

SFC

JONES

FM 21-20

DEPARTMENT OF THE ARMY FIELD MANUAL

S/S

**PHYSICAL
READINESS
TRAINING**



HEADQUARTERS, DEPARTMENT OF THE ARMY
JANUARY 1969

TAGO 6303A

FM 21-20 PHYSICAL READINESS TRAINING—1969

Change }
No. 1 }

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Education Development
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FORT KNOX, KENTUCKY

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 31 January 1974

PHYSICAL READINESS TRAINING

FM 21-20, 30 March 1973, is changed as follows:

Cover. The date is changed to read "MARCH 1973". Backstrip date "1972" is changed to read "1973".

Page 12. Paragraph 24e is added as follows:

e. Completion within the time established for training as follows:

- (1) Experience indicates that when men are

Page 96. The title of section II is changed as follows:

Section II. DROWNPROOFING INSTRUCTIONS AND EVALUATION #

Page 96. At the bottom of the page, the following note is added:

#Copyright: "DROWNPROOFING" by Fred R. Lanoue, 1963. Used by permission of the publisher, Prentice-Hall, Inc., Englewood, New Jersey. (para 211, 212, 213 only).

Page 100. Paragraph 214a is superseded as follows:

a. *Training Time.* The minimum block of training should consist of 8 to 12 hours of instruction to include an end-of-block proficiency test. The

physically conditioned in groups, a minimum of 3 hours per week is required to obtain objectives.

(2) Maintenance of physical condition must be sustained following development, and the objectives not yet attained should be scheduled. It is recommended that a minimum of 2 hours per week be allotted during a sustaining program. Unit mission or objectives may dictate an increased number of hours to operate a satisfactory program (para 6c, 29b, 39b and 57-62).

training should include a classroom presentation with the balance of time devoted to instruction and practice in the pool. Increased time beyond 8 hours will increase the qualification rate by making more practice time available.

Page 105. The title of section III is changed as follows:

Section III. SUPPORT REQUIRED FOR DROWNPROOFING #

Page 105. Note is added at the bottom of the page as follows:

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Page 161. A, figure 72. Title of relay is changed to read: "60-METER LANE RELAY."

Page 162. A, figure 73. Title of relay is changed to read: "100-METER LANE RELAY."

Page 225. Paragraph 401b(1). In line 2 "21.5" is changed to read "20.5," and in line 3 "79" is changed to read "78."

Page 226-227. Paragraph 404d(2). Table of minimum standard raw scores is changed as follows (*):

Event	Age group	Raw Score
Inverted crawl	17-25	25 seconds *
	26-30	27 seconds *
	31-35	28 seconds *
	36-39	29 seconds *
Bent-leg situp	17-25	32 repetitions *
	26-30	31 repetitions *
	31-35	30 repetitions *
	36-39	29 repetitions *
Horizontal ladder	17-25	36 bars *
	26-30	32 bars *
	31-35	27 bars
	36-39	21 bars
Run, dodge and jump	(no change)	(no change)
Two-mile run	17-25	19 minutes 7 seconds *
	26-30	19 minutes 17 seconds *
	31-35	19 minutes 27 seconds *
	36-39	19 minutes 37 seconds *

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INVERTED CRAWL					RUN, DODGE, JUMP					HORIZONTAL LADDER					BENT LEG SITUPS									
POINTS	17-25	26-30	31-35	36-39	POINTS	17-25	26-30	31-35	36-39	POINTS	17-25	26-30	31-35	36-39	POINTS	17-25	26-30	31-35	36-39					
100	14	15	16	17	50	30	31	32	33	100	83	80	75	69	50	54	53	52	51	50	27	26	25	24
99					49	30.5	31.5	32.5	33.5	99	82	79	74	68	49	53	52	51	50	49				
98	14.5	15.5	16.5	17.5	48	31	32	33	34	98	81	80	78	73	67	52	51	50	49	48	26	25	24	23
97					47	31.5	32.5	33.5	34.5	97	79	77	72	66	47					47				
96	15	16	17	18	46	32	33	34	35	96	78	76	71	65	46	51	50	49	48	46	25	24	23	22
95					45	32.5	33.5	34.5	35.5	95	77	75	70	64	45	50	49	48	47	45				
94	15.5	16.5	17.5	18.5	44	33	34	35	36	94	76	75	74	69	63	49	48	47	46	44	24	23	22	21
93					43	33.5	34.5	35.5	36.5	93	74	72	67	61	43				43					
92	16	17	18	19	42	34	35	36	37	92	73	71	66	60	42	48	47	46	45	42	23	22	21	20
91					41	34.5	35.5	36.5	37.5	91	72	70	65	59	41				41					
90	16.5	17.5	18.5	19.5	40	35	36	37	38	90	71	69	64	58	40	47	46	45	44	40	22	21	20	19
89	17	18	19	20	39	35.5	36.5	37.5	38.5	89	69	68	63	57	39				39					
88	17.5	18.5	19.5	20.5	38	36	37	38	39	88	68	66	61	55	38	46	45	44	43	38	21	20	19	18
87	18	19	20	21	37					87	67	65	60	54	37				37	20	19	18	17	
86	18.5	19.5	20.5	21.5	36	36.5	37.5	38.5	39.5	86	66	64	59	53	36	45	44	43	42	36				
85		20	21	22	35	37	38	39	40	85	65	64	63	58	52	44	43	42	41	35	19	18	17	16
84	19				34	37.5	38.5	39.5	40.5	84	63	62	57	51	34				34					
83		20.5	21.5	22.5	33					83	62	60	55	49	33	44	43	42	41	33	18	17	16	15
82	19.5				32	38	39	40	41	82	61	59	54	48	32				32					
81		21	22	23	31	38.5	39.5	40.5	41.5	81	60	58	53	47	31	43	42	41	40	31	17	16	15	14
80	20				30	39	40	41	42	80	59	57	52	46	30				30					
79		21.5	22.5	23.5	29	39.5	40.5	41.5	42.5	79	58	56	51	45	29	42	41	40	39	29	16	15	14	13
78	20.5	22	23	24	28	40	41	42	43	78	57	54	49	43	28				28					
77					27	40.5	41.5	42.5	43.5	77	56	55	53	48	27				27	15	14	13	12	
76	21	22.5	23.5	24.5	26	41	42	43	44	76	54	52	47	41	26	40	39	38	37	26				
75					25	41.5	42.5	43.5	44.5	75	53	51	46	40	25				25	14	13	12	11	
74	21.5	23	24	25	24	42	43	44	45	74	52	49	44	38	24	39	38	37	36	24				
73					23	42.5	43.5	44.5	45.5	73	51	50	48	43	23				23	13	12	11	10	
72	22	23.5	24.5	25.5	22	43	44	45	46	72	49	47	42	36	22	38	37	36	35	22				
71					21	43.5	44.5	45.5	46.5	71	48	46	41	35	21				21	12	11	10	9	
70	22.5	24	25	26	20	44	45	46	47	70	47	45	40	34	20	40	39	38	37	20				
69					19	44.5	45.5	46.5	47.5	69	46	43	38	32	19				19	11	10	9	8	
68	23	24.5	25.5	26.5	18	45	46	47	48	68	45	42	37	31	18				18					
67					17	45.5	46.5	47.5	48.5	67	44	41	36	30	17	41	40	39	38	17	10	9	8	7
66	23.5	25	26	27	16	46	47	48	49	66	43	39	34	28	16				16					
65					15	46.5	47.5	48.5	49.5	65	42	41	38	33	15				15	9	8	7	6	
64	24	25.5	26.5	27.5	14	47	48	49	50	64	40	37	32	26	14	40	39	38	37	14				
63					13	47.5	48.5	49.5	50.5	63	39	36	31	25	13				13	8	7	6	5	
62	24.5	26	27	28	12	48	49	50	51	62	38	34	29	23	12				12					
61		26.5	27.5	28.5	11					61	37	33	28	22	11				11	7	6	5	4	
60	25	27	28	29	10	48	49	50	51	60	36	32	27	21	10				10					
59	25.5	27.5	28.5	29.5	9					59	35	31	26	20	9				9	6	5	4	3	
58	26	28	29	30	8					58	34				8				8					
57	26.5	28.5	29.5	30.5	7					57	33	30	25	19	7				7	5	4	3	2	
56	27	29	30	31	6					56	32				6				6					
55	27.5	29.5	30.5	31.5	5					55	31	29	24	18	5				5	4	3	2	1	
54	28	30	31	32	4					54					4				4					
53	28.5				3					53	30	28	23	17	3				3	3	2	1		
52	29	30.5	31.5	32.5	2					52					2				2					
51	29.5				1					51	29	27	22	16	1				1					

1 First four events

Figure 119. Score table, advanced physical fitness test.

AGE GROUP/POINTS					AGE GROUP/POINTS					AGE GROUP/POINTS					AGE GROUP/POINTS					AGE GROUP/POINTS				
17-25	26-30	31-35	36-39	TIME	17-25	26-30	31-35	36-39	TIME	17-25	26-30	31-35	36-39	TIME	17-25	26-30	31-35	36-39	TIME	17-25	26-30	31-35	36-39	TIME
100				14:00 - 14:09	80	81	82	83	16:58 - 17:03	60	61	62	63	18:58 - 19:07	40	41	42	43	21:46 - 21:53	20	21	22	23	23:49 - 23:54
99	100			14:10 - 14:23	79	80	81	82	17:04 - 17:09	59	60	61	62	19:03 - 19:17	39	40	41	42	21:54 - 21:59	19	20	21	22	23:55 - 24:00
98	99	100		14:24 - 14:33	78	79	80	81	17:10 - 17:15	58	59	60	61	19:10 - 19:27	38	39	40	41	22:00 - 22:05	18	19	20	21	24:01 - 24:04
97	98	99	100	14:34 - 14:43	77	78	79	80	17:16 - 17:21	57	58	59	60	19:28 - 19:37	37	38	39	40	22:06 - 22:11	17	18	19	20	24:07 - 24:12
96	97	98	99	14:44 - 14:53	76	77	78	79	17:22 - 17:27	56	57	58	59	19:30 - 19:45	36	37	38	39	22:12 - 22:17	16	17	18	19	24:13 - 24:18
95	96	97	98	14:54 - 15:03	75	76	77	78	17:28 - 17:33	55	56	57	58	19:46 - 19:53	35	36	37	38	22:18 - 22:23	15	16	17	18	24:19 - 24:24
94	95	96	97	15:04 - 15:13	74	75	76	77	17:34 - 17:39	54	55	56	57	19:54 - 20:01	34	35	36	37	22:24 - 22:29	14	15	16	17	24:25 - 24:30
93	94	95	96	15:14 - 15:23	73	74	75	76	17:40 - 17:45	53	54	55	56	20:02 - 20:09	33	34	35	36	22:30 - 22:35	13	14	15	16	24:31 - 24:36
92	93	94	95	15:24 - 15:33	72	73	74	75	17:46 - 17:51	52	53	54	55	20:10 - 20:17	32	33	34	35	22:36 - 22:41	12	13	14	15	24:37 - 24:42
91	92	93	94	15:34 - 15:43	71	72	73	74	17:52 - 17:57	51	52	53	54	20:18 - 20:25	31	32	33	34	22:42 - 22:47	11	12	13	14	24:43 - 24:50
90	91	92	93	15:44 - 15:51	70	71	72	73	17:58 - 18:03	50	51	52	53	20:26 - 20:33	30	31	32	33	22:48 - 22:53	10	11	12	13	24:51 - 24:58
89	90	91	92	15:52 - 15:59	69	70	71	72	18:04 - 18:09	49	50	51	52	20:34 - 20:41	29	30	31	32	22:54 - 22:59	9	10	11	12	24:59 - 25:06
88	89	90	91	16:00 - 16:07	68	69	70	71	18:10 - 18:15	48	49	50	51	20:42 - 20:49	28	29	30	31	23:00 - 23:05	8	9	10	11	25:07 - 25:14
87	88	89	90	16:08 - 16:15	67	68	69	70	18:16 - 18:21	47	48	49	50	20:50 - 20:57	27	28	29	30	23:06 - 23:11	7	8	9	10	25:15 - 25:22
86	87	88	89	16:16 - 16:23	66	67	68	69	18:22 - 18:27	46	47	48	49	20:58 - 21:05	26	27	28	29	23:12 - 23:19	6	7	8	9	25:23 - 25:30
85	86	87	88	16:24 - 16:31	65	66	67	68	18:28 - 18:33	45	46	47	48	21:06 - 21:13	25	26	27	28	23:19 - 23:24	5	6	7	8	25:31 - 25:38
84	85	86	87	16:32 - 16:39	64	65	66	67	18:34 - 18:39	44	45	46	47	21:14 - 21:21	24	25	26	27	23:25 - 23:30	4	5	6	7	25:39 - 25:46
83	84	85	86	16:40 - 16:45	63	64	65	66	18:40 - 18:45	43	44	45	46	21:22 - 21:29	23	24	25	26	23:31 - 23:36	3	4	5	6	25:47 - 25:54
82	83	84	85	16:46 - 16:51	62	63	64	65	18:46 - 18:51	42	43	44	45	21:30 - 21:37	22	23	24	25	23:37 - 23:42	2	3	4	5	25:55 - 26:02
81	82	83	84	16:52 - 16:57	61	62	63	64	18:52 - 18:57	41	42	43	44	21:38 - 21:45	21	22	23	24	23:43 - 23:48	1	2	3	4	26:03 - 26:10

2 Two-mile run

Figure 119 — Continued.

PACED					RUL. COOSE. JUMP					DETERMINAL LACED					BUCS					
POINTS	17-25	26-30	31-35	36-39	POINTS	17-25	26-30	31-35	36-39	POINTS	17-25	26-30	31-35	36-39	POINTS	17-25	26-30	31-35	36-39	
100	51	49	47	44	50	17.5	20.5	21	21.5	22.5	5.0				100	60	75	71	67	50
99					49					4.9					99	70	74	70	66	49
98	50	40	40	43	40					4.0	26.5	27	27.5	20.5	98	77	73	69	65	40
97	49	47	45	42	47					4.7					97	74	72	60	64	47
96					46	21	19	17	14						96	75	71	67	63	46
95	40	45	44	41	45					4.5	21	21.5	22	23	95	74	70	66	62	45
94					44					4.4					94	73	69	65	61	44
93	47	45	43	40	43	20	18	16	13						93	71	60	64	59	43
92	45	44	42	39	42					4.2	27.5	20	20.5	20.5	92	70	67	63	59	42
91					41					4.1					91	69	66	62	57	41
90	45	43	41	30	40	19	17	15	12		21.5	22	22.5	23.5	90	60	67	65	61	40
89	44	42	40	37	39					3.9	20	20.5	20	30	89	66	64	60	55	39
88					38					3.8					88	65	63	59	54	38
87	43	41	39	36	37	18	16	14	11						87	64	61	57	52	37
86	42	40	30	35	36					3.6	23.5	20	20.5	30.5	86	63	60	56	51	36
85					35	22	22.5	23	24	3.5					85	62	59	55	50	35
84	41	39	37	34	34	17	15	13	10						84	61	59	55	50	34
83					33					3.3	29	29.5	30	31	83	60	57	53	49	33
82	40	30	36	33	32	16	14	12	9						82	58	55	51	46	32
81	39	37	35	32	31					3.1	29.5	30	30.5	31.5	81	57	54	50	45	31
80	38	36	34	31	30					3.0	22.5	23	23.5	24.5	80	56	53	49	44	30
79					29	15	13	11	8		29	30	30.5	31	79	55	52	48	43	29
78	37	35	33	30	28					2.8					78	54	50	46	41	28
77					27					2.7	30.5	31	31.5	32.5	77	53	51	47	42	27
76	36	34	32	29	26	14	12	10	7						76	51	48	44	39	26
75	35	33	31	20	25					2.5	23	23.5	24	25	75	50	47	43	38	25
74					24					2.4					74	49	45	41	36	24
73	34	32	30	27	23	13	11	9	6						73	48	44	40	35	23
72					22					2.2					72	46	43	39	34	22
71	33	31	29	26	21	12	10	8	5		23	24	24.5	25.5	71	45	42	38	33	21
70					20					2.0					70	44	41	37	32	20
69	32	30	28	25	19	11	9	7	4						69	43	39	35	30	19
68					18					1.8					68	42	38	34	29	18
67	31	29	27	24	17	10	8	6	3		24	24.5	25	26	67	41	37	33	28	17
66					16					1.6					66	40	36	32	27	16
65	30	28	26	23	15	9	7	5	2						65	39	35	31	25	15
64					14					1.4					64	38	34	30	24	14
63	29	27	25	22	13	8	6	4	1		24.5	25	25.5	26.5	63	37	33	29	23	13
62	28	26	24	21	12					1.2					62	36	32	27	21	12
61	27	25	23	20	11	7	5	3							61	35	31	26	20	11
60	26	24	22	19	10					1.0	25	25.5	26	27	60	34	30	25	19	10
59					9	6	4	2			9	9.5	10.5	11.5	59	33	29	24	18	9
58	25	23	21	10	8					0.8					58	32				8
57					7	5	3	1			7	7.5	8	8.5	57	31	28	23	17	7
56					6					0.6	25.5	26	26.5	27.5	56	30				6
55	24	22	20	17	5	3	1	2			5	5.5	6	6.5	55	29	27	22	16	5
54					4					0.4					54					4
53					3	3	1				3	3.5	3.7	3.8.5	53	28	26	21	15	3
52	23	21	19	16	2	2					26	26.5	27	28	52	27				2
51					1	1				0.1					51	27	25	20	14	1

1 First four events

Figure 126. Score table, staff and specialist physical fitness test.

AGE GROUP/POINTS					AGE GROUP/POINTS					AGE GROUP/POINTS					AGE GROUP/POINTS					AGE GROUP/POINTS				
17-25	26-30	31-35	36-39	TIME	17-25	26-30	31-35	36-39	TIME	17-25	26-30	31-35	36-39	TIME	17-25	26-30	31-35	36-39	TIME	17-25	26-30	31-35	36-39	TIME
100				6:06 - 6:09	80	82	84	86	7:13 - 7:16	60	62	64	66	8:21 - 8:24	40	42	44	46	9:41 - 9:45	20	22	24	26	11:21 - 11:25
99				6:09 - 6:11	79	81	83	85	7:17 - 7:20	59	61	63	65	8:25 - 8:28	39	41	43	45	9:46 - 9:50	19	21	23	25	11:26 - 11:30
98	100			6:12 - 6:14	78	80	82	84	7:21 - 7:24	58	60	62	64	8:29 - 8:32	38	40	42	44	9:51 - 9:55	18	20	22	24	11:31 - 11:35
97	99			6:15 - 6:17	77	79	81	83	7:25 - 7:26	57	59	61	63	8:33 - 8:36	37	39	41	43	9:56 - 10:00	17	19	21	23	11:36 - 11:40
96	98	100		6:18 - 6:20	76	78	80	82	7:27 - 7:29	56	58	60	62	8:37 - 8:40	36	38	40	42	10:01 - 10:05	16	18	20	22	11:41 - 11:45
95	97	99		6:21 - 6:23	75	77	79	81	7:30 - 7:32	55	57	59	61	8:41 - 8:44	35	37	39	41	10:06 - 10:10	15	17	19	21	11:46 - 11:50
94	96	98	100	6:24 - 6:26	74	76	78	80	7:33 - 7:35	54	56	58	60	8:45 - 8:48	34	36	38	40	10:11 - 10:15	14	16	18	20	11:51 - 11:55
93	95	97	99	6:27 - 6:29	73	75	77	79	7:36 - 7:38	53	55	57	59	8:49 - 8:52	33	35	37	39	10:16 - 10:20	13	15	17	19	11:56 - 12:00
92	94	96	98	6:30 - 6:32	72	74	76	78	7:39 - 7:41	52	54	56	58	8:53 - 8:56	32	34	36	38	10:21 - 10:25	12	14	16	18	12:01 - 12:05
91	93	95	97	6:33 - 6:35	71	73	75	77	7:42 - 7:44	51	53	55	57	8:57 - 9:00	31	33	35	37	10:26 - 10:30	11	13	15	17	12:06 - 12:10
90	92	94	96	6:36 - 6:38	70	72	74	76	7:45 - 7:47	50	52	54	56	9:01 - 9:04	30	32	34	36	10:31 - 10:35	10	12	14	16	12:11 - 12:15
89	91	93	95	6:39 - 6:41	69	71	73	75	7:48 - 7:50	49	51	53	55	9:05 - 9:08	29	31	33	35	10:36 - 10:40	9	11	13	15	12:16 - 12:20
88	90	92	94	6:42 - 6:44	68	70	72	74	7:51 - 7:53	48	50	52	54	9:09 - 9:12	28	30	32	34	10:41 - 10:45	8	10	12	14	12:21 - 12:25
87	89	91	93	6:45 - 6:48	67	69	71	73	7:54 - 7:56	47	49	51	53	9:13 - 9:16	27	29	31	33	10:46 - 10:50	7	9	11	13	12:26 - 12:30
86	88	90	92	6:49 - 6:52	66	68	70	72	7:57 - 8:00	46	48	50	52	9:17 - 9:20	26	28	30	32	10:51 - 10:55	6	8	10	12	12:31 - 12:35
85	87	89	91	6:53 - 6:56	65	67	69	71	8:01 - 8:04	45	47	49	51	9:21 - 9:24	25	27	29	31	10:56 - 11:00	5	7	9	11	12:36 - 12:40
84	86	88	90	6:57 - 7:00	64	66	68	70	8:05 - 8:08	44	46	48	50	9:25 - 9:28	24	26	28	30	11:01 - 11:05	4	6	8	10	12:41 - 12:45
83	85	87	89	7:01 - 7:04	63	65	67	69	8:09 - 8:12	43	45	47	49	9:29 - 9:32	23	25	27	29	11:06 - 11:10	3	5	7	9	12:46 - 12:50
82	84	86	88	7:05 - 7:08	62	64	66	68	8:13 - 8:16	42	44	46	48	9:33 - 9:36	22	24	26	28	11:11 - 11:15	2	4	6	8	12:51 - 12:55
81	83	85	87	7:09 - 7:12	61	63	65	67	8:17 - 8:20	41	43	45	47	9:37 - 9:40	21	23	25	27	11:16 - 11:20	1	3	5	7	12:56 - 13:00

Figure 126 — Continued.

2 One-mile run 5th event of Staff + Specialist PT Test

Page 252. Paragraph(s) 422d(1)-(5) are changed as follows (*):

- | | |
|--------------------------|------------------|
| (1) Inverted crawl | 25 seconds * |
| (2) Run, dodge, and jump | 24.5 seconds |
| (3) Horizontal ladder | 36 bars * |
| (4) Bent-leg situps | 32 repetitions * |
| (5) Two-mile run | 19 min, 7 sec * |

Page 321. Paragraph 6: is added as follows:

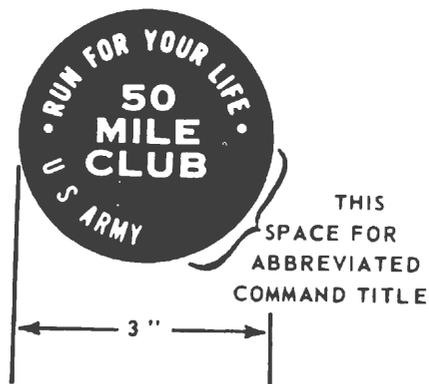
c. Major Commands. Commanders of major Army commands and components of unified commands in CONUS and overseas are encouraged to implement the program on a command-wide basis. Implementing instructions may be issued by the commander of these commands to insure uniformity of procedure within the command (para 13, 15, and 23).

COLORS

- 50 MILE CLUB - LIGHT BLUE BACKGROUND WITH WHITE LETTERING
- 100 MILE CLUB - DARK GREEN BACKGROUND WITH WHITE LETTERING
- 200 MILE CLUB - DARK RED BACKGROUND WITH WHITE LETTERING
- 300 MILE CLUB - BLACK BACKGROUND WITH WHITE LETTERING
- 400 MILE CLUB - SILVER BACKGROUND WITH BLUE LETTERING
- 500 MILE CLUB - GOLD BACKGROUND WITH BLACK LETTERING
- 750 MILE CLUB - LIGHT GREEN BACKGROUND WITH WHITE LETTERING
- 1,000 MILE CLUB - BROWN BACKGROUND WITH WHITE LETTERING
- 2,500 MILE CLUB - YELLOW BACKGROUND WITH BLACK LETTERING
- 5,000 MILE CLUB - DARK BLUE BACKGROUND WITH WHITE LETTERING
- 7,500 MILE CLUB - MEDIUM RED BACKGROUND WITH WHITE LETTERING
- 10,000 MILE CLUB - ORANGE BACKGROUND WITH BLACK LETTERING



A. LETTERING OF PATCH FOR PROGRAM AS DIRECTED AT INSTALLATION LEVEL



B. LETTERING OF PATCH FOR PROGRAM AS DIRECTED BY MAJOR ARMY COMMAND

(Patches are to be produced locally)

Figure 175. Examples of patches to be awarded.

Page 335. Paragraph 13 is superseded as follows:

13. Awards

One of the primary advantages of this program is the incentive awards system which contributes to participants' motivation and progress in the program. As an incentive, mileage certificates (fig 174) (DA Form 3860-R) and patches (fig 175) will be awarded to participants completing 50, 100, 200, 300, 400, 500, 750, 1000, 2500, 5000, 7500, and 10,000 miles of running in the program. To receive credit for awards, an individual must complete the mileage within the established time goals as appropriate for the phase of participation; i.e., preparatory, conditioning, or sustaining phase. When qualified for an award, the participant submits schedule sheets to the sponsoring agency. Unit commanders submit a group schedule sheet to certify awards for individuals who are eligible for recognition within the unit program.

a. The award certificate and the patch should be transmitted by letter (fig 176) to the organization for presentation to both individual participants and unit participants. These letters should be typed on appropriate letterhead stationery. The patch award may be worn on a sweater or similar type of clothing. The cloth patch can usually be obtained through a local distributor. For uniformity, colors, patch size, letter size, and letter style must be specified in order to insure standardization throughout the Army (fig 175).

b. If a major Army command or major Army component of a unified command (AR 10-5) sponsors the program, award certificates may contain the title of the major command in the heading. Award patches may also be altered to include the abbreviated title of the command. In such case the bottom half of the arc of the patch will be altered to read "US ARMY — (followed by abbreviated lettering to indicate the major command)." Installations not involved in a major command-directed program are not authorized to alter the patch award (fig 175).

Page 336. Paragraph 15 is superseded as follows:

15. Sponsoring Agency Responsibility

A local (installation) sponsoring agency is required to administer the program. A staff agency should be designated as the sponsoring agency to provide needed support as required by individual entrants and various organizations. It is not effective or feasible for small units to contract for patch awards, have certificates printed and at-

tempt to support their own program. Such an agency is necessary when the program is operated solely by the installation or when the installation is participating in a major command-directed program.

a. The installation sponsoring agency must prepare for the program by publicizing and promoting the program, establishing office space, selecting and training personnel to administer the program, arranging a budget and procuring necessary funds, providing award certificates and patches, and establishing the measured running areas.

b. If major Army commands choose to implement the program on a command-wide basis the program is to be administered as outlined herein, with the exception of presentation of awards beyond the 500-mile distance (para 23).

c. The success of the program will greatly depend on the effectiveness of the organizational effort. Command emphasis is essential to encourage participation and to provide material support.

Page 343. Paragraph 23 is superseded as follows:

23. Earning and Presentation of Award

Certificates (fig 174) (DA Form 3860-R) and cloth patches (fig 175) should be awarded to all participants upon the proper submission of a completed progress schedule sheet. Awards are made at various mileage levels. The first is for 50 miles and is known as the "50-Mile Club." Awards progress to the "10,000-Mile Club."* Each award is for the specified number of miles under the established time goals. The administrator at installation level is responsible for forwarding the certificate and cloth patch award to the individual's immediate commander or supervisor. The accompanying letter of transmittal (fig 176) should be signed by the head of the sponsoring agency recommending proper presentation. Awards should be established, processed, and presented as follows:

a. *50 Through 500 Miles.* Awards for 50, 100, 200, 300, 400, and 500-Mile Clubs are administered and awarded at installation level. These awards should be signed and presented by a commander from company to brigade level (or appropriate staff or office level), as deemed appropriate by the organization to which the award recipient is assigned.

b. *750 Through 2500 Miles.* Awards for 750, 1000, and 2500-Mile Clubs are signed and presented as follows:

*Since the entrant is allowed to certify only 3 miles per day to qualify toward an award, it would take 17 days to merit the 50-mile award; or, nearly a year to qualify for the 1,000-mile award.

(1) *Installation program.* Certificates should be signed by the installation commander and awarded locally.

(2) *Major command program.* Certificates and patches are to be provided by the major command upon notification that personnel have achieved the required distance. Certificates should be signed by a general officer at the headquarters of the major command and forwarded to the installation for presentation.

c. *5000 Through 7500 Miles.* Awards for the 5000 and 7500-Mile Clubs should be processed as follows:

(1) *Installation program.* Certificates should

be signed by a general officer at installation level, by the division commander, or by the corps commander (or equivalent major commander), and presented at installation level.

(2) *Major command program.* The same procedure is followed as outlined in para 23b(2) above.

d. *10,000-Mile Club.* This top award, representing approximately 10 years of running, should be signed by the commanding general of the major command to which the individual is assigned, whether the program is administered at installation level or at major command level. The presentation should occur at installation level.

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:

VERNE L. BOWERS
Major General, United States Army
The Adjutant General

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HEADQUARTERS
 DEPARTMENT OF THE ARMY
 WASHINGTON, D.C. 15 August 1975

PHYSICAL READINESS TRAINING

FM 21-20, 30 March 1973 is changed as follows:
 Page 28. Paragraph 63. Line 6 is changed to read:
 "... specialist positions. For additional guidance
 see chapter 18."

Page 28. Paragraph 64. Line 12 is changed to
 read: "... fitness test. The benefits of exercise are
 listed in paragraph 25."

Page 31. Paragraphs 76.1 through 76.4 are added
 as follows:

76.1. Elements To Include in a Sound Program

There are five factors that are essential to any
 well-planned physical fitness program: overload,
 progression, balance, variety, and regularity. We
 need to know and understand each one.

a. Overload. If you are to develop or improve
 your physical fitness through exercise, you must
 apply the principle of overload. This simply
 means that you must participate in physical
 activity of greater intensity than you are
 accustomed to doing. The usual method of doing
 this is to increase the amount of exercise, to
 extend the duration of the exercise, or to speed up
 the execution of the exercise. In other words you
 must push beyond your usual activity level a bit
 to cause development to take place. Do not
 "push" yourself during exercise until it hurts.
 Such action is not necessary to improve your
 physical fitness. To be healthfully tired after
 exercise is normal, and one night's rest should
 completely refresh you.

b. Progression. This principle somewhat
 overlaps with that of overload. Briefly stated,
 progression is the advancement or increase of the
 load as your fitness increases. As you reach one
 level, you reset the goal at a slightly higher level
 and progress toward the new goal. During the
 developmental conditioning stages (toughening
 and slow improvement stages), progression is
 regularly applied. When you arrive at the desired
 level of fitness, progression may cease and you
 then maintain the fitness level attained through
 continuous exercise as the last level of pro-
 gression. Practicing the principle of overload ac-
 customs the body to withstand a bit more exer-
 tion than needed to do the day's work. Following
 the principle of progression gradually boosts the
 level of fitness to a plane above that needed to

work easily through the day. The two together
 will put you in condition not only to get your daily
 work done without undue fatigue but at the same
 time give you enough energy after normal duty
 hours to meet emergency work demands or to
 enjoy the fruits of the daily labors.

c. Balance. All body parts should be exercised.
 You should also develop strength, endurance,
 coordination, and agility; circulo-respiratory
 (wind) endurance as well as muscular endurance
 should be developed. To assist in achieving
 balance in your program you should bend, twist,
 stoop, stretch, and run. The practice of physical
 skills will also provide proper balance to assure
 the development of all body parts. A properly
 balanced program should not neglect the devel-
 opment of skills such as jumping, throwing, run-
 ning, and crawling.

d. Variety. All too often well-intended fitness
 programs start with great interest and high
 enthusiasm only to fall short and fail entirely
 because the routine becomes "old" and boredom
 sets in. Concentration upon a single activity
 usually results in boredom for most people.
 Programs of this type should be avoided in favor
 of those which contain some variety.

e. Regularity. Guard against any approach to
 the problem of attaining fitness which does not
 provide for a program of regular exercise. Fads
 are prevalent in this area as in all others. There is
 no easy or occasional way to develop physical
 fitness. Regularity of exercise is a must. If your
 program is sound, contains only a single activity,
 but is one which you like, carry on. The secret is
 to exercise and not to sit along the sideline
 debating the merits of the various types of
 exercises you could get if you would but make up
 your mind. A single program executed with
 regularity can do the job. People who have
 successful individual programs may be divided
 into the following three types:

(1) *Single activity participants.* Individuals
 in this category may choose to play a single or
 dual sport which they can carry on year round, or
 they may use running as the sole means of
 conditioning, or they may lift weights, or perform
 a "daily dozen" of conditioning exercises.

(2) *Multiple activity participants.* Indi-
 viduals in this group are marked by their use

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of a variety of activities to maintain physical condition. They may play tennis in the summer and handball in the winter or they may do conditioning exercises, play golf, swim, and run. They like variety and may use any combination of physical activities suited to their need.

(3) *Unit training participants.* People in this category get all their physical activity through the unit training program, to include physical training. Staff personnel must be aware of a tendency to take credit for such training without really taking part in it. If your assignment is such that you are "chairborne" during the time your unit is participating in vigorous field training, you will require a supplementary individual program to maintain your physical fitness.

76.2. Exercise and Your Diet

Just as a regular program of exercise is essential to your physical well being, the consumption of food and drink is also important to your state of physical fitness. Until recent years it was commonly suggested that exercise was not an effective way of keeping weight down. Now, however, there is a growing realization that exercise together with proper eating habits, as a way of life, is excellent preventive medicine for obesity. In the expenditure of physical effort and the control of weight, you should know the following facts:

a. If you are active you use the energy from food to do your work; the harder the work the more food you require. As long as the food consumption equals the work production, fat will not accumulate. If you eat more than you need and fail to work or exercise, fat will be deposited.

b. Exercise usually increases the desire for food, and everything being equal, you need more food when you exercise. If you increase your food consumption and fail to increase the intensity and duration of exercise at a commensurate rate, overweight will result.

c. Alcohol in excess, just as food in excess, will increase weight. Alcoholic beverages consumed in addition to an adequate food intake constitute a considerable supplement to your diet. All supplements, such as candy, milk shakes, alcohol, midnight and other between meal snacks, soft drinks (high caloric), second and third helpings, and other extra food and drink will result in overweight.

d. As you grow older your appetite will, in all probability, remain good and at the same time your body generally will require less food. You must therefore, apply strict control over the types and amounts of food consumed.

76.3. Dieting

Dieting may be carried on either informally or formally. The control of weight through restriction of food intake may be an informal process or simply watching and generally controlling the amount of food consumed or it may be a more formal process of following a diet prescribed by medical authorities. If you are in a group being assisted by a medical officer, here are a few simple rules to guide you.

a. Your body needs protective foods for maintenance and repair. These foods are eggs, milk, meat, fruit, and vegetables. You should include them in your daily diet.

b. Although your system requires some fat for proper functioning, it is easy to eat too much of it. Reduce the fat intake by judicious reduction of fatty foods from your diet. Greasy, creamy, or oily foods; butter, cream, whole milk, salad dressing and gravies are high caloric. Limit consumption of fatty meats such as pork, bacon, sausage, and ham.

c. Pastries such as pie, cake, and cookies are fattening.

d. Starch foods such as potatoes, lima beans, bread, macaroni, noodles, and similar foods are a source of energy, but when taken in excess they are stored in the tissues as fat.

e. Eat generous portions of fish, fowl, lean meat, and green or root vegetables. Fruit and fruit juices are tasty and not too fattening. Drink plenty of water throughout the day. Water consumed with your meals will give you a feeling of fullness.

f. If, after restricting your diet and participating in exercise you still fail to lose weight, you may find that you are eating an excess of fat producing foods. If a review of your diet reveals this is not the case, medical advice should be sought as there are certain cases of overweight caused by organic imbalances which only medical authorities can detect.

76.4. Army Weight Standards

The Army weight control measures are prescribed in AR 632-1. Specific minimum and maximum weights for retention on duty are prescribed in AR 40-501. When weight is controlled in relation to height and frame size greater physical efficiency usually occurs, with less strain on the heart. A weight table indicating desirable weight limits is reproduced as figure 4.1.

Height, with shoes		Small frame	Medium frame	Large frame
Feet	Inches			
5	2	116-125	124-133	131-141
5	3	119-128	127-136	133-144
5	4	122-132	130-140	137-149
5	5	126-136	134-144	141-153
5	6	129-139	134-147	145-157
5	7	133-143	141-151	149-162
5	8	136-147	145-156	153-166
5	9	140-151	149-160	157-170
5	10	144-155	153-164	161-175
5	11	148-159	157-168	165-180
6	0	152-164	161-173	169-185
6	1	157-169	166-178	174-190
6	2	163-175	171-184	179-196
6	3	168-180	176-189	184-202

Figure 4-1. Desirable weights for male personnel 25 years of age and over.

Page 96. Paragraph 209. Subparagraphs *e* and *f* are added.

e. Water accidents cause 7,000 to 8,000 drownings each year in the United States. Some of this number are Army personnel. Drowning of military personnel occurs during training exercises, in combat operations, in recreational swimming, and in aquatic activities. The causes of drowning are varied and result from overestimating ability, entering water too soon after meals, panic, unexpected entry into water, inability to stay afloat until rescued, freezing in frigid water, swimming alone and undergoing an accident, entering water with impaired strength or judgment (injured, sick, under the influence of alcohol or drugs, etc.), failure to remove clothing and equipment upon unexpected entry into water, and failure to follow safe boating practices.

f. Soldiers in training and in combat operations frequently operate in or near water where accidents or planned operations place the individual in a situation where skill in water survival may save his life. Several examples follow which illustrate the value of such skill:

(1) In an engineer training exercise a power boat crossing a lake capsized, several men drowned prior to rescue.

(2) A transport plane is forced down at sea, a number of men drowned.

(3) A landing craft moved toward a beach in a combat assault. When the ramp was lowered several men started toward shore but drowned prior to getting to the beach.

(4) In a stream crossing a man lost his grip

on the rope (placed across the stream as a safety device), and drowned due to panic.

Page 96. Subparagraphs 210 *c* (1) and (2) are superseded as follows:

(1) Drownproof Training (sec II and III). This is a process of training which conditions individuals to avoid panic and survive in the water. Both swimmers and nonswimmers can learn the techniques. The process is approximately 10 percent physical and 90 percent mental. Training programs are outlined in appendix D.

(2) Expedient floatation devices, removal of equipment, and unexpected entry into the water (sec IV).

Page 96. Paragraph 210 *c*. New subparagraph (3) is added.

(3) Training of instructor personnel to teach water survival training (sec V). And, original subparagraph (3) is renumbered (4).

Page 97. Paragraph 212 *c*. New subparagraph *c* is added:

c. Muscular Cramps. Occasionally trainees will experience muscular cramps in the water. The cramp itself is not serious, but when it occurs in the water the trainee may panic and go down. The cramp usually occurs in the calf of the leg. Action to overcome this interference is simply to extend the leg, raise the toes, force the heel downward, and hold until the cramp diminishes.

Page 97. Paragraph 212 *c*. "*c*" is changed to read "*d*" and "*d*" is changed to read "*e*".

Page 97. Paragraph 212. Subparagraph *f* is added as follows:

f. The drownproofing system was developed over a period of 25 years. In recent years the method has gained national prominence. Various organizations throughout the country to include the American Red Cross, Peace Corps, US Coast Guard, and US Marine Corps have adopted drownproofing as a means of water survival. The method is also spreading among business and industrial organizations. Many use the method in training of personnel who must work near water. This method of training has proven to be the most effective water survival training known to date. The system has been adapted for Army use, tested extensively, and applied in the field effectively.

Page 97. Paragraph 213 *b*. In line 14 "(fig 46)" is changed to read "(fig 46.1)."

Page 99. Paragraph 213 *c*. In line 6 "(fig 46)" is changed to read "(fig 46.2)."

Page 99. Paragraph 213 *d*. In line 7 "(fig 46)" is changed to read "(fig 46.3)."

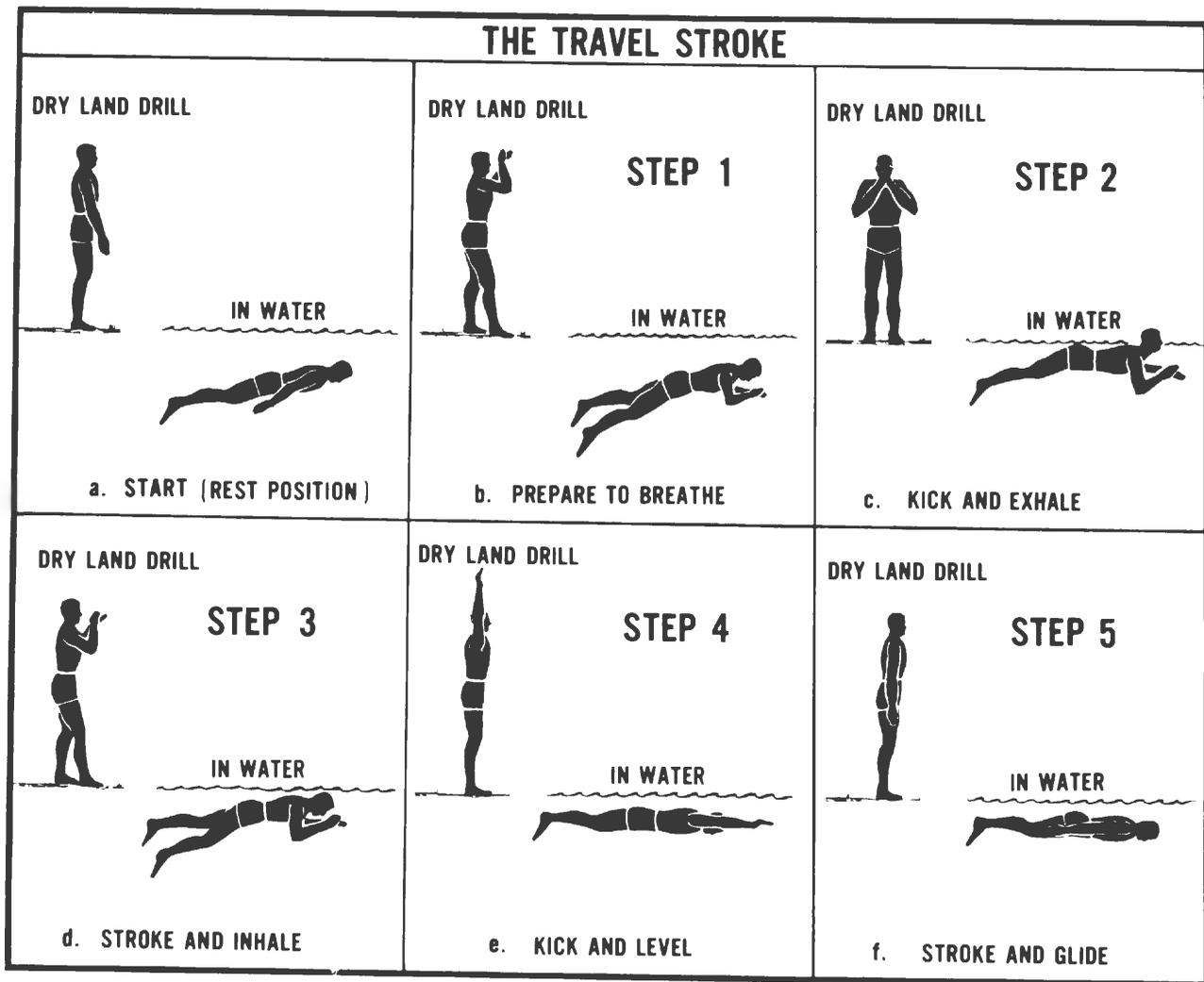


Figure 46.1. Travel stroke — dry land and in water.

Page 100. Figure 46—Continued is superseded as follows:

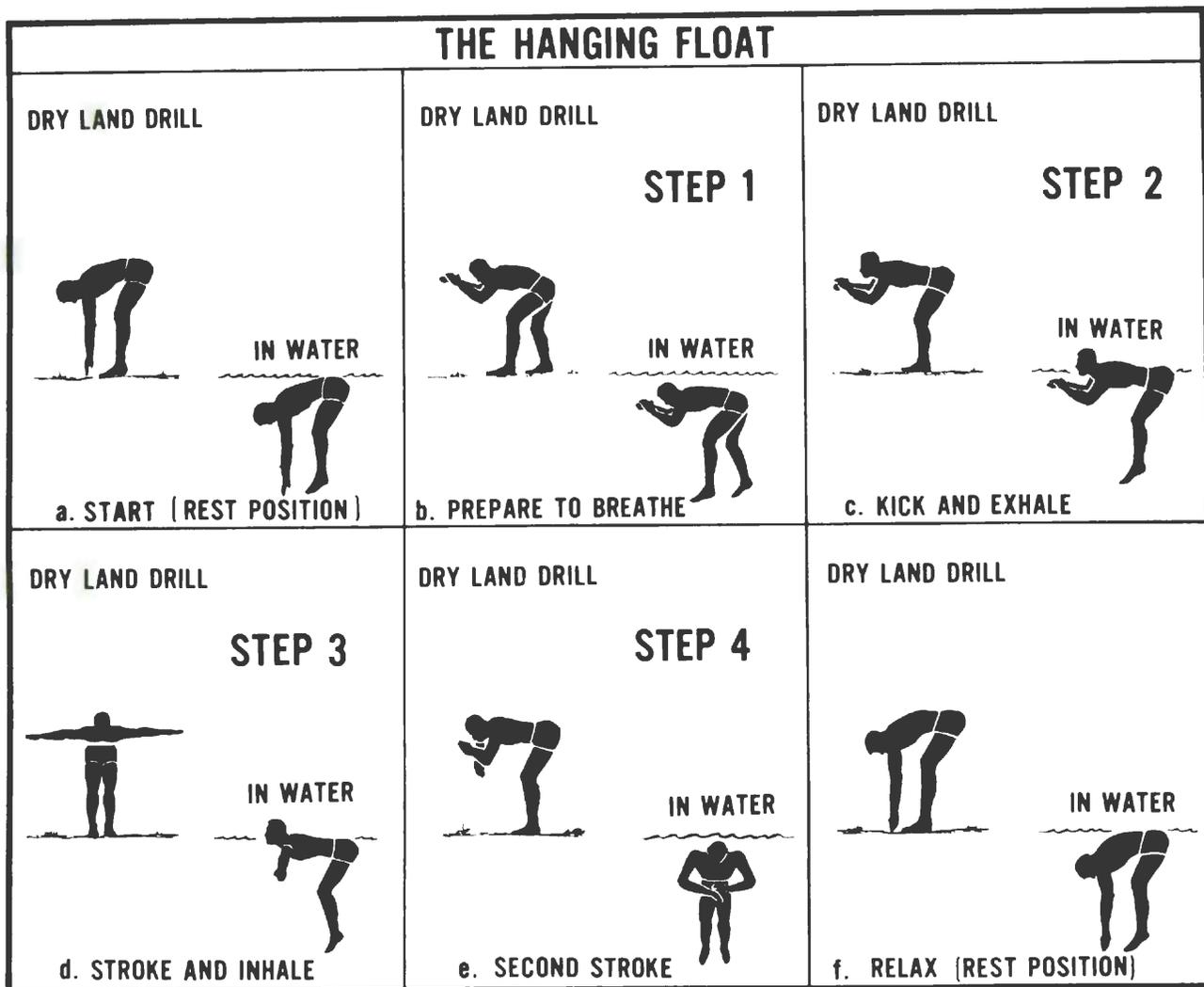


Figure 46.2. Hanging float—dry land and in water.

Page 100. Paragraph 214 is superseded as follows:

214. Preparation for Implementing Training

To successfully conduct drownproof training the following actions must be taken:

a. Understand the concept of drownproof training. To fully support the training of instructors and trainees, commanders and staff must understand the method, appreciate the need for careful planning, and know the detailed preparations required to make the training successful.

b. Provide an indoor pool in which the air and water are heated. An Olympic size pool 25x50 meters is ideal. The pool is divided into three parts, or station locations, for instruction (para 219b(2)).

c. Provide standard safety, pool and classroom equipment, and uniform items for trainees (para

219c). Normally, Recreational Services furnish the pool equipment.

d. For instruction in the pool, train and provide a cadre of 12 instructors to conduct the initial training of trainees. For conduct of instructor training three instructors are required (para 219a(2)).

e. Provide Recreational Service personnel to maintain the pool in a safe and operative condition (para 219a(3)).

f. Establish and support administrative procedures for handling items such as scheduling, training records, awards, and reports (para 218).

g. Provide for implementing initial instruction (12 hr), followed by remedial instruction (8 hr), for trainees who fail to qualify, or did not receive initial instruction (app D).

Page 101. Figure 46—Continued is superseded as follows:

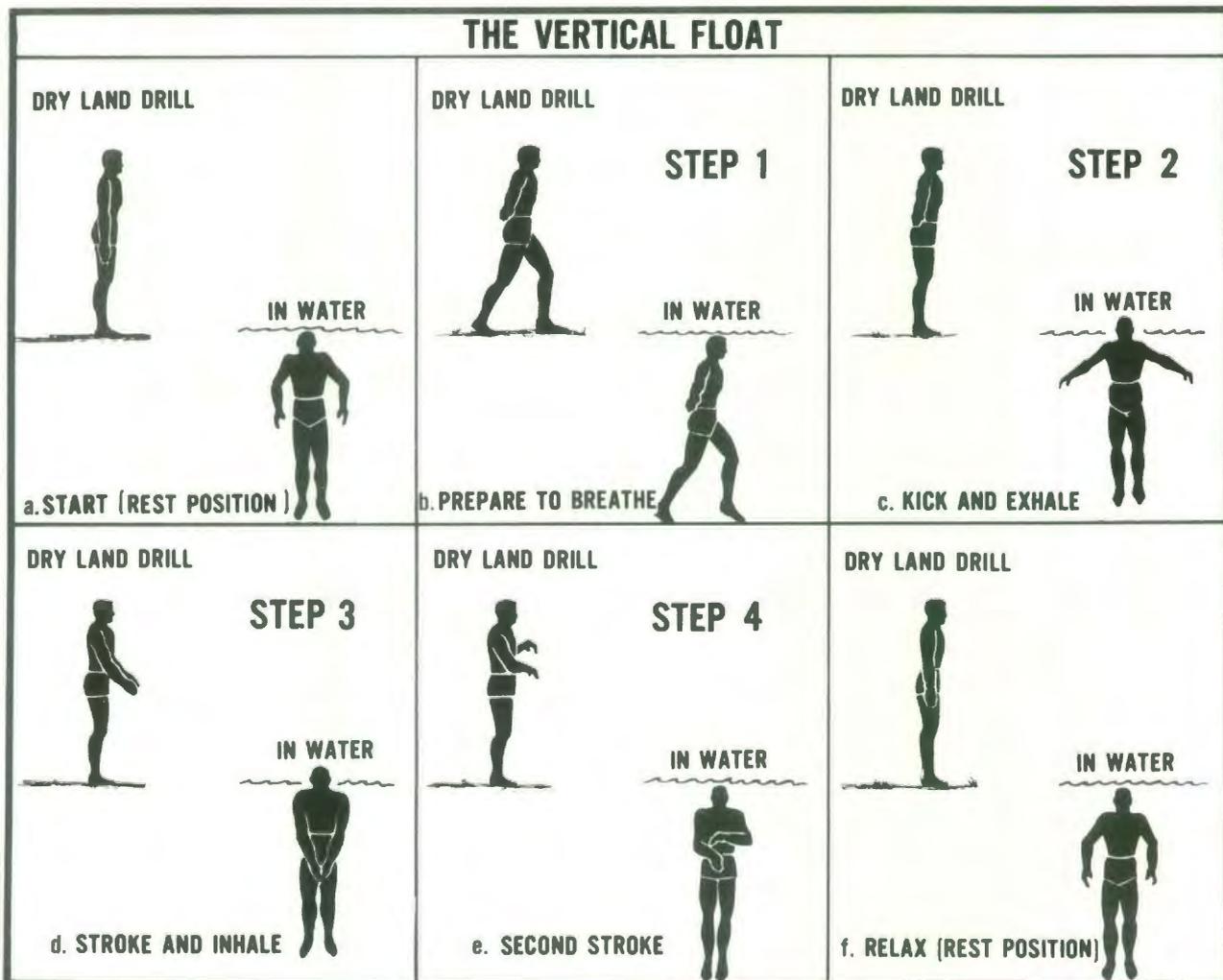


Figure 46.3. Vertical float—dry land and in water.

Page 102. Paragraph 215 is superseded and paragraphs 215.1 through 215.7 are added as follows:

215. Confidence, Motivation, and Mental Discipline

Trainees are divided according to ability. The majority will never have been exposed to drownproofing, therefore instruction is necessary for all trainees regardless of swimming capability.

a. At no time should trainees be required to do anything for which they are not prepared. In water activities confidence in the technique must be developed within each trainee. Every effort must be made to avoid fear and panic (para 212a and c). Skills and techniques which are new to swimmers and nonswimmers alike must be learned.

b. Trainees must be motivated in order to progress during the instruction and they must be willing to make their best effort to learn. Personnel who are good swimmers may be a problem because they may think there is nothing to learn, weak swimmers may think they cannot learn, and nonswimmers may be afraid of water and may not want to try. Very few trainees have experienced staying under water for extended periods of time. Swimmers have been taught to remain on top of the water, rather than below the surface. In learning the drownproofing technique there is approximately 10 percent skill and 90 percent mental discipline involved. Mental discipline is the ability to concentrate and think at all times, and to continuously work toward establishment of a feeling of calmness and relaxation while under water.

215.1. Methods of Entry Into Water

Following orientation, the first thing to be learned in the pool is proper entry into the water. There are two methods of entry into the pool, a sitting and a standing method. Both methods are explained as follows:

a. Trainees sit on the edge of the deck and scoop water over their bodies to become accustomed to the water temperature (A, fig 46.4). They then bend to the right, placing both hands across the legs and downward on the gutter edge. The right hand is next to the legs and the left hand crosses over and is farther from the body. The hands are turned so that the fingers are toward the wall and the thumbs are over the gutter edge toward the water (B, fig 46.4). This action is taken upon the preparatory command, PREPARE TO ENTER WATER. The command of execution is ENTER THE WATER. On that

command the trainee moves his body off the deck and turns to the right, entering the water feet first (C, fig 46.4) and in turning the body faces the wall (D, fig 46.4). The hands retain their grip on the gutter and control the entry to keep the head above the water (E, fig 46.4). Immediately upon facing the wall the feet are raised and the toes braced against the wall. This action causes the body to be positioned away from the wall. The hands retain their grip on the gutter edge, arms are straight and on top of the water, head is out of the water, shoulders and remainder of the body are in the water, legs are drawn up approximately 45 degrees with feet spread shoulder width apart and toes braced against the wall (F, fig 46.4).

b. Later in training and in practicing drills, trainees stand on the deck at the edge of the pool facing the water. On the preparatory command PREPARE TO ENTER WATER the arms are raised straight above the head and feet are together. On the command ENTER WATER a feet-first jump into the water is executed with the body in a vertical position (fig 46.5). The trainee then comes to the surface and performs the assigned task.

215.2. Pool Organization

Three instructional stations are established at the pool (fig 46—Cont. p. 103). Trainees are divided according to swimming and floating ability and instructed accordingly at these three stations. The stations are—

a. Station No. 1 is located in the deep end of the pool for swimmers who are floaters.

b. Station No. 2 is located in the center section (intermediate depth) of the pool for swimmers who are nonfloaters, or who are weak swimmers.

c. Station No. 3 is located in the shallow end of the pool for nonswimmers. At the beginning the nonswimmers are asked to raise their hand. These trainees are then moved to Station 3 which establishes this station.

215.3. Float and Swim Tests

Trainees who can swim are retained at the deep end of the pool. These trainees are then tested to measure their ability for purposes of station assignment. The simple tests which follow are administered to determine whether trainees in this group are to be assigned to stations 1 or 2.

a. *Float Test.* All trainees, while in the water, are told to face the edge of the pool, grasp the gutter edge, and brace their toes against the pool wall. Each trainee, on the instructor's command is to inhale (fill the lungs), put his face in the water, and have just the fingertips providing

Figure 46.4 is added:



A GETTING ACCUSTOMED TO WATER



B GRASPING GUTTER EDGE



C ROTATING BODY



D BODY FACES *ALL



E ARM EXTENDED FORWARD



F ARMS EXTENDED GETTING DOWNWARD

Figure 46.4. Entry into water from sitting position.

Figure 46.5 is added.



Figure 46.5. Entry into water from standing position.

balance on the gutter edge. The trainee then slowly releases the edge, one hand at a time, thus ending in a dead float. If the trainee sinks he is tested again. If he sinks again, he is sent to Station No. 2. (This action of separating non-floaters activates Station No. 2.)

b. Swim Test. Immediately following the float test each trainee is told to let go of the pool edge, move out in the clear (not beyond the reach of a pole), and swim a few strokes so that the assistant instructor can judge his swimming ability. Those trainees who show they cannot swim are sent to

Station No. 3, weak swimmers and strong swimmers who cannot float are sent to Station No. 2, and swimmers who pass the float and swim tests are retained at Station No. 1.

Note. Qualification tests, as administered to determine the skill level attained as a result of instruction, are outlined in paragraph 216.

c. Trainees on Station. Experience indicates there will be approximately 50 to 60 percent of the trainees at station 1, 20 to 25 percent at station 2, and 20 to 25 percent at station 3. Of course, these

percentages can and do fluctuate from company to company; however, these percentages may be used as a guide.

215.4. Dry Land Drill

Dry land drill is a method of teaching the sequence of steps as contained in the air exchange, travel stroke, hanging float, and vertical float. Trainees are formed on the deck in a rectangular formation, with every other trainee in each file uncovered. The instructor demonstrates, then leads the group through the sequence; first by the numbers several times, and then at normal speed (for drownproofing normal speed is slow). When air exchange is learned it then becomes a part of the travel stroke, hanging float, and vertical float, and is practiced as part of these skills. An example of using dry-land drill in teaching the air exchange follows:

a. Air Exchange.

(1) *Starting position.* Feet spread laterally, trunk at right angle to the floor, hands on knees, neck relaxed with head down.

(2) *Speed of action.* Slow.

(3) *Movement.* A three-count action, at—

(a) **STEP ONE—EXHALE** (A-D, fig 46.6). Begin blowing air out through the nose with your mouth shut and simultaneously slowly raise your head continuing to blow out air. Time the blow-out so that approximately 70 percent of the air is exhaled by the time your head is raised out of water, then exhale the remaining 30 percent in order to blow any remaining water out of the nose.

(b) **STEP TWO—INHALE** (E, fig 46.6). Open your mouth wide and inhale deeply to gain a large breath of air, close the mouth, and hold your breath.

(c) **STEP THREE—REST** (F, fig 46.6). Slowly lower your head until it is completely down and relaxed and continue to hold breath.

b. Following are hints which will assist in application of dry-land drill:

(1) To begin drill, informally direct trainees to assume a rectangular formation and then further to assume the rest position. The command for practice is: **AIR EXCHANGE—STEP ONE—EXHALE** (trainees execute), follow by naming the step and action to be executed for each step. As trainees learn the steps of this and other actions wording can be omitted and only the step number announced.

(2) If the drill is not to be repeated give the command **RELAX** and have trainees assume the erect position.

(3) To repeat the drill following Step Three of this skill (or the final step of other skills), simple

command **STEP ONE—EXHALE**, thus starting the sequence again. (The same general procedure as outlined above is used in teaching the travel stroke and the two floats.)

(4) Air exchange is used in the travel stroke, hanging float, and vertical float. The three air exchange steps are incorporated in these skills; however, the air exchange steps are not counted separately but are integrated into the various steps of the travel stroke and the two floats.

(5) Each stroke starts from a rest position and at the conclusion of the stroke returns to the same rest position. Remember the objective is to rest between strokes.

215.5. Continuous Practice

To make maximum use of pool time, trainees should be active in learning skills during the practical exercise periods. This time should be organized so that trainees are either practicing in the water or on the deck in dry land drill. The instructor-trainee ratio was determined with such continuous practice in mind.

a. Air exchange is the first skill to be learned. After practice on dry land, trainees practice in the water by holding to the edge of the gutter with the feet braced against the pool wall. The head is placed in the water and the air exchange is practiced (see exception for nonswimmers in paragraph 215.6c). Later (in the training) the trainee practices air exchange as part of the travel stroke and, if he can float, as part of the hanging and vertical floats. (The technique is explained paragraph 213.)

b. Practice of skills should be conducted by the numbers and by whole sequence on dry land until there is no confusion of the sequence, followed by practice in the water. For example, after dry-land practice four to six trainees at Station No. 1, or two or three trainees at Station No. 2, should be designated to practice the travel stroke across the pool. As soon as the first order is halfway across, put the next order into the water.

215.6. Training at Stations

Practice sequence and procedures for learning the travel stroke, hanging float, and vertical float as utilized at the various stations, follows:

a. Station No. 1 Training.

(1) Practice the travel stroke, hanging float, or vertical float by the numbers and the whole sequence on dry land until there is no confusion of the sequence. (These skills are explained in paragraph 213 b-d.) Then put four to six trainees in the water at one time to practice. On command trainees jump in feet first, arms overhead, surface, execute the specified skill across pool,

Figure 46.6 is added.

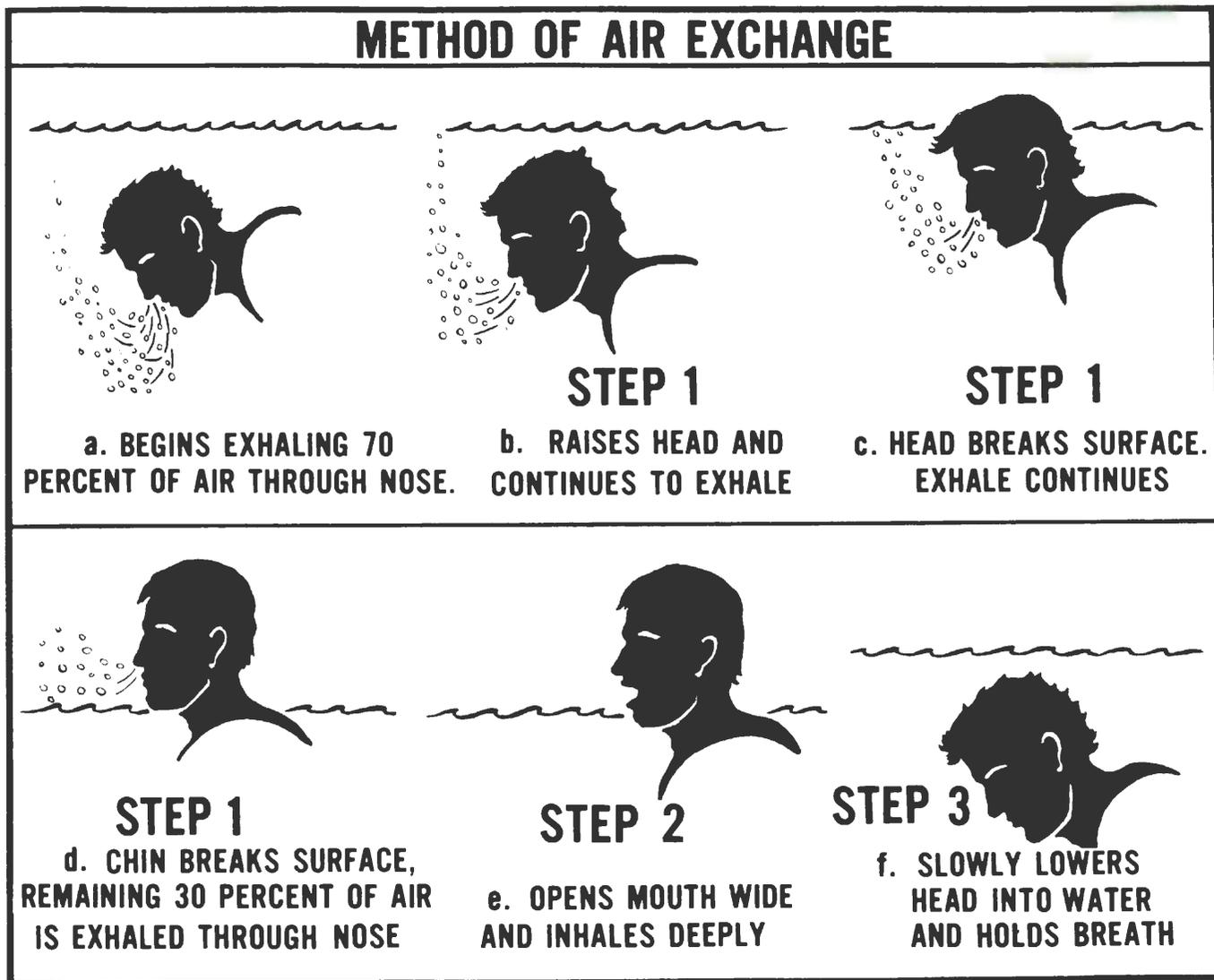


Figure 46.6. Dry land drill, air exchange.

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then exit the water. As soon as the first wave of trainees is halfway across, put the next group in the water; commands are: PREPARE TO ENTER WATER. ENTER WATER. Give each trainee two opportunities to practice the designated skill across the pool; return to dry land drill to correct errors and to practice; then back into the pool for more practice across pool. As proficiency increases the dry land drill can be eliminated.

(2) When the three skills are learned, stay-afloat practice is conducted by having all trainees enter the water and slowly execute the travel stroke, hanging float, and vertical float in any proportion and in any sequence selected by the trainee. Trainees are not to rest by holding to the pool edge. Nor should they attempt to rest by treading water as such action is tiring. Treading water is not permitted in the 30-minute test and for that reason it should not be permitted during practice. Trainees should be encouraged to use one or both floats most of the time and to use the travel stroke occasionally to avoid boredom. Do not force trainees to stay in the water, and carefully supervise and monitor this practice in order to avoid accidents; however, encourage and motivate them to remain in the water for the allotted time.

(3) If it is essential to retain an item of personnel equipment, during unexpected entry into water, such action can be taken. A line can be secured to any item of equipment and a loop formed at the other end for placement about the neck. The item then trails just below the individual during the travel stroke. Rifles with slings, or ropes to serve as slings, are used in the 75-meter travel stroke test at Station No. 1. The sling or rope should be adjusted with a loop at one end which is placed about the neck. The rifle is allowed to hang downward freeing both hands to perform travel stroke. Salvage type or dummy rifles should be used. Such practice reduces the maintenance and security problems involved with functioning rifles.

b. Station No. 2 Training. Use the same general procedure as described in practice of skills at Station No. 1. During practice in the water, change the procedure to place two to three men in the water at one time and have trainees attempt to travel stroke across pool. Maintain a dry land practice group through the period. When it is a trainee's turn to enter the water, he leaves the group, travel strokes across the pool, walks around the deck to the dry land drill group, and rejoins that practice until his turn comes to again practice in the water. This rotation continues until such time as other action is directed. The

station primary instructor controls the rotation and starts trainees from one side of the pool. An assistant instructor is stationed on the opposite side of the pool on the platform and the third assistant instructor instructs the dry land drill.

c. Station No. 3 Training. Trainees at Station No. 3 must be progressively introduced to the water to overcome fear. The following progression and techniques are used initially at Station No. 3.

(1) *Confidence drill.*

(a) *Orientation.* WE WILL DIVIDE INTO GROUPS OF EIGHT TO TEN MEN WITH ONE ASSISTANT INSTRUCTOR IN CHARGE OF EACH GROUP. AFTER DIVIDING INTO GROUPS WE WILL PERFORM SEVERAL DRILLS WHICH ARE INTENDED TO ACCUSTOM YOU TO PUTTING YOUR FACE UNDER WATER AND TO TEACH YOU BASIC TECHNIQUES. Divide into groups of eight to ten men and have each assistant instructor lead his group into shallow water (teach sitting method of pool entry) and form a circle around him. At this time the assistant instructor begins instruction of his group as follows:

(b) *Instruction and practical exercise.* Each group instructor explains how to hold the breath, to include reasons, and how to place the face under water (not the ears) with eyes closed: LEAN FORWARD, PLACE YOUR HANDS ON YOUR KNEES, BEND FORWARD AT THE WAIST, AND PLACE YOUR FACE INTO THE WATER UP TO THE EARS. After several trials, repeat, but this time have the trainees open their eyes after placing their faces in the water. Repeat several times. Finally, have the trainees place their faces into the water until their ears are under water with eyes open and practice several times. Then the trainees exit the water for air exchange instruction and dry land drill.

Note. In holding the breath the mouth is closed without tightness and the trainee refrains from breathing in through the nose. When the breath is held a counter pressure is established inside the head and the air thus retained forms a block to water entering the nose.

(2) *Air exchange for nonswimmers.* Following instruction and dry land drill in air exchange, trainees enter the pool and form circles around their assistant instructors. The instructors demonstrate the air exchange drill. Trainees then place their hands on their knees and slowly lower their heads into the water. Each trainee raises his head when he needs a breath of air, exchanges the air, and again puts his head under. Trainees who show nervousness are helped, and when all trainees are confident and have learned air exchange, instruction moves to the next phase.

(3) *Glide*. This training is to provide the nonswimmers with the feel of moving through shallow (4 to 5 ft) water with their feet off the bottom of the pool. The trainee pushes off from the side of the pool with his feet, face down, arms extended to the front, and rides the glide out with head under the water and then stands up. He assists to regain a standing position by sweeping the hands forcefully to the rear and at the same time bending at the waist, bringing his legs under his body. Each trainee within the group glides in turn individually while the group observes and the instructor critiques.

(4) *Scissors kick*. All nonswimmers must be taught to kick properly. Swimmers who have not learned proper kicking must also be identified and instructed in this skill. Trainees are instructed to hold on to the gutter edge of the pool with the body face down, and to extend the body out in the water. In this extended position one leg is lowered in the water 18 to 24 inches with the knee straight. From this position the lower leg is kicked upward and brought alongside the top leg (assistant instructors should assist trainees who initially cannot hold the body in the horizontal plane by holding their body up at the hip area.).

(5) *Travel stroke*. Progression from learning air exchange, the glide, and proper kicking, leads to practice in putting all of these skills together in order to do the travel stroke. Dry-land drill should precede practice in the water. Following water practice it will be necessary to again return to dry-land drill. In fact, alternate periods of dry-land drill and water practice cause the fastest learning. However, the proportion of water practice time should be greater than the dry-land drill.

215.7. Summary of Training

Additional guidance as to how to implement initial training in water survival is contained in appendix D. A remedial training program is also contained in the same appendix.

The remedial program is for those personnel who failed to qualify during initial training, or for those who missed all or part of the initial training. Instructor training is included in section V of this chapter, and in appendix D.

Page 104. Paragraph 216. In line 1 "fourth" is changed to read "next to last", and in line 2 "fifth" is changed to read "final."

Page 104. Paragraph 216b. In line 5 "approximately" is deleted.

Page 104. Paragraph 216c. In line 2 "the three" is changed to read "all."

Page 104. Paragraph 216e. Lines 1 through 3 are changed to read as follows:

e. Administration of Tests. Performance testing as administered is conducted as follows: Page 104. Paragraph 216e (1). Line 1 is changed to read: "Next to last period. Men at station 2..." And line 6 is changed to read: "...second hour of the next to the last period. As a result..."

Page 104. Paragraph 216e (2). Subparagraph title "Fifth period" is changed to read "Final period."

Page 104. Paragraph 216e (2)(a). In line 2 "fifth" is changed to read "final."

Page 104. Paragraph 216e (2)(b). In line 2 "fourth" is changed to read "next to the last."

Page 105. Paragraph 218a is superseded as follows:

a. Scheduling. Scheduling of drownproof periods of instruction is limited and restricted by two factors. These factors are a single training facility (pool), and one group of trained instructors. The weekly number of personnel to be trained will influence scheduling. In addition the following items must also be considered:

(1) The periods must occur in sequence.

(2) The entire company is instructed during the first and final periods. During the other periods only one-half the company (usually two platoons—100 to 110 men) receive instruction.

(3) A four-company fill is the maximum load with one pool utilizing normal duty time (0700 - 1700 hours). Greater flexibility will occur with lesser number of companies to be scheduled.

Page 106. Paragraph 218b (2). Line 8 is changed to read: "... roster will be submitted for recording of qualification results."

Page 106. Paragraph 218b (5). Line 9 is changed to read: "... directed to the proper area for instruction."

Page 106. Paragraph 218b (6)(a). Line 12 is changed to read: "... available for instruction. Nonswimmers who fear the water must be carefully monitored to insure they do not avoid this training."

Page 106. Paragraph 218b (6)(b). In lines 2 and 3 the sentence "Period 1 will be 50 minutes in duration." is deleted.

Page 106. Paragraph 218b (7). Line 3 is changed to read: "...prior to the end of each period. Upon..."

Page 106. Paragraph 218c. Line 8 is changed to read: "...not undergoing pool instruction in order to have maximum numbers present for instruction."

Page 106. Paragraph 218c (1)(b). In line 6 "(fig 46)" is changed to read "(fig 46---Cont., p. 107)."

Page 106. Paragraph 218c (1)(c). In line 8 "(fig 46)" is changed to read "(fig 46---Cont., p. 108)."

Page 106. Paragraph 218c (1)(d). In line 2 "fifth"

is changed to read "final."

Page 106. Paragraph 218c (1) "(c)" (*Company qualification form*) is changed to read "218c (1) "(e)." And, in line 11 of the same subparagraph "(fig 46)" is changed to read "(fig 46—Cont., p. 109)."

Page 109. Paragraph 219 is superseded as follows:

219. Support Requirements

Various support is required in order to effectively conduct this training to include personnel, facilities, equipment, and training aids.

a. *Personnel.* The following personnel are required to support drownproof training:

(1) *Trainees.* Personnel of advance individual training companies or TOE combat support units; full strength for periods 1 and half strength for remaining periods.

(2) *Instructors.*

(a) Instructors for the initial training—officers and NCO who are qualified as instructors and who are strong swimmers—12. (1-team chief to organize and supervise the training; 4-instructors at station 1; 3-instructors at station 2; 3-instructors at station 3; and 1-administrative NCO to handle scheduling, supply, pool reservation, and other similar noninstructional duties.

(b) Instructors to conduct training of instructors—officers and NCO who are experienced drownproof instructors, and who are Red Cross qualified as instructors, or as water safety instructors—three for a class not to exceed 20 students.

(3) Pool operation personnel—Recreation Service personnel as required to maintain the pool under conditions of heavy usage; numbers as required.

(4) Projectionist—one for the classroom period.

(5) Work detail—two men to collect and deliver wet fatigues to the post laundry at end of each day for drying prior to the next day's training; pick up dry fatigues at the laundry and deliver to the pool site.

b. *Facilities.* Two facilities are required as follows:

(1) One classroom, 225-250-man capacity, with blackout capability.

(2) One pool, indoor; the water and air must be heated. The size of the pool should be 25 to 50 meters. If existing pools are not of that size, in all probability they can be used. If there is a choice, the larger pool should be selected. It is not recommended that training be held in outdoor facilities other than in the summer, and outdoor training other than in established swimming pools

should not be attempted. The pool is divided into three parts, or stations, for instruction. Certain safety and instructional items are required at the pool. The normal locations of stations and equipment are indicated (fig 46.7).

(a) If a pool is to be constructed it should be 25 to 50 meters (olympic size) (fig 46.8).

(b) If no indoor pool is available and a large outdoor pool is available this pool can be covered with an air shelter (air inflatable building). If such a structure is utilized, heating of the water and the air must be provided.

(c) Dressing facilities are required where trainees can change clothes and take showers. Dressing rooms must accommodate 100-120 men. Security of personal valuables is not required as the men should be instructed to leave such items in the company area.

c. *Equipment.* Equipment is necessary for the pool, classroom, and individual trainees.

(1) *Pool equipment.* Recreational Service pools have some of the required equipment. Additional pool items must be available which are standard items; however, they are not used in the normal swimming program. Some of these items may be present but normally the quantity on hand is not adequate for drownproofing instruction. The following is a complete list of required pool items.

(a) Ring type buoys, with 20-yard nylon line—8.

(b) Poles, staff, 1 1/2-inches in diameter by 12 feet in length—8.

(c) Floatation boards or ring buoys without lines—8. These boards (fig 46.9) are used to assist trainees to stay afloat while learning to kick properly and they are used by instructors who stay in the deep water for long periods to instruct or to assist trainees. Floatation boards are made of plastic about 1 to 2 inches in thickness, 14 to 18 inches in width, and 24 to 26 inches in length. Slots are used as hand holds. The board(s) is used by holding it out at arms length and extending the body to practice kicking in the prone position.

(d) Marker buoys, assembled on a rope of sufficient length to reach across pool (to mark a lane across pool)—2.

(e) Whistles, on neck lanyards—6. Six instructors have whistles at all times, three at Station No. 1, two at Station No. 2, and one at Station No. 3. These whistles are only blown when a rescue is taking place. The whistle is a signal for all trainees to clear the pool and move back against the wall of the deck and await directions from the primary instructor.

Figure 46.7 is added.

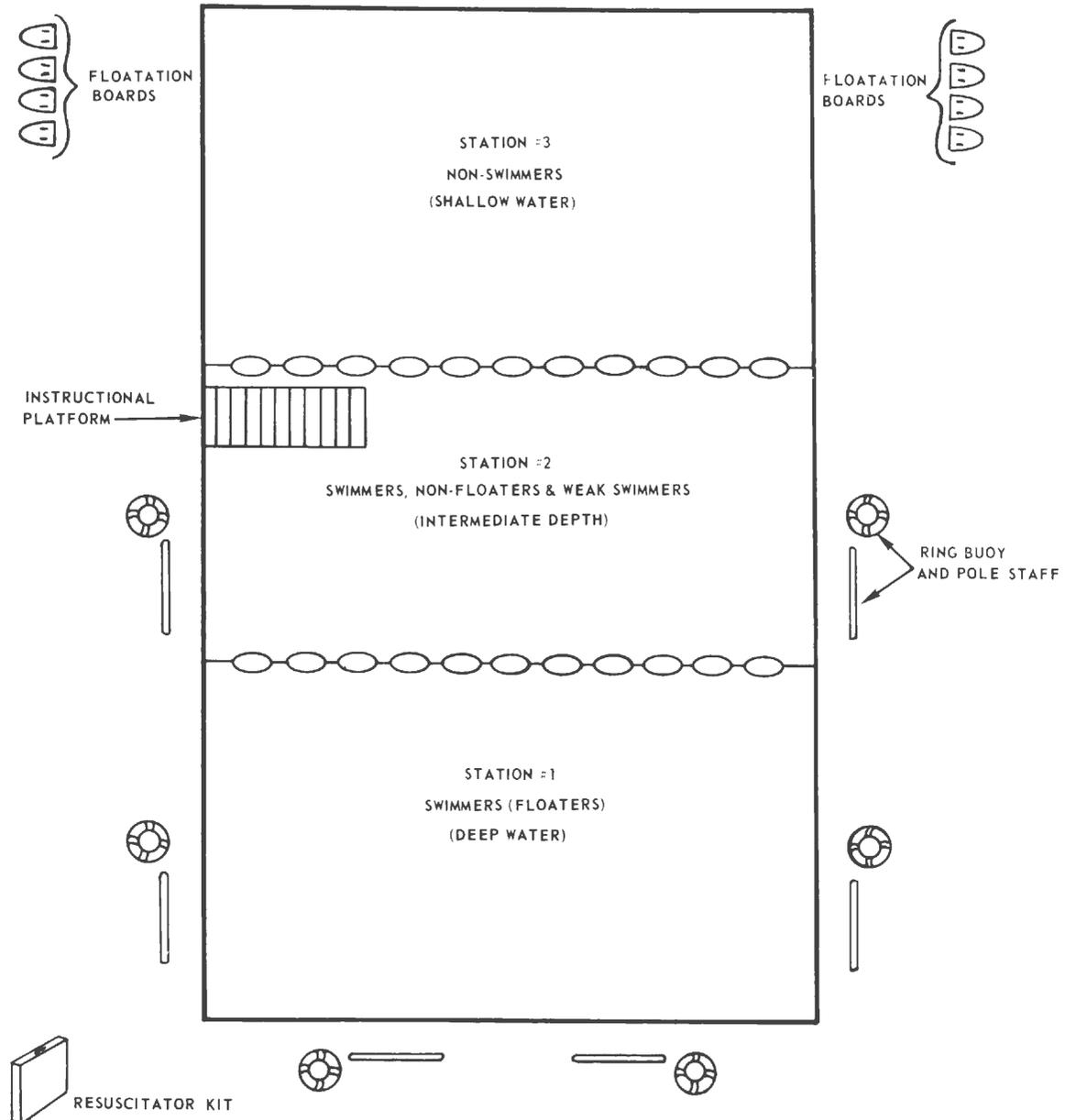


Figure 46.7. Instructional stations and equipment locations.

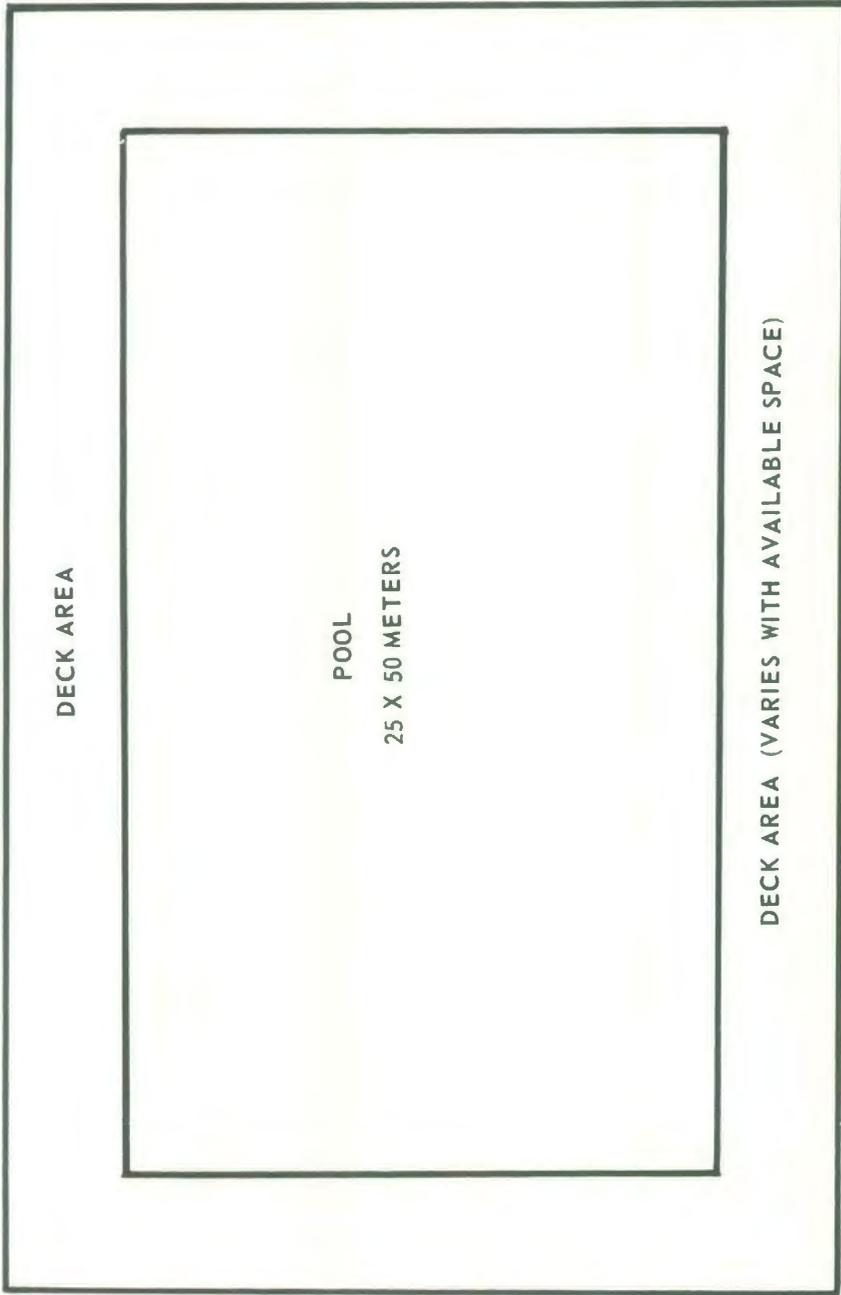
(f) Mechanical respiratory kit (lifesaving respiratory apparatus)—1.

(g) Platform, 4 feet by 15 feet, to be attached to side of pool and extended over the water—1 (fig 46.10). It is secured to the edge of the pool at Station No. 2 and should have supports at the far end which rest on the bottom of the pool. During initial training at Station No. 2, and later when trainees from Station No. 3 are tested on the travel stroke and the floatation test, an instructor with a pole and a ring buoy is stationed on the platform. If a trainee moves away from the edge of the pool and has difficulty

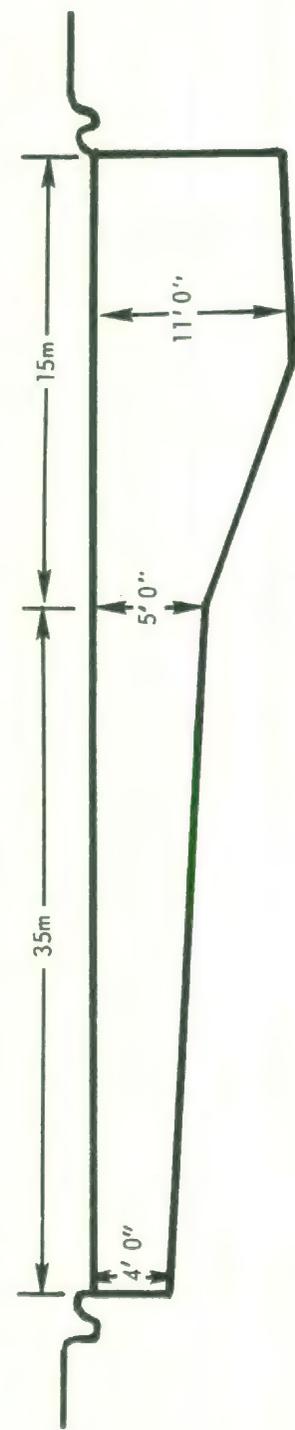
the instructor extends the pole to the trainee. If the trainee goes beyond the length of the platform before having difficulty, the instructor throws a ring buoy, and if required goes into the water to make a rescue.

(h) Fatigue jackets, salvage type, non-starched, no holes or tears—100.

(i) Fatigue trousers, salvage type, non-starched, no holes or tears—100. Dirt and lint from clothing will interfere with the filter system's ability to clean the water. Fatigues used in a pool must be nonstarched and freshly laundered. The best solution to this problem is the



a. TOP VIEW OF POOL



b. PROFILE VIEW OF POOL

Figure 46.8. Typical pool specifications.

Figure 46.9 is added.

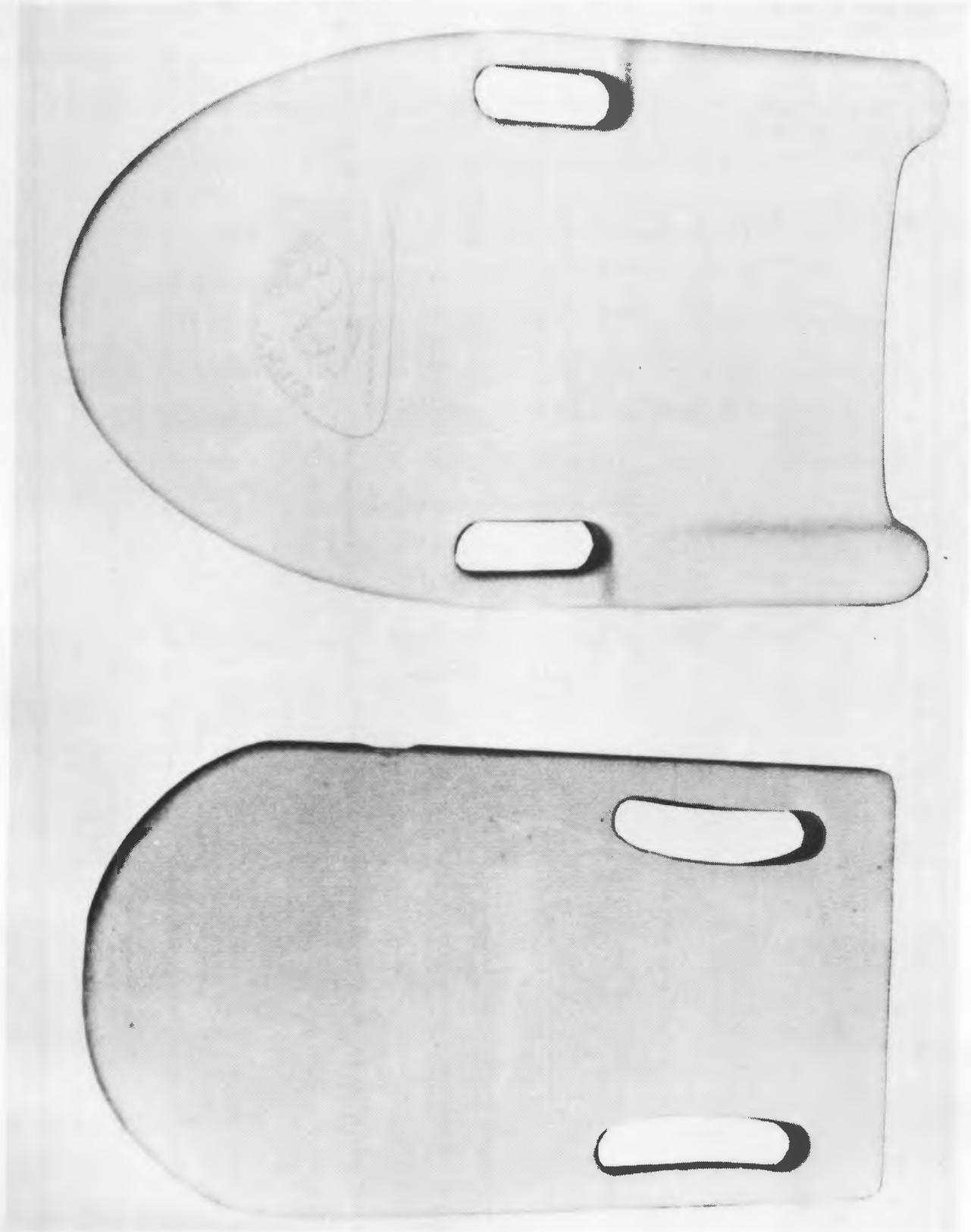


Figure 46.9. Flotation boards, two types.

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use of salvage type fatigues with no holes or tears. These uniform items should be furnished, rather than issued to each trainee. Under these conditions 200 sets should be procured. A maximum of 100 sets will be used for one day by all trainees undergoing training that day. The fatigues remain at the pool and at the conclusion of training for the day the used fatigues are delivered to the laundry for washing. On the

second day while the first set of 100 are being laundered, the second set of 100 is used. Alternation of the two sets continues thus providing freshly laundered fatigues each day. Only trainees who swim well and can float use the fatigues (Station No. 1) on a regular basis; others use them for floatation device practice on a one-time basis.

Figure 46.10 is added.

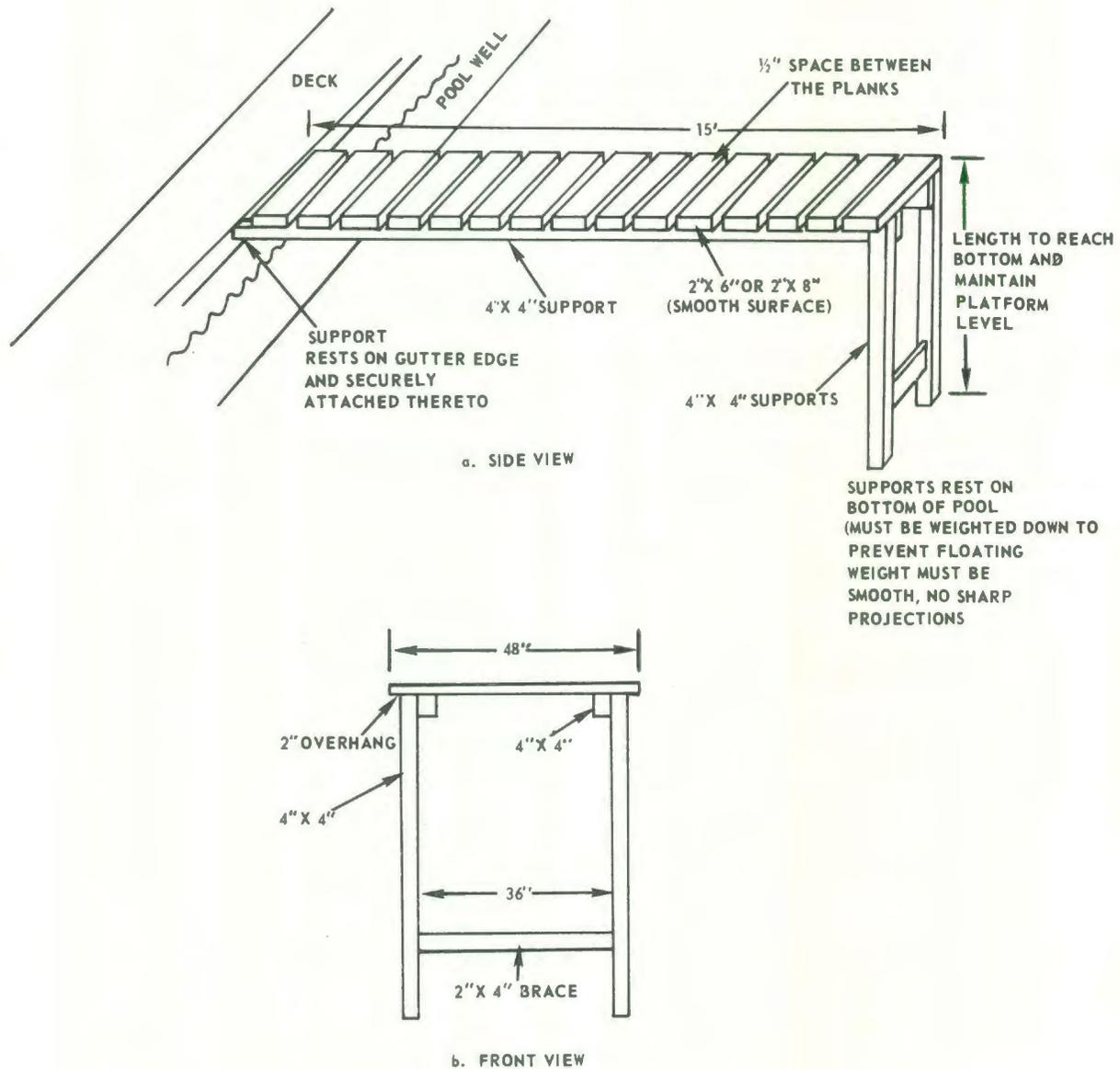


Figure 46.10. Instructional platform (schematic showing construction dimensions).

(j) Truck, 1/4 or 1/2-ton, to transport fatigues to laundry and return to pool—1.

(k) Rifles, M14 or M16 (nonfiring or salvage type) with slings—16.

(l) Table, field—1.

(m) Chairs, folding—2.

(2) *Classroom equipment.*

(a) Stand, instructors—1.

(b) Projector, overhead or 35-mm slide—

1.

(c) Screen, projection—1.

(d) Fatigues, set, for demonstration—1.

(3) *Individual equipment.* Trainees must have these issue items:

(a) Shorts, P.T. tan—1 per man, FSN 8415904531.

(b) Supporter, athletic, 3-inch waist-band—1 per man, FSN 8415630391 and DSA 100-69-0-1824.

(c) Belt, web trousers—1 per man (trainees have this item).

Note. Shorts and athletic supporters are in the supply inventory; however, they must be requisitioned; 30-45 days should be allowed for delivery.

(d) Suits, swimming for women.

d. Training Aids. Training aids are used in the first period. Slide and/or transparencies: one each of travel stroke, hanging float, and vertical float.

e. Pool Maintenance. Pools are under the jurisdiction of recreational services personnel. It will be necessary to coordinate the training requirement with Recreational Services.

(1) Support personnel are required to clean the pool, deck area, dressing and shower rooms; test and maintain the cleanliness of the water; operate filtering equipment; and regulate the air and water temperatures. These duties are normally handled by recreational services personnel.

(2) Because of the increased student time in the water it is advisable to maintain the temperature of the pool at 85 to 90 degrees F. This temperature range shows no increase in the bacteria count.

Page 110. Paragraph 220. In line 1 "9-hour" is deleted.

Page 110. Paragraph 221. In line 1 "ways" is changed to read "occasions." And, in line 2 "where" is changed to read "when."

Page 111. Paragraph 221a (1) In line 5 "swimmer" is changed to read "individual."

Page 111. Paragraph 221b (3)(b). In lines 8 and 12 "swimmer" is changed to read "individual." And, in line 9 "swims" is changed to read "moves."

Page 112. Paragraph 221d (2). Lines 2 and 3 are

changed to read: "...there are two assistant instructors; one on the ground..."

Page 112. Paragraph 222a (1). In subparagraph title "(1, fig 47)" is added.

Page 114. Paragraph 222a (2). In subparagraph title "(fig 47)" is changed to read "(2, fig 47)."

Page 114. Paragraph 223 is superseded as follows:

223. Factors Affecting Ability in the Water

a. The ability of a good swimmer to swim or travel stroke a specific distance depends upon a number of factors. Knowledge of these factors is very important to the individual who is involved in a water survival situation.

b. To subsist or remain afloat for an extended period of time depends upon conservation of energy and retention of body heat. In remaining afloat (using the hanging and vertical floats) several factors affect floating ability to include physical condition, temperature of the water, and weight of clothing and equipment. Normally, when an unexpected entry into water occurs, the soldier has no control over his physical condition or the temperature of the water. He can and should discard equipment and clothing (in warm water) to enable him to remain afloat. However, in cold water clothing must be retained in order to conserve body heat. Items of equipment are the first to go with retention of as much clothing as possible to permit floatation and, at the same time to forestall chilling or freezing.

c. The ability of the soldier to swim or move is based upon a swimmer who is able, under ideal conditions, to swim a mile. The purpose of this information is to serve as a general guide to illustrate the adverse effect of changing conditions upon the soldier's ability to swim or move. The soldier who has less ability to overcome adverse conditions will have lesser proportional ability to survive. Should he apply drownproofing to conserve, rather than expend his energy, he could stay afloat for a much longer time period.

(1) *Condition of the water.* As water conditions change, as shown in the left column below, the ability of the swimmer is reduced proportionally as shown in the right column:

<i>Condition</i>	<i>Ability/distance</i>
(a) Smooth and temperate	1 mile
(b) Tides and strong current	1/4 mile
(c) Rough water	100 yards
(d) Cold water	25 yards

(2) *Conditions of the soldier and water.* If poor judgment or circumstances cause the soldier to enter water under less than ideal circumstances his ability is reduced as follows:

<i>Condition</i>	<i>Ability/distance</i>
(a) Ideal (soldier fit, water warm and calm).....	1 mile
(b) Tired (soldier fatigued).....	1/2 mile
(c) Current strong.....	200 yards
(d) After a heavy meal.....	25 yards

(3) *Effects of clothing.* The weight and type of clothing reduce ability as follows:

<i>Condition</i>	<i>Ability/distance</i>
(a) Swim trunks.....	1 mile
(b) Summer khaki uniform.....	1/3 mile
(c) Field uniform (fatigues, boots, harness, rifle).....	25 yards
(d) Field uniform with heavy equipment.....	not at all

Page 114. "Section V. INSTRUCTOR TRAINING," is added as follows and "Section V. MILITARY SWIMMING" is changed to read "Section VI. MILITARY SWIMMING."

Section V. INSTRUCTOR TRAINING

223.1. Selection of Personnel for Instructor Training

Water survival training instructors serve in a dual capacity as instructors and life guards. Personnel selected for instructor training should have the following qualifications.

a. *Instructor Qualified.* Selected personnel should be qualified by schooling or experience in instructional methods. This is necessary as the 30-hour training period is not adequate time to teach the techniques of drownproofing and also qualify the student in general instructional techniques.

b. *Strong Swimmer.* There are two reasons for this criterion. First, instructors will double as lifeguards, and second, a good swimmer can quickly learn the new skills of drownproofing. Possession of a Red Cross certificate as a senior lifeguard, or as a water safety instructor, is an added and desirable qualification.

223.2. Training Program for Instructors

Instructors must learn drownproofing techniques and know drownproofing methods prior to conducting instruction. This skill and knowledge, to the degree necessary for effective instruction, can only be gained through participation in an instructor training course. A 30-hour instructor's training program is recommended. As instructors double as lifeguards the course includes lifesaving methods. To support initial training at least 15 to 18 instructors should be trained. This will permit selection of 12 instructors with the remaining personnel to provide backup and substitute when necessary.

223.3. Instructor Qualification

When students qualify as instructors a certificate is awarded (fig 47.1). To qualify as an instructor the student must—

- a. Complete the 30-hour instructor course.
- b. Stay afloat for 30 minutes without touching the sides or bottom of the pool, using any combination of the travel stroke, hanging float, and vertical float, while clothed in fatigue shirt and trousers.
- c. Travel stroke for 75 meters clothed in fatigue shirt and trousers, with rifle suspended by sling.
- d. Enter water feet first, inflate fatigue shirt, deflate and refill with air; enter water feet first, inflate fatigue trousers, deflate, refill with air using a refill method other than that used with the shirt (see para 222, for proper techniques).
- e. Throw a ring buoy accurately.
- f. Enter water, rescue a victim, and tow him or her to the side of the pool.
- g. Make a passing grade in the presentation part of the methods of instruction portion of the course (para 223.7).

223.4. Instructor Duties

Eventually all instructors should be cross-trained so they know all instructional and administrative duties. The instructor who makes the classroom presentation assists at the pool when not instructing in the classroom. Several instructors should be trained to make the classroom presentation to cover for the appointed instructor during his absence. When the instruction is given frequently, three or four instructors should be available to fill in during periods of illness and

also to relieve boredom. All instructors at a station should be able to serve as the primary instructor or as an assistant instructor at that station. Instructor duties follow:

a. *Instruction.*

- (1) Conduct instruction in accordance with lesson plans.
- (2) Conduct dry land drill on deck of pool.
- (3) Conduct and supervise practical application periods in the water.

(4) Determine skill level and assign trainees to appropriate stations. (During remedial training complete the Trainee Water Survival Experience/Ability Data Sheet (fig 47.2)).

(5) Demonstrate the various drownproofing skills in the water and on dry land.

(6) Correct trainees' form and actions in execution of skills.

(7) Help trainees establish confidence and overcome fear of the water.

Figure 47.1 is added.

DEPARTMENT OF THE ARMY



Certificate of Training

This is to certify that

has successfully completed

The Water Survival Instructors Course in Drownproofing at this Organization and that in testimony thereof he is awarded this Certificate

Given at

Figure 47.1. DA Form 87

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- (8) Motivate trainees to strive to qualify.
- (9) Refer trainees who fail to carry out assignments to the primary instructor. (Have trainees who refuse to remain in the water report to the officer in charge of the company or group being instructed.)
- (10) Maintain noise discipline (talking by trainees interferes with instruction and should be held to a minimum.)
 - b. Sanitation and Safety.
 - (1) Give safety orientations.

- (2) Insure that trainees take showers before entering the pool.
- (3) Enforce safety regulations.
- (4) Enforce sanitation regulations.
- (5) Be alert for hazardous conditions and take corrective action.
- (6) Rescue trainees who are in trouble.
- c. Administration.
 - (1) Administer qualification tests.
 - (2) Record qualifications.
 - (3) Count and report number of trainees at

Figure 47.2 is added.

DA FORM 4337-R, 1 May 75

TRAINEE WATER SURVIVAL EXPERIENCE ABILITY DATA SHEET																
NO.	NAME (LAST NAME FIRST)	GRADE	SWIM ABILITY GS - GOOD WS - WEAK SWIMMER (RECORD)	EXPERIENCE (CHECK OR RECORD)						INITIAL TRAINING (CHECK OR RECORD)			PROBLEM AREAS (CHECK)			QUAL. (RECORD)
				CONF. IDENCE DRILL	AIR EXCH.	KICK	GLIDE	TRAVEL STROKE (DISTANCE)	FLOAT- ATION DEVICE	COMPLETED HR. COURSE	MISSED TNG. (ENTER HRS COMPLETED)	TNG. SITE AIT OR UNIT	FEAR OF WATER	LACK CONF. IDENCE	LACK OF PRACTICE		DPA DPB NQ
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18																
19																
20																

NOTE: THE LAST COLUMN, QUALIFICATION, IS COMPLETED AS A RESULT OF QUALIFICATION TESTING DURING REMEDIAL TRAINING.

DPA - DROWNPROOF ADVANCED; DPB - DROWNPROOF BEGINNER; NQ - NONQUALIFIED

Figure 47.2. DA Form 4337-R

stations.

(4) At latrine breaks lead trainees to and from the dressing rooms, and supervise activity during break.

(5) Distribute equipment before the first pool period each day and collect and store equipment at the end of the last period.

(6) Help the administrative NCO in the collection of fatigues, security of rifles, and maintenance of records and reports.

223.5. Instructor Assignment

Qualified instructors should be assigned in accordance with their individual abilities. Experience indicates that most instructors desire to be assigned to Station No. 1 and work with the better trained swimmers. Well trained instructors are needed at every station, yet good swimmers will learn the new skills readily and will have little difficulty in qualifying. The group qualification rate will be improved if trainees who are lesser skilled receive good instruction. At Stations No. 2 and No. 3 instructors are required who have patience, show understanding, and are able to detect and analyze reasons for lack of progress.

223.6. Pool Safety and Rescue Methods

Instruction in and around the water with large groups of people always presents a safety hazard. Strict discipline and control must be maintained throughout the instruction. Instructors are trained as lifeguards and in first aid procedures. At any time personnel are in the water they will be under constant observation and supervision. Assistant instructors will assist in the safety procedures as directed by the primary instructor.

a. Safety and Sanitary Rules. Students and trainees are informed of the safety and sanitary regulations (para 217) during the first period of instruction and are reminded of them before entering the water at each pool period. Instructors must be alert to enforce safety at all times.

b. Safety Equipment. Safety equipment is specified in paragraph 219. A description of this equipment and procedure for its proper use follows:

(1) The pole/staff is a hollow aluminum pipe of 9 to 12 feet in length and 1 to 1 1/2 inches in diameter. Poles are placed on deck (fig 46.7), four at Station No. 1, and two at Station No. 2. These poles are used initially when trainees are learning new skills in water over the head in depth. If a trainee is having difficulty the pole is extended toward him and when he feels it touch his chest he grasps the pole with both hands (fig 47.3).

Assistant instructors should have the poles in hand during the float and swim tests and during initial training in each new skill.

(2) Ring buoys are formed of foam or cork material into a ring approximately 24 inches in diameter. A rope or line is attached for retrieval when the buoy is thrown. This line should be 20 feet in length. The buoy is placed on deck with line coiled and a loop formed at the loose end. Four buoys are located at Station No. 1, two at end of the pool, and one at each side. Two are located at Station No. 2, one on each side of the pool. The buoys are thrown by instructors to trainees who are having difficulty. The use of the ring buoy as a lifesaving aid involves preparation of the buoy and line, placement of the buoy, throwing the buoy, and pulling it in.

(a) Preparation and placement. The line is coiled to prevent kinks with a coil of 15 to 18 inches in diameter. The buoy is then placed on the deck with the coiled rope on top of the buoy (fig 47.4).

(b) Throwing the buoy. When throwing the buoy, the left hand is slipped through the loop at the loose end of the line. The hand in the same motion scoops up the coils of the line with the loop around the wrist. The coiled line is held in the left hand, palm up, fingers pointing away from the body with the coils resting on the fingers and palm. The buoy is grasped with the other hand, palm down.

The buoy is thrown by moving the throwing arm to the rear (A, fig 47.5), and then forcefully bringing the arm forward (B, fig 47.5). The foot opposite to the throwing hand is forward and pointed toward the spot where the buoy is to be thrown. With the head up and eyes upon victim the buoy is released when the arm is extended, and at the time of release the buoy is parallel to the water (C, fig 47.5). In throwing to a person in the water the buoy should be thrown beyond the person and the line used to pull the buoy to the individual (D, fig 47.5). An overthrow is made to prevent a short throw with the waste of time required to pull the buoy in and rethrow.

(c) Pull in. With a person holding to the buoy, strong pulls must be made to tow the victim to safety. A hand-over-hand method should be used with a strong and full pull by each hand. The feet must be well spread and the legs used to assist in the pull (E, fig 47.5). To pull the rescued person onto the pool deck the instructor offers a hand and tells the individual to grasp the extended arm at the wrist with both hands. The instructor then grasps the rescued person's forearm with the free hand and pulls him out of

the water (F, fig 47.5).

(d) *Practice throwing the ring buoy.* Personnel being trained as instructors should learn how to coil the line properly, how to place the buoy on deck ready for use, and how to throw the buoy accurately. Each student should coil the rope several times and practice throwing until accuracy is attained.

c. *Rescue Methods.* If the pole is too short to

Figure 47.3 is added.

effect a rescue and throwing is not appropriate or too slow, the instructor should go after the trainee having difficulty.

(1) *Making rescue.* The instructor enters the water by jumping in with the legs well spread from front to rear and the arms raised to shoulder level at the sides (A, fig 47.6). Upon entry the arms slap the water to maintain the head above water (B, fig 47.6). The instructor then swims



Figure 47.3. Use of pole/staff.

toward the trainee. When he is 10-12 feet away he surface dives and moves under the water to the trainee's knees. With one hand on the front of one knee and the other hand grasping the rear of the other knee, the front hand pushes and the rear hand pulls causing the trainee to turn in the water. The instructor moves upward placing one hand in the small of the trainee's back and pushes the trainee's trunk and legs to the surface. At the same time he applies one of the standard cross chest (A), head (B), or hair carry (C) methods as taught in Red Cross lifesaving instruction (fig 47.7).

(2) *Removing rescued person from water.* Normally there is help available to assist in

Figure 47.4 is added.

moving the rescued person from the pool to the deck. If it should be necessary the instructor can perform this task without help. The steps of this procedure are illustrated in figure 47.8.

(3) *Artificial respiration.* If the rescued trainee requires artificial respiration the resuscitator kit should be used. A standard version of such a kit usually has a face mask for children, a larger one for adults, a rubberized air bag, and a hand pump (A, fig 47.9). To use the kit remove parts from the carrying case, assemble the adult face piece to the air bag (B, fig 47.9), place face piece over the nose and mouth and squeeze the bag to force air into the victim's air passage (C, fig 47.9). The pump is used to remove water

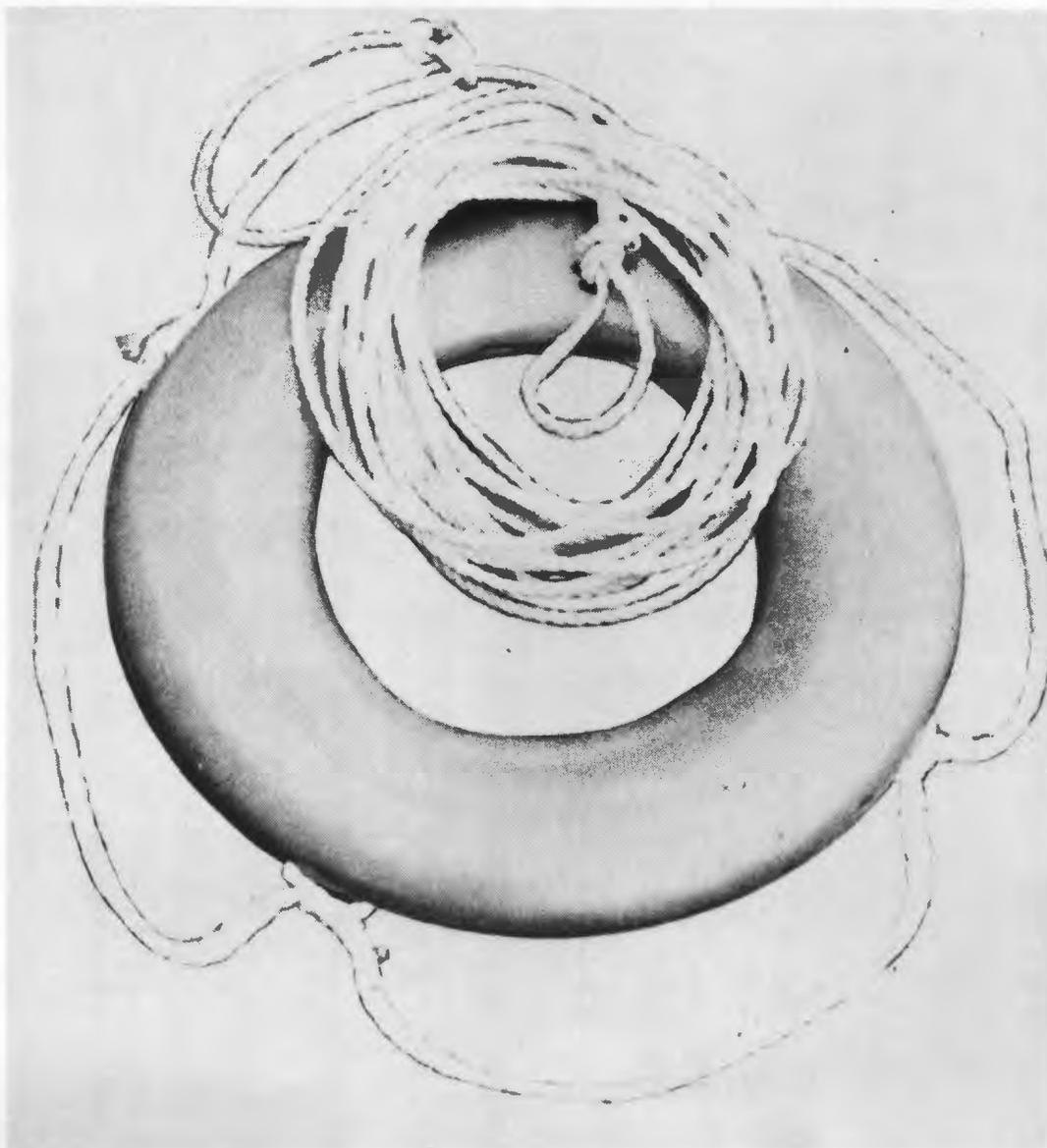


Figure 47.4. Ring buoy on deck prepared for throwing.

Figure 47.5 is added.



A. MOVING ARM TO THE REAR.



B. ARM BEGINS THROW MOTION.



C. ARM EXTENDED PRIOR TO RELEASE.



D. BUOY LANDS IN REAR OF TRAINEE.



E. FEET SPACED DURING HAND-OVER-HAND PULL-IN.



F. ASSISTING TRAINEE OUT OF WATER.

Figure 47.5. Use of ring buoy.

Figure 47.6 is added.



A. INSTRUCTOR PRIOR TO ENTRY INTO POOL



**B. ENTERS WATER AND SLAPS SURFACE
TO HOLD HEAD OUT OF WATER**

Figure 47.6. Instructor entering water to effect rescue.

Figure 47.7 is added.



A. CROSS-CHEST CARRY



B. HEAD CARRY



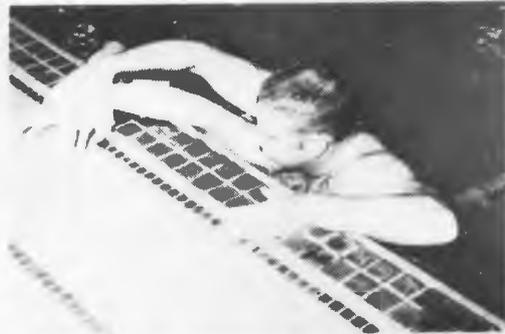
C. HAIR CARRY

Figure 47.7. Rescue carries.

Figure 47.8 is added.



A PLACING HANDS ON DECK



B HOLD HANDS MOVE TO SIDE



C HOLD HANDS, COME OUT OF WATER



D LIE ON DECK HOLD WITH BOTH HANDS



E KNEEL AND GRASP BOTH WRISTS



F PULL TRAINEE ONTO DECK



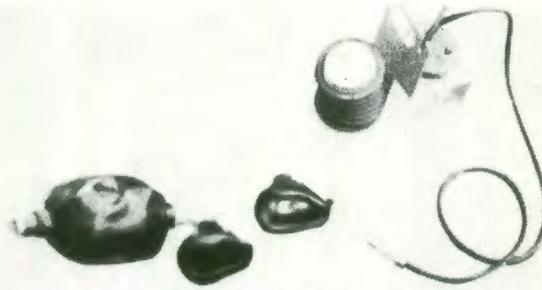
G HOLD ARM AND TORSO



H LIFT TRAINEE

Figure 47.8. Instructor removing rescued person from water.

Figure 47.9 is added.



A. RESUSCITATION KIT



B. PREPARING TO LOWER FACEPIECE, WITH ATTACHED AIR BAG, IN PLACE



C. PERFORMING ARTIFICIAL RESPIRATION BY SQUEEZING BAG

Figure 47.9. Use of resuscitator kit.

from the air passages and lungs. To employ the pump the hose is placed in the throat; with the pump on a firm surface, place the hand on the top of the bellows and alternate pushing down and letting up thus pumping the water out through the exit hose. Instructors should be trained to use the kit. Medical personnel or Army hospitals can provide information concerning procurement and use.

223.7. Practice Teaching

A graded exercise is conducted during instructor training to determine that personnel training as instructors are able to properly teach drown-proofing skills.

a. At least one ungraded opportunity to teach a skill should be provided prior to the graded practice. Several days prior to the date the student instructor is scheduled to do his ungraded or graded practice teaching, he should be

informed of his subject and the grading system. The assigned skill for the graded practice should not be the same skill assigned during the ungraded practice period. A written notice (fig 47.10) is used to inform the student of the assignment. Attached to this notice is a practice teaching performance checksheet (fig 47.11), and a written practice assignment from the list in paragraph 223.7d.

b. Student instructors also serve as trainees for their classmates during practice teaching. With a class of 18 to 20 student instructors the class should be divided into three groups (one group at each station) of 5 to 7 students in each group.

c. An experienced instructor should be in charge of each group to observe, grade, and critique each student instructor in turn. The student grade should be recorded on the checksheet and delivered to the chief instructor at the conclusion of the class period.

Figure 47.10 is added.

WATER SURVIVAL INSTRUCTOR TRAINING

SUBJECT: PRACTICE TEACHING ASSIGNMENT

TO:

DATE:

1. You are scheduled for practice teaching during the _____ period scheduled on _____.
2. Your assignment is attached (Incl 1) and you will have _____ minutes to complete your teaching assignment. Use FM 21-20 as a basis for your instruction.
3. Also attached is a copy of the checksheet (Incl 2) to be used to rate your presentation. If there are any questions contact _____, who will serve as your supervisor.

2 Incl
as

Figure 47.10. Practice teaching assignment notice (locally fabricated).

Figure 47.11 is added.

WATER SURVIVAL INSTRUCTOR TRAINING

PRACTICE TEACHING CHECKSHEET

NAME _____ GRADE _____ DATE _____

- 1. CONTROL OF GROUP.
(Did instructor take charge in an effective manner?) _____
- 2. INTRODUCTION.
(Was there a short effective statement of introduction?) _____

(Did the instructor announce what was to be done?) _____

(Did the trainees understand what standard of proficiency they were to attain?) _____
- 3. EXPLAIN SKILL TO BE LEARNED.
(Was there a brief and clear explanation of the skill to be learned?) _____
- 4. DEMONSTRATION.
a. Did instructor demonstrate the skill effectively? _____
b. Was the demonstration by the numbers, and also by the whole movement? _____
- 5. PRACTICAL EXERCISE.
a. Did the instructor organize men for effective practice? _____
b. Was there dry land drill and water practice? _____
c. Was there supervision and correction of errors? _____
d. Was the majority of the time devoted to practice? _____
- 6. SUMMARY AND CRITIQUE.
(Was instruction summarized, errors critiqued, and were good points acknowledged?) _____

Grading Key: Each grading element is worth a maximum of 10 points. Superior— 10 points; Excellent 7-9 points; Average 4-6 points; Below Average 1-3 points. A total of 70 or above is passing.

SUPERVISOR SIGNATURE _____ GRADE TOTAL _____

Fig. 47.11. Practice teaching performance checksheet (locally fabricated).

d. Suggested Practice Teaching.

(1) *Practice teaching requirement 1.* As the instructor at Station No. 1 you are receiving the men at the beginning of the first pool period as they come from the dressing room. Assume control, and present the initial instruction as called for by the lesson plan up to the initial practical exercise by the trainees.

(2) *Practice teaching requirement 2.* Following the initial orientation during the first pool period, instruct the trainees at Station No. 1 in air exchange on dry land and in the water, and also administer the float test.

(3) *Practice teaching requirement 3.* During the first pool period you are assigned to Station No. 2. The last nonfloaters reports from Station No. 1 as a result of the float test. You have been put in charge of instructing a group of 10 to 12 men in the travel stroke on dry land. Instruct the trainees in the stroke.

(4) *Practice teaching requirement 4.* You are located at Station No. 2 and have completed the dry land drill portion of the travel stroke. It is now time to try the initial practical exercise of the travel stroke in the water. Instruct the trainees in this part of the technique.

(5) *Practice teaching requirement 5.* During the first pool period you have been assigned 10 men at Station No. 3 who are nonswimmers. These men have been separated from the swimmers at Station No. 1, and this is their first instruction at Station No. 3. Orient your group, instruct them in how to enter the water and instruct in the confidence drill.

(6) *Practice teaching requirement 6.* During the first pool period the confidence drill at Station No. 3 has just been concluded and your 10-man group is on deck. You have been told to cover air exchange; instruct the trainees in dry land drill and in the water.

(7) *Practice teaching requirement 7.* Your men at Station No. 3 have completed the confidence drill and air exchange and are now ready to learn the scissors kick. Instruct the trainees in this kick.

(8) *Practice teaching requirement 8.* Your trainees at Station No. 1 have received instruction in air exchange and the travel stroke. They are now ready for their initial instruction in the

hanging float. Instruct trainees on dry land and in the water.

(9) *Practice teaching requirement 9.* Trainees in your group at Station No. 2 have had the initial instruction and practice in air exchange and the travel stroke. They have done poorly and are not breathing properly. You have been told to review the instruction to include dry land and water practice.

(10) *Practice teaching requirement 10.* You have a 10-man group at Station No. 3 and have covered confidence drill, air exchange, and the scissors kick. The trainees are now ready for instruction in the glide prior to learning the travel stroke. Instruct the group in the glide.

(11) *Practice teaching requirement 11.* Your trainees at Station No. 1 are ready for their initial instruction in the vertical float. Instruct the group in dry land drill and water practice.

(12) *Practice teaching requirement 12.* Your trainees have had all previous instruction on the travel stroke at Station No. 3. They are now ready for the travel stroke. Instruct the trainees in the travel stroke on dry land and in the water.

(13) *Practice teaching requirement 13.* Your trainees at Station No. 1 are ready for brief instruction and practice in travel stroking while towing a rifle. Instruct and have each trainee practice the technique.

(14) *Practice teaching requirement 14.* Your group is ready for the floatation device orientation. Review the method of preparing the fatigue trousers to be used as the device, and instruct men in the technique to include practical exercise.

(15) *Practice teaching requirement 15.* You are the instructor at Station No. 1 and are ready to administer the stay afloat test. Prepare for and administer the test.

Page 119. In figure 51 the arabic numerals 1. and 2. are changed to letters A. and B.

Page 246. Paragraph 419*d* is superseded as follows:

d. Standards. To meet minimum acceptable standards the participants must score a minimum of 50 points per event, and also score a total of 300 or more points.

Page 305. Appendix A. Reference is added. AR 40-501, Standards of Medical Fitness.

Appendix D is added as follows:

APPENDIX D

DROWNPROOFING TRAINING PROGRAMS

Section I. GENERAL

1. Purpose and Scope

This appendix provides guidance for the conduct of training in water survival using a method known as "Drownproofing" (chap 17). Separate sections of this appendix are provided for initial training, remedial training, and instructor training. Initial training is for personnel regardless of swimming ability or prior water survival training (sec II); remedial training is for individuals who failed to qualify during initial training (sec III); and instructor training is to qualify leaders to conduct initial and remedial training (sec IV). These training programs apply to both male and female personnel. The overall objective is to train personnel to safely operate in and around water to eliminate the possibility of needless drownings during training, in combat operations, and during recreational swimming to include participation in all aquatic activities. This objective is attained through training which is designed to overcome fear of the water, how to subsist in water indefinitely until help arrives, and to move to a safe area. This training is designed for use in both individual and unit training.

2. Training Notes

a. To make the instruction successful commanders and staff personnel must have a basic understanding of the method, know and appreciate the careful planning and detailed preparations required, and provide proper support. Appropriate facilities, personnel, and equipment (para 219), must be provided to accomplish the prescribed training.

b. Specific training objectives and standards of performance are part of each lesson. Performance tests are also part of the training and result in qualification ratings for the individual as a beginner, or qualification in an advanced classification. Personnel who satisfactorily complete the instructor's course are qualified as instructors.

c. There are four simple skills in this training to include air exchange (proper breathing), hanging float, vertical float, and travel stroke (used to move). As in learning any new physical skill, much practice is required to establish a satisfactory or working skill level.

3. Modifications

a. A basic 12-hour program of initial training is contained herein. During initial instruction this basic program should be implemented (sec II). Modification may be made to the instruction as specified within the program; however, no less than 8 hours should be scheduled.

b. If an organization undergoing unit training desires to use these programs modifications are authorized. The following applies to modifications during unit training:

(1) Using unit commanders may modify this program to meet the training needs of their units as affected by their unique missions, available resources, and local conditions.

(2) Modifications to this program should be made in accordance with the provisions of AR 350-1 and implementing directives of major Army commands.

Section II. INITIAL INSTRUCTION

4. Purpose and Scope

The instructional material in this section is designed for trainees undergoing AIT, for students in branch service school courses of instruction, and in any other situation where personnel are to be trained in water survival and have never been instructed in the concept and techniques of this method. Guidance is included as to organization, scheduling, and presentation of instruction. The soldier learns to perform safely in and around water, how to act to avoid panic, how to overcome interference of water with

natural body functions, the proper method of movement through deep water (over the head), and the methods to use in subsisting in water for an extended period of time.

5. Training Notes

a. The initial instruction includes a one-half hour introductory period in the classroom, followed by a 1 1/2-hour period in the pool. The remainder of the instruction is divided into five 2-hour periods in the pool. The final period includes qualification testing. Modification to this 12-hour program may be made if necessary; see notes in

lesson schedule and lesson outline.

b. Limitations imposed by pool size, safety requirements, and instructor-trainee ratio make it necessary to limit class size during pool periods to approximately 100-110 trainees. Groups in excess of that size should be divided into two or more groups and each group scheduled for pool periods separately (par. 218).

c. Trainees are divided according to ability to swim and float. Instruction then occurs at three stations in accordance with their individual abilities. Trainees do not rotate from station to station. For that reason lesson outlines show the total instructional time for the period at each station.

d. During periods of instruction in the pool 25 minutes of the total time allotment for the period is devoted to dressing and breaktime. Change of clothing prior to and following the period accounts for 15 minutes and the break is 10 minutes in duration. The remainder of the time is devoted to instruction. In lesson outlines only the instructional times is indicated. For example, in a 2-hour period there are 120 available minutes. When 25 minutes are subtracted, 95 minutes remain for instruction.

e. To allow adequate time for skill patterns to be established, pool periods must be scheduled on

separate days, and 2 hours is the maximum time which should be devoted to this type of instruction for any one day.

f. The ten instructors who are designated to instruct at the various stations are assigned as follows:

(1) Station No. 1—One primary instructor and three assistant instructors are assigned to good swimmers who can float. Approximately 50 to 60 percent of the total group of trainees will be assigned at this station.

(2) Station No. 2—One primary instructor and two assistant instructors will be assigned to the weak swimmers who are unable to float. Approximately 20 to 25 percent of trainees will be in this category.

(3) Station No. 3—One primary instructor and two assistant instructors are assigned to the nonswimmers station. At this station each of the three instructors teach a group of 8 to 10 trainees. One instructor is designated as a primary instructor to assign overall responsibility at this station. Approximately 20 to 25 percent of the group will be nonswimmers.

g. The key to water survival is conservation of energy. For that reason all skills are executed slowly. Rapid speed of movement is to be discouraged.

6. Lesson Schedule, Initial Instruction—(12 Hr).

Period	Hours	Lesson	Text references	Training facility	Training aids, equipment, and ammunition requirements
1	0.5	Introduction to Water Survival Training: Water survival development and use, definition, drowning in US and in the Army, mental discipline, air exchange, travel stroke, pool sanitary and safety regulations, and qualification classifications.	FM 21-20, para 209 a-c, 210, 211, 212 a and d, 213 a and b, 215, 215.4, 216 a-c, and 217.	Classroom	None
2	1.5	Ability Testing and Introduction to Basic Skills: Safety, relaxation, muscle cramps, coughing and choking, classification and division into station groups according to ability, air exchange, method of entry into pool, float test, swim test, travel stroke, hanging float, confidence drill, scissors kick, and gliding.	FM 21-20, para 211, 212 b, c; 213 a-c, 214, 215, 215.1, 215.2, 215.3, 215.4, 215.5, 215.6, 217 a.	Pool, 25x50 meters, water temperature 85-90 degrees, air temperature minimum of 80 degrees.	Ring type buoys w/20' line-6; poles/staff-6; floatation boards-8; lines w/floats attached, length to span width of pool-2; whistles, thunderer-6; resuscitator kit-1; platform, 4'x15'-1.
3	2	Basic Skill Development: Review necessity for relaxation and safety, air exchange, travel stroke, hanging float, confidence drill, scissors kick, and gliding. Introduce vertical float, and stay-afloat practice.	FM 21-20, para 213, 214, 215, 215.4, 215.5, 215.6, 216 a (1), 217, 219 c (1)(i).	Pool, 25x50 meters, water temperature 85-90 degrees, air temperature minimum of 80 degrees.	Ring type buoys w/20' line-6; poles/staff-6; floatation boards-8; lines w/floats attached, length to span width of pool-2; whistles, thunderer-6; resuscitator kit-1; platform 4'x15'-1; fatigue shirts and trousers, salvage, no holes or tears, unstarched-100 sets.
4	2	Skill Practice and Unexpected Entry into Water: Factors which interfere with movement or subsistence in water, wearing uniform and gear around water, unexpected entry in water, review safety, relaxation, air exchange, travel stroke, hanging float, vertical float, scissors kick, gliding, and stay-afloat practice.	FM 21-20, para 213, 215, 215.4, 215.5, 215.6, 215.6 a (1), 217, 221 a and b, 223.	... do ...	Do.
5	2	Skill Practice and Development: Review confidence, safety, relaxation, air exchange, travel stroke, hanging float, vertical float, scissors kick, and stay-afloat practice. Intro-	FM 21-20, para 213, 215, 215.4, 215.5, 215.6, 216 a, 217, 222.	Pool, 25x50 meters, water temperature 85-90 degrees air temperature minimum of 80 degrees.	Ring type buoy w/20' line-6; poles/staff-6; floatation boards-8; lines w/floats attached, length of span width of pool-2; whistles, thunderer-6; resuscitator kit-1;

Note. If this schedule is to be modified by reducing the total time allotment, it is suggested that period 5 be eliminated to reduce to a 10-hour program. If further reduction is necessary period 6 may be eliminated thus reducing the block to 8 hours. In no case should a further reduction be made. Any reduction of the 12-hour program will lower the individual qualification rate, as reduction of the practice time incorporated in periods 5 and 6 will not provide time for the skill patterns to be developed sufficiently to qualify a high percentage of the group.

Period	Hours	Lesson	Text references	Training facility	Training aids, equipment, and ammunition requirements
		duce the rifle tow-travel stroke.			platform, 4'x15'-1; rifles, unserviceable or dummy w/slings/ropes-16; fatigue shirts and trousers, salvage, no holes or tears, unstarched-100 sets.
6	2	Skill Practice, Floatation Device and Testing: Review travel stroke, qualification standards, and safety. Administer rifle tow-travel stroke test, stay-afloat test, and fatigue uniform floatation device test.	FM 21-20, para 213, 216a-d, 217, 222; app B, para 11; app D, para 4, 5.	...do...	Do.
7	2	Qualification and Floatation Device Testing: Review qualification standards, and safety. Administer travel stroke test, rifle-tow travel stroke test, stay-afloat test, and fatigue uniform floatation device test; operate remedial training and retest.	FM 21-20, para 215.4, 215.5, 216a-d, 217, 222.	Pool, 25x50 meters, water temperature 85-90 degrees, air temperature minimum of 80 degrees.	Ring type buoy w/20' line-6; poles/staff-6; floatation boards-8; lines w/floats attached, length of span width of pool-2; whistles, thunderer-6; resuscitator kit-1; platform, 4'x15'-1; rifles, unserviceable or dummy w/slings/ropes-16; fatigue shirts and trousers, salvage, no holes or tears, unstarched-100 sets.
				...do...	Do.

7. Lesson Outlines, Initial Instruction (12 Hr)

(1) *Period 1; hours 1/2. Introduction to water survival training.*

(a) *Training objectives.* Trainee must—

1. Accomplish air exchange in dry land drill, simulating a 70 percent exhalation under water and 30 percent above water, followed by inhalation above the water.

2. Execute the travel stroke by the numbers in dry land drill.

3. List the major safety and sanitary rules which apply in the pool.

4. List the three water survival qualification classifications.

(b) *Lesson outline.*

1. Introduction. Inform trainees of water survival development and use, definition, drownings in the US and in the Army, requirement for mental discipline, and announce the training objectives (3 min)

2. Explain, demonstrate, and practice dry land air exchange (5 min)

3. Explain, demonstrate, and practice the travel stroke in dry land drill (14 min)

4. Explain sanitary and safety pool regulations (4 min)

5. Explain the three water survival ratings or classifications (2 min)

6. Summary (2 min)

(c) *Evaluation.* Assistant instructors are to determine if trainees are performing correctly in the air exchange and travel stroke during dry land drill. Trainees who fail to execute the sequences properly should receive remedial training prior to the second period (in the pool).

Notes. 1. In remaining periods training occurs in the pool. In addition to the time allotted for instruction a total of 15 minutes is provided for dressing prior to and at the end of the period, and 10 minutes is provided for a mid-period break. This time (25 minutes) is not shown in the lesson outlines.

2. There is no rotation of trainees from station to station. For that reason lesson outlines show the total instruction time during the period for each station. Since 25 minutes is allotted for dressing and a break, instructional time during period 2 is 65 minutes, and for remaining periods—95 minutes.

(2) *Period 2; hours 1 1/2. Ability testing and introduction to basic skills.*

(a) *Training objectives.* Trainee must—

1. Accomplish the air exchange in the water by exhaling 70 percent under water and 30 percent above the water followed by a large intake of air through the mouth at Station No. 1, No. 2 and No. 3.

2. Perform the travel stroke in the water with a fair degree of proficiency at Station No. 1 and No. 2 across one width (25 meters) of the pool

without resting.

3. Perform the hanging float at Station No. 1 with a fair degree of proficiency during three continuous repetitions.

4. Gain confidence to glide through the water with the head submerged at Station No. 3, followed by two or more travel strokes.

5. Follow sanitary and safety regulations at all stations to such a degree that no mishaps occur.

(b) *Lesson outline.*

1. *Introduction.* Remind trainees of safety regulations; explain why the class is divided into stations; motivate trainees to relax and make all movements in the water slowly; emphasize that trainees will not be subjected to anything they are not prepared to do; explain how to overcome a muscle cramp by extending the heel, thus stretching the muscle; explain and demonstrate procedure for clearing the throat during coughing and choking; and identify the nonswimmers by a show of hands and send these trainees to Station No. 3 (10 min)

2. *Station No. 1. Swimmers.*

(a) Introduction (previously shown) (10 min)

(b) Review air exchange on dry land to include explanation, demonstration, and practice (5 min)

(c) Explain, demonstrate, and practice entry into the pool, air exchange in water, float test, and swim test (15 min)

Note. Trainees then practice air exchange at their own pace. While practicing, the assistant instructor gives them, one at a time, the float test and swim test. Instructors should have pole/staff in hand as an aid to assist "sinkers" to regain the surface during the "float" test. Trainees who fail the float test, the swim test, or both tests, are sent to Station No. 2. This action activates Station No. 2.

(d) Review and practice travel stroke (20 min)

(e) Explain, demonstrate, and practice hanging float (20 min)

(f) Summary (5 min)

3. *Station No. 2. Swimmers who are nonfloaters and weak swimmers.* (Since Station No. 1 and No. 2 were combined at the beginning of the period, only 45 minutes remain in the period when Station No. 2 is constituted).

(a) Introduction, air exchange, float test and swim test (previously shown) ... (30 min)

(b) Station objective and orientation (3 min)

(c) Practice air exchange in the water according to the above standard to further check skill (5 min)

(d) Explain, demonstrate, and prac-

tice the scissors kick, and gliding with head submerged (10 min)

(e) Review and practice the travel stroke according to the above standard .. (15 min)

(f) Summary (2 min)

4. Station No. 3. Nonswimmers.

(a) Introduction (previously shown) (10 min)

(b) Station objective and orientation (3 min)

Note. Fear of the water and inability to relax due to this fear are bars to learning the traveling stroke. Trainees must be encouraged and progressively introduced to the water. At this station the same assistant instructor works with a group of 8 to 10 trainees throughout the period. A suggested opening statement follows:

AT THIS STATION YOU WILL RECEIVE INSTRUCTION AND PRACTICE ON AIR EXCHANGE AND THE TRAVEL STROKE. OUR OBJECTIVE AT THIS STATION IS TO TEACH YOU THE TRAVEL STROKE AND HAVE YOU EXECUTE IT TO THE BEST OF YOUR ABILITY. ENTERING THE WATER MAY BE A NEW EXPERIENCE FOR YOU; YET YOU NEED NOT FEAR THE WATER OR THIS COURSE. WE WILL NOT ASK YOU TO DO ANYTHING WE HAVE NOT PREPARED YOU TO DO. ALL OF OUR INSTRUCTION AT THE BEGINNING IS HERE AT THE SHALLOW END OF THE POOL, WHERE YOU CAN STAND UP AT ANY TIME. WE NEED YOUR COOPERATION, AND WE WANT YOU TO LISTEN CAREFULLY, PRACTICE SERIOUSLY, AND TRY YOUR BEST TO CARRY OUT YOUR ASSIGNMENTS. AT ALL TIMES YOU MUST CONCENTRATE AND THINK.

(c) Conduct water confidence drill (10 min)

(d) Explain, demonstrate, and practice air exchange on dry land and in the water (10 min)

(e) Explain, demonstrate, and practice the scissors kick (10 min)

(f) Explain, demonstrate, and practice gliding under water (10 min)

(g) Review and practice travel stroke on dry land and in the water according to the above standard (10 min)

(h) Summary (2 min)

(c) *Evaluation.* Instructors at all stations should identify trainees who have unusual difficulty and given them extra attention. If instruction is beyond their skill level send them to a more appropriate station. Trainees who perform at a higher skill level than required at the assigned station should be sent to a higher skill station.

(3) Period 3; hours 2. Basic skill development.

(a) *Training objectives.* Trainees must—

1. Perform the travel stroke at Station No. 1 in fatigues (no boots), cross the pool and back (50 meters) without resting.

2. Stay afloat at Station No. 1 for 15 minutes without touching the sides or bottom of the pool, using any combination of the travel stroke, hanging float, or vertical float, clothed in fatigues (no boots).

3. Perform the travel stroke at Station No. 2 in swim trunks, cross one width of the pool (25 meters) with a good degree of proficiency without resting.

4. Perform the travel stroke effectively in the water at Station No. 3 for two or more repetitions of the stroke clothed in swim trunks.

(b) *Lesson outline.*

1. *Introduction.* Remind trainees of safety regulations, stress the requirement to relax, encourage trainees to keep trying and to do their best, announce training objectives, and divide into station groups (5 min)

2. Station No. 1. Swimmers and floaters.

(a) Introduction (previously shown) (5 min)

(b) Station introduction and orientation (5 min)

(c) Review and practice the travel stroke and hanging float in fatigues (no boots) (10 min)

(d) Explain, demonstrate, and practice the vertical float on dryland and in the water (15 min)

(e) Practice staying afloat for a 15-minute period according to the above standard (20 min)

(f) Short critique and break.

(g) Practice staying afloat for another 15-minute period, again according to the above standard (15 min)

(h) Summary (5 min)

3. Station No. 2 Swimmers (nonfloaters and weak swimmers).

(a) Introduction (previously shown) (5 min)

(b) Station introduction and orientation (3 min)

(c) Review and practice air exchange in the water (5 min)

(d) Review and practice kick and glide in the water (7 min)

(e) Practice float test (10 min)

Note. Same float test as administered during period 2 at Station No. 1 (para 5, app B). Stress requirement to relax all muscles.

(f) Review past instruction in the travel stroke and correct errors during dry land drill (10 min)

(g) Perform travel stroke practice in

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the water, to extend the distance trainee is able to travel, in accordance with Station No. 2 standard (50 min)

Note. Operate a continuous dryland station as in period 2.

(h) Summary (5 min)

4. Station No. 3. Nonswimmers.

(a) Introduction (previously shown) (5 min)

(b) Station introduction and orientation (5 min)

(c) Water confidence drill, practice in 8 to 10 man groups (10 min)

(d) Practice the glide and scissors kick in the water (15 min)

(e) Demonstrate and practice travel stroke on dryland (15 min)

(f) Demonstrate and practice travel stroke in the pool according to the Station No. 3 standard as above (40 min)

(g) Summary (5 min)

(c) Evaluation. The travel stroke is common to all stations. Trainees who are having difficulty with this skill should be identified and checked to determine if they understand and can execute the stroke on dryland without hesitation or confusion.

(4) Period 4; hours 2. Skill practice and unexpected entry into water.

(a) Performance objectives/standards.

Trainee must—

1. Perform travel stroke at Station No. 1 for 75 meters clothed in fatigues (no boots).

2. Stay afloat at Station No. 1 for 20 minutes without touching the sides or bottom of the pool, using any combination of the travel stroke, hanging float, or vertical float clothed in fatigues (no boots).

3. Travel stroke two widths of the pool (50 meters), at Stations No. 2 and 3 without touching the sides or bottom of the pool, clothed in swim trunks.

4. Demonstrate understanding of immediate survival action (all trainees) during unexpected entry into the water.

(b) Lesson outline.

1. Introduction.

(a) Remind trainees of safety regulations, stress the need to relax, critique past performance, and announce training objectives (5 min)

(b) Demonstrate wearing the uniform and gear when operating in and around bodies of water, and action to take when entering the water unexpectedly (8 min)

(c) Explain the factors which interfere

with movement or subsistence in the water (5 min)

(d) Divide into station groups and move to station locations (2 min)

2. Station No. 1. Swimmers and floaters.

(a) Introduction (previously shown) (20 min)

(b) Station introduction and orientation (5 min)

(c) Review and practice the travel stroke, hanging float, and vertical float . . (20 min)

(d) Practice travel stroke for 50 meters clothed in fatigues (no boots) . . . (20 min)

(e) Practice staying afloat for 20 minutes according to Station No. 1 standard as outlined above (25 min)

(f) Summary (5 min)

3. Station No. 2. Swimmers (non-floaters and weak swimmers).

(a) Introduction (previously shown) (20 min)

(b) Station introduction and orientation (5 min)

(c) Review air exchange in the water (10 min)

(d) Review and practice kicking, the glide, and the travel stroke (25 min)

(e) Practice the travel stroke according to Station No. 2 standard as outlined above (30 min)

(f) Summary (5 min)

4. Station No. 3. Nonswimmers.

(a) Introduction (previously shown) (20 min)

(b) Station introduction and orientation (5 min)

(c) Review and practice air exchange (10 min)

(d) Review and practice scissors kick, and glide through the water (15 min)

(c) Evaluation. Instructors should be alert to the fact that some trainees quit the stay-afloat test at Station No. 1 due to lack of confidence or due to boredom. Build up trainee confidence at all stations. At Station No. 2 and No. 3 continue dryland drill in the travel stroke, and be sure trainees connect what they do on dryland with what they must do in the water.

(5) Period 5; hours 2. Skill practice and development.

(a) Training objectives. Trainees must—

1. Perform travel stroke at Station No. 1 while towing a rifle for 75 meters without touching the sides or bottom of the pool, clothed in fatigues (no boots).

2. Stay afloat at Station No. 1 for 25

minutes without touching the sides or bottom of the pool, using any combination of the travel stroke, hanging float, or vertical float clothed in fatigues (no boots).

3. Travel stroke at Station No. 2, three widths of pool (75 meters), without touching the sides or bottom of the pool, clothed in swim trunks.

4. Travel stroke at Station No. 3, two widths of the pool (50 meters), without touching the sides or bottom of the pool, clothed in swim trunks.

5. Prepare fatigue shirt and trousers as floatation device at all stations, and properly place the fatigue uniform item on the body ready for entry into the water.

(b) *Lesson outline.*

1. *Introduction.* Stress safety regulations, confidence, continue emphasis upon relaxation, critique past performance, announce training objectives, and divide into station groups (5 min)

2. *Station No. 1 Swimmers and floaters.*

(a) Introduction (previously shown) (5 min)

(b) Station introduction and

orientation (5 min)

(c) Explain, demonstrate, and practice travel stroke while towing a rifle according to the Station No. 1 standard as stated above (20 min)

(d) Practice the hanging float and vertical float (15 min)

(e) Explain, demonstrate, and practice preparation of fatigue shirt and trousers for use as floatation devices (15 min)

(f) Practice staying afloat for 25 minutes in accordance with the Station No. 1 standard as stated above (30 min)

(g) Summary (5 min)

3. *Station No. 2. Swimmers (non-floaters and weak swimmers).*

(a) Introduction (previously shown) (5 min)

(b) Station introduction and orientation (5 min)

(c) Review and practice air exchange in the water (10 min)

(d) Explain, demonstrate, and practice preparation of fatigue shirt and trousers for use as floatation devices (15 min)

(e) Practice the travel stroke in accordance with the Station No. 2 standard as stated above (55 min)

Note. Operate a dry land travel stroke station continuously during the practice period.

(f) Summary (5 min)

4. *Station No. 3. Nonswimmers.*

(a) Introduction (previously shown) (5 min)

(b) Station introduction and orientation (5 min)

(c) Review and practice air exchange and kicking in the water (15 min)

(d) Explain, demonstrate, and practice preparation of fatigue shirt and trousers for use as floatation devices (15 min)

(e) Practice the travel stroke, two widths of the pool (50 meters), without touching the sides or bottom of the pool, in swim trunks (50 min)

(f) Summary (5 min)

(c) *Evaluation.* Continue to motivate trainees to make their best effort. Again point out the value of relaxing all muscles; and announce the beginning of qualification testing during the next period.

(6) *Period 6; hours 2. Skills practice, floatation devices and testing.*

(a) *Training objectives.* Trainee must—

1. Travel stroke at Station No. 1 for 75 meters towing a rifle, without touching the sides or bottom of the pool, clothed in fatigues (no boots).

2. Stay afloat at Station No. 1 for 30 minutes without touching the sides or bottom of the pool, using any combination of the travel stroke, hanging float, or vertical float, clothed in fatigues (no boots).

3. Travel stroke at Station No. 2 and No. 3 for 75 meters without touching the sides or bottom of the pool, wearing swim trunks.

4. Prepare fatigue trousers as a floatation device at all stations, jump into deep water feet first, surface, float, deflate the device, refill by handscoop method, and float.

(b) *Lesson outline.*

1. *Introduction.* Remind trainees of safety, announce the training objectives, review the qualification requirements for classification as “advanced” and “beginner” and stress the need for concentration and expenditure of best effort (5 min)

2. *Station No. 1. Swimmers and floaters.*

(a) Introduction (previously shown) (5 min)

(b) Station introduction and orientation (3 min)

(c) Administration of rifle tow-travel stroke test according to above standard (20 min)

(d) Administration of stay-afloat test

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- for 30 minutes according to above standards (35 min)
- (e) Administration of fatigue floatation device according to above standards (30 min)
- (f) Summary (2 min)

Note. Administer the test in items (d) and (e) above at the same time. Divide the station strength into two groups. One group is administered the 30-minute stay-afloat test while the other group takes the fatigue device floatation test. Then switch groups and again administer the tests.

3. Station No. 2. Swimmers (non-floaters and weak swimmers).

- (a) Introduction (previously shown) (5 min)
- (b) Station introduction and orientation (5 min)
- (c) Administration of 75-meter travel stroke test according to above standards for Station No. 2, and continued practice for trainees not ready for testing or for trainees who fail the test (60 min)
- (d) Administration of the fatigue device floatation test according to the above standards (20 min)
- (e) Summary (5 min)

4. Station No. 3. Nonswimmers.

- (a) Introduction (previously shown) (5 min)
- (b) Station introduction and orientation (5 min)
- (c) Practice the travel stroke according to Station No. 3 standard as stated above (55 min)
- (d) Administration of the fatigue floatation device test according to the above standard (25 min)
- (e) Summary (5 min)

(c) *Evaluation.* Trainees who qualify at Station No. 1 and No. 2 may be used during the final period to assist in qualification of those who failed to qualify during this period. Selected trainees should be used as peer instructors during the final period to qualify trainees from Station No. 3 in the qualification tests, and also to retest those who failed at Station No. 1 and No. 2 during this period. Trainees are to be afforded as many attempts to pass the test as time permits.

(7) Period 7; hours 2. Qualification and floatation device testing.

(a) *Training objectives.* Trainee must—

- 1. Stay afloat at Station No. 1 for 30 minutes using any combination of the travel stroke, hanging float, or vertical float without touching the sides or bottom of the pool, clothed in fatigues (no boots).

2. Travel stroke for 75 meters at Station No. 1 towing a rifle, without touching the sides or bottom of the pool, clothed in fatigues (no boots).

3. Travel stroke for 75 meters at Station No. 2 and No. 3 without touching the sides or bottom of the pool, wearing swim trunks.

4. Prepare fatigue trousers as a floatation device, at all stations jump into deep water feet first, surface and float, deflate device, refill by hand scoop method and float.

(b) *Lesson outline.*

1. *Introduction.* Remind trainees of safety, announce training objectives, review the qualification classifications, announce that those who did not pass tests during the last period will be tested again. Stress the need to put out a best effort, and divide into station groups (5 min)

2. Station No. 1. Swimmers and floaters.

- (a) Introduction (previously shown) (5 min)
- (b) Station introduction and orientation (3 min)
- (c) Administer travel stroke-rifle tow qualification test (15 min)
- (d) Administer the 30-minute stay-afloat qualification test (35 min)
- (e) Administer the fatigue floatation device test (35 min)
- (f) Summary (2 min)

Note. When all trainees at this station are qualified close out the station and concentrate on qualifying trainees at Station No. 2 and No. 3.

3. Station No. 2 and No. 3. Combine stations to include Station No. 2 trainees who failed to pass the test in period 6, and all Station No. 3 trainees.

- (a) Introduction (previously shown) (5 min)
- (b) Introduction and orientation (5 min)
- (c) Administer travel stroke test. Travel stroke for 75 meters, wearing swim trunks according to above standard (30 min)
- (d) Review those who fail and retest (45 min)

Note. Pair trainees who fail with a peer instructor (trainee who qualified) for individualized instruction prior to retesting. Retest as many times as practical within the limits of time available during the period.

(e) Administer floatation device test to trainees who did not qualify during prior periods according to the above standard (10 min)

Note. Do this on an individual basis in order to make the maximum time available for practice and testing in the travel stroke test.

(c) *Evaluation.* Trainees who pass the 30-minute float test and the rifle swim tests at Station No. 1 are qualified with an "advanced" classification. Trainees at Station No. 1 who fail

to meet the stay-afloat test, but pass the rifle-tow test, are qualified with a "beginner" classification.

Section III. REMEDIAL TRAINING

8. Purpose and Scope

This section provides guidance for the conduct of remedial training in water survival. Remedial training should be scheduled for individuals who completed, or partially completed, initial training yet were not able to meet minimum qualification requirements. The scope covers identification of individual causes of nonqualification, review of basic skills of water survival, individual practice of deficient skills, and qualification testing. The objective is to qualify all personnel as beginner or higher.

9. Training Notes

a. To achieve a minimum level of water survival ability on the part of every individual, remedial training is required. The initial training does not always produce progress for some personnel due to fear of the water, low motivation, lack of confidence, or inability to relax. Some individuals who make little progress during initial training may seem to be making no progress during remedial training. Suddenly skill patterns develop and everything begins to fall into place. After continued practice, qualification often follows. Remedial training is also valuable as makeup training for personnel who missed all or part of the initial instruction, and as a result failed to qualify. Some advanced swimmers are in this category.

b. During remedial instruction attention is placed on deficiencies which resulted in failure to

qualify. Better results will be achieved if instructors learn and understand the problem of each individual, and devote their time and attention to assist the individual overcome his problem. Identification of these problems should occur early during remedial training in order not to waste time and effort. A form is provided to assist in obtaining an experience and ability inventory (fig. 47.2). From this inventory individual deficiencies can be determined. The last column on the form provides a place to record the results of the qualification test administered at the end of remedial training.

c. To meet the objective of qualifying all individuals to pass the minimum test, the instructor-trainee ratio must be maintained at 1 to 8. There should be one primary instructor, one equipment-facility NCO, and one assistant instructor for each eight trainees or fraction thereof.

d. Personnel who are singled out as being deficient are usually self-conscious. They must be encouraged and not made to feel guilty about their failure to qualify. Encouragement and praise are techniques which usually produce good results with trainees in this category. Morale and motivation of this group can be raised by instructors who display knowledge and understanding of each individual in the group.

e. Stations for remedial training are redesignated as follows: Station No. 1 — advanced swimmer station; Station No. 2 — swimmer station; Station No. 3 — nonswimmer station.

10. Lesson Schedule — Remedial Training (8 Hr)

Period	Hours	Lesson	Text references	Training facility	Training aids, equipment, and ammunition requirements
1	2	Introduction, objective of remedial training, safety, confidence, definition of drownproofing, avoidance of panic, coughing and choking, muscular cramps, float and swim tests, establish stations, experience and ability inventory, confidence drills, air exchange, scissors kick, glide, and travel stroke.	FM 21-20, para 209 <i>b</i> , 211, 212 <i>a-e</i> , 213 <i>a & b</i> , 215, 215.1, 215.2, 215.3, 215.6 <i>c</i> (1)-(5), 217, 223.4 <i>a</i> (4).	Indoor or outdoor pool according to weather and temperature conditions.	Ring buoys — 4; poles/staff — 4; whistles, thunderer — 5; resuscitator kit — 1; platform — 1; floatation boards — 6; water survival training and ability inventory forms — 1 per trainee.
2	2	Introduction, safety regulations, relaxation, conservation of energy, use of fatigues, confidence drill, scissors kick, glide, air exchange, travel stroke, hanging float, and vertical float.	FM 21-20, para 213, 215, 215.4, 215.5, 215.6 <i>c</i> (1)-(5), 217.	... do ...	Ring buoys — 4; poles/staff — 4; whistles, thunderer — 5; resuscitator kit — 1; platform — 1; floatation boards — 8; fatigue shirt and trousers — 1 set per trainee at the advanced swimmer station.
3	2	Introduction, safety, drownproofing beginner qualification, air exchange, travel stroke, hanging float, vertical float, stay-afloat practice, and rifle tow travel stroke.	FM 21-20, para 213, 215.4, 215.5, 215.6, 216.	... do ...	Do
4	2	Introduction, practice travel stroke, hanging float, vertical float, and stay-afloat ability. Administer floatation device test, and drownproof beginner and advanced tests.	FM 21-20, para 213 <i>b, c</i> , and <i>d</i> , 215, 215.5, 216, 217, 222'a (2) and <i>b</i> .	Indoor or outdoor pool according to weather and temperature conditions.	Ring buoys — 4; poles/staff — 4; whistles, thunderer — 5; resuscitator kit — 1; platform — 1; floatation boards — 6; fatigue shirts and trousers, 1 set per trainee at the advanced swimmer station; fatigue trousers, 1 pair per trainee who missed floatation device in the initial training; rifles, salvage type — 2.

11. Lesson Outline — Remedial Training (8 Hr)

a. First Period (2 Hr). Inventory and Review of Skills.

(1) Training objectives. Trainee must —

(a) Accomplish air exchange in dry land drill, simulating a 70 percent exhalation under water and 30 percent above water, followed by inhalation above water.

(b) Glide in water 4-5 feet in depth by pushing off with feet from pool wall with arms extended and head submerged with no sign of fear.

(c) Execute a scissors kick holding to the pool edge in a face-down position with the body extended on the surface of the water.

(d) Perform one or more sequences of the travel stroke in water 4-5 feet deep (non-swimmers), or over the head of the swimmers.

(e) Abide by safety rules so that no mishaps occur.

(2) Lesson outline.

(a) Introduction: Inform trainees of the objective of the 8-hour block of instruction; remind trainees of sanitary and safety rules, and announce training objectives for this period

(5 min)

(b) Administer float and swim tests and as a result establish swimmer and nonswimmer stations. (15 min)

(c) Interview personnel individually and complete water survival experience and ability inventory (20 min)

(d) Review and practice confidence drill, glide, and scissors kick (15 min)

(e) Review and practice air exchange in dry land drill and in the water (10 min)

(f) Review and practice travel stroke in dry land drill and in the water (25 min)

(g) Critique of performance (5 min)

(3) Evaluation. During practice periods each trainee is checked to determine his ability to achieve training objectives. A special note is to be made of trainees who cannot attain standards, and individual attention devoted to their weaknesses during the second period.

b. Second Period (2 Hr). Skill Review and Instruction.

(1) Training objectives. Trainee must —

(a) Accomplish air exchange in dry land drill and in the water.

(b) Execute the travel stroke and cover a distance of 25 yards in the water without rest or touching the bottom or sides of the pool.

(c) Execute the hanging float and vertical float clothed in fatigue shirt and trousers (only for advanced swimmers).

(d) Abide by safety rules so that no mishaps occur.

(2) Lessons outline.

(a) Introduction: Indicate the importance of safety regulations, motivate trainees to relax and make all movements slowly to conserve energy, emphasize the importance of an attitude to "keep trying," announce the training objectives, and divide into station groups. (5 min)

(b) At the nonswimmer station practice the confidence drill, scissors kick, glide, air exchange, and travel stroke. (85 min)

(c) At the swimmers' station practice air exchange, scissors kick, and travel stroke (85 min)

(d) Advanced swimmer station — during the second hour activate this station if warranted by the ability of one or more trainees to swim well and float; discuss use of fatigues at this station and prepare these trainees to pass the drown-proofing advanced test in the final period (45 min)

Note. Instructors will insure that practice also takes place at all stations on points of individual weakness.

(e) Critique of performance (5 min)

(3) Evaluation. Continued emphasis will be placed upon overcoming individual deficiencies. Instructors will check each trainee individually to determine progress and ability to attain prescribed objectives.

c. Third Period (2 Hr). Skill Practice and Techniques.

(1) Training objectives. Trainee must —

(a) Accomplish air exchange in the water.

(b) Execute the travel stroke and cover a distance of 50 yards without resting or touching the bottom or sides of the pool.

(c) (For advanced swimmers) Stay afloat for two 15-minute periods using any combination of the travel stroke, hanging float, and vertical float, clothed in fatigue shirt and trousers.

(2) Lesson outline.

(a) Introduction: Stress safety and announce that trainees who are ready will have an opportunity to pass the beginner qualification test, review the requirements for qualification as a beginner, announce the objectives for the period, and divide trainees into station groups (5 min)

(b) Swimmer station — practice the travel stroke to a distance of 50 to 75 yards according to ability of the individual trainee. Trainees who are able to cover 75 yards in accordance with qualification standards will qualify as a beginner (45 min)

(c) Nonswimmer station — practice air exchange and travel stroke to meet the standard (45 min)

(d) During the second hour, combine the

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swimmer and nonswimmer stations at the shallow end of the pool and pair each nonswimmer with a swimmer. Maintain groups of eight (four nonswimmers and four swimmers per group). Practice the travel stroke with each swimmer assisting a nonswimmer as a peer instructor under the direction and supervision of the assistant instructor who is in charge of the group. . . (40 min)

(e) Advanced swimmer station — if this station was activated during the second period continue preparation of the advanced swimmers to pass the advanced qualification test. . . (85 min)

(f) Critique of performance. (5 min)

(3) *Evaluation.* Check each trainee to insure he or she fully understands and can coordinate the stroke, kick, and air exchange. Those trainees who are having difficulty will be checked out in dry land drill to determine if they know the sequence and can coordinate the entire movement of the travel stroke.

d. *Fourth Period (2 Hr). Skill Practice and Qualification Testing.*

(1) *Training objectives.* Trainee must —

(a) Qualify as a beginner by performing the travel stroke 75 yards without resting or touching the sides or bottom of the pool, wearing swim trunks.

(b) Form a floatation device of fatigue trousers and float with the assistance of this floatation aid, deflate, refill with air and float (only for trainees who did not experience this test during initial training).

(c) (For advanced swimmers) Stay afloat for 30 minutes without touching the sides or bottom of the pool, and tow a rifle for 75 yards using the travel stroke without touching the sides or bottom of the pool. Both tests to be accom-

plished in fatigue shirt and trousers, no boots.

(d) Abide by safety rules so that no mishap occurs.

(2) *Lesson outline.*

(a) Introduction: Announce that practice and testing of drownproofing beginner qualification will continue during the entire period, that as many trials of the test as time allows will be permitted, that advanced swimmers may attempt to pass the advanced test, that trainees who did not make a floatation device during initial training will be provided this opportunity, stress the need for confidence, motivation and mental discipline, and announce training objectives

(5 min)

(b) Nonswimmer station — practice the travel stroke through the period. (90 min)

(c) Swimmer station — practice and test trainees from this and the nonswimmer station at the platform location throughout the period

(90 min)

(d) Advanced swimmer station (if applicable) — test trainees on drownproofing advanced test to include 30 minute stay-afloat test and rifle tow-travel stroke test of 75 meters, clothed in fatigue shirt and trousers. (90 min)

Note. Trainees who did not make and use a floatation device are to be provided this training at their assigned stations.

(3) *Evaluation.* The success of remedial training is measured by the percentage of trainees who qualify. With 12 hours of initial training and 8 hours of remedial training, practically all trainees undergoing remedial training should, as a minimum, attain beginner qualification.

Section IV. INSTRUCTOR TRAINING

12. Purpose and Scope

This section provides uniform guidance for the *training of instructors* in the drownproofing method and related water survival techniques. The scope contains 30 hours of instruction to include causes of drownings and drowning in the United States and in the Army, development and use of drownproofing, techniques of water survival, organization and conduct of instruction, lifesaving and safety, instructional support requirements, administrative requirements, practice teaching, and instructor certification. The objective is to prepare instructors to manage and conduct both initial and remedial training.

13. Training Notes

a. Drownproofing is a specific technique and swimming instructors must undergo instructor

training in the technique prior to serving as instructors in initial or remedial water survival training.

b. It is recommended that instructor training be divided into 5 days of 6 hours each as follows: first day, periods 1-4; second day, periods 5-8; third day, periods 9-12; fourth day, periods 13-15; and fifth day, periods 16-18.

c. Personnel in training as instructors should, prior to the end of the course, have full knowledge of the content of this appendix and chapter 17 of this manual. Self study is vital in attaining this knowledge.

d. In this section the term "student" is used to designate personnel undergoing instructor training. When the term "trainee" is used the reference is to personnel who are undergoing initial

or remedial water survival training; for example, a trainee as used in this schedule applies to AIT

trainees, soldiers in a unit organization, or, students at a service school.

14. Lesson Schedule — Instructor Training (30 Hr)

Period	Hours	Lesson	Text references	Training facility	Training aids, equipment, and ammunition requirements
1	1	Definition, purpose, and advantages of drownproofing; purpose and scope of instructor course; instructor qualifications; air exchange; travel stroke; hanging float; coughing and choking; sanitary and safety requirements; drownproof classifications.	FM 21-20, para 209, 210, 211, 212 b, 213 a-c, 216, 217; 223.1, 223.2, 223.3.	Classroom	Slides for the air exchange, travel stroke, and hanging float; projector and screen; chalkboard, chalk and eraser; watch — 1.
2	2	Avoiding panic, air exchange; float test swim test; travel stroke; and instructional methods to include two methods of entering the water, and use of the staff.	FM 21-20, para 212 a, 213 a and b, 215.1, 215.3, 215.4, 215.5, 223.6 b (1).	Indoor pool or outdoor pool depending upon weather conditions.	Poles/staff — 1½ inch outside diameter aluminum pole, 12 feet long with rubber tip on one end — 3; ring buoys with 20-foot line attached — 3; watch — 1; whistle, thunderer — 1.
3	1	Orientation to include explanation of initial training course; use of FM 21-20 and appendix D as references; history of drownproofing; trainee motivation and confidence.	FM 21-20, para 209 b, 212 d-f, 215; App D, sec I, II.	Deck area of pool or classroom at pool.	Chalkboard, chalk and eraser; FM 21-20 with changes — 1 per student; ASubjScd Water Survival Training — 1 per student; watch — 1.
4	2	Practice air exchange and travel stroke. Use of fatigues in the pool and introduce hanging float.	FM 21-20, para 213 a-c; 215.4, 215.5, 219c (1)(h) & (i).	Indoor pool or outdoor pool depending upon weather conditions.	Poles/staff — 3; ring buoys with lines — 3; whistle — 1; watch — 1.
5	1	Relieving muscle cramps; introduce vertical float; review air exchange.	FM 21-20, para 212 c, 213 a & d; 215.4, 215.5.	.....do.....	Do.
6	2	Review air exchange, hanging float, and vertical float; travel stroke practice in traveling 75 yards.	FM 21-20, para 213; app B, 215.4, 215.5.	.....do.....	Do.
7	1	Orientation to include explanation of instructor assignment and duties, station organization, initial period of pool instruction for trainees, methods of organization and instruction at each station.	FM 21-20, para 215.2, 215.6, 223.4, 223.5; app D, sec II	Deck area of pool or classroom at pool.	Chalkboard, chalk and eraser; FM 21-20 with changes — 1 per student; ASubjScd Water Survival Training — 1 per student; watch — 1.
8	2	Unexpected entry into water and factors which effect ability in water; practice staying afloat using any combination of travel stroke, hanging float, and vertical float for two 15-minute periods.	FM 21-20, para 213 a-d, 216 b, 220, 221 a & b, 223.	Indoor pool or outdoor pool depending upon weather conditions.	Poles/staff — 3; ring buoys with lines — 3; whistle — 1; watch — 1.
9	1	Lifeguard duties and skills to include use of ring buoys, staff and rescue methods. Review of safety regulations.	FM 21-20, para 217 a, 223.4 b, 223.6.	.....do.....	Ring buoys with 20 foot line — 8; poles/staff, 9-12 foot length — 8; whistle — 1; watch — 1.
10	2	Review through practice travel stroke, hanging float, and vertical float. Practice travel stroke for distance. Floatation device and inflation methods.	FM 21-20, para 213, 215.4, 215.5, 222.	.....do.....	Ring buoys with line — 3; poles/staff — 3; set of fatigues — 1 per student; whistle — 1; watch — 1.

Period	Hours	Lesson	Text references	Training facility	Training aids, equipment, and ammunition requirements
11	1	Trainee qualification standards. Testing of trainees to include period and methods. Method of testing trainees in floatation device (fatigues). Instructor qualification tests and requirements.	FM 21-20, para 216, 222 <i>b</i> ; 223.3, 224.4; App D, sec II.	Deck area of pool or classroom at pool.	Chalkboard, chalk and eraser; FM 21-20 with changes — 1 per student; ASubjScd Water Survival Training — 1 per student; watch — 1.
12	2	Practice throwing ring buoys and rescue technique; stay afloat practice for two 20-minute periods.	FM 21-20, para 213, 223.6 <i>b</i> (2), <i>c</i> (1) & (2).	Indoor pool or outdoor pool depending upon weather conditions.	Ring buoys with line — 8; poles/staff — 3; set of fatigues — 1 per student; whistle — 1; watch — 1.
13	3	Explanation of second pool period of initial instruction and instructional techniques and methods at Station No. 1, Station No. 2, and Station No. 3. Ungraded practice teaching.	FM 21-20, para 215.6, 223.7; App D, sec II.	Indoor pool or outdoor pool depending upon weather conditions.	Chalkboard, chalk and eraser; ASubjScd Water Survival Training — 1 per student; ring buoys with line attached — 1 per practice teaching station; poles/staff — 1 per practice teaching station; checksheet — 1 per station; watch — 1 per station; and other equipment or aids as required for specific practice teaching assignments.
14	1	Artificial respiration — mouth-to-mouth and use of the artificial resuscitator kit; floatation device to include use of trousers and inflation methods.	FM 21-20, para 222, 223.6 <i>c</i> (3).	.....do.....	Ring buoys with lines attached — 3; poles/staff — 3; fatigues — 1 set per student; whistle — 1; watch — 1; artificial respiration dummy — 1; resuscitator kit — 1.
15	2	Review travel stroke and floats; practice stay-afloat test for 30 minutes; practice rifle tow-travel stroke test.	FM 21-20, para 213 <i>b-d</i> , 215.6, 216.	.....do.....	Ring buoys with lines attached — 3; poles/staff — 3; fatigues — 1 set per student; rifles, dummy or unserviceable with slings or ropes — 6; whistle — 1; watch — 1.
16	2	Administer instructor qualification test.	FM 21-20, para 216, 223.3.	Indoor pool or outdoor pool depending upon weather conditions.	Ring buoy with line attached — 3; poles/staff — 3; watch — 1; rifles, dummy or unserviceable with sling or ropes attached — 6; fatigues — 1 set per student; whistle — 1; watch — 1.
17	1	Remedial training for trainees; administrative and support requirements for initial and remedial training.	FM 21-20, para 214, 215.7, 218, 219, App D, sec I, II & III.	Deck of pool or classroom at pool.	Chalkboard, chalk, eraser; FM 21-20 with changes — 1 per student; ASubjScd Water Survival Training — 1 per student.
18	3	Final practice teaching (graded), review of course, and closing.	FM 21-20, para 209-223.7; App D, sec I-III.	Indoor or outdoor pool depending upon weather conditions.	Ring buoy with line attached — 1 per practice teaching station; poles/staff — 1 per practice teaching station; checksheet — 1 per student; watch — 1 per station; and other equipment or aids as required for specific practice teaching assignments.

15. Lesson Outlines, Instructor Training (30 Hr)

a. *Period 1; Hours 1. Introduction to Instructor Training in Water Survival.*

(1) *Training objectives.* Student must —

(a) Define drownproofing.

(b) Perform the following dry land drills (without confusion):

1. Air exchange.
2. Travel stroke.
3. Hanging float.

(c) Explain remedial action for coughing and choking.

(d) List sanitary and safety regulations.

(e) List the three drownproofing qualification classifications.

(2) *Lesson outline.*

(a) Introduction to include purpose and scope of instructor training, purpose and advantages of drownproofing, definition of drownproofing, and training objectives for this lesson

(5 min)

(b) Explain, demonstrate, and practice air exchange in dry land drill by the numbers and in whole sequence

(5 min)

(c) Explain, demonstrate, and practice the travel stroke in dry land drill by the numbers and in whole sequence

(11 min)

(d) Explain, demonstrate, and practice the hanging float in dry land drill by the numbers and in whole sequence

(11 min)

(e) Explain and demonstrate remedial action for coughing and choking

(5 min)

(f) Explain pool sanitary and safety regulations

(8 min)

(g) Explain drownproofing qualification classification

(5 min)

(3) *Evaluation.* Make certain students understand that air exchange is to be used as part of the travel stroke and hanging float. Check to insure the use of air exchange in the practical exercise period. Also make spot checks to determine if selected students can list or explain the non-physical skill objectives.

b. *Period 2; Hours 2. Instructional Methods, Air Exchange and Travel Stroke.*

(1) *Training objectives.* Student must —

(a) Exchange air while in the water by exhaling 70 percent under water and 30 percent above water, followed by large intake of air through the mouth. The breath is held and the head lowered into the water.

(b) Float on top of the water for 10 seconds, face downward with head, arms, and legs hanging downward.

(c) Swim 10 yards to demonstrate pro-

ficiency.

(d) Execute two continuous sequences of the travel stroke in the water.

(e) Enter the water from a sitting position on the pool edge without releasing grasp of the gutter.

(f) Enter the pool from a standing position on the deck and then surface.

(g) Use the pole/staff to assist a student who is having difficulty in the water, or to gain the student's attention.

(2) *Lesson outline.*

(a) Introduction to include review of sanitation and safety regulations, and remedial action to overcome coughing and choking. Announce training objectives for this lesson

(10 min)

(b) Explain, demonstrate, and practice method of entering pool from a sitting position on deck

(5 min)

(c) Review air exchange and practice on dry land and in the water

(15 min)

(d) Explain, demonstrate, and administer the float and swim tests

(10 min)

(e) Explain, demonstrate, and practice use of the pole/staff

(5 min)

(f) Explain, demonstrate, and practice entry into the water from a standing position on the deck

(10 min)

(g) Review the travel stroke on dry land and in the water

(40 min)

(h) Critique

(5 min)

(3) *Evaluation.* Check to see that all students attain each objective according to the above standard as specified.

c. *Period 3; Hours 1. Drownproofing Development, References, Initial Training Course, and Motivation.*

(1) *Training objectives.* Student must —

(a) Describe the history and development of the drownproofing method of water survival.

(b) Demonstrate ability to use references to include FM 21-20 and this subject schedule.

(c) Outline the organization and content of initial water survival training to personnel who have never experienced drownproof instruction.

(d) Explain the importance of trainee motivation and confidence in learning and successfully performing drownproof skills.

(2) *Lesson outline.*

(a) Explain the development, history, and use of drownproofing in the United States

(5 min)

(b) Explain and demonstrate the organization and use of this field manual as a reference

(10 min)

(c) Explain the organization and content

of the initial course of training in drownproofing to include course length, periods, dressing and locker room procedure, station organization, and period content. (20 min)

(d) Explain the importance of trainee motivation at each station during training in the initial course of instruction. (5 min)

(e) Summary. (10 min)

(3) *Evaluation.* During the summary period question students to determine attainment of training objectives.

d. *Period 4; Hours 2. Air Exchange, Travel Stroke, and Hanging Float.*

(1) *Training objectives.* Student must —

(a) Exchange air properly to sustain performance of the travel stroke and the hanging float.

(b) Execute the travel stroke continually across one width of the pool.

(c) Execute the hanging float for a minimum period of 5 minutes in water (over the head in depth).

(2) *Lesson outline.*

(a) Introduction to include use of fatigues in the pool and announcement of training objectives for this lesson. (10 min)

(b) Review and practice air exchange. (20 min)

(c) Review and practice the travel stroke. (40 min)

(d) Explain, demonstrate, and practice the hanging float. (25 min)

(e) Critique. (5 min)

(3) *Evaluation.* Check to determine that all students attain the training objectives during the instructional period devoted to each skill.

e. *Period 5; Hours 1. Relief of Muscle Cramp, Air Exchange, and Vertical Float.*

(1) *Training objectives.* Student must —

(a) Demonstrate and explain relief of a muscle cramp in the leg.

(b) Exchange air properly in order to sustain the vertical float.

(c) Execute the vertical float for a 3-minute period.

(2) *Lesson outline.*

(a) Introduction to include performance training objectives for this lesson. (5 min)

(b) Explain, demonstrate, and practice the procedure for relieving a muscle cramp in the leg. (5 min)

(c) Review air exchange to include importance and practice of dry land drill. (10 min)

(d) Explain, demonstrate, and practice the vertical float. (25 min)

(e) Critique. (5 min)

(3) *Evaluation.* Check to determine that all students attain the training objectives during the instructional period devoted to each skill.

f. *Period 6; Hours 2. Air Exchange, Hanging Float, Vertical Float, and Travel Stroke.*

(1) *Training objectives.* Student must —

(a) Exchange air to an adequate degree to sustain the travel stroke, the hanging float, and vertical float.

(b) Subsist in water (over the head in depth) through execution of the hanging float for a period of 8 minutes.

(c) Subsist in water (over the head in depth) through execution of the vertical float for a period of 5 minutes.

(d) Travel stroke 75 meters without touching the sides or bottom of the pool.

(2) *Lesson outline.*

(a) Introduction to include announcement of the training objectives for this lesson. (5 min)

(b) Review and practice air exchange and the hanging float. (25 min)

(c) Review and practice the vertical float. (25 min)

(d) Review and practice the travel stroke. (40 min)

(e) Critique. (5 min)

(3) *Evaluation.* Check as in past skill development periods, to determine that training objectives are attained.

g. *Period 7; Hours 1. Instructor Duties, Station Organization, First Period of Pool Instruction, and Instructional Methods at Each Station.*

(1) *Training objectives.* Student must —

(a) List the three areas of instructor responsibility and discuss responsibilities under each area.

(b) Name the number and title of each station in the pool and the number of instructors per station.

(c) Describe the content, division, and organization of the instruction presented during the first period of initial water survival training.

(d) Describe the instructional methods used at the three stations in the first pool period during initial training.

(2) *Lesson outline.*

(a) Introduction to include announcement of the training objectives for this lesson. (5 min)

(b) Explain the assignment and duties of instructors. (15 min)

(c) Review pool organization and division into three stations. (10 min)

(d) Outline and explain the content, division, and organization of instruction during

the first pool period of initial training, to include instructional methods used at each station

(20 min)

(3) *Evaluation.* Question selected students to determine if they have the ability to recall the information which is required by the training objectives.

h. Period 8; Hours 2. Stay Afloat Practice.

(1) *Training objectives.* Student must stay afloat for two, separate 15-minute periods using any combination of the travel stroke, hanging float, or vertical float (in water over the head in depth) without touching the sides or bottom of the pool. A 10-minute break is given between periods.

(2) *Lesson outline.*

(a) Introduction to include preparation for and unexpected entry into water to include factors which affect ability in the water, and announcement of the training objectives for this lesson. (20 min)

(b) Review and practice travel stroke, hanging float, and vertical float. (15 min)

(c) Explain the conduct of the practice session to include orientation toward trainee tendency to give up due to boredom prior to expiration of the time. (10 min)

(d) Conduct first practice session (20 min)

(e) Break (10 min)

(f) Conduct second practice session (20 min)

(g) Critique. (5 min)

(3) *Evaluation.* Students will demonstrate their ability to meet the training objectives during the two 15-minute practice sessions.

i. Period 9; Hours 1. Safety and Lifeguard Duties.

(1) *Training objectives.* Student must —

(a) List the safety regulations.

(b) Throw a ring buoy accurately 15-20 yards two out of three times, and coil the line to prevent kinks when throwing.

(c) Use the pole/staff to aid a student who is having difficulty in the water, or as an aid to maintain floatation of a trainee during brief critique or correction by the instructor.

(d) Enter water from the deck, approach the victim, and secure a hold in preparation for towing to safety.

(2) *Lesson outline.*

(a) Introduction to include announcement of the training objectives for this lesson. (2 min)

(b) Review safety regulations. (5 min)

(c) Review use of the pole/staff and practice. (8 min)

(d) Explain, demonstrate, and practice

throwing the ring buoy and coiling the line

(15 min)

(e) Explain, demonstrate, and practice how to enter the water in making a rescue, approach, underwater action, and grasp or hold of victim. (20 min)

(3) *Evaluation.* Use a verbal quiz to determine knowledge of safety regulations, and note success in attainment of training objectives during the practical application periods devoted to skills.

j. Period 10; Hours 2. Review of Air Exchange and Skills; Introduction to Floatation Devices.

(1) *Training objectives.* Student must —

(a) Travel stroke for a distance of 75 meters without touching the sides or bottom of the pool, clothed in fatigue shirt and trousers.

(b) Prepare fatigue shirt as a floatation device, enter the water feet first, surface, float for 10 seconds, deflate device, and refill with air by hand scoop method.

(c) Prepare fatigue trousers as a floatation device, enter water feet first, surface, float for 10 seconds, deflate device, and refill with air by one of the two methods not used in refilling the fatigue shirt.

(2) *Lesson outline.*

(a) Introduction to include announcement of the training objectives for this lesson. (5 min)

(b) Practice travel stroke, hanging float, and vertical float. (25 min)

(c) Practice travel stroke for a distance of 75 meters. (20 min)

(d) Explain, demonstrate, and practice use of fatigue shirt as a floatation device (25 min)

(e) Explain, demonstrate, and practice use of fatigue trousers as a floatation device (25 min)

(3) *Evaluation.* The attainment of training objectives can be determined during the periods devoted to practice of skills.

k. Period 11; Hours 1. Trainee and Instructor Qualification.

(1) *Training objectives.* Student must —

(a) Explain the qualification ratings which trainees can attain.

(b) Outline testing procedures of trainees to include testing of floatation device.

(c) List instructor qualification tests and requirements.

(2) *Lesson outline.*

(a) Introduction to include announcement of the training objectives for this lesson. (3 min)

(b) Review trainee qualification ratings (10 min)

(c) Explain the testing procedure of train-

- ees (20 min)
1. Testing periods.
 2. Testing at each of the three stations.
 3. Qualification ratings and recording.
 4. Floatation device testing.

(d) Explain the seven items of qualification which apply to instructors (17 min)

(3) *Evaluation.* As part of the instruction, question selected students to determine that training objectives are being met.

l. Period 12; Hours 2. Rescue Techniques and Stay-Afloat Practice.

(1) *Training objectives.* Student must —

(a) Throw a ring buoy attached to a line to land on the water 4 to 6 feet beyond the victim and pull the buoy to the victim, two out of three times.

(b) Enter the water, wearing swim trunks, from the deck with a stride jump entry, swim toward the victim, swim underwater to the victim, turn him, apply the cross-chest carry, and tow him to the side of the pool.

(c) Stay afloat for two separate 20-minute periods using any combination of the travel stroke, hanging float, or vertical float (in water over the head in depth) without touching the sides or bottom of the pool while clothed in fatigue shirt and trousers. A 10-minute break is given between periods.

(2) *Lesson outline.*

(a) Introduction to include announcement of the training objectives for this lesson ... (3 min)

(b) Review throwing of the ring buoy and test of student's ability to meet the prescribed standard (20 min)

(c) Review rescue of a victim by going after him to include practice. Test student's ability to make a rescue (27 min)

(d) Review factors important to staying afloat for an extended period and conduct first practice session (20 min)

(e) Break (10 min)

(f) Conduct second practice session
(20 min)

(3) *Evaluation.* The ring buoy test and rescue tow test complete two of the seven items on the instructor qualification list. There is one additional practice of the stay afloat test schedule for the 15th period prior to the test on the 16th period.

m. Period 13; Hours 3. Techniques and Methods of Instruction.

(1) *Training objectives.* Student must —

(a) Describe, in general terms, the instruction which takes place during the second pool period of initial training with emphasis upon

differences of instruction at each station.

(b) Present practice teaching assignment and cover the ten areas to be graded as contained on the Practice Teaching Checklist.

(2) *Lesson outline.*

(a) Introduction to include announcement of the training objectives for this lesson ... (5 min)

(b) Explain the organization, conduct, and training methods used during the second pool period of initial training (15 min)

(c) Conduct practical exercise in practice teaching of skills (exercise is ungraded; however, instructor critiques each student following his presentation) (130 min)

(3) *Evaluation.* The objective is to provide a period of practice prior to the graded presentation scheduled for the 18th period. Each student should be checked to see that he or she follows and is aware of the 10-point teaching procedure as contained on the checksheet.

n. Period 14; Hours 1. Artificial Respiration and Floatation Devices.

(1) *Training objectives.* Student must —

(a) Perform mouth-to-mouth artificial respiration on a dummy.

(b) Place the resuscitator kit into operation on a simulated drowning victim to restore his breathing capacity.

(c) Prepare fatigue shirt as a floatation device, jump into the water and float for 10 seconds, deflate and inflate with hand scoop method, and float. Enter the water with trousers, float, then deflate and inflate with overhead method, and again float.

(2) *Lesson outline.*

(a) Introduction to include announcement of training objectives for this lesson (2 min)

(b) Review mouth-to-mouth artificial respiration and conduct practice exercise on dummy (10 min)

(c) Explain, demonstrate, and practice restoring respiration with resuscitator kit (15 min)

(d) Conduct test of ability to prepare, use, and inflate fatigue shirt and trousers as floatation devices (23 min)

(3) *Evaluation.* The fatigue floatation device test is another of the instructor qualification items which can be checked off.

o. Period 15; Hours 2. Stay-Afloat and Rifle-Tow Travel Stroke Practice.

(1) *Training objectives.* Student must —

(a) Stay afloat for 30 minutes clothed in fatigues (in water over the head in depth) using any combination of travel stroke, hanging float, or vertical float without touching the sides or bottom of the pool.

C2

(b) Jump into the water with rifle and travel stroke 75 meters, towing the rifle with sling around the neck, without touching the sides or bottom of the pool, while clothed in fatigues.

(2) *Lesson outline.*

(a) Introduction to include announcement of training objectives for this lesson (5 min)

(b) Practice staying afloat for 30 minutes as per above standard (40 min)

(c) Practice the rifle-tow travel stroke for 75 meters as per above standard (45 min)

(d) Review and critique (10 min)

(3) *Evaluation.* This marks the close of the fourth day of training. The fifth and final day contains two tests: a skill test to determine ability to execute drownproofing techniques, and a practice teaching test to determine ability to instruct.

p. *Period 16; Hours 2. Instructor Qualification Test.*

(1) *Training objectives.* Student must pass the qualification test in the advanced classification to include stay-afloat test and rifle-tow travel stroke test.

(2) *Lesson outline.*

(a) Introduction to include the training objectives for this lesson (10 min)

(b) Administer the stay-afloat test according to standard for the test (40 min)

(c) Administer the rifle-tow travel stroke test according to standard for the test (30 min)

(d) Retest students who failed test previously administered (floatation device, ring buoy throw, or rescue of victim by towing) (20 min)

(3) *Evaluation.* The attainment of standards is determined by the "Go - No Go" performance on the tests administered.

q. *Period 17; Hours 1. Remedial Training Course of Instruction and Administrative and Support Requirements.*

(1) *Training objectives.* Student must -

(a) Describe water survival remedial training of trainees to include definition, purpose, where conducted, and normally the number of stations utilized.

(b) Describe the requirement in water survival training for assistance by unit personnel, dressing room procedures, use of reports and forms, the importance of maintaining qualification data, and types of materiel support to be provided.

(2) *Lesson outline.*

(a) Introduction to include the training objectives for this lesson (3 min)

(b) Explain remedial training in water survival as applicable to trainees (20 min)

(c) Explain the administrative and materiel support requirements for water survival training (27 min)

(3) *Evaluation.* Check by questioning of selected students to determine if they are able to meet established standards.

r. *Period 18; Hours 3. Practice Teaching of Drownproofing Skills.*

(1) *Training objectives.* Student must instruct a small group of 5 to 10 students in the assigned water survival skills and attain a minimum grade of 70 percent.

(2) *Lesson outline.*

(a) Introduction to include the training objectives for this lesson (3 min)

(b) Divide students into groups and conduct graded practice teaching exercise for each student (132 min)

(c) Review of course and answer questions (15 min)

(3) *Evaluation.* The practice teaching exercise and completion of course satisfies the two final instructor qualification requirements. If there is a need for retesting or makeup training, additional time should be scheduled.

By Order of the Secretary of the Army:

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PART ONE
PHYSICAL FITNESS LEADERSHIP
CHAPTER 1
CONCEPT OF DEVELOPING PHYSICAL READINESS

Section I. INTRODUCTION

1. Purpose

This manual is directed to leaders involved in planning and conducting physical readiness training. The contents establish a concept to be used in developing and maintaining the appropriate level of physical readiness required of all male Army personnel.

2. Scope

The manual content is organized into six parts to cover all aspects of physical readiness training as follows:

a. Part One contains guidance concerning physical readiness leadership from the platoon level upward to include staff planners, supervisors, and commanders.

b. Part Two outlines physical readiness training program guidance to support a variety of training situations.

c. Part Three is composed of the physical conditioning activities which, together with combative and competitive activities, are used to develop physical readiness.

d. Part Four contains the competitive activities that are also used to assist in the development of physical condition and achievement of full physical readiness.

e. Part Five consists of physical fitness tests and related materials to include standards.

f. Part Six covers the structure and functioning of the human body.

3. Comments

Users of this manual are encouraged to submit recommended changes and comments to improve the manual. Comments should be keyed to the specific page, paragraph, and line of the

text in which the change is recommended. Reasons will be provided for each comment to insure understanding and complete evaluation. Comments should be forwarded directly to Commandant, United States Army Infantry School, Fort Benning, Ga. 31905.

4. Army Physical Fitness Program

The physical fitness program of the Army is a wide program extending into all facets of Army life (AR 600-9). This program consists of four parts as follows:

a. Physical Readiness Training. This segment of the program is part of the training effort to physically train and condition personnel during individual training, in units during unit training, and in other situations where the objective is to develop physical fitness. This manual contains specific guidance for physical readiness training.

b. Special Service Sports. This part of the program offers individuals, or teams of individuals, an opportunity to participate or compete in intramural or higher level sports activity designed to enhance morale and develop physical fitness (AR 28-52 and AR 28-1).

c. Weight Control. The control of body weight and physical fitness are closely related, therefore the cooperation of commanders and medical officers in the supervision and control of personnel in maintaining proper body weight is an important part of the Army physical fitness program (AR 600-7).

d. Staff and Specialist Physical Fitness. This part of the program applies to those personnel who by their duty or job assignment are prevented from participating in a group-directed

exercise program. In our modern Army large numbers of this type personnel exist and com-

manders must insure that they maintain physical fitness (DA Pam 21-1).

Section II. COMMAND ACTION

5. General

The physical readiness of individuals assigned to a unit is a command responsibility. This manual contains a *new* command-oriented approach to assist the commander in meeting his responsibility. The existing obstacles to efficient physical readiness training—time and facilities competing with other high priority tasks—are recognized. These obstacles confront every commander; therefore, achievement of the overall objectives of physical readiness training depends upon continuous command emphasis throughout all levels of command. One goal of this manual is to place such emphasis in proper focus. There are two general areas of responsibility in physical readiness training:

a. The first is a function of the commander at all levels and takes the form of command emphasis including planning, support, and supervision.

b. The second is on the lower level, where the company commander and platoon leaders implement and execute the program.

c. No program can be successful unless *both* areas of responsibility are administered properly.

6. Fundamental Factors

There are four factors which are fundamental to this concept.

a. Physical readiness is as important to the successful accomplishment of the Army's mission as is a high degree of proficiency in military skills, tactical and technical training, and materiel readiness. Considering America's policy of a flexible response to a wide variety of threats in variable operational environments, the physical readiness of individuals and units assumes ever greater importance.

b. Varying levels of physical readiness are required. Although standardization is desirable, the physical proficiency standards to be achieved by every individual or unit need not be the same; for example, the physical standards required for a rifleman are different from the physical standards required for

maintenance personnel in a division's supply and maintenance unit.

c. In the course of performing normal duties or missions, the time available and time used for physical readiness training must be balanced in proper context with the development of overall operational and materiel readiness of the unit.

d. It is a function of command to balance physical readiness requirements (individual and unit physical proficiency) against the resources, time, and facilities which are available for the development of physical proficiency.

7. Application

Based upon an evaluation of his unit's mission, each commander will classify the military personnel in his command into one of the following categories (separate physical training programs will be established for each category):

a. *Combat and Combat Support.* All personnel assigned to divisional combat and combat support TOE units, who are less than 40 years of age and are not excluded by virtue of limiting physical profiles. Commanders will determine those units and individuals who are in this category as defined in AR 320-5.

b. *Combat Service Support.* All personnel assigned to elements whose primary missions are to provide service support to combat forces, who are less than 40 years of age and are not excluded by virtue of limiting physical profiles. Commanders will determine those elements and individuals who are in this category as defined in AR 320-5.

c. *Personnel Over 40 Years of Age.* All personnel over 40 years of age who are not excluded by virtue of limiting physical profiles.

d. *Limited Physical Profile Personnel.* Personnel regardless of age who are designated by medical authorities as possessing limiting physical profiles.

8. Standards

Attainment of the minimum standards listed below is a measure to determine if established

objectives for each of these programs have been achieved.

a. *Physical Combat Proficiency Test.* The minimum total point standard for all users of the PCPT is 300 points. Personnel in the following categories are required to attain 300 points and the additional minimum event point scores as follows:

(1) *Combat and combat support.* A minimum of 60 points in each of the five events (fig. 1). Failure to attain these standards on any one event constitutes test failure regardless of total score.

(2) *Combat service support.* A minimum of 45 points in each of the five events (fig. 2). In order to score a total of 300 points it will be necessary to score more than 45 points on some or all events. Failure to attain these standards on any one event constitutes test failure regardless of total score.

b. *Other Measures.* Measures other than the PCPT are used to determine progress and physical fitness of personnel as follows:

(1) *Personnel over 40 years of age.* The 40-44 age group will attain the "A" level on table 5; and the 45-49 and 50-59 age groups will attain the "A" level on table 4 (fig. 58).

(2) *Limited Physical Profile Personnel.* Local medical authorities are to determine standards for personnel in this category.

9. Control

a. The commander, in recognizing the need for various type programs within his command, can use a variety of physical training techniques to achieve the desired results. Efficiency in physical training can be boosted by engaging in physical activity during a short period as opposed to allowing long and frequent breaks between longer sessions. A program which recognizes and uses frequent but short periods of physical training can produce effective results in improving physical fitness. These short periods can be conducted by men individually or under supervision in small groups in or near their working area. The types of physical activities and physical training techniques which can be used are contained in parts three and four of this manual.

b. To evaluate the effectiveness of the physical training programs, all military personnel under 40 years of age will be tested at least twice annually (AR 600-9). Should a commander wish to conduct an evaluation more

TEST EVENT	STANDARD	
	RAW	POINTS
40-YARD LOW CRAWL	36 SECONDS	60
HORIZONTAL LADDER	36 RUNGS	60
DODGE RUN AND JUMP	25.0 SECONDS	60
GRENADE THROW	15 POINTS	60
ONE MILE RUN	8 MINUTES 33 SECONDS	60
TOTAL SCORE POINTS ----- 300 OR MORE		

Figure 1. PCPT combat ready standards.

TEST EVENT	STANDARD	
	RAW	POINTS
40 - YARD LOW CRAWL	45 SECONDS	45
HORIZONTAL LADDER	21 RUNGS	45
DODGE RUN AND JUMP	27.0 SECONDS	45
GRENADE THROW	8 POINTS	45
ONE MILE RUN	9 MINUTES, 33 SECONDS	45
TOTAL SCORE POINTS -----300 OR MORE		

Figure 2. PCPT standards for combat support personnel.

frequently, it is recommended that approximately 3 months elapse between administration of the tests. Personnel over 40 years of age and limited physical profile personnel will not be administered the Physical Combat Proficiency Test, but will be encouraged to seek the minimum standards established in paragraph 8b(1) for health and professional reasons.

c. For those personnel under 40 years of age who fail to attain the minimum standards prescribed, corrective measures will be administered (chap 9) and a followup retest given. Appropriate personnel action should be considered in those cases where individuals positively

demonstrate an inability or lack of desire to meet the standards.

10. Support Requirements

The development of physical readiness is marked by sound program planning and management, the assignment and training of leaders who are motivated to achieve the objective, and the application of funds to provide needed facilities. The attitude and interest of company, battery, or troop leadership is of great significance in attaining a state of individual and unit physical readiness.

CHAPTER 2

DEVELOPMENT OF PHYSICAL READINESS

11. Total Military Fitness

Total fitness for combat includes technical fitness, mental and emotional fitness, and physical fitness. If any of these attributes are lacking, combat effectiveness suffers proportionately. Without technical fitness, a soldier lacks the knowledge and skill to fight; without mental and emotional fitness, he lacks the incentive and will to fight; and without physical fitness, he lacks the physical ability and confidence to fight.

12. Physical Fitness

Physical fitness in a soldier means a whole and healthy body, the capacity for skillful and sustained performance, the ability to recover from exertion rapidly, the desire to complete a designated task, and the confidence to face any eventuality.

13. Physical Fitness Considerations

To satisfy the unit objective, physical readiness training must be carefully planned and executed at the company, troop, and battery level. Leaders must understand the many considerations which are involved in the development of an effective program. These considerations are divided into three categories: physiological (para 14), psychological (para 28), and program (para 39).

14. Physiological Considerations

Men vary in their physical makeup. Physiological (body) function and reaction also varies in proportion to heavy demands placed upon the body. To attain the maximum program benefit without sacrificing the welfare of the men, there must be:

a. Development of the components of physical fitness (para 16).

b. Provisions for—

(1) Passage through the three stages of physical conditioning (para 17).

(2) The application of the principles of physical conditioning (para 18).

(3) Warming up and cooling off (para 20).

c. Consideration of—

(1) Climatic conditions (para 19).

(2) Age of participating personnel (para 21).

15. Types of Exercise

Basically there are two forms of exercises: isotonic and isometric. Each form of exercise is contained in activities to be found in this manual.

a. Isotonic. Isotonic exercises are those whereby the expenditure of energy is regulated and released during consecutive efforts. The regulated expenditure of energy is controlled by both the mode of exercise and the individual's effort. This type of effort is common to the majority of exercise and sport. To develop endurance, coordination, and flexibility, isotonic exercise must be used. Strength can also be developed or increased through this type of exercise.

b. Isometric. Isometric exercises are those whereby maximum effort is applied and held until the engaged muscle energy is depleted during a single contraction effort. The individual exerts full force against an immovable object for a relatively short period of time (6 to 10 seconds) and then the contraction is repeated several times with a short period of rest between each contraction. This type of exercise develops only strength, therefore it has limited application.

16. Components of Physical Fitness

A sound body, free of disease and defect, does not in itself constitute physical fitness. Before an untrained soldier can be considered physically fit for combat, he must develop the following traits that are an important part of physical fitness.

a. Strength. Every soldier needs enough strength to perform the heaviest task he may encounter in routine and emergency activities. The basic areas of heavy duty strength required in a soldier are in the arm and shoulder girdle, abdomen, back, and legs. Muscles increase in size, strength, and firmness with regular and strenuous exercises. Without work, they grow flabby and weak.

b. Endurance. Each soldier needs sustaining power to maintain his maximum ability without undue fatigue. There are two types of endurance:

(1) *Muscular endurance.* The soldier needs muscular endurance to fight the enemy under the most tiring combat conditions. Muscular endurance is characterized by the ability to perform continuous work over long periods of time. The ability to endure depends on the blood stream's ability to deliver large amounts of oxygen and nutrition to the muscle masses and then carry away the waste products quickly.

(2) *Circulo-respiratory endurance.* The development of *wind* (circulo-respiratory endurance) is necessary to maintain muscular endurance. Circulo-respiratory endurance depends on the efficiency of the blood vessels, lungs, and heart. The maximum effort a man can exert over a period of time is limited by his capacity to absorb oxygen and expel carbon dioxide. The average man's circulo-respiratory capacity can be greatly increased by exercise.

c. Agility. A soldier must be able to change direction quickly and as faultlessly as possible. The ability to react instantly and to maintain orientation during rapid changes of body position may save his life. This important characteristic of agility may be developed by conditioning exercises that require varied and rapid changes of body position on the ground and in the air.

d. Coordination. Coordination is the ability to move all parts of the body in a smooth, efficient, and concerted effort (commonly called

timing). A well-coordinated individual does not make useless movements. He moves with precision and accuracy and thus saves energy. Coordination is best developed by practicing diversified muscular activities and skills affecting all body parts.

17. Three Stages of Physical Conditioning

Unconditioned or poorly conditioned men pass through the following stages in reaching the desired state of physical condition:

a. Toughening Stage. Approximately 2 weeks in duration and usually characterized by muscular stiffness and soreness followed by recovery.

b. Slow Improvement Stage. Approximately 6 to 10 weeks in duration and characterized by slow and steady improvement in the components of physical fitness until the desired level, or a high level, of fitness is attained.

c. Sustaining Stage. This stage goes on indefinitely in order to maintain the level of conditioning achieved by passage through the previous stages.

18. Principles of Physical Conditioning

To allow for adjustments in body functioning as the program progresses and to insure attainment of objectives, the principles of physical conditioning must be applied. These principles are:

a. Overload. The physical load must be increased as strength and endurance increase, until the desired level of fitness is reached.

b. Progression. In beginning stages the load must be moderate. Gradual progression from this low state of fitness to a higher state is possible through application of a progressive program.

c. Balance. An effective program utilizes various types of activities and provides for development of strength, endurance, and coordination, as well as basic physical skills.

d. Variety. Some programs fail because the routine becomes boring. The most successful programs always include conditioning activities, competitive events, and military physical skill development.

e. Regularity. There is no easy or occasional way to develop physical fitness. Regularity of exercise is a must, with daily exercise preferred.

19. Effects of Climatic Conditions

Temperature, both atmospheric and body, affects the physical performance of personnel. The proper maintenance of body temperature through warmup exercise, proper dress in cold weather, and removal or adjustment of clothing in hot weather, is necessary for effective performance and health. Climatic factors to be considered are:

a. Exercise in High Temperature. Men can endure strenuous physical activity in extremely hot temperature if they are given an opportunity to become acclimated, and if they take enough salt and water. It is essential to continue physical training programs in hot climates because men can better withstand high temperatures when they are well-conditioned. Scheduling of training should conform to the provisions of TB Med 175.

b. Exercise at High Altitude. Certain problems are encountered in conditioning soldiers stationed in high altitudes because the heart undergoes greater exertion during exercise. It is particularly important that only light exercise be given in the early days of residence at such altitudes. A man's body gradually adjusts to high altitudes within a few weeks. After this adjustment, the men can take progressively greater amounts of exercise (chap 30).

c. Exercise in Arctic Regions. Military duty in the arctic is so arduous that a high level of physical conditioning is essential. Due to the difficulties of carrying on physical conditioning exercises in extreme cold, the men should be conditioned to the highest level possible before they arrive in such regions. A sustaining program will then maintain the high level previously achieved. When exercising in cold weather, men should be required to remove excess clothing to prevent their becoming damp with perspiration.

20. Warmup and Cooling Off

It is a fundamental physiological principle that the men should warm up gradually before taking strenuous exercise. Such action speeds up the circulation to prepare the body to take the overload and assists to prevent injury to muscles and joints. After exercising, the men should be kept mildly active, walking or performing some other muscular activity until their breathing and temperature have returned to normal. The man should never be allowed to cool off too rapidly. In cool or cold weather, they should put on additional clothing during the cooling-off period.

21. Physical Activity as Age Increases

In combat, where severe physical demands are made on troops, all men, regardless of their age, must be physically ready to meet the situation. There is no physiological reason for men to cease exercise or exertion as they reach 40 or any other age. Increased age usually brings increased responsibility which, in many instances, leads to a routine that is almost devoid of physical activity. The key to fitness with increased age is to continue exercising at a reasonable level and to include exercise of a vigorous type (chap 8 and 30). Older personnel who have not regularly maintained a reasonable state of physical fitness, when compared to younger personnel, will require a longer period to become fit. Such individuals usually will require a longer period of time to recover from physical effort than will younger men. If general health is good, there is ample evidence that older personnel can develop and maintain a degree of fitness which will permit vigorous activity and proper performance of duties.

CHAPTER 3

PHYSICAL READINESS TRAINING

22. Physical Readiness

Today a very important objective of training is attainment and maintenance of operational readiness. Complete personnel readiness must include physical training and conditioning of men to sustain operations at any time and under all conditions of climate and environment. This combination of training to develop proficiency in physical skills and conditioning to improve strength and endurance results in physical readiness.

23. Necessity for Physical Readiness Training

The degree of physical fitness required of the soldier can be acquired only through physical exercise activities. The performance of purely military duties, such as drills and marching, is not enough to build all the desired areas of fitness. Few recruits are physically fit for the arduous duties ahead of them. The softening influences of our mechanized civilization add difficulties to the problem of conditioning men and thereby make physical fitness more important than ever before. Even within TOE units, labor saving devices and mechanized equipment exert this softening effect. If men are to be developed and maintained at the desired standard of physical fitness, a well-conceived plan of physical readiness training must be a basic part of every training program. The soldier cannot be adequately prepared in any other way for the hard work and arduous demands associated with military life.

24. Objective

The overall objective of the physical readiness training program is to develop individuals and units who are physically capable and ready to perform their duty assignments or missions during training and in combat. To attain the

objective of physical readiness, exercise activities must be aimed at—

a. Developing strength in adequate amounts to perform required duties, and adequate endurance to sustain activity over a long period of time (chap 30).

b. Developing muscle tone adequate to maintain proper posture and reasonable weight control (chap 31).

c. Developing proficiency in certain military physical skills which are essential to personal safety and effective combat performance (chap 16). As skill is developed, agility and coordination will be attained. The essential skills are:

(1) *Running*—Distance and sprint running on roads and cross country.

(2) *Jumping*—Broad jumping, and vertical jumping downward from a height.

(3) *Dodging*—Change of body direction rapidly while running.

(4) *Climbing and traversing*—Vertical climbing of rope, poles, walls, and cargo nets. Traversing horizontal objects such as ropes, pipes, and ladders.

(5) *Crawling*—High crawl and low crawl for speed and stealth.

(6) *Throwing*—Propelling objects such as grenades for distance and accuracy.

(7) *Vaulting*—Surmounting low objects such as fences and barriers by use of hand assists.

(8) *Carrying*—Carrying objects and employment of man carries.

(9) *Balancing*—Maintaining proper body balance on narrow walkways and at heights above normal.

(10) *Falling*—Contact with the ground from standing, running, and jumping postures.

(11) *Swimming* (in specialized situations)—Employment of water survival techniques.

d. Instilling certain character traits which

are beneficial to successful accomplishment of military missions to include:

(1) *Confidence*—Developing confidence through achieving progressively more difficult tasks as physical ability develops.

(2) *Aggressiveness*—Participation in combative activities and contests to develop desire and willingness to overcome an opponent.

(3) *Reaction under pressure*—Training the soldier to think and to act quickly while under pressure is desirable. Competitive contests and game situations are good training vehicles for the development of this trait.

(4) *Teamwork*—The trait of working together as a team can be developed through competitive events in which a number of men must coordinate their efforts in accomplishment of a physical task.

25. Benefits of Exercise

The benefits of exercise are not always understood. Some of the more important products of exercise are listed below.

a. Muscular tone is improved and, at the same time, muscular strength and endurance are built up.

b. Circulo-respiratory endurance, or *wind*, is improved through a process of opening up dormant lung capacity to absorb greater amounts of oxygen.

c. Circulation of the blood is speeded up and extended to a greater portion of the body as the force exerted by exercise forces the blood to service all parts of the body. The efficiency and effectiveness of the heart, lungs, and blood vessels are improved.

d. Flexibility is maintained. A wider range of muscular movement is possible and the ability is developed to accomplish a greater number of physical skills with rapidity.

e. Elimination of body waste is regulated and assisted by bending and twisting of the body and the general speedup of body processes caused by exercise.

f. Tension is relieved through the working off of excess nervous energy and in the loss of daily worries and cares. Participation in exercises leaves little time for worry.

g. Sleep is improved because muscles are healthfully tired after a bout of exercise. A byproduct of sound sleep is a relief of tension.

h. Control of obesity (fat) is made possible

by using up excessive amounts of fat-producing food elements.

i. Susceptibility to injury is reduced through exercise. Muscles, tendons, and joints are strengthened and injuries such as hernia, back strain, and joint sprains are less likely to occur if muscles are maintained in proper tone.

26. History of Army Physical Readiness

Every war has revealed the physical deficiencies of our men during the initial periods of mobilization. This realization followed the Civil War and has recurred regularly with each period of national emergency.

a. Training programs in each war were geared to the physical need of the era and success was dependent upon the amount of time available during training to physically prepare troops for battle conditions. Frequently, casualties in initial engagements were attributed to the inability of our soldiers to physically withstand the rigors of combat over rugged terrain and under unfavorable climatic conditions, yet our men have stood the test of battle when properly prepared.

b. During World War II the first physical conditioning doctrine that could be scientifically justified by testing procedure was introduced. As the war progressed, this program was effective in the physical conditioning of millions of men for combat.

c. Postwar periods have traditionally been a time of consolidation, and unfortunately some leaders have considered the conditioning phase of the training program to be a wartime tool. With such a philosophy prevalent between wars, physical readiness was relegated to a place of secondary importance resulting in a serious lowering of combat effectiveness. The initial commitment of troops in Korea was a dramatic display of this failure to recognize the extreme physical nature of warfare.

d. Over a period of years and the course of several wars, the costly lessons learned from our past military experiences led to an increasing interest in the physical condition of the fighting man. With this interest has come the ever increasing realization that our troops must be well conditioned to operate effectively. No longer can we afford emphasis on physical fitness during wartime and de-emphasis during

peacetime. It is evident that, in spite of increased mechanization and modern weapons, physical readiness retains a vital place in the life of each individual soldier and in every unit within the Army.

e. Commanders are well aware of the need for rugged and well-conditioned soldiers, yet

the daily operational demands of housekeeping, maintenance, support, training, operations, and other time-consuming tasks make it necessary that commanders *create* the opportunity for frequent, regular, and vigorous exercise periods to insure the avoidance of past errors.

CHAPTER 4

PHYSICAL READINESS LEADERSHIP

Section I. GENERAL LEADERSHIP RESPONSIBILITIES

27. Purpose and Scope

a. The purpose of this chapter is to outline physical readiness responsibilities, qualifications and duties of commanders, staff planners, supervisors, and unit leaders to include instructors.

b. The purpose of this section is to provide information as to the leadership to be applied to assure success of the physical readiness effort.

28. Psychological Considerations

In the full development of a man's total resources the process is not all physical. To be effective in developing physical readiness, leaders must realize that mind and attitude are also important to success. The more important psychological considerations are:

a. *Understanding the Value of Physical Readiness.* A desire to be physically ready should be created in all personnel. Motivation is increased and men take greater interest in their individual physical fitness if they understand the value and benefits of vigorous exercise. When men realize their efforts are an investment in their own personal welfare, it should not be difficult to obtain their cooperation. Men should understand the objectives, the benefits, and the value of each type of exercise activity contained in their program. Men should also understand the relation of physical readiness to survival in combat.

b. *Positive Approach.* Physical readiness training is strenuous and demanding. It is a simple matter for a soldier to malingering if he chooses to do so, and for this reason it is a responsibility of leadership to create an atmosphere of desire and motivation. Nothing should be done to destroy this attitude, in fact it should be fostered. A negative approach must not be identified with physical readiness training.

c. *Maintain Motivation.* Any tendency on the part of leaders to administer punishment to individuals who appear not to be complying with proper form, or appear not to be doing their best, is to be discouraged. Punitive measures in the form of multiple repetitions of a physical activity may do more harm than good. A positive form of leadership should be utilized with men who are having difficulty, and only in *unusual* cases should fear of punishment be the motivating factor behind good performance.

d. *Seek Cooperation and Develop Morale.* In a program where maximum physical stress is placed upon the soldier, it is necessary to gain his cooperation. Favorable reaction is enhanced by proper planning and organization, reasonable yet not easy requirements, use of competition, and application of a progressive program resulting in physical fitness. With the development of physical fitness there is an equal development of morale.

Section II. COMMAND AND SUPERVISORY FUNCTIONS

29. Command Functions

Commanders should take the following actions to support physical readiness training:

a. Instill command interest in development

of physical readiness which will assure success, and indicate to subordinate personnel the importance of this training to the welfare of the organization.

b. Allot sufficient time for the achievement of objectives and monitor the use of such allotted time. The substitution of other training or routine duties for scheduled physical readiness training is unsound and unwise.

c. Assign and properly utilize qualified personnel to supervise and conduct physical readiness training. If leadership personnel are not competent, necessary action should be implemented to locally train an adequate number of leaders.

d. Make necessary facilities and funds available, as required, to support a program which will be sufficient to develop physical readiness within all personnel.

e. Assure that the physical fitness of individuals is measured in order to evaluate progress and to determine if the program is successful.

30. Supervisory Functions

Leaders responsible for planning and supervision of physical readiness training should take the following actions to provide effective training:

a. Assure the preparation of physical readiness training schedules which will apply the principles of physical conditioning (para 18), and see that these schedules are developed with a particular type of program plan as a goal (para 39).

b. Provide for wide participation of as many personnel as possible. All personnel, regardless of position or age, will benefit from regular exercise. In some instances special efforts are necessary to overcome obstacles to regular and frequent training. Special effort is also necessary to insure remedial conditioning (para 77). Such conditioning should occur for personnel who are physically substandard, and for all personnel after extended absence from the conditioning process due to leave, sickness, injury, and travel.

c. Prevent waste or unwise use of time allotted for physical readiness training.

Time wasters include unprepared instructors; assignment of a group, to an instructor, which is larger in size than a platoon; progression which does not keep pace with the physical development of the men; extreme formality which usually emphasizes discipline at the expense of physical fitness; inadequate equipment or facilities which require the waiting of turns to exercise; and lengthy rest periods between exercises which interfere with the application of overload.

d. Check to determine that the program contains vigorous physical activity. Such activity progressively places greater demands upon the body during each exercise session, and also over the duration of the training program. To be of benefit, exercise must tire the muscles and cause the heart to increase its rate of beat.

e. Determine that each physical fitness program has an overall objective (para 24), and observe the training as necessary to insure that the established objectives are being achieved.

f. Observe physical readiness training to insure the use of a positive approach. To implement a positive attitude, small unit leaders and instructors should have an understanding, fair, and sympathetic attitude; recognize individual differences; and motivate men toward their best effort.

g. Guide and inform small unit leaders and instructors concerning approved techniques, directives, and literature. As necessary, arrange for local training of instructors to include clinics, conferences, schools, and demonstrations (app B).

h. Determine the effectiveness of physical readiness training by observation of training, analysis of field inspection reports, and through analysis of individual physical fitness test scores which may be combined to reflect the fitness of the unit.

Section III. SMALL UNIT LEADERS AND INSTRUCTORS

31. Responsibility

The instruction and conduct of physical readiness activities is the function of platoon leaders and personnel assigned as instructors. Experience has proven the effectiveness of physical fitness development when conducted

in squad and platoon-size units under direct control of the leader with overall supervision being exercised by the parent unit commander; for example, the platoons of a company all exercising at the same time under the general supervision of the company commander, with

each platoon conducting the assignment separately and under its own leadership.

32. Your Assignment

You may be a small unit leader or an instructor in a school or training center. If you are a unit leader, you may be assigned to a combat unit or to a support unit. In this assignment you will be responsible for all training to include physical readiness training. In a different situation you may find yourself assigned as a physical readiness instructor in a school or training situation where your time is fully devoted to physical readiness development. This will be in contrast to a unit leader assignment where only part of your time is devoted to such training. In either case you hold an important and vital position of leadership as related to the physical fitness of your men.

33. Your Training

You may come to the assignment either fully or partially trained, or this may be your first responsibility for the development of physical fitness. If you have had previous training through experience, make certain your information is supplemented with study of this manual to determine that your experience has been correct. If you have had professional training in physical education during civilian life, but no Army experience in this area, you should also supplement your preparation with information from this manual to learn the methods used by the Army. If you are new to this area of training, take advantage of various ways to learn including attendance at available leader training courses in this subject area, self study and practice, and discussion with experienced leaders.

34. Your Objective

As a physical readiness training leader you have two general objectives. The first is to motivate your men to want to be physically fit, and second, to conduct a program that will develop a high degree of physical fitness. Motivated men will react enthusiastically to the program and such an approach to physical fitness aids greatly in achieving the local program objectives.

35. Your Personal Fitness

As a small unit leader who must instruct and demonstrate physical activities, it is necessary that you be in such physical condition to do the job without undue physical stress. Your physical condition should enable you to do those things you must demonstrate. Your strength, endurance, posture, and your skill should set the example. This does not mean you must excel, as your men do not expect championship performance; at the same time they do expect, and deserve, a creditable showing of fitness for the job.

a. Naturally, a previous assignment of a sedentary nature, or the passage of the younger years, makes it necessary to expend effort to regain an acceptable degree of physical fitness.

b. The use of assistants as demonstrators is permissible for specific functions, yet this will not always be feasible. You must look the part and be in a state of good physical fitness to command the respect of your men.

36. Your Knowledge

It is necessary for you to possess three types of knowledge to properly administer physical readiness training. They are—

a. *Leadership Knowledge.* You must understand men, know how to lead and motivate them, understand how they learn, and apply this knowledge wisely in the day-to-day training situation.

b. *Understanding of Body Functioning.* A more intelligent application of an exercise program can be made when you understand and apply the principles and fundamentals which govern the physical conditioning of the body. You are in a better position with such knowledge to prescribe, adjust, and regulate dosage and progression as necessary to attain fitness (chap 30).

c. *Technique of Exercise Activities.* You will need to understand the contribution each type of physical activity makes to physical fitness, and how each activity is properly applied during the development of such fitness. Skill to demonstrate and lead the various activities is necessarily a part of technique and is invaluable to the instructor, or small unit leader (app B).

PART TWO
PHYSICAL READINESS TRAINING PROGRAMS
CHAPTER 5
DEVELOPING PHYSICAL READINESS PROGRAMS

Section I. CONSIDERATIONS IN ASSEMBLING PROGRAMS

37. Purpose

The purpose of this chapter is to inform the personnel who plan and administer physical readiness training as to the proper procedure in developing programs to meet organizational objectives and standards.

38. Scope

This chapter contains program planning guidance to include factors which must be considered in developing programs; definitions of activity packages and systems of exercise; how to assemble a program; making a proper selection of activity packages; and systems used in implementing the packages.

39. Program Considerations

To implement workable and effective programs (as directed by AR 600-9) the planner must—

a. Recognize the Needs of Troops. Troop units are inherently different in their organization and mission. The physical readiness program must be tailored to the mission and to the current state of physical condition as represented by the majority of unit personnel. Programs to meet this need are of the following types:

(1) *Developmental programs.* Troops in a beginning or poor state of physical readiness are in need of a program which will develop strength, endurance, physical skills, and character traits which are beneficial to successful accomplishment of military missions (para 24). Such programs should be applied progressively to gradually come up to a peak of fitness and skill.

(2) *Maintenance programs.* Once troops,

through participation in a developmental program, reach the sustaining stage of conditioning (para 17), their goal is then to maintain this level of achievement by participation in a maintenance program.

(3) *Remedial programs.* The term *remedial* is usually applied to those individuals or groups of individuals who possess substandard physical fitness. For example, a remedial physical conditioning program could be applied to personnel who are overweight, who fail to reach physical fitness test standards, or who have missed extended periods of conditioning due to illness, injury, extended hospitalization or other absence (chap 9).

(4) *Leadership development programs.* Programs or courses of instruction designed to develop physical fitness leaders are in constant session throughout the Army. Such instruction is located in Drill Sergeants Schools, NCO Academies, unit schools and clinics, and in the branch service schools. These leadership courses may have the dual objective of providing knowledge and techniques, and at the same time the student is being physically conditioned.

b. Consider Time Available. The amount of time for training operations varies considerably. However, every unit can find time to conduct physical readiness training. Frequent short intervals are preferred over occasional longer periods. The general demand for training time is so urgent that every minute of time allotted for physical readiness training should be utilized. By careful planning and organization leaders can make effective use of time scheduled for this purpose.

c. *Organize for Various Size Groups.* It is essential to stress exercise rather than formality. Men must complete the program where they are—on the training field, in the motor pool, on the range, next to the classroom, in the office area, in the shop, aboard ship or elsewhere. It is not always possible to assemble company-size units. Platoon-size groups are more appropriate for the proper conduct of physical conditioning activities. In certain situations it may be necessary to operate exercise programs for section- or squad-size units. This manual outlines programs for all situations and types of organizations.

d. *Provide for Climate and Exercise Area.* In programing and scheduling, the climate and terrain govern the selection of activities.

(1) Seasonal changes cause differences in temperature, rainfall, wind chill, and snow. These changes should be anticipated as these factors will dictate the type of program. When weather conditions are anticipated to be adverse, inclement weather plans should be part of the schedule.

(2) Local terrain and available exercise areas may also govern the selection of activities and the type of program which it is possible to support. Some activities, due to minimum support and space requirements, can be completed in any area.

e. *Plan for Seasonal Change.* As most physical readiness training is conducted out-of-doors, it is necessary to recognize seasonal change. A program should be divided into fall, winter, spring, and summer parts. In addition to changes of weather, the light conditions change. For example, an early morning pro-

gram started in the summer will have ideal light conditions, yet in the fall or winter season, darkness will occur at that same hour and interfere with the conduct of the program. Programs should be developed in seasonal blocks and provisions made for anticipated changes in conditions.

f. *Consider Needed Facilities.* An excellent program can be conducted with practically no facilities since there are exercises which require no equipment; however, a better program can be developed when supported by certain facilities and items of equipment. Proper command support, plus ingenuity, will solve this problem. (Items of equipment, when necessary to support the recommended exercises, are included in the chapters on exercise activities.)

g. *Specify Appropriate Uniform.* The uniform worn for exercising depends upon the season of the year, the state of the weather, and local regulations. All men should be dressed alike. Undershirts are preferred as the upper garment when the weather permits. A uniform that restricts the free movement of the body should not be worn when exercising.

h. *Consider Availability of Instructors.* Leaders who can lead and direct the scheduled activity must be available. Organizational units should train junior officers and NCOs down to squad or section leaders to instruct and lead the various activities (app B).

i. *Secure Command Support.* Prepare and brief the commander to assure his full understanding of the objectives and administration of the program. The full support of the commander will greatly improve the chances of success.

Section II. SELECTION AND SCHEDULING OF ACTIVITIES

40. Exercise Activities

After considering the impact of physiological factors (para 14), psychological factors (para 28), and program factors (para 39), the planner must determine the exercise activities which will be appropriate to include in his program. An exercise activity is a single means of exercise usually identified by the name applied; for example, running, log exercises, and obstacle course.

41. Activity Packages

Many of the physical activities prescribed in this manual are arranged in prescribed sequences and are known as *activity packages*.

a. An activity package is a number of exercises of the same type, assembled as a group or a set, and arranged in a specific sequence. Exercise packages are organized in such manner that *not more than 15 minutes* will be required to complete the execution of any package.

b. Each type of activity is explained in later chapters. The number of available drills, tables, or circuits, the manner of organization, and the contribution each makes to the total program are covered. Full understanding of this information will greatly assist in developing effective programs.

c. Various designations are used to identify these exercise packages; for example, conditioning exercises when arranged in a set order are known as "drills," and other packaged activities are designated as "tables" or "circuits." The following activities are contained in packages:

(1) *Activity packages for groups.*

- (a) Conditioning Drill One.
- (b) Conditioning Drill Two.
- (c) Conditioning Drill Three.
- (d) Rifle Drill.
- (e) Log Drill.
- (f) Grass Drill.
- (g) Running Tables.
- (h) Guerrilla Tables.
- (i) Circuit-Interval Table.
- (j) Combatives Tables.
- (k) Relay Tables.
- (l) Strength Circuits:
 1. Fixed Circuit.
 2. Movable Circuit.
 3. Simplified Circuit (Circuit-Interval Table).

(2) *Activity packages for individuals.*

- (a) The 6-12 Plan.
- (b) The Chairborne Conditioner.
- (c) Weight Training.
- (d) Isometric Exercise.

42. Advantages of Packaged Activities

The use of exercise packages simplifies the scheduling and conduct of exercise and results in the following benefits:

a. Schedule development is simplified as the planner assembles packages which will satisfy the training objective. There is no need to deal with selection of individual activities or to be concerned about the amount of time to be expended on each.

b. Any 15-minute period, and in some cases less time, can be scheduled or used to perform an activity.

c. If longer periods of time are available or if the objective demands, several packages can

be assembled to provide a more complete period of activity.

d. Men are assured a balanced set of exercises or activities as each package is carefully arranged to reach all muscle groups.

e. The instructor can concentrate upon the conduct of a vigorous workout as he need not concern himself with selecting the type and duration of the activity.

43. Nonpackaged Activities

There are several types of activity which are not packaged. Activities in this category are obstacle courses, combat water survival swimming, team contests, and team sports. If time permits, these activities can be scheduled in combination with packaged activities, or they may be scheduled separately. Normally a longer period of time is required to conduct one of these activities; for example, most of the nonpackaged activities require a 50-minute period to satisfactorily complete their objective. The benefits of these activities should not be overlooked in the scheduling of physical readiness training as some desirable objectives cannot be attained without their use.

44. Systems of Exercise

Several methods or systems of exercise are available and various activity packages can be applied through the use of these systems. Each system is based upon a method of specific organization as follows:

a. *Single Activity System.* A system in which the squad, section, or platoon leader immediately assumes command of his unit at the beginning of the exercise period. He moves his unit to a predesignated exercise site at double time, forms his unit in a circle around him, grounds clothing and equipment as appropriate, and quickly moves into the exercise routine prescribed for that period. There is usually no time to teach; therefore, the men must know the activity to be used. At the conclusion of the 5- to 15-minute period, he returns his unit to the instructional area at double time and releases his unit for the next scheduled activity.

b. *Progressive Activity System.* A system in which the activities are completed by all men (company or platoon) in the same order during the period. For example, Drill One followed by

dual combatives, and finally a 1-mile run. This system is usually progressive from a warmup activity such as Drill One, to an activity which contributes in a major way to one of the objectives such as the development of aggressiveness through combatives, or to a circulo-respiratory development activity such as running.

c. Rotating Activity System. This is a system where the same number of activities or stations is used as there are platoons in the company. Each platoon rotates through each station in turn. With four platoons in a 50-minute period about 10 minutes can be devoted to each station, or with three platoons approximately 15 minutes is available at each station. Activities must be of a type that can be covered in the time allotted. For example, with three platoons Station 1 could be Conditioning Drill One; Station 2, Running; and Station 3, a Team Contest.

d. Circuit System. In this method a number of stations are set up to provide various types of exercise. Equipment and/or items of apparatus are usually employed. The idea is to keep all men busy and exercising vigorously for a short period of time at each station. The fixed strength circuit and the movable strength circuits are examples of this system (chap 15). Station changes must be rapid and the exercise must be started quickly after such change as the time period at each station is short. Since the objective is to exercise at top speed, the motivation comes from frequent changes of activity by moving to another station featuring a different type of exercise. Rotation by station groups continues until all men have covered all stations.

e. Interval System. This type of training stresses the development of strength and endurance. It involves heavy work for a given

distance within a specified time, alternated with lighter work and recovery but never stopping during the workout. This procedure is repeated and the intensity increased gradually as exercise tolerance permits, but always with adequate recovery. As physical condition improves, dosage increases. The important factor involved is stress, recover, stress, recover, and so on. This system is often applied through running, but other activities of a continuous nature may also be used. An example is the Circuit-Interval Table (chap 15).

45. Procedure to Apply in Determining Program

The planner should follow these steps in developing a program:

a. Evaluate the unit in view of the psychological, physiological, and program considerations with emphasis upon unit objective and time available.

b. For each day's program select an activity package, or a combination of activities which will contribute to the objective, and then determine the system to be used in implementing the selected activities.

c. In deciding upon the system to use in implementing the selected activities, the choice will be guided by the unit objective and the applicable program considerations outlined in this chapter. There are several possible choices and much opportunity for flexibility in program development. For example, the weekly program may contain various exercise packages, systems, and time periods. This flexibility is illustrated in chapter 7. Additional guidance is contained in chapters which follow on program planning of physical training for various types of organizations and personnel.

CHAPTER 6

PHYSICAL READINESS DURING INDIVIDUAL TRAINING

46. Objective

The physical readiness objective during individual training is to develop in the recruit a level of physical fitness to support his performance of duty as a unit replacement, or to fit him for a specialized assignment.

47. Application

The content of this chapter is applicable to basic combat and advanced individual training. Program content for these two phases of training is prescribed by current Army directives. The physical readiness training specified by these directives is vigorous and progressive and, coupled with other types of training received during BCT and AIT, results in well-conditioned replacements.

a. Army Training Programs. The program of training for Basic Combat Training (BCT) is specified by ATP 21-114, or by ATP 21-111.

b. Army Subject Schedules. The outline of physical training for BCT is contained in ASubjScd 21-37. Other closely related training which makes a major contribution to physical readiness during BCT is contained in ASubjScd 21-150. Advanced Individual Training (AIT) is specified by branch army subject schedules which are keyed to the MOS specialty for which individuals are to be trained.

48. Basic Combat Training

Recruits report for BCT in various degrees of physical condition and at various physical skill levels. During the 8-week training period they pass through the toughening stage and are well along within the slow improvement stage of conditioning (para 17) by the end of the training cycle.

a. Program Content. The content of the BCT program of physical readiness consists of physical training and physical contact-confidence training.

(1) Physical training is contained in Army Subject Schedule 21-37. This subject schedule provides a standardized program of time allotment approximating 4 hours per week. The training features progressive and vigorous physical activity designed to develop strength, endurance, coordination, and basic military skills such as running, jumping, carrying, and crawling.

(2) A means of providing the recruit an opportunity to engage an opponent in strenuous personal combat and to develop confidence is afforded by Army Subject Schedule 21-150. The training resulting from this subject schedule provides the recruit a chance to test his skill against an opponent in bayonet training, pugil training, basic hand-to-hand combat, and against the obstacles of the confidence course. This varied training is designed to teach skills and techniques enabling the recruit to overcome an opponent, to instill confidence in his own ability, to develop his aggressiveness and will to win, and to afford additional opportunity to develop physical fitness.

b. Posture Training. The development of good posture and proper bearing (chap 31) is not confined to a few minutes' instruction during the training day, but is a constant factor during the BCT program. This is true whether the recruit is standing, walking, or sitting. Recruits develop good posture by development of muscle tone to assist in holding the body parts in the proper alinement.

c. Evaluation of Physical Fitness. The recruit is administered a Physical Combat Proficiency Test at the beginning and at the end of the training cycle. He must meet the Army minimum score of 300 points on the final test.

d. Remedial Training. Training companies should conduct such remedial physical conditioning as the situation permits or warrants (chap 9). If it is clear the recruit cannot per-

form the physical tasks of BCT, or due to extremely poor physical condition cannot improve fast enough to keep up with the pace of the training routine, then he should be transferred to the Special Training Company. Here he can receive special and individual attention as needed.

49. Advanced Individual Training

Although the concentration during advanced individual training is upon technical and branch oriented subjects, the physical readiness aspect of this training must not be slighted. Training and combat operations are largely physical and strenuous in nature. To maintain and build upon the physical base established during BCT, a time block for physical training is provided during AIT. This training is standardized in length for all personnel regardless of branch preparation.

a. Program Content. The time allotment and scope for physical training are contained in appropriate MOS designated branch Army Subject Schedules. Exercise activities designed to support this time allotment are suggested in ASubjScd 21-37. This schedule is intended to maintain and improve the level of fitness attained in BCT. In cases where the branch requirement for physical fitness (following AIT) is in excess of a maintenance level, the branch service school can increase the intensity of the program during the preparation of the specific MOS Army Subject Schedules.

b. Evaluation of Physical Fitness. The soldier in AIT is administered at least one Physical Combat Proficiency Test during the training cycle. He must achieve the Army minimum score of 300 points on this test.

c. Remedial Physical Conditioning. With the satisfactory completion of strenuous physical fitness preparation during BCT, there should be only a minimum requirement for remedial physical conditioning during AIT. If some men are below standard, the training company should develop a remedial program (chap 9) to overcome the problem.

50. Scheduling

The physical training subject schedule for individual training (ASubjScd 21-37) will furnish valuable assistance to the training officer in integrating physical training into the mas-

ter training schedule. Lesson plan outlines for the hours allotted are contained in the subject schedule and should be of assistance to the instructor in development of detailed lesson plans.

a. This program is designed to make the most of the limited time allotted to physical training. The subject content is sound and adheres to accepted current concepts of physical conditioning. The effectiveness of the instruction outlined in this schedule depends upon its leadership.

b. The hours allotted to physical training are considered to be the minimum, and any lost time seriously affects the progression necessary to insure success of the program. The tendency to call off physical training due to inclement weather should be held to a minimum. Since the program can be conducted anywhere, full use should be made of hard surface and blacktop areas when the ground is wet.

c. The time of day for training is unimportant except for the hour immediately following the morning and noon meals. Some units have initiated "before breakfast" physical training over and above the regularly allotted hours. If scheduled, this period should not exceed 15 to 20 minutes of not too vigorous activity, terminating at least 30 minutes before breakfast.

d. If the commander desires additional short periods of physical training, one of the packaged activities should be selected. This conditioning period can be accomplished in short 15-minute periods during midmorning or mid-afternoon, or at the end of the training day.

e. Valuable physical conditioning is derived from the more vigorous phases of training in such basic military subjects as tactical training, patrolling, technique of fire, close combat, and marches. These items of individual and field training should be thoroughly exploited to add to the all-round physical conditioning of the individual trainee. In addition, movement to and from training areas can be used to good advantage by double timing, speed marching, or a combination of both. Definite procedures should be established as control measures, and are best accomplished in the training center standard operational procedure on concurrent physical conditioning.

51. Leadership

The time devoted to the learning of techniques and leadership in training schools is never adequate to learn all there is to know about a subject. For this reason officers who serve as pla-

toon leaders or company training officers, and noncommissioned officers who serve as drill sergeants, should continue their preparation by study of this manual (chap 4 and app B).

CHAPTER 7

COMBAT AND COMBAT SUPPORT TROOP PROGRAMS

Section I. INTRODUCTION

52. Objective

The objective of physical readiness training for combat and combat support troops is to develop individuals who are physically capable; and units that are physically ready, to perform duty assignments and their missions during training or in combat.

53. Application

This chapter pertains to the development and maintenance of physical readiness during basic unit, advanced unit, field exercise, and operational readiness training phases for combat and combat support troops, and also combat service support troops (para 7).

a. The number of hours allotted for basic unit and advanced unit training depends upon the type of unit and its mission. Each branch of service develops Army Training Programs (ATP) specifying the time to be allotted to physical training.

b. At the conclusion of basic unit, advanced unit, and field exercise periods of training, the unit enters a phase known as operational readiness training. During operational readiness training, the commander specifies the amount and type of all training to include physical readiness training.

c. During all unit training, every member of the unit, regardless of position or age, must participate in vigorous exercise to attain the objective. Upon assignment to a unit, the individual generally has reached the latter part of the slow improvement stage of conditioning. Therefore, during the early part of unit training, he normally reaches the sustaining stage. Walking, running, and climbing during unit training contribute to a high level of fitness, but these alone are not sufficient. To remain in the sustaining stage of physical fitness requires continued and regular exercise of a vigorous nature.

54. Planning Unit Programs

Program planners, prior to attempting to plan and schedule physical training for troop units, should have a complete knowledge concerning the information contained in Part One of this manual. Specific planning guidance is included in chapter 5. This material will be invaluable as background to the task of selecting and scheduling programs under the flexible scheduling concept contained in this publication.

Section II. COMBAT AND COMBAT SUPPORT UNIT PROGRAMS

55. Objective

The physical objectives for the combat and combat support unit soldier (para 7) are outlined in detail in paragraph 24. The attributes and traits as listed in the four areas of paragraph 24 should be developed in each combat and combat support unit soldier. He must possess these qualifications if he is to have a fair chance to successfully complete his mission.

56. Standards of Fitness

The physical standards to be attained by combat and combat support unit personnel are higher and more demanding than those expected of other personnel due to the nature of the requirement. It is not a simple matter to summarize the expected performance of a combat or combat support unit soldier; however, as a measure of his physical combat readiness,

DAY	TIME	ACTIVITY
MONDAY	15 MIN.	RUNNING, TABLE I
TUESDAY	15 MIN.	COMBATIVES, TABLE I
WEDNESDAY	15 MIN.	CONDITIONING DRILL ONE
THURSDAY	15 MIN.	RELAYS TABLE II
FRIDAY	15 MIN.	CONDITIONING DRILL ONE
SATURDAY	15 MIN.	RUNNING, TABLE I

Figure 3. Sample schedule A—single activities.

he must attain or exceed the standards as shown in figure 1 on the Physical Combat Proficiency Test.

57. Program Development

Various packages and systems are provided to afford the commander maximum flexibility to fit an effective program to his situation. The unit situation may change from day to day and from unit to unit. For this reason, sample weekly schedules are included to demonstrate various possible combinations of scheduling. The steps to apply in designing a program to fit the unit are as follows:

a. Determine the type of program needed. That is, a developmental or maintenance program (para 39).

b. Determine the time required per week to accomplish the needed program.

c. In consideration of other scheduled training and the needed program, divide the time into daily blocks. On a daily basis it is possible to schedule one 15-minute period, or one 30-minute period, or a 45-50-minute period; and in some cases, two 15-minute periods, one in the morning and the other in the afternoon.

d. With the type of program needed and the objectives in mind, select an activity package, or other activity for each day's scheduled phys-

ical training. At this same time the system to be used in employment of the selected activity or activities must be determined. This selection will affect the support required in equipment, areas, instructors, transportation, and similar requirements.

e. Write the program thus developed into the unit training schedule.

58. Sample Weekly Programs

Various weekly programs are illustrated to show the variety and flexibility which is possible.

a. A sample program (fig. 3) illustrates a 15-minute time allotment in which the single activity system is used with various 15-minute activity packages scheduled each day. In this program 11½ hours are scheduled for the week.

b. A more comprehensive weekly program (fig. 4) illustrates the scheduling of various length periods, a variety of activities, and the use of three systems during the week. In this schedule 3¼ hours are included for the week. The following should be noted concerning this schedule:

(1) On Monday a 50-minute period is available for physical readiness training; three 15-minute packages are scheduled and each

DAY	TOTAL TIME	TIME PER ACTIVITY	ACTIVITIES	REMARKS
MONDAY	50 MIN.	15 MIN.	RIFLE DRILL	PROGRESSIVE ACTIVITIES SYSTEM
		15 MIN.	COMBATIVES, TABLE I	
		15 MIN.	RUNNING, TABLE II	
TUESDAY	15 MIN.	15 MIN.	GUERRILLA EXERCISES, TABLE I	SINGLE ACTIVITY
WEDNESDAY	15 MIN.	15 MIN.	RIFLE DRILL	SINGLE ACTIVITY
THURSDAY	15 MIN.	15 MIN.	CIRCUIT-INTERVAL TABLE	SINGLE ACTIVITY
FRIDAY	50 MIN.	15 MIN.	STRENGTH CIRCUIT (FIXED)	ROTATING ACTIVITY SYSTEM
		15 MIN.	CONDITIONING DRILL ONE	
		15 MIN.	CROSS-COUNTRY RUN	
SATURDAY	15 MIN.	15 MIN.	WARMUP RUN AND GRASS DRILL, TABLE I	SINGLE ACTIVITY

Figure 4. Sample schedule B—various time periods, activities, and systems.

platoon, under its own leadership, will progress through each scheduled activity in turn.

(2) On Tuesday, Wednesday, Thursday, and again on Saturday, only a 15-minute period is available; here the single activity system is utilized in which each platoon leader supervises the training of his own platoon.

(3) On Friday the training is under company control due mainly to a facility problem. In this example only one strength circuit and one cross-country course are available and each will accommodate only one platoon. For this reason, a Conditioning Drill One station is included and a platoon assigned to each station as shown and they rotate through each activity within the 50-minute period.

c. A third sample schedule for combat and

combat support units (fig. 5) illustrates the use of the single activity system utilizing 4 hours of training. This schedule includes sustaining-type activities for a unit that has passed through both the toughening and slow improvement stages of conditioning. The use of competitive-type activities is featured to assist in holding the interest of the men and providing self-motivation.

d. Many other scheduling combinations are possible through use of the packaged activities, various lengths of time periods, and different systems of administering the activities. Due to type of duty assigned, some combat and combat support personnel will be better able to follow the type of program recommended for combat service support units.

Section III. COMBAT SERVICE SUPPORT UNIT PROGRAM

59. Objective

The physical objectives for combat service support troops are outlined in paragraph 52. More

specifically, soldiers in service support units must maintain strength, endurance (both muscular and circular-respiratory), and coordination.

DAY	TIME	ACTIVITY
MONDAY	15 MIN.	RUNNING - CROSS COUNTRY
TUESDAY	60 MIN	TEAM ATHLETICS - TOUCH FOOTBALL
WEDNESDAY	15 MIN.	RUNNING - CROSS COUNTRY
THURSDAY	15 MIN	LOG DRILL
	15 MIN.	DUAL COMBATIVES
FRIDAY	60 MIN.	SPEED MARCH
SATURDAY	30 MIN.	TEAM CONTESTS

Figure 5. Sample schedule C—sustaining activities.

60. Standards of Fitness

The physical standards of the combat service support soldier are established at a level to insure an adequate degree of fitness and result in successful attainment of the objective. The minimum objective for combat support troops is reflected in the PCPT standards as specified (fig. 2).

61. Program Development

a. Combat service support units usually have difficulty finding time for any training activity as they are committed to supporting the combat units. Personnel are often dispersed individually to recover vehicles, deliver or pick up supplies, drive trucks, make repairs, and many other similar type duties. Other support personnel work in one area such as a motor pool, an office, or ration breakdown point.

b. The physical readiness program for combat service support personnel must recognize the requirement for a program which will apply both to the individuals who depart and return to a central work area at intervals during the day, as well as to the men who remain in the same area throughout the entire day. The packaged activities are ideal for this purpose due to the short time required for their

execution, plus their adaptability, making it possible for them to be accomplished within the work area. There are several ways to provide such training:

(1) Complete the selected exercise package in the barracks area during the early morning prior to movement to the work area.

(2) Administer the exercise by unit (section or platoon) upon arrival at the work area and prior to beginning work.

(3) Accomplish the scheduled activity during a designated period in the day, with those individuals who are not available performing the exercise individually upon their return.

(4) On days when it is difficult to assemble the majority of men, have each man execute the exercise individually, or complete the exercise in small groups when they return to the work area.

62. Sample Weekly Programs

a. The sample weekly schedule (fig. 6) is designed to be accomplished within the work area. This sample demonstrates several points as follows:

(1) A 15-minute period is shown each day. On Monday, Wednesday, and Friday these ex-

DAY	TIME	ACTIVITIES	REMARKS
MONDAY	15 MINUTES	WEIGHT TRAINING, TABLE I	EXECUTED BY GROUP OR INDIVIDU- ALLY
TUESDAY	15 MINUTES	CHAIRBORNE CONDITIONER, TABLE I	EXECUTED IN- DIVIDUAL- LY
WEDNESDAY	15 MINUTES	CONDITIONING DRILL ONE	EXECUTED BY GROUP OR INDIVID- UALLY
THURSDAY	15 MINUTES	MOVABLE STRENGTH CIRCUIT	EXECUTED BY GROUP
FRIDAY	15 MINUTES	ISOMETRIC EXERCISES TABLE I	EXECUTED BY GROUP OR INDIVIDU- ALLY
SATURDAY	15 MINUTES	RUNNING, TABLE I	EXECUTED BY GROUP

Figure 6. Sample schedule D—combat support troop personnel.

ercises could be conducted by section or platoon, and when those men who are absent become available later in the day they can execute the prescribed table of exercise on an individual basis.

(2) On Tuesday an apparatus is used which would be difficult to supply for each man; therefore, men could individually leave their work at opportune times and execute the prescribed table.

(3) On Thursday and Saturday, due to the nature of the activity scheduled, section- or platoon-size groups should execute the prescribed packages as a group.

(4) If time is available during one afternoon a longer period of competitive activity can be scheduled in place of the 15-minute period, as illustrated.

b. Combat service support troop units may find it possible to assemble men for platoon or

group physical training. If this is practical, then the schedules similar to sample schedules A, B and C (figs. 3, 4, and 5) may be used.

c. Flexibility of program planning is possi-

ble through the use of packaged activities. Programs and schedules other than those illustrated in this chapter may be assembled to provide schedules to fit any situation.

CHAPTER 8

PHYSICAL FITNESS FOR STAFF AND SPECIALIST PERSONNEL

Section I. CONSIDERATIONS IN PLANNING PROGRAMS

63. Application

This chapter is to provide guidance toward physical fitness for those individuals or groups of individuals who are not in a training situation and therefore get little or no vigorous exercise during the duty day. This type of situation usually applies to personnel who occupy staff and specialist positions.

64. Objective

The age span is wide for those who are in this category and while individual desires and abilities are not the same, there are general and specific objectives which are common to all. Generally, the objective is to retain strength and muscular endurance, keep up the *wind*, maintain muscle tone and flexibility, and practice coordination activities. Specifically, for those under 40 years of age it will also be the goal to semiannually work toward a peak of condition in preparation to take the physical fitness test.

65. Importance of Exercise

There is evidence that our rich diet, lack of muscular activity, and emotional stress is reducing longevity. Exercise is not a cure for all of the ills that result, but its importance to the total welfare of the human machine is better understood as research evidence mounts in favor of exercise. This evidence supports the Army's traditional belief that exercise is so important that if not attained naturally as part of our job or duty assignment, we should insert it artificially into our weekly routine as often as possible, and preferably on a daily basis.

66. Fitness and Age

The physical deterioration in the body which

occurs with increased age cannot be overcome, but its effects can be countered. There is no reason why a person over 40 should not maintain a degree of fitness commensurate with his age. Physiologists tell us that aging begins somewhere about the age of 40. One man may be at this point at 32 and another may not reach it until he is 50. Factors which postpone or slow this process at any age are:

a. Heredity. Some of us inherit a sound body and a slower rate of aging.

b. Good Health Habits. The faithful practice of adequate sleep, diet control, and body hygiene will make for better health and fitness.

c. Exercise. Participation in a regular form of exercise adjusted in intensity and type as age increases.

d. Mental Outlook. A desire to remain active and a conscious effort to emphasize activity rather than the sedentary life is very important.

67. Problem Areas

In establishing group physical activity programs for personnel in staff positions and for specialists, the program planner encounters problem areas, which although not easy to resolve, can be solved. Among these problems are:

a. Time. Personnel involved in this type of duty have no duty time programmed by their unit for physical fitness. For example, the tank mechanic must keep the tanks rolling; the personnel officer must remain in an office and care for administration; the clerk must type and file; the staff officer must work out plans and projects. To assemble such personnel at one time and at the same place is a difficult task.

b. Age. Young people usually gain the bene-

fits of exercise naturally, because the activities that appeal to them are vigorous. As age increases, big-muscle activities usually decrease. However, at any age the infirmities associated with lack of exercise begin to take their toll: muscular flabbiness, shortness of breath, poor circulation, stiffness, tensions, interrupted and fitful sleep, overweight, and susceptibility to injury become more prevalent. Often older men remember the level of fitness they maintained as young men. In later years they try to achieve the same level. Failing to do so, they think it of no use to settle for anything less. Others, feeling that exercise is for younger men, make no effort to maintain physical fitness. Within a group of staff and specialist personnel the age span may be from young men in their late teens or early twenties, to men who are over 40. This fact creates a problem of activity selection to fit the needs of various age groups.

c. Physical Needs. Some men in the group may be in excellent physical condition regardless of age, and others may be in quite poor condition. All personnel will not have the same physical need and this factor may cause a problem at the beginning of the program. Those personnel in good condition will have a tendency to become impatient waiting for the others to pass through the toughening stage.

d. Physical Profiles. Some personnel in this category will have minor physical profiles. In fact some will have been diverted into the specialist category due to their profile assignment. Certain concessions may be required due to these profiles which in turn may complicate program planning. A close check should be maintained on men with profiles and on all men over 40 regardless of profile.

Section II. ORGANIZATION AND CONDUCT OF PROGRAMS

68. Types of Programs

Programs of physical activity for staff and specialist personnel can either be group or individual programs. Group programs are more successful as the group spirit will carry men along and provide incentive. A great deal of willpower must be exerted by the individual to continue a personal fitness program over an extended period of time. Many problems plague the individual as he attempts to organize and conduct his own program. Some of these prob-

e. Attitude. The attitude of some personnel is one of disinterest. This condition can afflict any man, regardless of age.

(1) Some men are too tired to be interested. If physical activity is eliminated from the daily routine, a declining state of physical fitness will result and soon the individual will have just enough or perhaps not enough physical ability to get through the sedentary duties which constitute the day's work. At best he is completely "beat" at the end of the day or at worst he "drags" through the latter part of the day with too little energy to be effective.

(2) Others feel exercise is not dignified. In our highly technical and cultivated society the local attitude may not be conducive to exercise. In some instances exercise is looked upon as a waste of time, as a mark of crudeness, or as a mark of the unintelligent. Good honest sweat is not a trademark of getting ahead in these instances, yet there are professions where this attitude would prove to be detrimental to the completion of the mission. The Army is certainly the last place in our society where such an attitude should be accepted as desirable.

f. Interest. The selection of physical activities must be carefully handled for this type group. Some will want to participate only in those activities of their interest. Frankly, some activities are of such little vigor that the outcome is questionable toward developing and maintaining a satisfactory degree of physical fitness. At the same time, if the activities cannot hold the interest of the group, the program suffers. Boredom also must be countered as the program continues over a long period.

lems are lack of knowledge as to what to do and how to do it, also lack of facilities, time, interest, and similar obstacles. The individual usually prefers a group program as these problems of time, place, selection of activity, facilities, and equipment are established or provided for him.

69. Group Programs

To be successful a group program must overcome the problem areas outlined in paragraph

67. The following solutions to these problems have been successfully applied:

a. *Scheduled Time.* Programs should be scheduled at a time when the maximum number of personnel can attend. During the duty day is best, or immediately after the close of the duty day. Early morning and after supper periods are generally least successful. In some instances, two periods are scheduled each day and the individual is permitted to determine, on a daily basis, which period he will attend. Exercise programs should be scheduled no less than three times per week and preferably on a daily basis.

b. *Age Divisions.* Two elements must be considered in connection with age if the group is to be divided into subgroups. The first consideration is the level of physical condition and the second is age. At the beginning those in poor condition and older personnel (over 35) may be in the same group, and the second group may be made up of younger men (17 to 35) who are in good physical condition. Progression and overload in conduct of the activities, as applied to each group, should be regulated according to the needs of the group.

c. *Physical Profile Allowances.* Care should be exercised to insure that the individuals who have physical profiles are made to feel accepted and part of the group. At the same time, some of the activities may be too strenuous or difficult for them to accomplish. If these men are considered as individuals and allowances are made for their individual handicaps, they can benefit from the execution of activities they can accomplish.

d. *Meeting Individual Needs and Interests.* The program must be dignified. Some of the physical activities which the new recruit finds interesting and challenging offer no interest-holding element for the more experienced soldier. Careful selection of activities must be made in this connection. A varied program usually insures that personnel interests are met and at the same time boredom is counteracted. Conditioning activities and running followed by competitive sports proves to be the way to hold interest and satisfy the need for vigorous activity. Competition in team sport and in dual sport tournaments adds an element of interest and offers a change of pace as compared to pick-up types of competition.

70. Recommended Group Activities

Most of the activities included in Parts Three and Four of this manual are suitable. The following activities are particularly appropriate for staff and specialist personnel: conditioning drills, log exercises, grass drills, running, strength circuits, swimming, and team sports. Individual sports may also be added. These sports must be vigorous in order to make a definite contribution to physical fitness. For the mechanics and methods of assembling a group program see chapters 5 and 7.

71. Personal Fitness Programs

Personal programs are difficult to maintain, yet some men are very successful with year-round programs. Some others who attempt their own programs have good intentions but fail due to backsliding. There are many reasons for this condition, but here are three common problems.

a. *Time Limitations.* Some men try activities which are not interesting to them and at their own choosing busy themselves with other non-physical activities which soon "choke off" the time for exercise. Others begin an overambitious program which takes too much time and rather than trim their program somewhat they drop the whole thing. Still others firmly decide upon a daily program which naturally is difficult to maintain. When they are forced to occasionally miss the daily workout, no visible signs of harm are apparent. First, it is an occasional forced miss; next, it is a frequent voluntary absence; and before long, no activity remains. The only solution is for the individual to understand the benefits of exercise and then set up a reasonable exercise program, adopt it as part of his daily life, and stick to the concept that exercise is a necessary activity.

b. *No Facilities.* Many of us have a favorite physical activity which we pursue faithfully with great benefit. Through a change in season, or perhaps transfer to a new post, the facilities are unavailable. With no facilities we feel justified in nonpursuit of exercise. An individual program must be changed and adjusted to accommodate such problems as they arise.

c. *Loss of Interest.* Too many times individuals adopt a program that fits the interest and skill level of some other person but which fails

to fit their personal philosophy, aptitude, interest, or need. For example, some people are bored by a particular type of exercise, yet because their best friend is a faithful advocate of this form of exercise they adopt it with a rapid and predictable loss of interest. The beginner will rapidly lose interest during the learning period in an activity which requires a high degree of skill to result in satisfaction from participation. This is particularly true in individual and dual sports of a highly skilled nature. Therefore, an understanding that as skill develops satisfaction will also develop may assist in sustaining interest through the learning period.

72. Choice of Activities

Any combination of physical activity is possible on an individual basis. The activities you select should be suited to your individual interest, your ability, your physical need, your age, the time you make available for exercise, and the facilities available to you. In many cases these items serve as limiting factors in the selection of a program but in no case should these items serve as an excuse for no physical activity.

73. Dual Sports

There are several games or sports, known as dual sports, which are popular with many men and for which facilities are available at most installations. Included in this category are such games as badminton, tennis, handball, golf, and bowling. Most men enjoy competition and these dual sports are competitive. They also call for participation with companions, which many people prefer to exercising alone. Information concerning these sports is readily available at newsstands or at libraries.

74. Noncompetitive Activities

Some men prefer noncompetitive activities which are usually done individually. Such activity includes weight training, swimming, running, walking, and conditioning exercises. In these activities you can set your own pace and have more definite control of your program as you are not dependent upon others. You may wish to participate in one or more of these conditioning activities. It is not the intent here to promote or dictate any single ac-

tivity over the other; that choice is for you to make. The plan that works best for the majority of men is one in which conditioning exercises are used as a basic and constant means of exercise. Such exercise has the following advantages:

- a. The activity can be completed in a short time.
- b. No special facilities or equipment are required.
- c. Dosage and progression can be controlled by the individual.
- d. Complicated skill need not be developed to receive benefit from the exercise.
- e. There is no need to depend on others to assist in completing the activity.
- f. Daily participation is easier because of the simplicity and convenience of the exercise.

75. Recommended Conditioning Activities

You may use conditioning exercises as a basic form of exercise and supplement these exercises on a regular or occasional basis by other forms of physical activity. If by chance the other forms of exercise do not materialize, your physical fitness need not suffer because you are on a regular program which will fill the requirement of maintaining basic physical fitness. To assist you in regulating dosage and progression and to provide convenient forms of exercises, the following activities are recommended as examples of noncompetitive conditioning activities.

a. *The 6-12 Plan.* This plan features six tables of conditioning exercises which have been closely graded for age. These six tables contain six exercises each and a table can be completed in 12 minutes. The tables are progressive in difficulty from 1 through 6, and progression guidance is provided (para 240-246).

b. *Weight Training.* One table for weight training is provided consisting of seven exercises. Fifteen minutes is adequate to complete the table (para 247-251).

c. *Chairborne Conditioner.* This apparatus can be constructed from pipe at any shop with welding facilities. Two tables of exercises are provided, with the second table progressively more difficult than the first. Fifteen minutes is adequate to complete a table (para 234-239).

d. *Isometric Exercises.* These simple exercises are organized into three tables and can be

completed in almost any area in a period of time less than 15 minutes (para 252-257).

76. Running for Men Over 40

After a preliminary period of conditioning

with the activities contained in paragraph 75, running should be added to the program for men over 40. The type of running should be a steady double time; sprint running should be avoided.

CHAPTER 9

REMEDIAL PHYSICAL CONDITIONING

Section I. INTRODUCTION

77. Definition

Remedial physical conditioning is a process by which physically substandard individual personnel are conditioned to meet the standard prescribed for their group.

78. Application

The company, battery, or troop commander identifies personnel who cannot achieve the prescribed Physical Combat Proficiency Test standard at the time of the semi-annual administration of that test. Notation is made of the particular weakness of body parts as indicated by failure of certain test events. These men are then placed in a special remedial program, either at platoon or company level, and extra time is devoted to overcoming the weakness. These extra periods of conditioning may be during or after duty hours, as determined by local conditions.

79. Need for Remedial Action

To achieve a full degree of operational readiness it is necessary to bring all men up to the prescribed standard. Experience has demonstrated that some men will have difficulty due to a poor state of fitness, overweight, or lack of motivation. Attention to these individual deficiencies will help improve unit physical readiness.

80. Medical Reconditioning Responsibility

Physical reconditioning is the treatment during hospitalization that is aimed at restoring physical fitness to damaged areas of the body. This treatment is accomplished through the use of progressively graded physical activities under professional supervision. Reconditioning is a medical responsibility.

Section II. DETECTING INDIVIDUAL NEED

81. Types of Deficiencies

Physical deficiencies which can be corrected by exercise fall into several categories.

a. Lack of Strength in One or More Body Parts. The major muscle areas concerned are the arms and shoulder girdle, back, abdomen, and legs.

b. Lack of Overall Endurance. Usually there is deficient muscular and circulo-respiratory (wind) endurance.

c. Deficiency in Coordination and Agility. In these cases physical skill is not developed to a satisfactory degree in such activities as crawling, running, jumping, climbing, traversing, vaulting, pushing, pulling, lifting, and carrying.

d. Overweight or Underweight. Either condition may interfere with physical fitness and accomplishment of mission. Lack of exercise is not always the cause. The cause may be malfunction of normal physiological functions or it may be due to poor health habits such as over- or undereating, lack of adequate rest, or overconsumption of alcohol.

e. Lack of Motivation. Personnel are not all motivated to attain or maintain a desirable state of fitness. Some personnel do not understand the importance of physical fitness, some find proper exercise too difficult, and others find it inconvenient.

82. Causes of Deficiencies

There are several causes which are responsible for men to be deficient in physical fitness.

- a. Absence of exercise.
- b. Exercise which fails to develop all muscle groups and components of fitness.
- c. Exercise which is not vigorous enough, or which lacks progression.
- d. Injury or illness which depletes fitness.
- e. Inadequate amounts of sleep or rest.

83. Methods of Detection

The commander has several means by which to detect physical deficiencies:

- a. Through analysis of physical fitness test

performance. The scorecards of individuals who fail required standards should be separated from those who pass and an analysis made to determine the cause of failure as revealed by test scores.

b. By observation of men as they perform physical tasks.

(1) Men who have difficulty during training or in physical types of work.

(2) Personnel who are obese and therefore experience difficulty.

c. Observation and attention to those personnel who are:

(1) Often on sick call.

(2) Returnees from hospitalization.

(3) Newly assigned personnel.

Section III. ADMINISTRATION OF REMEDIAL ACTION

84. Group Attitude

Men who are singled out as being physically deficient are self-conscious and are not always convinced they need extra help. They must be handled correctly and not be made to feel guilty about their state of fitness. Encouragement is often needed and desirable.

85. Motivation

Within a deficient group motivation may be low. These men must be convinced that a proper and special remedial program which is tailored to their needs will help them and will eliminate their deficiencies.

86. Leadership

The leader of this group must study each man and know his deficiencies. He must be sympathetic, counsel men individually, maintain records, observe men closely as they progress through the remedial program, and adjust the program as required.

87. Measurement

Men in this group should be measured by the Physical Combat Proficiency Test either individually or by group when improvement in performance is noted. When testing reveals the individual to be satisfactory, normally he should be released from the remedial group. There may be exceptions to this policy in the case of men who are overweight or in the exe-

cut ion of an exercise program as prescribed by medical authorities.

88. Organization of a Remedial Group

a. A remedial group is usually a small group of men within a company-size unit. In some situations it may be a larger group numbering 50 to 75 men. In the case of a larger group divide the men initially into subgroups according to ability, and prescribe exercise loads commensurate with their ability. General conditioning activity will be sufficient in the early part of the program to qualify men who are on the borderline. This will reduce the size of the group, thus permitting more individual and specialized attention to those who remain.

b. As the program progresses it will be necessary to regroup men who have like deficiencies in order that they can concentrate on their weakness. For example:

(1) One group may be weak in the arms and shoulders as revealed by their failure of the Horizontal Ladder Test event. This group, with an assistant instructor in charge, can work on pullups, rope climb, pushups, rifle or log exercises, horizontal ladder, and similar type exercises.

(2) Another group may be weak in general endurance as revealed by the 40-Yard Low Crawl and the One-Mile Run test events. This group could profit from participation in conditioning drills, running, grass drill, and strength circuit.

(3) It may be necessary to form some groups to overcome weaknesses in skills, such as an inability to throw, or quickly change direction while running, to crawl rapidly, or to carry a load. Lack of coordination or lack of

practice may be the cause of such deficiencies. In this instance instructors must provide an opportunity to practice and correct poor form and other errors as they are noted.



3



4



PART THREE
PHYSICAL ACTIVITIES
CHAPTER 10
CONDITIONING DRILLS ONE, TWO, AND THREE

Section I. INTRODUCTION

89. Description and Function

Conditioning drills are calisthenic-type exercises organized and numbered in a set pattern. Each drill contains seven exercises which can be completed in 15 minutes. The function of conditioning drills is to exercise all major muscle areas in order to develop strength, endurance, coordination, and flexibility.

90. Area and Equipment

Any level area is satisfactory for conduct of the drills. Drills One and Two contain ground exercises; if ground conditions are unsatisfactory Drill Three should be used as it contains no ground positions. Usually, no equipment is required; however, if the group exceeds a platoon in size an instructor's stand is necessary.

91. Formation

The extended rectangular formation is prescribed (app B).

92. Starting Dosage and Progression

The starting dosage is six repetitions of each exercise. An increase of one repetition for each three periods of exercise, in which the drill is performed, is an acceptable rate of progression. This rate is continued until 12 repetitions can be completed. At this point the level

reached should be maintained in future use of the drill, or until another drill is used. Progression can also be gained by moving from Drill One to Drill Two, as Drill Two is more demanding.

93. Starting Positions

Starting positions vary with the exercises and are explained as part of each exercise. Basic positions are explained in appendix B.

94. Leadership

A principal instructor is required to demonstrate and lead the drill. He must be familiar with leadership techniques peculiar to conditioning drills to include the exercises, commands, counting cadence, cumulative count, formation, method of teaching the exercises, and utilization of assistant leaders.

95. Peace in the Program

Conditioning Drills One, Two, and Three reach all major muscles of the body. They are easy to learn and to perform, and they are simple to administer and supervise. These features, coupled with the short time required for completion, the fact that no equipment is necessary, and adaptability to most areas of execution, make these drills possible in any program.

Section II. CONDITIONING DRILL ONE

96. Exercise 1. High Jumper

a. Starting Position. Feet separated shoulder width, knees flexed, body bent forward at the waist, arms alined with the trunk and hips, el-

bows locked, palms facing, fingers extended and joined, head and eyes to the front (A, fig. 7). (Elbows remain locked throughout the exercise.)

b. *Cadence.* Moderate.

c. *Movement.* A four-count exercise: at the count of—

(1) ONE—Take a slight jump into the air, swinging the arms forward and up to shoulder level.

(2) TWO—Take a slight jump into the air and swing the arms downward and back, returning to the starting position.

(3) THREE—Take a vigorous leap into the air, swinging the arms forward and up to an overhead position, momentarily looking skyward. On returning to the ground the knees are flexed, head and eyes return to the front.

(4) FRONT—Repeat the action of count two.

97. Exercise 2. Bend and Reach

a. *Starting Position.* Feet spread more than shoulder width, arms overhead, elbows locked, palms facing, fingers extended and joined, head and eyes to the front (B, fig. 7).

b. *Cadence.* Moderate.

c. *Movement.* A four-count exercise: at the count of—

(1) ONE—Bend at the knees and waist, swing the arms straight downward and reach between the legs. Touch the ground as far to the rear as possible and look to the rear. (Elbows remain locked throughout the exercise.)

(2) TWO—Recover sharply to the starting position.

(3) THREE—Repeat the action of count ONE.

(4) FOUR—Repeat the action of count TWO.

98. Exercise 3. Push up

a. *Starting Position.* Front leaning rest position: to assume this position there is a silent one-two count. On the silent count of one, assume the squatting position, heels together, elbows locked inside the knees, hands flat on the ground directly beneath the shoulders. On the silent count of two, thrust the legs to the rear, toes and heels together, body straight from head to heels (C, fig. 7).

b. *Cadence.* Moderate.

c. *Movement.* A four-count exercise: at the count of—

(1) ONE—Flex the elbows lowering the

body until the thick portion of chest touches the ground.

(2) TWO—Raise the body until elbows are straight and locked.

(3) THREE—Repeat the action of count ONE.

(4) FOUR—Repeat the action of count TWO. (On returning to position of attention the silent one-two count is used in reverse.)

99. Exercise 4. Trunk Twister

a. *Starting Position.* Feet are spread more than shoulder width apart, fingers laced behind neck, thumbs pointing downward, elbows back (D, fig. 7). (Elbows remain well back throughout the exercise.)

b. *Cadence.* Slow.

c. *Movement.* A four-count exercise: at the count of—

(1) ONE—Keeping the knees locked and back straight, bend forward at the waist sharply, with a slight recovery.

(2) TWO—Twist the trunk to the left vigorously at the waist, keeping the elbows back. The left elbow is higher than the right.

(3) THREE—Twist vigorously to the right, so the left elbow comes under the right.

(4) FOUR—Straighten sharply to the starting position.

Note. Do not attempt to touch the elbows to the knees on counts TWO and THREE.

100. Exercise 5. Squat Bender

a. *Starting Position.* Feet are spread less than shoulder width apart, hands on hips, thumbs in small of back, elbows back (E, fig. 7).

b. *Cadence.* Moderate.

c. *Movement.* A four-count exercise: at the count of—

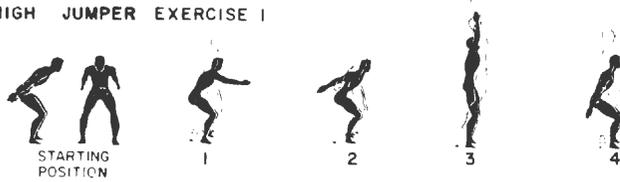
(1) ONE—Assume the squatting position, maintain balance on the balls of the feet, with trunk erect thrust arms forward to shoulder level, elbows locked, palms down.

(2) TWO—Recover to starting position. Elbows are well back.

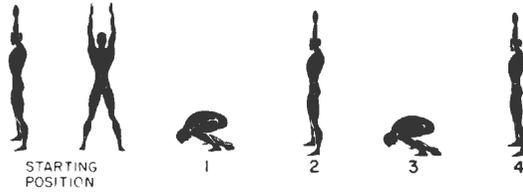
(3) THREE—Keeping the knees locked, bend forward at the waist, touching the ground in front of the toes.

(4) FOUR—Vigorously recover to the starting position.

A. HIGH JUMPER EXERCISE 1



B. BEND AND REACH EXERCISE 2



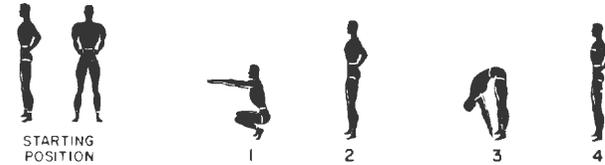
C. PUSH UP EXERCISE 3



D. TRUNK TWISTER EXERCISE 4



E. SQUAT BENDER EXERCISE 5



F. BODY TWIST EXERCISE 6



G. STATIONARY RUN EXERCISE 7



Figure 7. Conditioning drill one.

101. Exercise 6. Body Twist

a. Starting Position. On the back, arms extended sideward on the ground, palms down. The legs are raised to a near vertical position, feet together, knees locked (F, fig. 7).

b. Cadence. Slow-fast.

c. Movement. A four-count exercise: at the count of—

(1) ONE—Lower legs slowly to your left until they touch the ground near the left hand, keeping the knees straight and shoulders on the ground.

(2) TWO—Recover the starting position by quickly raising the legs, keep knees straight and feet together.

(3) THREE—Repeat movement of count ONE, except the movement is to the right side.

(4) FOUR—Recover sharply to the starting position.

102. Exercise 7. Stationary Run

a. Starting Position. Position of attention (G, fig. 7).

b. Cadence. Fast.

c. Movement.

(1) At the command of execution start running in place, first lifting the left foot and continue double time cadence; follow the instructor as he counts two repetitions of cadence; for example, 1, 2, 3, 4—1, 2, 3, 4. The instructor then gives informal commands such as "FOLLOW ME." Run on the toes and balls of the feet, keeping the back straight. Speed it up. Increase to a sprint, raise the knees high, lean forward at the waist, and pump the arms vigorously. Slow it down.

(2) To halt the exercise the instructor will count two repetitions of cadence as the left foot strikes the ground: 1, 2, 3, 4—1, 2, 3, HALT.

Note. When counting cadence the instructor counts only as the left foot strikes the ground. The duration of the exercise is approximately 1 1/2 minutes.

Section III. CONDITIONING DRILL TWO

103. Exercise 1. Jumping Jack

a. Starting Position. Feet separated more than shoulder width, arms overhead (A, fig. 8).

b. Cadence. Moderate.

c. Movement. A four-count exercise: at the count of—

(1) ONE—Jump to position with the feet together and assume the squatting position, swinging the arms sideward and downward, placing the hands palms down on the ground, elbows locked inside the knees.

(2) TWO—Recover to the starting position by jumping to the side straddle and swinging the arms sideward overhead.

(3) THREE—Repeat the action of count ONE.

(4) FOUR—Recover to the starting position.

104. Exercise 2. Turn and Bend

a. Starting Position. Side straddle, arms overhead (B, fig. 8).

b. Cadence. Moderate.

c. Movement. A four-count exercise: at the count of—

(1) ONE—Turn the trunk to the left and bend forward over the left thigh, attempting to touch the fingertips to the ground outside the left foot. Keep the left knee straight. On successive repetitions attempt to touch farther and farther to the side.

(2) TWO—Recover to the starting position.

(3) THREE—Turn the trunk to the right and bend forward over the right thigh, trying to touch the hands to the ground outside the right foot. Keep the right knee straight.

(4) FOUR—Recover to the starting position.

105. Exercise 3. Eight Count Push Up

a. Starting Position. Position of attention (C, fig. 8).

b. Cadence. Moderate.

c. Movement. An eight-count exercise: at the count of—

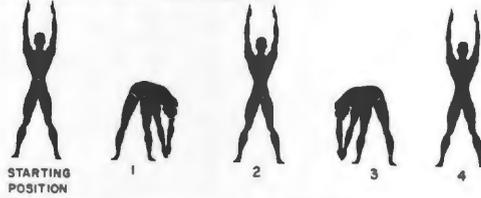
(1) ONE—Assume the squatting position, palms on the ground directly beneath the shoulders, elbows locked inside the knees.

(2) TWO—Thrust the legs to the rear assuming the front leaning rest position.

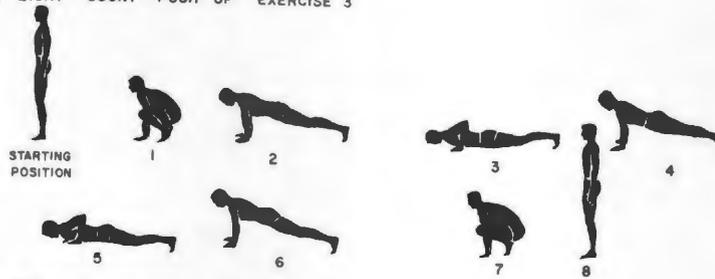
A. JUMPING JACK EXERCISE :



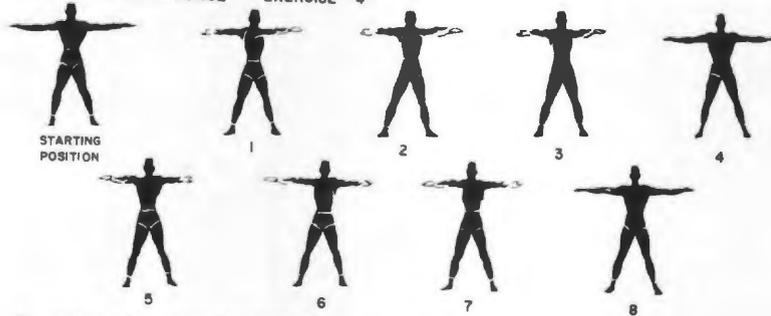
B. TURN AND BEND EXERCISE 2



C. EIGHT COUNT PUSH UP EXERCISE 3



D. TURN AND BOUNCE EXERCISE 4



E. SQUAT STRETCH EXERCISE 5



F. LEG CIRCULAR EXERCISE 6



G. STATIONARY RUN EXERCISE 7



Figure 8. Conditioning drill two.

(3) THREE—Flex the elbows until the thick portion of the chest touches the ground.

(4) FOUR—Raise the body on a straight plane until the elbows are locked.

(5) FIVE—Repeat the action of count THREE.

(6) SIX—Repeat the action of count FOUR.

(7) SEVEN—Recover to the squatting position as in count ONE (elbows locked inside the knees).

(8) EIGHT—Return sharply to the position of attention.

106. Exercise 4. Turn and Bounce

a. Starting Position. Feet spread more than shoulder width apart, arms sideward at shoulder level, palms up (D, fig. 8).

b. Cadence. Slow.

c. Movement. An eight-count exercise: at the count of—

(1) ONE—Turn sharply to the left as far as possible, then recover slightly.

(2) TWO—Again turn to the left as far as possible and recover as in ONE.

(3) THREE—Repeat the action of count TWO.

(4) FOUR—Recover sharply to the starting position.

(5) FIVE—Turn sharply to the right as far as possible, then recover slightly.

(6) SIX—Again turn to the right as far as possible and recover as in FIVE.

(7) SEVEN—Repeat the action of count SIX.

(8) EIGHT—Return to the starting position.

Note. The head and hips remain to the front throughout the exercise and the knees and elbows are locked at all times.

107. Exercise 5. Squat Stretch

a. Starting Position. Attention (E, fig. 8).

b. Cadence. Moderate.

c. Movement. A four-count exercise: at the count of—

(1) ONE—Squat, placing the hands on the ground about 12 inches in front of the feet.

Section IV. CONDITIONING DRILL THREE

110. Exercise 1. Side Straddle Hop

a. Starting Position. Position of attention (A, fig. 9).

(2) TWO—Keeping the fingertips on the ground, straighten the knees completely and raise the hips.

(3) THREE—Recover to position ONE.

(4) FOUR—Recover to the starting position.

108. Exercise 6. Leg Circular

a. Starting Position. On the back, arms stretched sideward, palms down, feet raised 1 foot from ground, knees straight (F, fig. 8).

b. Cadence. Slow.

c. Movement. A four-count exercise: at the count of—

(1) ONE—Swing the legs as far as possible to the left, keeping the knees straight and the legs together.

(2) TWO—Swing the extended legs overhead with the thighs as close as possible to the trunk.

(3) THREE—Swing the legs as far as possible to the right.

(4) FOUR—Recover to the starting position.

109. Exercise 7. Stationary Run

a. Starting Position. Position of attention (G, fig. 8).

b. Cadence. Fast.

c. Movement.

(1) At the command of execution start running in place, first lifting the left foot and continue double time cadence; follow the instructor as he counts two repetitions of cadence; for example, 1, 2, 3, 4—1, 2, 3, 4. The instructor then gives informal commands such as "FOLLOW ME." Run on the toes and balls of the feet, keeping the back straight. Speed it up. Increase to a sprint, raise the knees high, lean forward at the waist, and pump the arms vigorously. Slow it down.

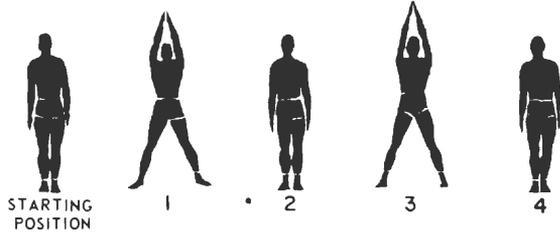
(2) To halt the exercise the instructor will count two repetitions of cadence as the left foot strikes the ground: 1, 2, 3, 4—1, 2, 3, HALT.

Note. When counting cadence the instructor counts only as the left foot strikes the ground. The duration of the exercise is approximately 1 1/2 minutes.

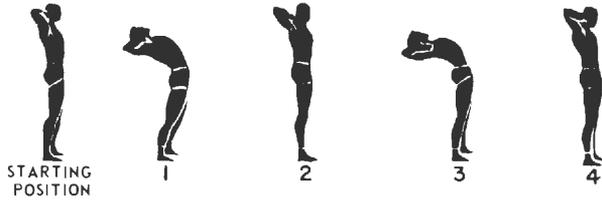
b. Cadence. Moderate.

c. Movement. A four-count exercise: at the count of—

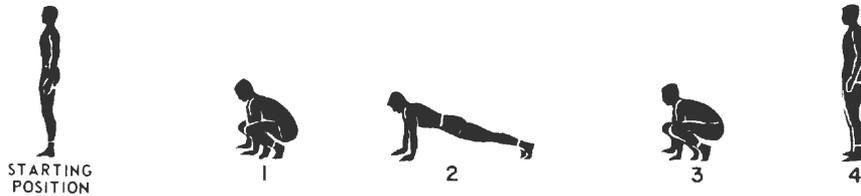
A. SIDE STRADDLE HOP EXERCISE 1



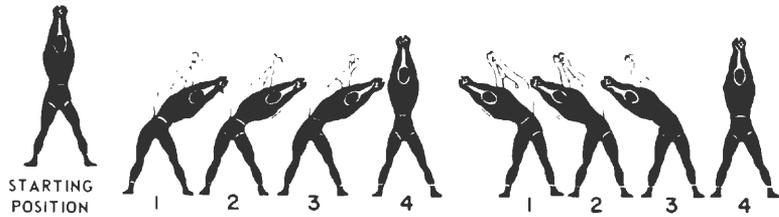
B. BACK BENDER EXERCISE 2



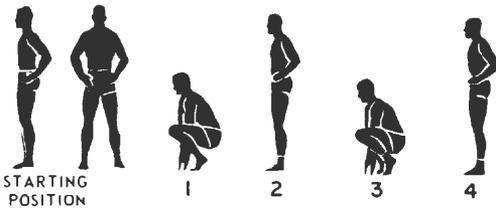
C. SQUAT THRUST EXERCISE 3



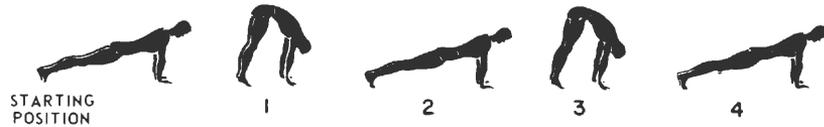
D. SIDE BENDER EXERCISE 4



E. KNEE BENDER EXERCISE 5



F. BUTTOMS UP EXERCISE 6



G. STATIONARY RUN EXERCISE 7



Figure 9. Conditioning drill three.

(1) ONE—Take a slight jump into the air, moving the legs sideward (more than shoulder width apart), at the same time swing the arms overhead (to an overhead position), clapping the palms together.

(2) TWO—Take a slight jump into the air, swing the arms sideward and downward, returning to the starting position.

(3) THREE—Repeat the action of count ONE.

(4) FOUR—Repeat the action of count TWO.

111. Exercise 2. Back Bender

a. Starting Position. Standing, feet 12 inches apart, fingers laced behind the head (B, fig. 9).

b. Cadence. Slow.

c. Movement. A four-count exercises: at the count of—

(1) ONE—Bend the upper trunk backward, raising the chest high, pulling the elbows back, and looking upward. Keep the knees straight.

(2) TWO—Recover to the starting position.

(3) THREE—Repeat the action of count ONE.

(4) FOUR—Recover to the starting position.

112. Exercise 3. Squat Thrust

a. Starting Position. Position of attention (C, fig. 9).

b. Cadence. Moderate.

c. Movement. A four-count exercise: at the count of—

(1) ONE—Assume the squatting position; heels together, placing the hands flat on the ground, shoulder width apart, elbows locked and inside the knees.

(2) TWO—Thrust the legs to the rear, assuming the front leaning rest position, body in line from head to heel, heels and toes together.

(3) THREE—Return to the squatting position as in ONE.

(4) FOUR—Return to position of attention.

113. Exercise 4. Side Bender

a. Starting Position. Feet are spread more than shoulder width apart, arms are raised

sideward and overhead, thumbs interlocked, palms to front, fingers extended and joined, elbows locked (D, fig. 9).

b. Cadence. Slow.

c. Movement. An eight-count exercise: at the count of—

(1) ONE—Bend to left as far as possible, then recover slightly.

(2) TWO—Again bend to the left as far as possible, then recover slightly.

(3) THREE—Repeat the action of count TWO.

(4) FOUR—Recover sharply to the starting position.

(5) FIVE—Bend to the right as far as possible, then recover slightly.

(6) SIX—Again bend to the right as far as possible, then recover slightly.

(7) SEVEN—Repeat the action of count SIX.

(8) EIGHT—Recover sharply to the starting position.

Note. Keep the elbows and knees locked throughout the exercise. The bend should occur to the side and not to the front.

114. Exercise 5. Knee Bender

a. Starting Position. Feet are spread less than shoulder width apart, hands on hips, thumbs in small of back, elbows back (E, fig. 9).

b. Cadence. Moderate.

c. Movement. A four-count exercise: on the count of—

(1) ONE—Do a knee bend, lean trunk forward at the waist, thrust arms between legs until the extended fingers touch the ground, palms to the rear, hands 6 inches apart.

(2) TWO—Recover sharply to the starting position.

(3) THREE—Repeat the action of count ONE.

(4) FOUR—Repeat the action of count TWO.

115. Exercise 6. Bottoms Up

a. Starting Position. Front leaning rest position, a silent one-two count is used as in the pushups (F, fig. 9).

b. Cadence. Moderate.

c. Movement. A four-count exercise: at the count of—

(1) ONE—With the weight on the hands

and knees locked, jump forward bringing the feet as close to the hands as possible; look to the rear.

(2) TWO—Keeping the knees locked, thrust the legs backward assuming the front leaning rest position.

(3) THREE—Repeat the action of count ONE.

(4) FOUR—Repeat the action of count TWO.

116. Exercise 7. Stationary Run

a. *Starting Position.* Position of attention (G, fig. 9).

b. *Cadence.* Fast.

c. *Movement.*

(1) At the command of execution start

running in place, first lifting the left foot and continue double time cadence; follow the instructor as he counts two repetitions of cadence; for example, 1, 2, 3, 4—1, 2, 3, 4. The instructor then gives informal commands such as "FOLLOW ME." Run on the toes and balls of the feet, keeping the back straight. Speed it up. Increase to a sprint, raise the knees high, lean forward at the waist, and pump the arms vigorously. Slow it down.

(2) To halt the exercise the instructor will count two repetitions of cadence as the left foot strikes the ground: 1, 2, 3, 4—1, 2, 3, HALT.

Note. When counting cadence the instructor counts only as the left foot strikes the ground. The duration of the exercise is approximately 1½ minutes.

CHAPTER 11

RIFLE AND LOG DRILLS

Section I. RIFLE DRILL

117. General

Rifle exercises are conditioning exercises performed with a rifle. They are usable in any unit armed with this weapon. In units which are not so armed, Log Drill may be substituted as contained in paragraphs 131 through 143.

118. Description and Function

There are six exercises in Rifle Drill (fig. 10), and they are numbered in a set pattern. This drill can be completed within 15 minutes. The additional weight of the rifle makes the exercise more strenuous and thus provides greater development, particularly of the upper body.

119. Area and Equipment

Any level area is satisfactory for the conduct of this drill. All exercises are completed from a standing position and no ground contact is required. Rifles are needed for each man and if the group exceeds a platoon in size, an instructor's stand is necessary.

120. Formation

The extended rectangular formation is prescribed as explained in appendix B.

121. Starting Dosage and Progression

The starting dosage and rate of progression are the same as prescribed for conditioning Drills One, Two, and Three (para 92).

122. Starting Positions

Starting positions vary with the exercises and are explained as part of each exercise. Basic positions are explained in appendix B. As in all set conditioning drills, the command used to start the exercise is "STARTING POSITION,

MOVE." The following specific directions apply to rifle drill:

a. In those exercises starting from the rifle downward position, on the command *MOVE*, execute port arms as prescribed in FM 22-5, and then assume the starting position. The command to return the men to the position of attention at the conclusion of the exercise is *POSITION OF ATTENTION, MOVE*.

b. In exercises which terminate in the rifle downward position, on the command of execution *MOVE*, the position of port arms is executed followed by order arms as prescribed in FM 22-5.

c. In the exercises which terminate in a position other than the rifle downward position, the men first assume the rifle downward position before executing port arms and order arms.

d. These movements are executed without command. This procedure is specified to facilitate uniformity, and it cannot be expected that precision can be obtained. To be effective, rifle exercises must be strenuous enough to tire the arms and, when the arms are tired they cannot move with precision.

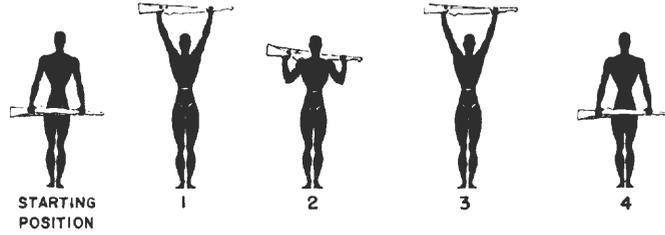
123. Leadership

A principal instructor is required to demonstrate and lead the drill. He must be familiar with leadership techniques for conditioning exercises and the peculiar techniques for Rifle Drill. He must be able to teach and lead the drill.

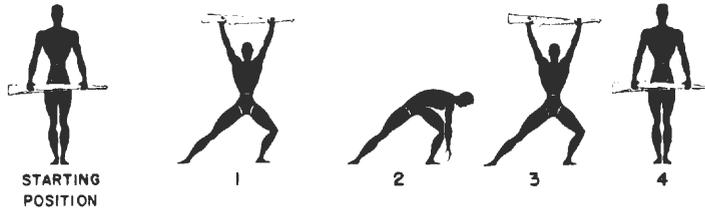
124. Place in the Program

Rifle Drill is designed primarily to benefit the arms, shoulders, and back muscles. The princi-

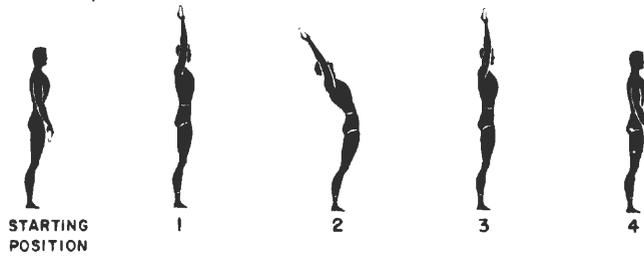
A. FOREUP, BEHIND BACK EXERCISE 1



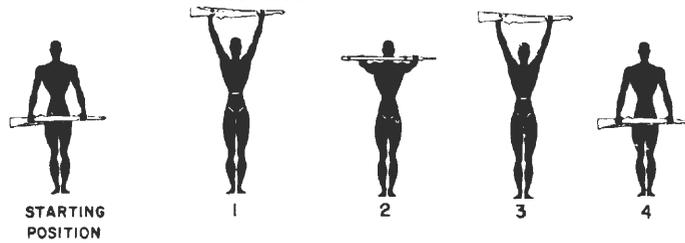
B. LUNGE SIDE, TURN AND BEND EXERCISE 2



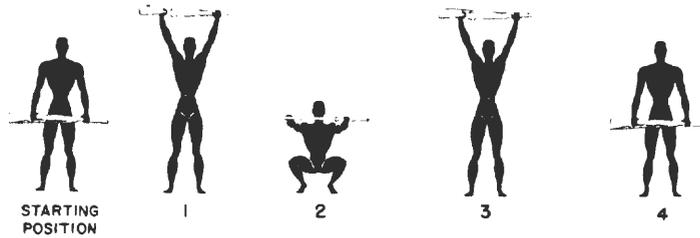
C. FOREUP, BACK BEND EXERCISE 3



D. UP AND FORWARD EXERCISE 4



E. FOREUP, FULL SQUAT EXERCISE 5



F. ARMS FORWARD, SIDE BEND EXERCISE 6

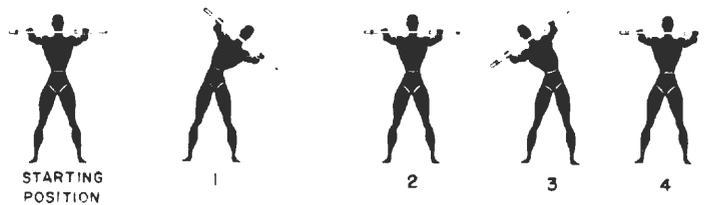


Figure 10. Rifle drill.

pal benefit is in development of strength and endurance. The short time required to complete the drill makes it usable in any unit armed with the rifle. The exercises of Rifle Drill are outlined in the following paragraphs.

125. Exercise 1. Foreup, Behind Back

a. Starting Position. Rifle downward, feet together (A, fig. 10).

b. Cadence. Slow.

c. Movement. A four-count exercise: at the count of—

(1) ONE—Swing the arms forward and upward to the overhead position. Inhale.

(2) TWO—Lower the rifle to the back of the shoulders. Exhale.

(3) THREE—Recover to position ONE and inhale.

(4) FOUR—Recover to the starting position and exhale.

126. Exercise 2. Lunge Side, Turn and Bend

a. Starting Position. Rifle downward, feet together (B fig. 10).

b. Cadence. Moderate.

c. Movement. An eight-count exercise: at the count of—

(1) ONE—Lunge sideways to the left, swing the rifle forward and upward to the overhead position.

(2) TWO—Turn the trunk to the left and bend forward over the left hip. At the same time, swing the rifle to a low horizontal in front of the left ankle.

(3) THREE—Recover to position ONE.

(4) FOUR—Recover to the starting position.

(5) FIVE, SIX, SEVEN, and EIGHT—Repeat on the right side.

127. Exercise 3. Foreup, Back Bend

a. Starting Position. Rifle downward, feet together (C, fig. 10).

b. Cadence. Moderate.

c. Movement. A four-count exercise; at the count of—

(1) ONE—Swing the arms forward and upward to the overhead position.

(2) TWO—Bend backward, emphasizing

the bend in the upper back. The face is up. Keep the knees straight.

(3) THREE—Recover to position ONE.

(4) FOUR—Recover to the starting position.

128. Exercise 4. Up and Forward

a. Starting Position. Rifle downward, feet together (D, fig. 10).

b. Cadence. Fast.

c. Movement. A four-count exercise: at the count of—

(1) ONE—Swing the arms forward and upward to the overhead position.

(2) TWO—Swing the arms forward to shoulder level.

(3) THREE—Recover to position ONE.

(4) FOUR—Recover to the starting position.

129. Exercise 5. Foreup, Full Squat

a. Starting Position. Rifle downward, feet in narrow stance (E, fig. 10).

b. Cadence. Moderate.

c. Movement. A four-count exercise: at the count of—

(1) ONE—Swing the arms forward and upward to the overhead position.

(2) TWO—Swing the arms down to shoulder level and assume the squatting position.

(3) THREE—Recover to position ONE.

(4) FOUR—Recover to the starting position.

130. Exercise 6. Arms Forward, Side Bend

a. Starting Position. Side straddle, regular stance, rifle forward (F, fig. 10).

b. Cadence. Moderate.

c. Movement. A four-count exercise: at the count of—

(1) ONE—Bend the trunk to the left. Keep the knees straight.

(2) TWO—Recover to the starting position.

(3) THREE—Bend the trunk to the right. Keep the knees straight.

(4) FOUR—Recover to the starting position.

Note. Keep the rifle on the same level as the shoulders throughout the exercise.

Section II. LOG DRILL

131. Description and Function

Log exercises are conditioning exercises performed with a log. Log teams of six to eight men are formed to exercise with a log. There are six exercises and they are numbered in a set pattern. The drill can be completed in 15 minutes. Log exercises are excellent for developing strength and muscular endurance because they require the muscles to contract under maximum loads. Log exercises also develop teamwork.

132. Area and Equipment

a. Any level area is satisfactory for the conduct of this drill. All exercises are completed from a standing position and no ground contact is required. If the group exceeds one platoon in size an instructor's stand is required.

b. The logs should be from 6 to 8 inches in diameter. They may vary in length from 14 feet (for six men) to 18 feet (for eight men). They should be skinned, smoothed, and dried. The 14-foot logs should weight approximately 300 pounds and the 18-foot logs, 400 pounds. Rings should be painted on the logs to indicate each man's position. When not in use, the logs should be stored on a rack to keep them off the ground.

133. Formation

a. All the men assigned to the same log team should be about the same height at the shoulders. The recommended method of dividing the platoon is to have the men form a single file or column with short men to the front and tall men to the rear. Have the men assume their positions in the column according to shoulder height, not head height. When the men are in position, they are given the command *COUNT OFF BY SIXES (OR EIGHTS), COUNT OFF*, to divide them into six- or eight-man log teams. Each team, in turn, can then proceed to the log rack, shoulder a log, and carry it to the designated exercise area.

b. The log teams form in front of the instructor in columns. With the men holding the log in the chest position (para 135f), have them face the instructor and ground the log at least 10 yards from him. There should be 10

yards between columns and 10 yards between log teams within the columns.

134. Starting Dosage and Progression

The starting dosage and progression is the same as for Rifle Drill, for this information see paragraphs 124 through 130.

135. Starting Positions

The men fall in, facing the log, their toes about 4 inches from it. The basic starting positions (fig. 11) and commands are as follows:

a. ONE—RIGHT HAND STARTING POSITION. TWO—MOVE. At the command MOVE, move the left foot 12 inches to the left and lower the body into a flatfoot squat. Keep the back straight, head up, and arms between the legs. Encircle the far side of the log with the left hand. Place the right hand underneath the log (A, fig. 11).

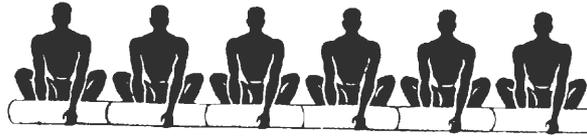
b. ONE—LEFT HAND STARTING POSITION. TWO—MOVE. These commands are executed in the same manner as in a above except that the left hand is underneath the log and the right hand encircles its far side (B, fig. 11).

c. ONE—RIGHT SHOULDER POSITION. TWO—MOVE. At the command MOVE, pull the log upward in one continuous motion to the right shoulder. At the same time, move the left foot to the rear and stand up, facing left. Balance the log on the right shoulder with both hands (C, fig. 11). This movement cannot be performed from the left hand starting position because of the position of the hands.

d. ONE—LEFT SHOULDER POSITION. TWO—MOVE. These commands should be given from the left hand starting position. At the command MOVE, pull the log upward in one continuous motion, to the left shoulder. At the same time, move the right foot to the rear and stand up facing right. Balance the log on the left shoulder with both hands (D, fig. 11). This movement cannot be performed from the right hand starting position.

e. ONE—WAIST POSITION. TWO—MOVE. From the right hand starting position pull the log waisthigh. Keep the arms straight and fingers laced underneath the log. The body

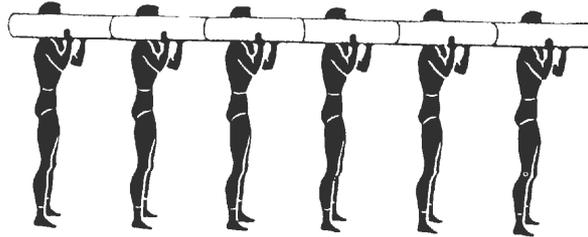
A RIGHT HAND STARTING POSITION



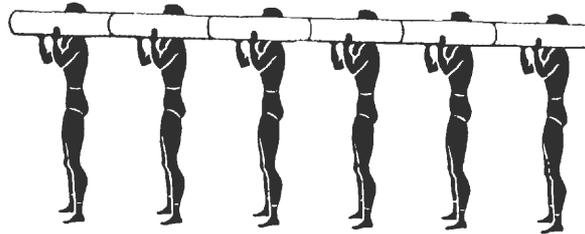
B LEFT HAND STARTING POSITION



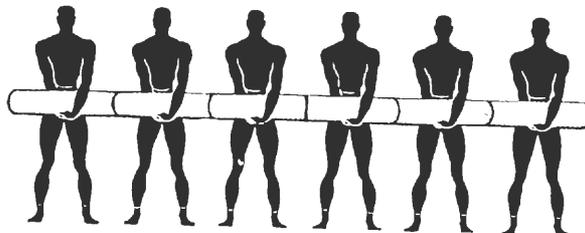
C RIGHT SHOULDER POSITION



D LEFT SHOULDER POSITION



E WAIST POSITION



F CHEST POSITION

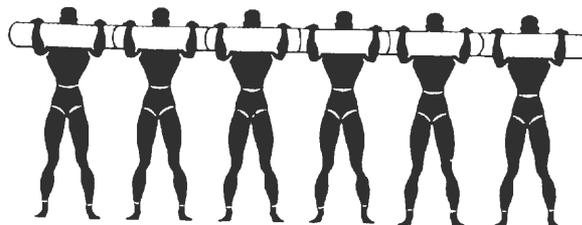


Figure 11. Starting positions, log drill.

is inclined slightly to the rear and the chest is lifted and arched (E, fig. 11).

f. ONE—CHEST POSITION. TWO—MOVE. These commands should be given after the waist position has been assumed. On the command MOVE, shift the log to a position high on the chest, bring the left arm under the log and hold the log in the bend of the arms (F, fig. 11). Keep the upper arms parallel to the ground.

g. To move the log from the right shoulder to the left shoulder, the commands are: ONE—LEFT SHOULDER POSITION. TWO—MOVE. On the command MOVE, push the log overhead and lower it to the opposite shoulder.

h. To return the log to the ground from any of the above positions, the commands are: ONE—STARTING POSITION. TWO—MOVE. At the command MOVE, slowly lower the log to the ground. The hands and fingers must be kept from under the log.

136. Leadership

A principal instructor is required to demonstrate and lead the drill. He must be familiar with the leadership techniques for conditioning exercises and the peculiar techniques for Log Drill. He must be able to teach and lead the drill.

137. Place in the Program

Log exercises are excellent for developing strength and muscular endurance, because they require the muscles to contract under maximum loads. Log exercises also develop teamwork. They may be used in lieu of the conditioning exercises (Drills One, Two, and Three) after the men have become somewhat conditioned. They provide a welcome change in the physical training program. The exercises of Log Drill are outlined in the following paragraphs.

138. Exercise 1. Two-Arm Pushup

a. *Starting Position.* Right or left shoulder position. Regular stance (A, fig. 12).

b. *Cadence.* Moderate.

c. *Movement.* A four-count exercise: at the count of—

(1) ONE—Push the log overhead until the elbows lock.

(2) TWO—Lower the log to the opposite shoulder.

(3) THREE—Repeat the action of count ONE.

(4) FOUR—Recover to the starting position.

139. Exercise 2. Forward Bender

a. *Starting Position.* Chest position. Regular stance (B, fig. 12).

b. *Cadence.* Moderate.

c. *Movement.* A four-count exercise: at the count of—

(1) ONE—Bend forward at the waist, keeping the back and legs straight.

(2) TWO—Recover to the starting position.

(3) THREE—Repeat the action of count ONE.

(4) FOUR—Recover to the starting position.

140. Exercise 3. Straddle Jump

a. *Starting Position.* Right or left shoulder position, feet together, fingers interlaced on top of the log (C, fig. 12).

b. *Cadence.* Moderate.

c. *Movement.* A four-count exercise: at the count of—

(1) ONE—Jump to a side straddle. Pull down on the log with both hands to keep it from bouncing on the shoulder.

(2) TWO—Recover to the starting position.

(3) THREE—Repeat the action of count ONE.

(4) FOUR—Recover to the starting position.

141. Exercise 4. Side Bender

a. *Starting Position.* Right shoulder position, feet regular stance (D, fig. 12).

b. *Cadence.* Moderate.

c. *Movement.* A four-count exercise: at the count of—

(1) ONE—Bend sideward to the left as far as possible, bending the left knee.

(2) TWO—Recover to the starting position.

(3) THREE—Repeat the action of count ONE.

(4) **FOUR**—Recover to the starting position.

d. After completing the required number of repetitions, change shoulders and execute an equal number of repetitions to the other side.

142. Exercise 5. Knee Bend

a. Starting Position. Right or left shoulder position. Narrow stance. Fingers interlocked on top of the log (E, fig. 12).

b. Cadence. Slow.

c. Movement. A four-count exercise: at the count of—

(1) **ONE**—Flex the knees to a quarter-squat position.

(2) **TWO**—Flex the knees to a half-squat position.

(3) **THREE**—Lower the body to a three-quarter squat position. (Lean slightly forward.)

(4) **FOUR**—Recover to the starting position.

Note. Pull forward and downward on the log throughout the exercise.

143. Exercise 6. Overhead Toss

a. Starting Position. Right or left shoulder position, regular stance. The knees are bent to a quarter-squat (F, fig. 12).

b. Cadence. Moderate.

c. Movement. A four-count exercise: at the count of—

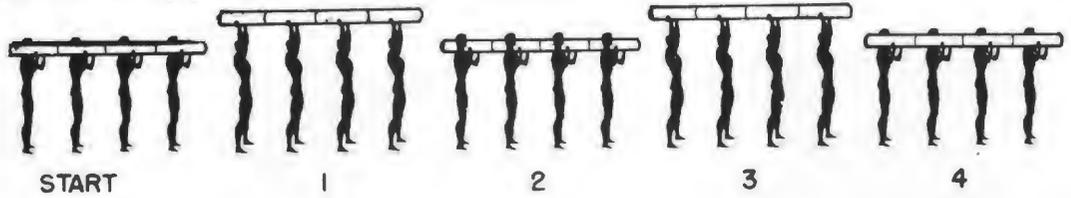
(1) **ONE**—Straighten the knees and toss the log into the air approximately 12 inches overhead. Catch the log with both hands and lower it toward the opposite shoulder. As the log is caught, lower the body into a quarter-squat.

(2) **TWO**—Again toss the log into the air and when caught return it to the original shoulder.

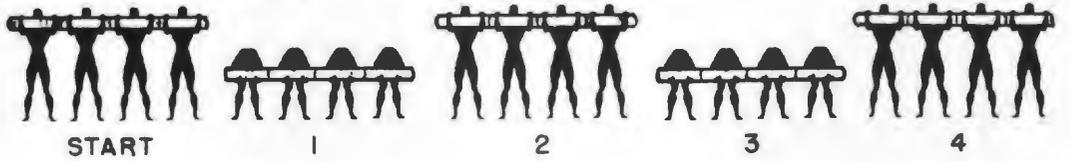
(3) **THREE**—Repeat the action of count **ONE**.

(4) **FOUR**—Recover to the starting position.

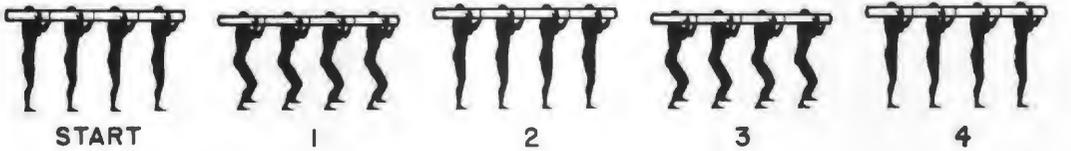
A. TWO-ARM PUSHUP EXERCISE 1



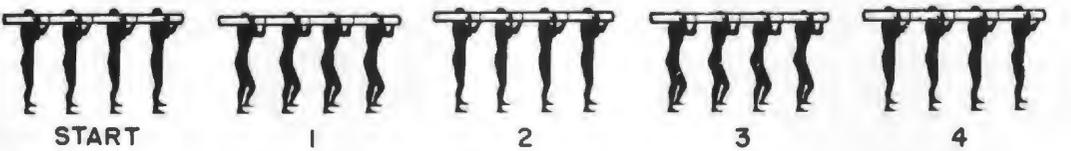
B. FORWARD BENDER EXERCISE 2



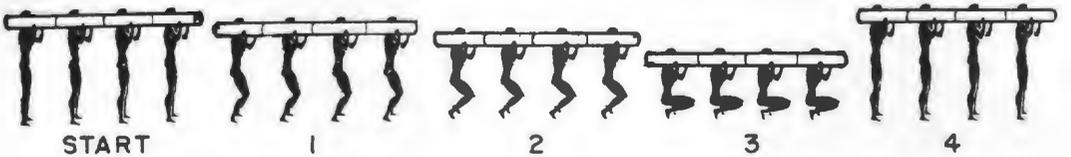
C. STRADDLE JUMP EXERCISE 3



D. SIDE BENDER EXERCISE 4



E. DEEP KNEE BEND EXERCISE 5



F. OVERHEAD TOSS EXERCISE 6

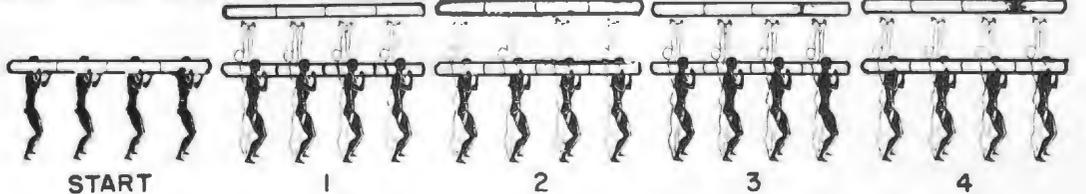


Figure 12. Log drill.

CHAPTER 12

GRASS DRILLS

Section I. INTRODUCTION

144. Description and Function

Grass drills are executed at top speed and consist of rapid changes of body position and execution of movements designed to exercise all body parts. Each individual responds to commands as rapidly as possible and all movements are at top speed. No cadence is counted, but men continue to execute multiple repetitions of the command until the next command is given. The function of the drills is to decrease reaction time, develop circulo-respiratory endurance; and provide a vigorous workout for all major muscles. These drills are extremely strenuous, consequently they are continued only for short periods of time. There are two drills: Drill One and Drill Two. Each drill contains six exercises.

145. Area and Equipment

Any level area suitable for ground contact and of such size to accommodate the group is adequate. No equipment is needed.

146. Formation

All movements are executed in place. The extended, rectangular formation is recommended for a platoon- or company-size unit. The circle formation is suitable for groups of squad or section size.

147. Dosage and Progression

At the beginning of an exercise program, 2 to 3 minutes will insure a good workout. Progression is gained by gradually increasing the length of time devoted to the drills. As the physical condition of the men improves, the periods should be gradually lengthened to 5 minutes. As the second drill is more difficult than

the first, some progression can be attained by initially executing grass Drill One, then as the program and the men progress, introduce Drill Two. To extend the duration of the drill it may be necessary to repeat the drill.

148. Starting Position

a. The drills are started from the GO position. Other basic positions are FRONT, BACK, and STOP (A, fig. 13).

(1) GO. Running in place (top speed): on the toes and balls of feet, knees raised high, arms pumping, body bent forward at waist.

(2) FRONT. Prone position: elbows bent (along body), palms flat on ground directly under the shoulders, legs together and straight.

(3) BACK. Supine position (flat on back): arms extended near side on ground with palms down, legs together and straight, feet toward the stand or instructor.

(4) STOP. Football lineman stance: feet spread and staggered, left arm across left thigh, right arm straight, knuckles on ground, head up, back parallel with ground.

b. To assume the FRONT or BACK position from the STANDING, GO, or STOP position, vigorously get into the prescribed position as quickly as possible (B, fig. 13).

c. To change from the FRONT to the BACK position, quickly do a pushup, move the feet several short steps to the right or left, lift the arm on the side toward which the feet move, and thrust the legs vigorously to the front (C, fig. 13).

d. To move from the BACK to the FRONT position, sit up quickly, place both hands on the ground to the right or the left of the legs.

A. FOUR BASIC POSITIONS



GO



FRONT



BACK



STOP

B. ASSUMING FRONT AND BACK POSITIONS



C. CHANGING FROM FRONT TO BACK



D. CHANGING FROM BACK TO FRONT

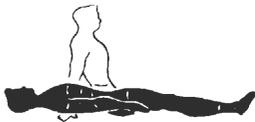


Figure 13. Basic positions for grass drills.

Move the feet several short steps to the rear on the side opposite the hands. When the feet are opposite the hands, thrust the legs vigorously to the rear and lower the body to the ground (D, fig. 13).

149. Place in the Program

Grass drills can be executed in a short period of time. The drills may be executed where only a few minutes are available for exercise, or they may be executed in conjunction with an-

other type of activity. Grass drills are an excellent substitute for running when time is a factor.

150. Leadership

A warmup activity of lesser intensity should proceed grass drill. During the instructional phase and conduct of these drills the following points should be applied:

a. The instructor executes only GO and STOP with the troops. This allows him to supervise the drill.

b. The commands peculiar to grass drills are given in rapid succession without the usual preparatory command.

c. To prevent confusion, the instructor should give his commands sharply to distinguish them from comments or encouragement.

d. As soon as the men know the drill, they respond to the instructor's commands and perform all exercises vigorously and as rapidly as possible. All exercises are executed contin-

uously until the next command is given. Insist on top speed performance; anything less is ineffective.

e. The commands peculiar to each exercise are identical to the name of the exercise.

f. Men are not to be required to assume the position of attention once the drills are started. To halt the drill for instructions or for rest, the command UP is used. At this command, the men assume a relaxed standing position. Do not demand formality. At the conclusion of a fast and vigorous 5-minute grass drill, it is physically impossible for men to stand at attention.

g. The sequence of commands for the execution of grass drills should occur in the order as contained in this example of Drill One. "GO, FRONT, Bouncing Ball; GO, BACK, Bicycle; GO, Full Squatter; GO, BACK, Situps; GO, FRONT, Mountain Climber; GO, FRONT, Roll Left; GO, STOP, UP."

Section II. GRASS DRILL ONE AND TWO

151. Grass Drill One (fig. 14)

a. *Bouncing Ball.* From the FRONT position, push up, supporting the body on the hands (shoulder-width apart) and feet. Keep the back and legs in line and the knees straight. Bounce up and down by a series of short, upward springs from the hands, hips, and feet simultaneously.

b. *Bicycle.* From the BACK position, raise the legs and hips. Keep the elbows on the ground and support the hips with the hands. Move the legs vigorously as if pedaling a bicycle.

c. *Full Squatter.* From the STOP position, assume a full knee bend, the feet on line, hands on hips. Bounce up and down in place by short, bouncing jumps.

d. *Situps.* From the BACK position and with arms stretched overhead, sit up, reach forward, and touch toes. Return to the supine position.

e. *Mountain Climber.* From the STOP position, place both hands on the ground directly under the shoulders. Thrust the right leg to the rear, knee straight. The left foot should be

close to the left hand, the left knee outside the left arm. Shift the weight to the hands, thrust off with the rear (right) foot and bring that foot up close to the right hand, the right knee outside the right arm. At the same time, thrust the left leg vigorously to the rear, knee straight. Continue at a fast cadence, alternating the legs.

f. *Roll Left.* From the BACK or FRONT position, make one complete roll in the direction commanded. On completing the roll, return to the FRONT or BACK position.

152. Grass Drill Two (fig. 15)

a. *Legs Over.* From the BACK position and with arms stretched overhead, palms up, raise the legs upward and then swing them backward over the head until the toes touch the ground behind the head. Return legs to the starting position.

b. *V-Up and Touch Toes.* From the BACK position, raise the legs with the knees straight, sit up until the trunk and legs form a V, and touch the toes with the hands. Return to the BACK position.

A. BOUNCING BALL



B. BICYCLE



C. FULL SQUATTER



D. SIT UPS



E. MOUNTAIN CLIMBER



F. ROLL LEFT

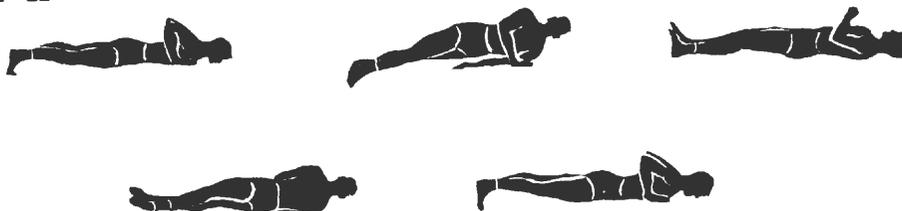


Figure 14. Grass drill one.

c. *Rocker.* In the FRONT position, clasp the hands behind the back, arch the body, holding the head back. Start rocking, using the front part of the trunk as a rocker.

d. *Bounce and Clap Hands.* The procedure is the same as for bouncing ball (fig. 14), but while in the air, clap the hands. This requires a more vigorous bounce or spring.

e. *Leg Spreader.* From the BACK position,

raise the legs so that the heels are 10 to 12 inches from the ground, spread them apart as far as possible, then close them together. Open and close legs as rapidly as possible.

f. *Forward Roll.* For forward roll from the STOP position, place both hands on the ground, tuck the head, and do ONE complete forward roll, keeping the legs tucked as you roll, and come back to the STOP position.

A. LEGS OVER



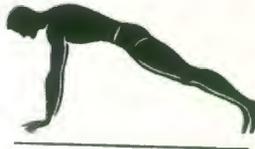
B. V-UP AND TOUCH TOES



C. ROCKER



D. BOUNCE AND CLAP HANDS



E. LEG SPREADER



SIDE VIEW



FRONT VIEW

F. FORWARD ROLL



Figure 15. Grass drill two.

CHAPTER 13

GUERRILLA EXERCISES

Section I. INTRODUCTION

153. Description and Function

Guerrilla exercises are individual exercises of an informal nature which require rapid change of body position and the execution of various basic skills while moving forward. The group moves in a circle formation while performing the exercises. This activity increases strength and endurance, aids flexibility, and develops coordination. There are two tables of guerrilla exercises, each of which can be completed in 15 minutes.

154. Area and Equipment

Any level area is suitable for the conduct of guerrilla exercises. No ground contact is required other than the hands. There is no equipment requirement.

155. Formation

a. The circle formation (app B) is used for guerrilla exercises. Each platoon forms its own circle and engages in guerrilla exercises under a platoon instructor. If the platoon exceeds 30 men, double or concentric circles may be used.

b. When the circle is formed, the instructor steps into the center of the circle and moves *clockwise* in a *small* circle. He commands: QUICK TIME, MARCH, 1-2-3-4. (Rapid cadence of approximately 130 counts per minute. Cadence and step are maintained between exercises.)

c. To re-form the platoon after completing guerrilla exercises, the instructor halts the men and places the base man or platoon guide where he wishes and commands:

- (1) BASE MAN (or platoon guide), POST.
- (2) FALL OUT AND FALL IN ON THE BASE MAN (or platoon guide).

156. Dosage and Progression

One table per conditioning period is the normal dosage. Progression may be attained by moving from table I to table II. Another method of progression is to shorten the quick time marching periods between exercises and perform all exercises a second time.

157. Place in the Program

Many men have not had the opportunity to perform the simple skills involved in guerrilla exercises. The conduct of these exercises is a simple matter as they can be performed easily and quickly in almost any situation. The tables of exercise are applicable to all personnel. The tables can constitute a station within a 1-hour period or be completed within a separate 15-minute period.

158. Leadership

a. To execute the exercises, the men continue at quick time while the instructor simultaneously explains and demonstrates the exercise to be performed, and then commands the men accordingly. In each instance, the preparatory command will be the name of the exercise and, in all instances, the command of execution will be MARCH. To terminate each exercise, the command is QUICK TIME, MARCH. The men immediately pick up the step as the instructor counts cadence.

b. Unless specified differently, each exercise should be continued for 20 to 40 seconds depending upon the vigor of the exercise. The leader can determine the duration of each exercise by observing its effect upon the men of the unit.

c. To form for double guerrillas, the com-

mands for pairing the men (who are in circle formation) are:

(1) PLATOON, HALT.

(2) FROM (designate an individual), BY TWO'S, COUNT OFF. (Example 1-2; 1-2; 1-2; etc.)

(3) EVEN NUMBERS MOVE UP BEHIND ODD NUMBERS. (At this time adjust pairs according to height and weight.)

(4) YOU ARE NOW PAIRED UP FOR DOUBLE GUERRILLAS. (To change the men's positions, merely command "CHANGE.")

(5) FORWARD, MARCH.

Section II. GUERRILLA TABLES

159. Table I

a. Double Time (A, fig. 16). The arms are held in the thrust position. The personnel execute a double time run, maintaining the circle formation and the prescribed distance between personnel. Duration—1 minute.

b. All Fours (B, fig. 16). Face downward. Support the body on the hands and feet. Walk forward as fast as possible.

c. Crab Walk (C, fig. 16). Get in the sitting position and lift the hips, supporting the body on the hands and feet, and walk forward feet first.

d. Squat Walk (D, fig. 16). Assume a full knee bend position. Grasp the ankles (left ankle with the left hand, right ankle with the right hand). Walk forward.

e. Broad Jump (E, fig. 16). Jump forward on both feet in a series of broad jumps. Swing the arms vigorously to assist the jumps.

f. Toe-Touch Walk (F, fig. 16). Walk forward, bending at the waist and touching one hand to the toe of the opposite foot while it is on the ground. Raise the trunk to the vertical position between steps. Keep the knees straight.

g. Bottoms Up Walk (G, fig. 16). Assume the front leaning rest position and move the feet toward the hands in short steps, keeping the knees locked. When the feet are as close to the hands as possible, walk forward on the hands to the front leaning rest position.

h. Straddle Run (H, fig. 16). Run forward, leaping to the right from the left foot and to the left from the right foot.

i. Fireman's Carry. See *j* below.

j. Single Shoulder Carry (I and J, fig. 16). Two men execute the carries as indicated by the diagram. No. 1 man executes one type; No. 2 man executes the other.

160. Table II

a. Double Time (A, fig. 17). The arms are held at the thrust position. The personnel execute a double time run, maintaining the circle formation and the prescribed distance between personnel. Duration—1 minute.

b. Toe Touch Walk. (B, fig. 17). Bend forward and grasp toes. With knees slightly bent, walk forward.

c. Hand-Kick Walk (C, fig. 17). Walk forward, kicking the moving foot upward on every step. At the same time, lean forward and touch the elevated toe with the hand of the opposite arm.

d. Pike Jumping (D, fig. 17). Jump forward and upward from both feet, keeping the knees straight, and at the same time swing the legs forward and touch the toes with the hands at the top of each jump.

e. Squat Jump (E, fig. 17). Travel forward by leaping from the squatting position, with the hands on the ground and the arms between the legs. Land on the hands and legs extended and bring up the legs to the squatting position.

f. Steam Engine (F, fig. 17). Lace the fingers behind the neck and walk forward in the following manner: as the left leg moves forward, raise the knee high, bend the trunk forward, and touch the outside of the right elbow to the outside of the knee. Then lower the left leg and step forward on the left foot and raise the right leg. Repeat with the right leg and left elbow.

g. Knee-Touch Walk (G, fig. 17). Walk forward, bending the knees and touching the knee of the rear leg to the ground on each step. The knees are bent and straightened on each step.

h. Hobble Hopping (H, fig. 17). Hold foot behind back with opposite hand and hop forward. On command "change" grasp the opposite foot with opposite hand and hop forward.

i. Cross Carry. See *j* below.

j. Saddle Back Carry (I and J, fig. 17). Two men execute the carries as indicated in the diagram. No. 1 man executes one type; No. 2 man executes the other.

A. DOUBLE TIME



B. ALL FOURS



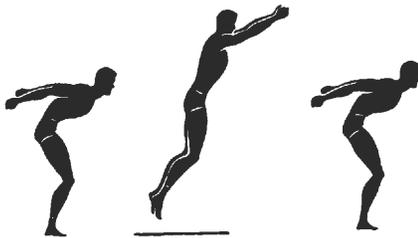
C. CRAB WALK



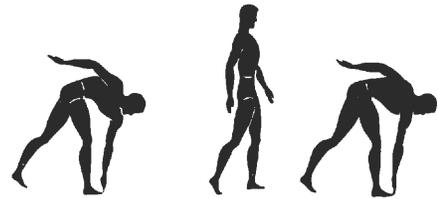
D. SQUAT WALK



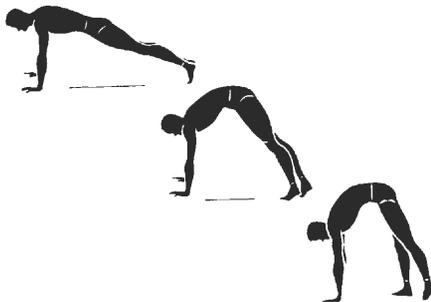
E. BROAD JUMP



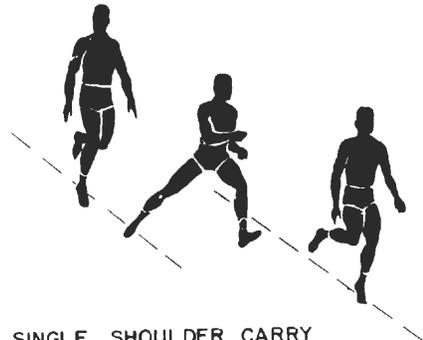
F. TOE-TOUCH WALK



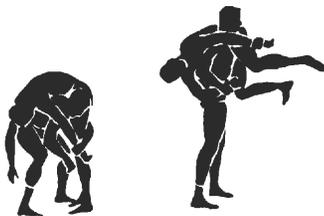
G. BOTTOMS UP WALK



H. STRADDLE RUN



I. FIREMAN'S CARRY



J. SINGLE SHOULDER CARRY



Figure 16. Guerrilla table I.

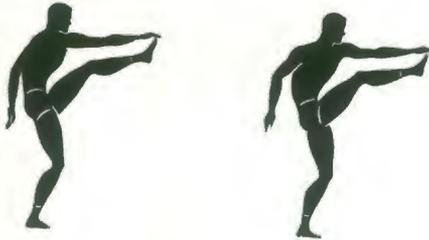
A. DOUBLE TIME



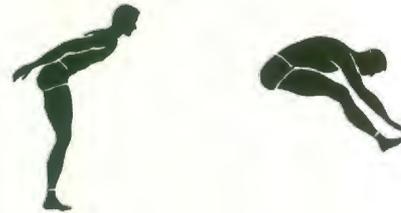
B. TOE-GRASP WALK



C. HAND-KICK WALK



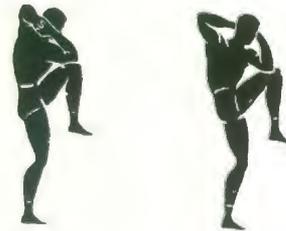
D. PIKE JUMPING



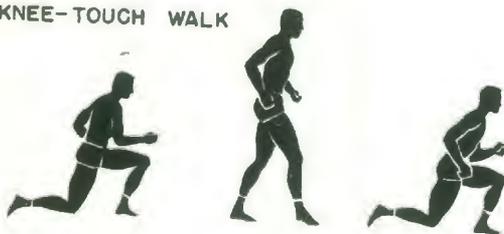
E. SQUAT JUMP



F. STEAM ENGINE



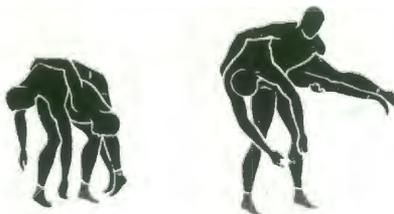
G. KNEE-TOUCH WALK



H. HORBLE HOPPING



I. GROSS CARRY



J. SADDLE BACK CARRY



Figure 17. Guerrilla table II.

CHAPTER 14

RUNNING

Section I. INTRODUCTION

161. Circulo-Respiratory Endurance

Circulo-respiratory endurance (wind) depends on the efficiency of the lungs and heart. The maximum effort a man can exert over a period of time is limited by the amount of oxygen his lungs can absorb with each breath inhaled and the amount of carbon dioxide his lungs can expel with each exhalation. The process of absorbing oxygen and expelling carbon dioxide (circulo-respiratory process) is performed by the blood that circulates through the lungs. The average man's capacity for keeping fresh blood circulating through his lungs can be greatly increased by exercise. Running is one of the best exercises for this purpose.

162. Use in the Program

Despite the fact that some men have been endowed with superb muscle structure and superior strength of muscle tissue, unless they have developed circulo-respiratory endurance (wind) to a satisfactory degree, they are not entirely physically fit nor combat ready. Running is one of the best activities to develop this vitally important circulo-respiratory endurance. Running fits well into the program as the recommended running tables can be completed in 15 minutes or less. In addition to the types of running in this chapter, there are other types which should be used, such as grass drills and the circuit-interval run.

163. Proper Form

The general form and technique for all types of running is fairly constant (fig. 18). The head is erect, body slightly forward without bending at the waist, and the arms are at a loose thrust position alternating from front to rear in straight planes. A cross-body arm movement wastes energy. The movement of the legs and feet will be discussed in subsequent paragraphs dealing with the different types of running. Of primary importance is the fact that in all types of running the toes must be pointed straight ahead. Toeing out is a common error in both running and walking and should be an item of individual correction.

164. Provisions for Instruction

In the development of running skill men require instruction to improve their proficiency.

a. Teach and insist upon proper form. Arm action is important; check to see that arms are held loosely and that the action is relaxed. The faster the run, the more rapid the arm action.

b. Allow the men to breathe through the mouth; the body demands a large supply of oxygen and it can be inhaled in greater quantities through the mouth.

c. Other items of instruction are part of the running tables in paragraphs 165 through 171.

Section II. TYPES OF RUNNING

165. Double Time

a. Description and Function. Double timing is marching at the rate of 180 steps per minute, each step being 36 inches in length. It takes practice to double time with precision in

formation. The troops should keep in step, placing their feet perfectly flat on the ground. This, however, should not be a stamping motion—it should be done with as slight a jolt as possible. Double timing is like a jog, the differ-

PROPER RUNNING FORM

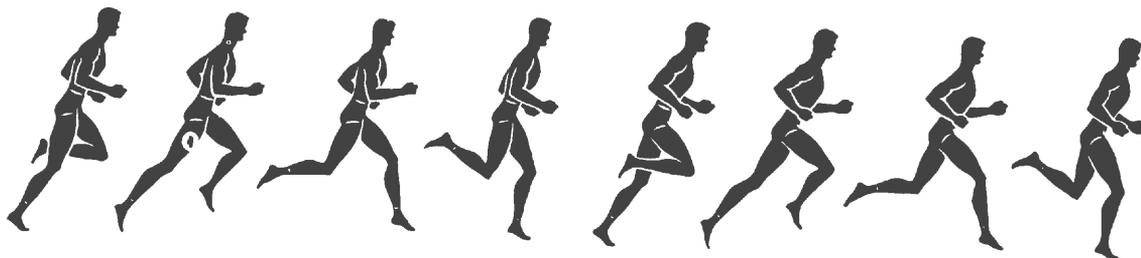


Figure 18. Proper running form.

ence being that in a jog the feet are lifted well off the ground and the running motion is bouncy. In double timing, the feet skim the ground and there is no bounce to the run. Double timing is a vehicle for teaching proper running form and for the development of circulo-respiratory endurance.

b. Area. This type of running can be completed over a variety of surfaces. Usually a field or road is utilized.

c. Starting Dosage and Progression. There is no set standard for alternating quick time and double time in the early conditioning of troops. A general rule is to begin with enough quick-time marching to insure a thorough warming up, then double time about 100 paces. Change again to quick time until the men have made a reasonable recovery from the running, then double time another 100 paces. The amount of double time can be increased and the quick time decreased from week to week, until the men are double timing about 1800 yards. This type of training should be given at least twice a week, but by no means is it adequate as the sole means of conditioning.

d. Leadership.

(1) The instructor should be to one side of the column or group and toward the rear so he can have a full view of all the men. Inexperienced instructors have a tendency to supervise from a position too far forward.

(2) Select a man who can maintain the proper cadence to act as the guide during double time running.

(3) Uncoordinated men who cannot keep step while double timing should be placed in the rear of the formation until they can.

(4) There are several ways for the instructor and group to count cadence while double timing. If not contrary to local policy, learn several methods and use them for variety.

(5) Control the dosage of early conditioning running to prevent the weaker men from falling out; observe the men closely and bring the group to quick time before they start to falter. Men forced to fall out in the early conditioning stage tend to form a mental pattern for falling out which persists, although later on there is no physical reason for it.

166. Wind Sprints

a. Description and Function. This type of running involves a series of 30- or 40-yard dashes, usually conducted in successive waves of squads. Each squad is in line and the squad leader is the right flank man. Wind sprints assist in developing speed and circulo-respiration endurance.

b. Area. Any flat and level area may be used which will permit the squad to form a line and run the required distance.

c. Starting Dosage and Progression. One or two 30-yard sprints will be adequate at the beginning. As time passes, sprints can be lengthened and up to six or seven sprints may be used.

d. Leadership.

(1) At the command **READY** (given by squad leader), each runner assumes the sprinter's starting position. At the command **GO**, the squad sprints approximately 30 yards, takes 10 yards to stop, and lines up immediately with the squad leader who repeats, **READY, GO**, and again the squad sprints. At the conclusion of the third sprint the squad waits until all the squads of the platoon have made

three sprints, then they all line up and the squad leaders conduct three more wind sprints in the opposite direction.

(2) Valuable time is gained by having each squad ready to go when the preceding squad has moved off its second sprint mark.

167. Cross-Country Running

a. Description and Function. Cross-country is a distance run conducted on a course laid out along roads, across fields, over hills, through woods, and on any irregular ground. The cross-country run may be utilized as a conditioner or as a competitive event; the objective is to cover the distance in the shortest possible time. These runs build leg muscles, increase lung capacity, and develop endurance.

b. Area. Any local area of varied terrain is suitable. The course should be 2 to 2½ miles in length and be laid out to avoid heavy vehicular traffic. The course should be marked by directional arrows until men know the course.

c. Starting Dosage and Progression. In the mass training of a large group, leaders should be stationed at the head and the rear of the column and they should make every effort to keep the men together.

(1) After determining the abilities of the men in cross-country running, it is advisable to divide the unit into three groups. The poorest conditioned group is started first, and the best conditioned group, last. The starting time of the groups should be staggered so that all of them come in about the same time.

(2) In preliminary training, the running is similar to ordinary road work in that it begins with rather slow jogging, alternating with walking. The speed and distance of the run is gradually increased. As the condition of the men improves, occasional sprints may be introduced. At first the distance run is from one-half to 1 mile. It is gradually increased to 2 or 2½ miles.

d. Leadership.

(1) No man should be required to take part in distance running until he has been through a progressively scheduled training program which requires a considerable amount of running.

(2) Cross-country runs should be sched-

uled occasionally to provide variety in the program. Cross-country running has the advantage of allowing mass participation. Interest can be stimulated by putting the runs on a competitive basis (para 336-342).

(3) As a single activity, short cross-country runs can be scheduled once a week; gradually increasing the distance as the physical condition of the men improves; or this running can be combined with other activities such as conditioning exercises. Well conditioned men can run 2 to 2½ miles within a 15 minute period.

168. Speed Marching

a. Description and Function. In addition to its military value, marching is used as a physical conditioner. Where used as a conditioner, it may take the form of forced marching at an accelerated quick time for shorter periods of time, or of longer forced marching, combining quick time and double time. This combined quick and double time is speed marching. Normal field equipment, individual weapons, and gear are worn and carried during the march.

b. Area. This type of marching and running is completed on roads or trails.

c. Starting Dosage and Progression.

(1) Because physical conditioning is proportional to the intensity of the exercise, and since the dosage or intensity varies with the speed, the faster marches have more conditioning value than the slower and somewhat longer ones. For example, a march of 5 miles in 1 hour has several times more value than a march of 5 miles in 2 hours. The relationship is not too simple, for it is physiologically easier to double time than to quick time at the higher speeds of walking—speeds approaching or exceeding 5 miles an hour. Hence, for conditioning, much of the marching should be fast quick time marching or a combination of quick time and double time.

(2) These speed marches should be introduced gradually with due allowance for terrain, weight carried, condition of the troops, and the temperature. Marches should become progressively more severe.

d. Leadership.

(1) In marching the recommended distances, a combination of quick time and double

TABLE I. DOUBLE TIME AND WIND SPRINTS			
PERIODS	TIME	DOUBLE TIME	WIND SPRINTS
1 - 3	15 MIN.	1/4 MILE	2 SPRINTS - 30 YARDS
4 - 6	15 MIN.	1/2 MILE	3 SPRINTS - 30 YARDS
7 - 9	15 MIN.	3/4 MILE	5 SPRINTS - 30 YARDS
10 - 12	15 MIN.	1 MILE	6 SPRINTS - 30 YARDS

Figure 19. Double time and wind sprints table.

TABLE II. CROSS-COUNTRY RUNNING			
PERIODS	TIME	DISTANCE	METHOD
13 - 15	15 MIN.	1 MILE	BY GROUP
16 - 18	15 MIN.	1 1/2 MILE	BY GROUP
19 - 21	15 MIN.	2 MILES	INDIVIDUALLY
22 - 24	15 MIN.	2 1/2 MILES	INDIVIDUALLY IN COMPETITION

Figure 20. Cross-country running table.

TABLE III. SPEED MARCHING			
PERIODS	TIME	DISTANCE	METHOD
25 - 27	45 MIN.	4 MILES	GROUP CONTROL
28 - 30	1 HR.	5 MILES	GROUP CONTROL
31 - 33	2 HRS.	9 MILES	GROUP CONTROL
34 - 36	4 HRS.	16 MILES	GROUP CONTROL

Figure 21. Speed marching table.

time is less fatiguing than fast quick time marching. For example, 166 34-inch steps per minute are required to march 4 miles in 45 minutes. A quick time cadence of 166 is far beyond the capabilities of the average unit. Troops can execute this distance by speed marching. In speed marching both during the quick and the double time, cadence and step are constantly maintained.

(2) The optimum pace and cadence in quick time and double time for a unit must be determined by experiment. The pace and cadence adopted by a unit for quick time and double time will of necessity determine the amount of each required to attain the desired overall rate.

169. Table I—Double Time and Wind Sprint Table

This table is based upon a unit or group which is starting to run as part of its physical readi-

ness program. At the beginning it may be necessary to double time and quick time to cover the distance prescribed. As fitness improves the distance increases but the time remains constant. Note that three periods are devoted to each distance (fig. 19).

170. Table II—Cross-Country Running Table

There is a progression from table I to table II. In table II a different type of running is prescribed and the distances increase with the time remaining at 15 minutes. As in table I, three periods are devoted to each distance (fig. 20).

171. Table III—Speed Marching Table

This table is a further progression from tables I and II. Men who have completed the previous tables will be ready for the specified distances. Normal individual field gear will add weight to the runner (fig. 21).

CHAPTER 15

STRENGTH CIRCUITS

Section I. INTRODUCTION

172. Description

A strength circuit is a series of stations where men in small groups exercise vigorously for a short period of time and then move (on signal) to the next station where a different form of exercise is available. This rotation of groups continues until all groups move through all stations. Strength circuits contain no set or specific types of exercise stations within the circuit. There are three general types of circuits.

a. Fixed Circuit. This is a circuit in which apparatus of an immovable type (fixed into the ground) is used. A type of fixed circuit is illustrated in figures 22 and 23 and explained in paragraphs 175 through 182.

b. Movable Circuit. This circuit consists of individual exercise apparatus which is portable and can be moved to and from the training area. A type of movable circuit is illustrated in figures 24 and 25 and explained in paragraphs 183 through 188.

c. Simplified Circuit. This circuit requires no equipment or apparatus. A type of simplified circuit is illustrated by the Circuit-Interval Table in figure 26 and explained in paragraphs 189 through 195.

173. Participation

a. The exercises are done at will, but rapid, steady, and continuous work is required of all.

Each man has a different nervous and muscular system, and should be considered, as nearly as possible, as an individual. One soldier may be able to complete five movements, while another may be able to complete 20, and yet each is receiving the maximum benefit.

b. All three circuits contained in this chapter are designed for platoon-size groups. Expansion beyond this capacity requires a large amount of equipment, as each man in the fixed and movable types of circuits must have an item of equipment available for exercise at each station. A group larger than a platoon could be exercised through use of the simplified type of circuit; however, the group would be unwieldy and control becomes a problem.

174. Place in the Program

All circuits illustrated can be completed in a 15-minute period. This feature allows the exercise of a platoon or smaller group on the circuit for a single 15-minute period, or the scheduling of the circuit as a 15-minute period within a longer period. A circuit can thus be utilized within the rotating activity system of scheduling as explained in chapter 5. Choice of a circuit by the unit depends upon area, facilities, and other local factors; however, there is a circuit for every need.

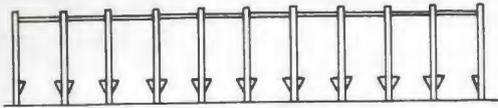
Section II. FIXED STRENGTH CIRCUIT

175. Objective

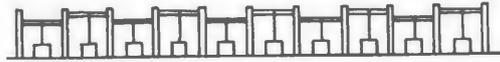
The objective of this circuit is to provide a series of exercises which will improve and maintain strength of the body's major muscle groups.

176. Time

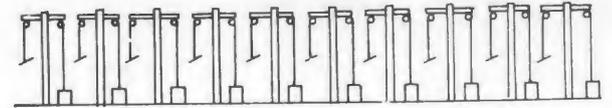
This circuit is designed to be accomplished in 15 minutes when conducted on a time-rotation basis, as normally executed for unit training. For individual use, the circuit may be executed



1. PULLUPS



2. TWIST GRIP

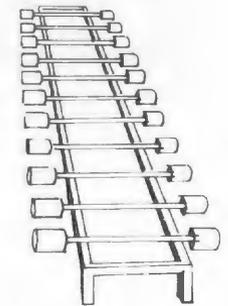


3. PULLEY WEIGHTS

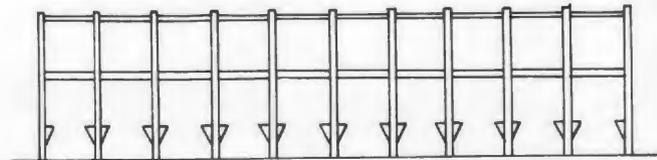


7. ROPE CLIMB

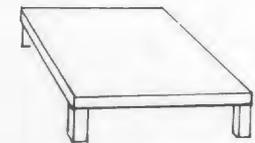
NOTE. IF SUPPLEMENTARY STATIONS ARE USED
THEY MAY BE INSERTED BETWEEN THE PRIMARY STATIONS.



4. BARBELL CURLS



6. LEG LIFT



5. STEP-UP

Figure 22. Fixed strength circuit.

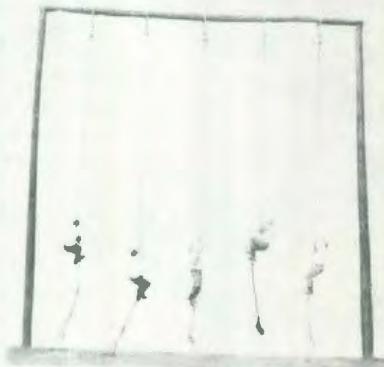
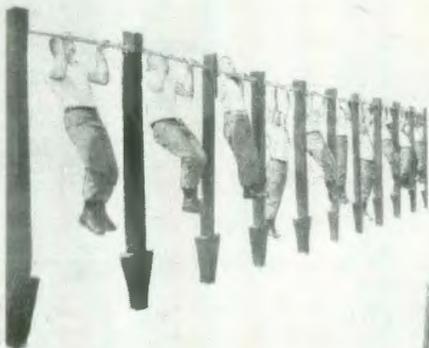
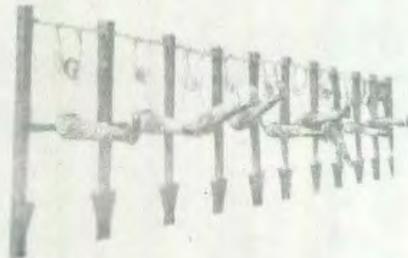


Figure 23. Stations of the fixed strength circuit.

STATION	NAME & ITEM	NUMBER	SPECIFICATION
1	BARBELL		1 1/4-INCH PIPE 5 FEET LONG WITH CONCRETE FILLED NO. 10 CANS.
2	JUMP ROPE		1/4 - OR 3/8 -INCH ROPE, 10 FEET LONG.
3	TWIST GRIP		HANDLE 12 INCHES LONG, ROPE 4 FEET LONG, NO.10 CAN CONCRETE FILLED.
4	INCLINE PLANE		3/4 - INCH PLYWOOD PLATFORM 2 FEET WIDE AND 6 FEET, 6 INCHES LONG ELEVATED 10 INCHES AT ONE END. STRAP TO HOLD FEET DOWN
5	WAR CLUB		HEAD IS 6 BY 12 INCHES, HANDLE IS 14 INCHES LONG BY 1 1/4 INCHES IN DIAMETER, ABOUT 20 POUNDS.
6	BICYCLE RIDE		PLYWOOD BOARD OR PLATFORM 2 BY 3 FEET WITH 2 BY 2 RUNNERS
7	STEP-UP		A BOX OR STURDY PLATFORM. 18 INCHES HIGH, 18 INCHES WIDE, 24 INCHES LONG.
8	ISOMETERIC PULL		TWO HANDLES 12 INCHES LONG WITH 4 FEET (BETWEEN HANDLES) OF LIGHT WIRE CABLE OR 1/4-INCH ROPE.

Figure 24. Movable strength circuit.


LEADER

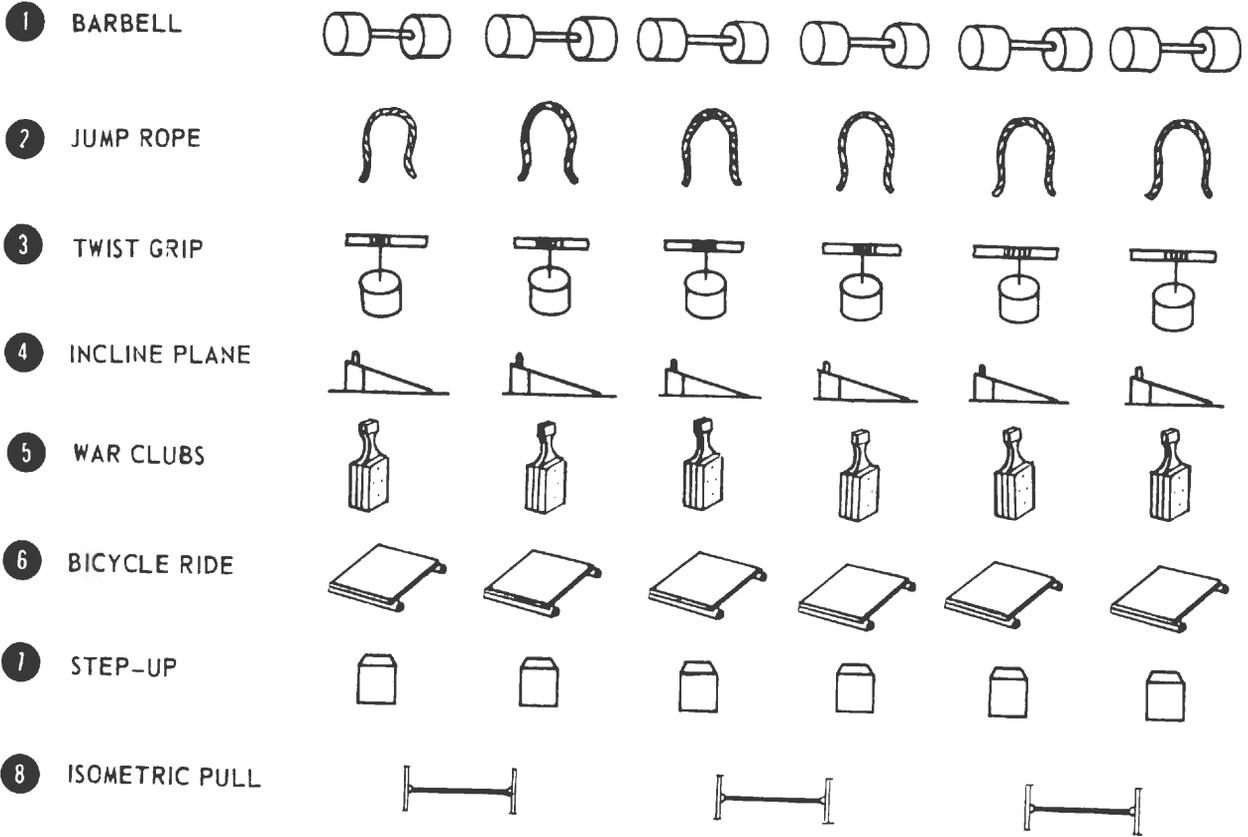
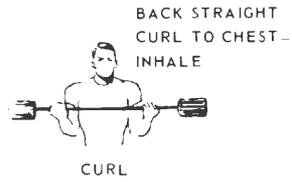
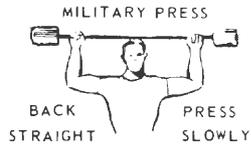
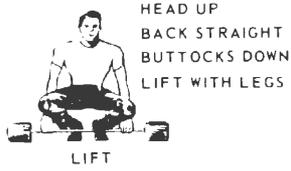


Figure 24—Continued.

1. BARBELL



2. JUMP ROPE



3. TWIST GRIP



4. INCLINE PLANE



5. WAR CLUBS



6. BICYCLE RIDE



7. STEP - UP



8. ISOMETRIC PULL



Figure 25. Stations of the movable strength circuit.

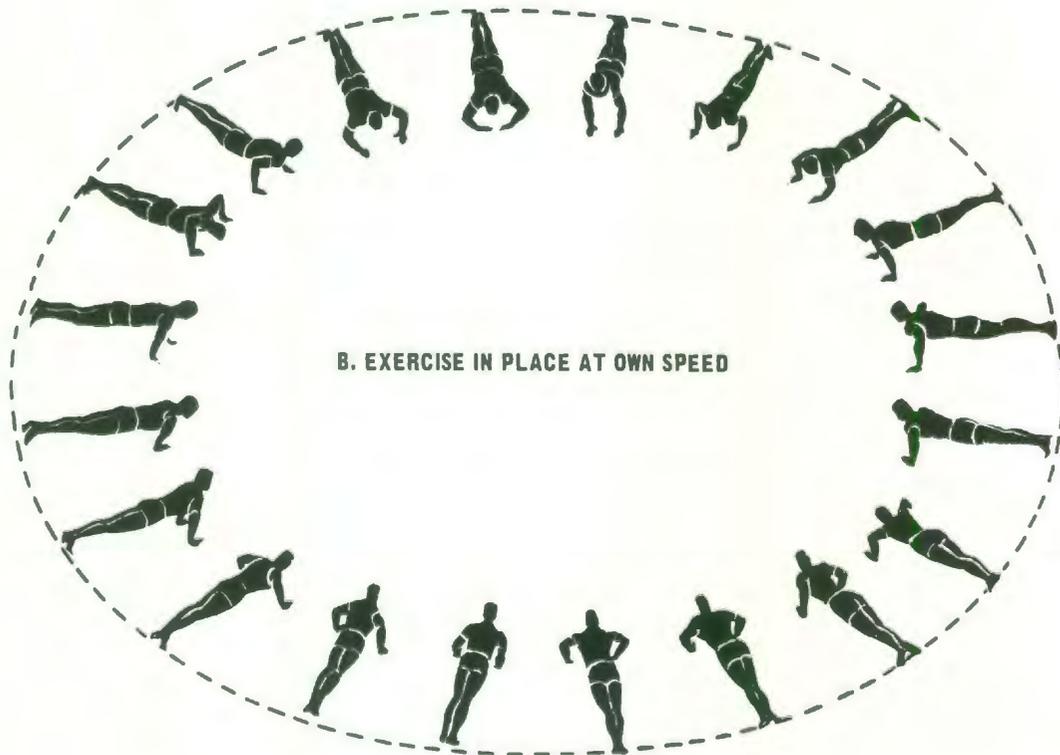
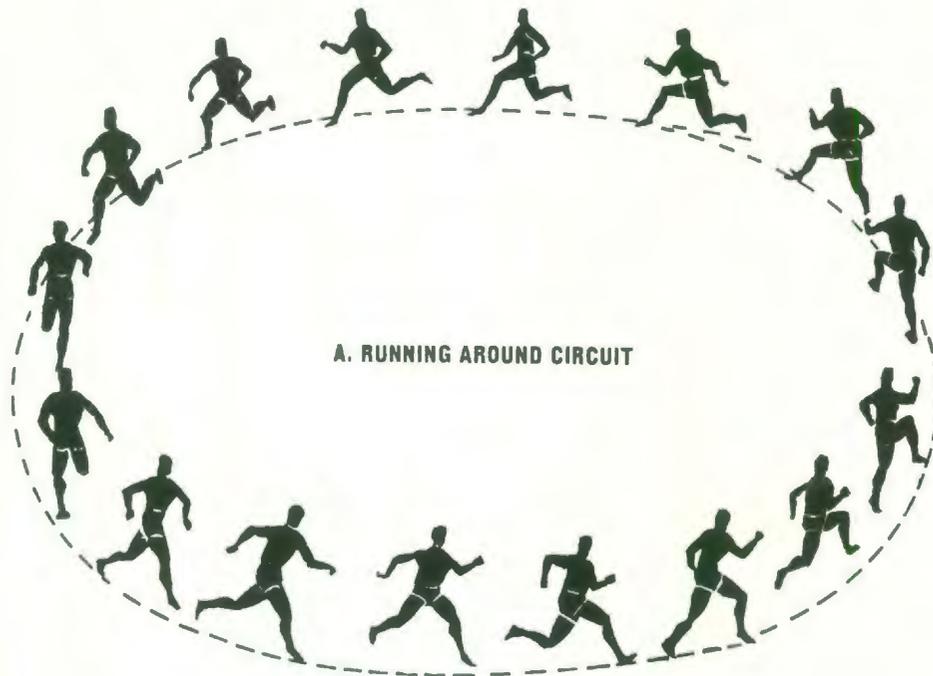


Figure 26. Circuit-interval table.

by accomplishing a specific number of repetitions of each exercise. In this case the time required for completion of the circuit would vary slightly depending on the number of repetitions accomplished.

177. Description

The strength circuit is an arrangement of various types of exercise apparatus (fig. 23) which is fixed as to position (immovable). All apparatus of one type are positioned together to constitute a station. Each station will accommodate 10 men. The participant starts on any station, exercises steadily for a certain period (45 seconds initially), then moves (on command) to the next type of apparatus where he again exercises steadily for an equal period. He continues this process until he has accomplished the exercise required at every station. Seven basic exercises are used, each of which requires apparatus. Four additional supplementary exercises, requiring no equipment, are provided if it is desired to expand the number of stations in the circuit to accommodate more participants at one time, and will increase the amount of time required for completing the circuit.

178. Warmup

Men must be thoroughly warmed up prior to participating in the circuit system. If personnel have not engaged in vigorous exercise immediately prior to starting the circuit, then the following warmup should be conducted. These exercises should be conducted in the normal formation for set drills. Seven repetitions of each exercise will normally provide sufficient warmup. The exercises are:

- a. High jumper, exercise 1, Conditioning Drill 1.
- b. Bend and reach, exercise 2, Conditioning Drill 1.
- c. Squat bender, exercise 5, Conditioning Drill 1.

179. Control

Close control of all personnel is necessary to insure that a minimum amount of time is spent in moving participants to their initial stations and in moving between stations. One instructor can control the activity on the strength circuit. A stopwatch or wristwatch with a second hand

is required. When troops arrive at the strength circuit, they will be formed for exercise and the warmup drill conducted. The group is then reassembled and formed into a number of files equal to the number of stations being used in the circuit. Each file is then directed to a station. As soon as all participants have reached an exercise position at a station, the command READY, GO is given. After 45 seconds of exercise, the command STOP, CHANGE OVER is given. Forty-five seconds is allowed for moving to the next station and preparing for the next exercise before the command to exercise is again given. In lieu of verbal commands a whistle may be used to stop and start the exercises. For large groups a megaphone or loudspeaker is useful.

180. Progression

The circuit system adjusts for participants of varying physical ability through several methods. The man in excellent physical condition can perform the exercises at a faster rate, thus doing more repetitions of each exercise than would a man in poorer physical condition. Some exercises can be adjusted by varying the load applied to the participant, such as changing the method of executing the leg lift or by selecting a heavier weight for the barbell curls. When it becomes apparent during a unit program that the overall fitness of the group has improved, then the exercise may be made more strenuous in two additional ways. First, one or more of the supplementary stations can be added. Second, the time spent exercising at each station can be increased in 5-second increments to a maximum of 60 seconds. The 45-second periods for movement between stations can be reduced. Initially this time is provided for movement and instruction. As men learn the circuit, instruction time should be eliminated, thus allowing only enough time to change stations.

181. Individual Conditioning Program

Timing the duration of the exercise periods will be impractical for the individual working alone on the strength circuit. For individual exercise, the participant should select a number of repetitions of each exercise to accomplish, then rotate to the next station after accomplishing these repetitions. The number of

repetitions selected should be at or near the maximum that the individual is capable of doing without halting for rest. Remembering these performance levels will provide the participant with goals to strive for or surpass. Merely exercising at a station until he feels tired is not a reliable performance standard for an individual, as he then has no objective method of measuring his progress.

182. The Fixed Circuit Stations

a. Primary Stations (fig. 23).

(1) *Pullups*. A horizontal bar placed 8 feet above the ground is required. A space on the bar $4\frac{1}{2}$ feet wide is needed for each participant. The pullup is executed with the palms away from the body, thumbs under the bar. After moving to a position directly under the bar, on the command to exercise, the participant jumps up and grasps the bar with the palms away from the face, thumbs under the bar, and comes to a "dead" hanging position. The exercise is then executed by pulling the body directly upward until the chin is placed over the bar, then lowering the body until the elbows are completely straight and the body is again in the "dead" hanging position. The exercise is repeated as many times as possible until the command is given to stop and move to the next exercise. If a participant has done his maximum number of pullups prior to the command to stop, he will remain in the "dead" hanging position until the command to stop and move to the next station.

(2) *Twist grip*. The apparatus is a horizontal bar, free to turn, held between uprights placed 30 inches apart. The bar is 52 inches above the ground. A weight of 20 pounds is attached to the center of the bar by a light rope long enough to permit the weight to rest on the ground. The participant stands at arm's length from the bar and grasps it with his hands on either side of the rope, palms down, thumbs under the bar. On the command to exercise the hands are rotated so that the backs of the hands are rotated away from the body, thus winding the rope on the bar. The elbows are kept straight to insure that the exercise is performed by the hand and forearm. When the weight is drawn up to the bar, the bar is then rotated in the opposite direction to lower the weight to the ground. This exercise is continued

until the command is given to stop and move to the next station.

(3) *Pulley weights*. The apparatus is a "T" frame with a system of pulleys that suspends a weight of about 90 pounds. The weight is attached to a light steel cable which has a drawbar attached to the other end. The participant grasps the drawbar and sits down directly under the bar, legs extended to the front and arms extended overhead. The exercise is executed by pulling the drawbar down behind the head, then extending the arms slowly again until they are fully extended overhead. The exercise is repeated as many times as possible until the command is given to stop and move to the next exercise. Upon completion of the exercise the weight is lowered slowly to the ground.

(4) *Barbell curls*. A barbell is necessary for each participant at this station. The barbell is constructed of $1\frac{1}{4}$ -inch pipe 5 feet long, and two concrete-filled No. 10 cans. Each barbell should weight about 40 pounds. Variance in the weight of the barbells, up to about 55 pounds, will allow appropriate overload to be applied to men who are above average in strength or weight. The participant grasps the bar with the palms forward and assumes a standing position with the barbell held in front of the hips, hands approximately shoulder's width apart. On the command to exercise, the elbows are flexed and the barbell is drawn up until it touches the upper chest. The elbows remain at the sides. Breath is inhaled with the upward movement and exhaled as the barbell is lowered to the starting position. The exercise is repeated as many times as possible until the command is given to stop and move to the next apparatus.

(5) *Step-up*. The apparatus is a platform or ledge 18 inches high and of such size to accommodate 10 men. The participant faces the platform and on the command to exercise, steps up onto the platform, bringing his trailing foot up beside his leading foot. He then steps back down to the original position, stepping down first with the same foot he initially used in stepping up. After 10 repetitions of the exercise, he changes the order of moving the feet to use the opposite leg for stepping up. He repeats this exercise until the command is given to stop and move to the next station.

(6) *Leg lift.* The apparatus is a horizontal bar constructed as described in (1) above. To prevent the body from swaying, a horizontal back support is added 40 inches below the horizontal bar. The arms are kept fully extended. On the command to exercise, the participant jumps up, grasps the bar with the palms forward and the back support behind him. The exercise is executed by raising the legs to a horizontal position then slowly lowering them to the vertical position. The knees are *not* flexed. The legs are *not* swung to the rear of a vertical position to gain momentum for raising them in the next repetition of the exercise. The movement is repeated until the command is given to stop and move to the next exercise. If unable to raise his legs to a horizontal position without flexing his knees, the participant flexes his knees and draws them up to his chest, then lowers his legs to the vertical position.

(7) *Rope climb.* The rope climb is 20 to 30 feet high with five ropes suspended from a horizontal bar which forms the uppermost part of the framework. To prevent the horizontal bar from sagging, and to provide safety, only five ropes are attached to it. There are two frameworks per station. The ropes are 6 feet apart. Any method may be used to climb the rope, and the men climb as high as possible. Personnel who are proficient should climb the rope several times during the time allotted. Caution inexperienced men to take care during descent to avoid rope burns on their hands.

b. Supplementary Stations. The following exercises are designed to expand the basic circuit by being inserted in specific places within the system. For each supplementary station used, adequate room for 10 men to exercise is needed.

(1) *Sit-up or Bottoms up.* These calisthenics are designed to strengthen the abdominal muscles. They will be inserted between the pullup and twist grip stations. The primary stomach exercise is the sit-up. In case of inclement weather or other conditions that make ground contact undesirable, the bottoms up is used.

(a) *Sit-ups.* The participant lies flat on his back with his knees flexed, both feet flat on the ground. The correct angle of the thighs to the ground is 45°. The fingers are interlaced behind the head and the elbows are drawn back even with the back of the neck. At the command to exercise, the participant sits up, keeping his feet flat on the ground and his elbows even with the back of his neck. He then returns to the starting position, repeating the exercise until given the command to stop and move to the next station.

(b) *Bottoms up.* On the command to exercise, the participant assumes the front leaning rest and executes the bottoms up exercise as described in exercise 6, Conditioning Drill 3. He continues this exercise at a moderate cadence until given the command to stop and move to the next station.

(2) *Pushup.* This exercise is designed to strengthen the arm and shoulder girdle muscles. It will be included between the twist grip and pulley weight stations. Upon the command to exercise, the participant executes the push up as described in exercise 3, Conditioning Drill 1. He continues this exercise at a moderate cadence until the command is given to stop and move to the next station.

(3) *Knee bender.* This exercise is designed to build leg muscles and is included between the pulley weight and barbell curl stations. On the command to exercise, the participant executes the knee bender as described in exercise 5, Conditioning Drill 3. He continues this exercise at a moderate cadence until the command is given to stop and move to the next station.

(4) *Trunk twister.* This exercise strengthens the major muscles of the trunk and is included between the step-up and pullup stations. On the command to exercise, the participant executes the trunk twister as described in exercise 4 to Conditioning Drill 1. He continues this exercise at a moderate cadence until the command is given to stop and move to the next station.

Section III. MOVABLE STRENGTH CIRCUIT

183. Introduction

The exercises in this circuit are progressive and the course is planned to gain and hold the

interest of the participating groups. The circuit consists of a series of stations, with each station designed to develop a particular group

of muscles. Along with muscular development, correct posture and deep rhythmic breathing should be stressed on this circuit at all times.

184. Equipment

The equipment is set up in files (fig. 24). Six files of eight stations will accommodate a platoon of 48 men. Two additional files will support 64 men. A file normally consists of eight stations as listed below.

185. Organization

The platoon marches to the area where the equipment is positioned and forms a file within each lane of stations, covering off on a piece of equipment. Movements are made on the double; the important factor is that no time is wasted in getting to work.

186. Execution

a. The leader places himself in front of the barbell station and controls the rotation from this position. He supervises the entire group, with the assistance of several instructors who move about in the platoon correcting and encouraging the men.

b. The leader starts each group but does not count cadence nor lead the men through the exercises. Each man exercises rapidly but individually.

c. As each man finishes his repetitions with the barbell he places the barbells on the ground and the leader call, **READY**, followed by the command **FALL OUT ONE**. All men move on the double to the station directly in front of them, while the men on the barbell stations go to their right-about to the rear station in their lane.

187. Progression

Initially 40 to 45 seconds per station is adequate. As men become stronger the time should be increased in 5-second increments until a minute to a minute and a half is reached.

188. The Movable Circuit Stations

The best results will be obtained on the movable circuit if the exercises on the various stations are given in the following manner:

a. *Station 1, The Barbell* (1, fig. 25).

(1) The exercises at this station stress the following:

(a) Proper posture.

(b) Deep, rhythmic breathing.

(c) Development of the muscles of the arms, shoulders, and upper body.

(2) Instruction of men in the proper methods of lifting: lifting with the legs; keeping the back straight; and merely gripping with the hands. Two recommended exercises are given below. Only one exercise will be used per period. Either exercise may be specified. At successive periods the other exercise may be used.

(a) *Exercise 1, two hands military press* (1, fig. 25). Grasp the barbell with both hands, knuckles up at shoulder width, and lift to the chest. Steadily press to arm's length overhead; lower to the chest resisting weight all the way. Inhale as the weight is pressed up and exhale as the weight is brought down.

(b) *Exercise 2, two hands regular curl* (1, fig. 25). Lift the weight to the waist, with the palms of the hands out, heels together, stomach in, chest lifted and arched, shoulders back, elbows in close to the sides; inhale deeply and curl the weight to the shoulders, using the arms only, at the same time keeping the elbows close to the sides; exhale rhythmically, resisting and lowering the weight to the waist. Emphasize posture and the use of the arms only. This a very valuable exercise for the development of the biceps and the grip and should be repeated from 8 to 16 times, depending on the ability of the participant.

Note. Cadence will not be counted. Each individual works at his own speed and performs the number of repetitions of exercises of which he is capable.

b. *Station 2. The Jump Rope* (2, fig. 25). The purpose of this exercise is to develop strength and agility in the legs, and stamina of the whole body. It makes the soldier agile on his feet and increases his footwork efficiency and timing. He should progress until he is able to jump rope at least 3 minutes at top speed.

c. *Station 3. The Twist Grip* (3, fig. 25). The twist grip is an excellent exercise for the hands and forearms, and adds greatly to the soldier's ability in hand-to-hand combat. The handle is gripped and twisted, winding the rope until the weighted can is level with the height of the hands, which are held horizontal. The weight is lowered in the same manner; the individual resists the weight all the way, occa-

sionally stopping the twisting motion and alternately removing first one hand, then the other, from the handle. A variation of the above exercise is to wind the handle with the palms up and the arms bent, the elbows held close in to the sides. Maintain a good posture and keep the stomach muscles taut all during this exercise.

d. Station 4, The Incline Plane (4, fig. 25). The use of the incline plane is a very strenuous exercise and well designed for the development of the abdomen. Six to ten repetitions are sufficient for the beginners; more are added as ability increases. Men with hernias or recent operations will be excused from participation at this station.

e. Station 5, The War Club (5, fig. 25). The war club is a simple and effective means of exercising the principal muscle groups of the body, especially those of the trunk, back, and shoulders. In order to gain the maximum benefit from this exercise, care must be taken to keep both feet flat on the ground at all times. Throughout the exercise period the weight is swung from arm's length as follows:

(1) As in chopping wood, first on one side, then on the other.

(2) As a batsman warming up with a number of bats.

(3) In large circles, first with one hand and then with the other.

f. Station 6, The Bicycle Ride (6, fig. 25).

The bicycle ride is well suited to exercising many of the muscle groups of the body, particularly those of the abdomen. Vary the speed of the exercise, but keep the men "riding" the entire period. A variation exercise may be performed by placing the legs together, raising them slowly to a height about 2 feet from the ground, and then lowering them slowly to the ground.

g. Station 7, Step-up (7, fig. 25). The step-up exercises the legs. The step-up is performed by initially stepping up with the left foot, followed by the right, then stepping down with the left foot followed by the right. Continue for 20 seconds, then change to the right foot as the lead foot for 20 seconds.

h. Station 8, Isometric Pull (8, fig. 25). Two trainees work at this station with a cable pull and perform the following exercises:

(1) Initially start with one man in the supine position and one man sitting. The sitting man lowers his upper body to the ground and pulls his partner up to the sitting position. His partner then performs this same action and this is continued for 20 seconds at a rapid rate.

(2) During the last 20 seconds the same action takes place but in this case the man in the supine position resists the pull of his partner for approximately 5 seconds before allowing himself to be pulled up into the sitting position.

Section IV. CIRCUIT-INTERVAL TABLE

189. Objective

To develop strength and endurance within a short period of time, with no equipment requirement, in a rapid and vigorous routine of exercise.

190. Time

Fifteen minutes is an adequate period to execute all exercises and to secure a vigorous workout with the circuit-interval principle.

191. Description

a. A platoon or smaller group is formed in an oval or circular formation with 3- to 5-yard intervals between men. The men are faced to the right and moved forward at quick time and then into double time (A, fig. 26). After run-

ning several platoon circle laps, the leader calls out the name of an arm and shoulder exercise from the list below, orders quick time and commands, for example, PUSHUPS. On this command all men immediately hit the ground and individually and rapidly begin doing pushups. No cadence is counted (B, fig. 26). After 30 seconds of exercise, the leader commands, ON YOUR FEET, FORWARD, MARCH. The men resume the quick time cadence and when the leader is ready the necessary commands for double time are given. The double time is continued for one or more laps and the leader calls out the name of the next exercise and the process is repeated. This continues, with running between each exercise, until every body part has been exercised.

b. The running and quick time are controlled by the instructor as he observes the effects of the exercise upon the men. Cadence, step, and precision are not important to the objective and should not be used. Speed is important and should be stressed. After the exercise period is started the men do not stop. This circuit method emphasizes stress and recovery, the recovery occurring during the quick time periods.

192. Activities

The following exercises are to be used and repeated if necessary during a second round.

- a. Arms and shoulders—pushups.
- b. Stomach—sit-ups.
- c. Back—squat thrusts.
- d. Legs—bicycle (on back).

193. Progression

The progress is controlled by the leader. He must pace the running, quick time movement,

and exercise in such a way that men will receive a vigorous workout yet be able to participate throughout the 15-minute period. Men who are in the initial stages of physical condition will not be able to double time or exercise as long as those who are better conditioned. The idea is to set a pace which can be increased somewhat each workout, thus progressing gradually to a higher level of physical fitness.

194. Leadership

The platoon leader, platoon sergeant, or section leader can lead his group. The leader must execute the exercise with his men in order to feel the effects and thereby adjust the dosage.

195. Place in the Program

This activity may be scheduled whenever a short period of time is available with only a requirement that enough space, indoors or out, be available to form the circle.

CHAPTER 16

BASIC PHYSICAL SKILLS AND OBSTACLE COURSES

Section I. BASIC PHYSICAL SKILLS

196. Purpose and Scope

The purpose of this chapter is to list the basic physical skills and methods for their development. It explains types of obstacle courses, details of construction, and methods of negotiating the various obstacles.

197. Importance of Physical Skills

The objective of physical readiness training is outlined in paragraph 24. Part of his objective is the development of proficiency in the various military physical skills which are essential to personal safety and effective combat operations. In travel by foot over rugged terrain and in the execution of combat duties men must be trained to perform basic skills such as running, jumping, climbing, and carrying. In our modern urban society many men have not had the opportunity to experience or to learn these skills. Fast and skillful execution of these basic skills may mean the difference between success and failure.

198. Learning Basic Skills

Men should receive instruction in the basic physical skills which have military application. As in learning any other activity, there should be explanation, demonstration, and practice of the skills. The basic skills enumerated below are the minimum skills required by the combat soldier. During training in these skills agility and coordination will be developed. Complicated facilities are not required for the practice of some skills and much can be accomplished to establish these skills prior to running an obstacle course. The essential skills are as follows:

a. Running (fig. 18). Running is used to strengthen the legs, develop circulo-respiratory

endurance and to develop proper running form (chap 14). Men should be exposed to running in various situations: on roads, over rough ground, up and down hills, cross-country, and running over low obstacles.

b. Jumping (fig. 27). In broad jumping the takeoff foot is planted firmly and the spring comes from the extension of this leg as the other leg reaches for the far side of a ditch or similar obstacle. The arms are forceably raised forward and upward to assist in propelling the body up and forward. Landing may be on one or both feet depending upon the length of the jump. In vertical jumping downward from a height the jumper should aim his feet at the desired landing spot and jump from the height with the knees slightly bent and feet together, the trunk should be inclined slightly forward. As the feet touch the ground, the shock is absorbed by bending the knees into a full squatting position. If the height is too great or the ground too hard to absorb the shock, then the jumper should forward roll or side roll thus eliminating some of the momentum.

c. Dodging (fig. 28). In combat situations it is often times necessary to change directions quickly. To execute this movement while running, a lead foot is firmly planted, left foot if the direction is to the right and right foot if the direction is to the left. The opposite foot is moved toward the new direction. The knees are slightly flexed during the movement and the center of gravity is low and balanced. At the time of the change of direction the head and trunk are turned quickly in the new direction.

d. Climbing and Surmounting (fig. 29). The soldier should know how to climb and surmount various types of obstacles.

(1) *Vertical climbing as in climbing a*

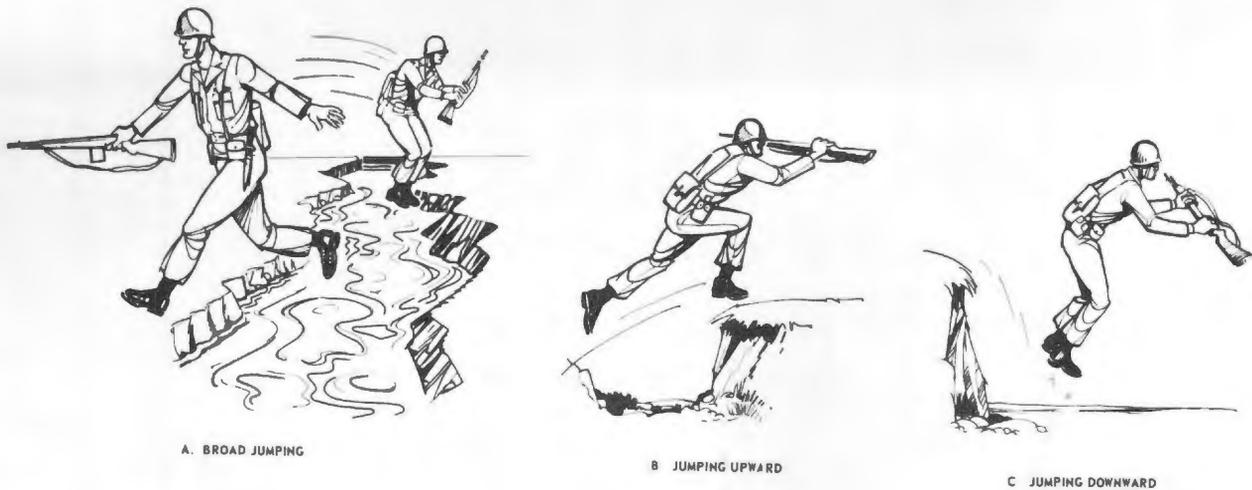


Figure 27. Jumping.

rope or pole. Here the technique is very similar. The hands grasp the rope or pole overhead with the palms toward the face. Gripping the object, the body is pulled upward with the arms and shoulders assisted by the feet which grip the object and assist by pushing downward. If shoulder girdle strength and body coordination are not adequate to permit alternating the hands, the arms act together in pulling upward.

(2) *Climbing as in surmounting a wall.* In going over a wall, the body should be kept as close to the top as possible, since in combat operations it is important to offer as small a target as possible to the enemy. If a man climbs a wall while carrying a rifle, he should free both hands by slinging the rifle over his back. There are two methods commonly used for surmounting a wall of moderate height, but only one for dropping from it.

(a) *Running, jump, and vault.* Approach the wall at a run, jump forward and upward at the wall and place one foot against it as high up as possible. Use the foot in contact with the wall to help push the body upward while grasping the top of the wall with the hands. Pull the body up with the arms, assisted by pressure of the foot against the wall and swing the legs over, propelling the body weight over the wall.

(b) *Hook and swing.* Approach the wall at a run and jump forward and upward. Hook one elbow over the wall, locking the arm in place by pulling up until the top of the wall is underneath the armpit. Grasp the top of the

wall with the other hand. Draw the leg which is closer to the wall up as far toward the abdomen as possible. Then swing the outside leg over the top of the wall. The body is then carried over with a rolling motion. A variation of this leg action can be used by men who are unable to draw up the leg as described. While hanging with both legs fully extended, start a swinging motion with the legs together. When the legs have enough momentum, swing the outside leg over the top of the wall with a vigorous kick, then follow with the body.

(c) *Dropping.* All drops from the wall are executed in the same manner, regardless of the method used to gain the top. One hand is placed against the far side of the wall while the other hand grasps the top. From this position the body is rolled over the wall and "vaulted" away from it with the legs swinging clear. As the body passes over the wall and drops, it should at all times face the wall. This will keep the rifle and other equipment clear. Break the fall by retaining a grasp on the top of the wall as long as possible.

(3) *Climbing ladders and cargo nets.* Rope ladders, stationary vertical ladders, and cargo nets employ the same general technique. The important element is to grasp the side supports firmly in the hands about shoulder height and place the feet on a rung which will cause the body to be fully extended. In movement upward one hand is moved upward and a new grasp is secured and at the same time the opposite leg moves up a rung. As the knee straightens, the body is elevated. This process

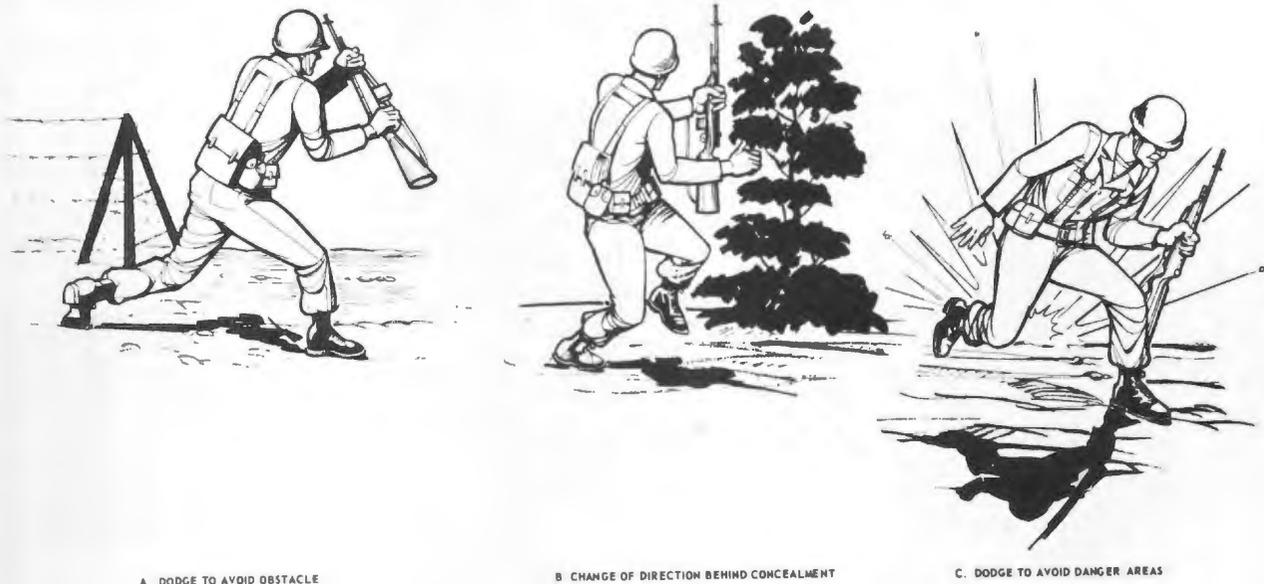


Figure 28. Dodging.

is repeated using the opposite arm and leg. Alternation continues in this manner until the climber reaches the objective.

e. *Traversing Horizontal Objects* (fig. 30). The traversing of horizontal objects puts heavy stress on the arms and shoulder girdle area as the feet are usually suspended in the air with all of the body weight on the arms and shoulders.

(1) *Traversing horizontal ropes or pipes*. The hands grasp the horizontal support overhead with the palms facing. To propel the body forward one hand is released and moved forward to secure a new grasp. At the same time the opposite side of the body is swung forward (some men are able to "walk" in the air, keeping the body to the front and moving the legs in time with the arms as in walking on the ground). The other hand is then released and moved forward; this alternation is continued until the objective is reached.

(2) *Traversing horizontal ladders*. In this situation the movement is the same as used in traversing a rope or pipe. The hands, however, are placed on the rung with the palms away from the face. Other than this difference the technique is the same.

f. *Crawling* (fig. 31). Crawling in combat situations is an often used skill. Crawling may be high or low.

(1) *High crawl*. In the high crawl the sol-

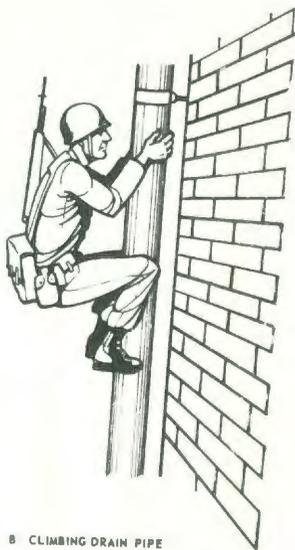
dier moves on hands and knees, moving one hand and the opposite knee and then continuing to move the hands in alternation with the opposite knee following the companion hand.

(2) *Low crawl*. The soldier is in the prone position usually with the forearms and palms of the hand on the ground. He propels himself forward by bending the knee of one leg and pushing with the inside edge of the shoe. At the same time the opposite arm moves forward and pulls to the rear. The body remains low and movement is continued by bending the opposite knee and pushing, and at the same time sliding the opposite arm forward and pulling. Alternation of hands and legs continues until the objective is reached.

g. *Throwing* (fig. 32). Throwing may be executed from kneeling or standing positions. The object to be thrown is held in the hand and the throwing arm is bent at the elbow; the hand is then moved to the rear until the hand is behind the ear. The body is turned so that the lead foot and balance arm on the side toward the target are pointing at the target. The balance arm is used to sight over and aline the throwing hand and the target. When properly alined, the elbow is moved rapidly forward until it is at a point just in front of the body where the arm is straightened and the wrist "snapped." This whip motion propels the object to the target. Underhand throws secure momentum by



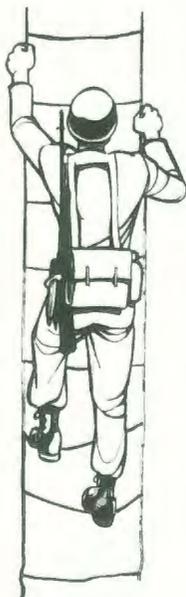
A SURMOUNTING WALL



B CLIMBING DRAIN PIPE



C. CLIMBING ROPE



D ROPE LADDER



E. CARGO NET

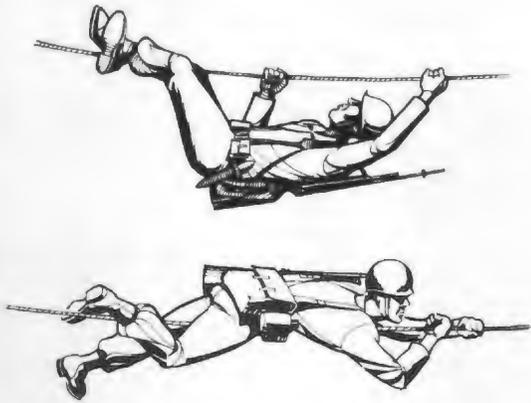
Figure 29. Climing and surmounting vertical objects.

the thrower bending his knees and swinging the throwing arm to the rear. As the knees are straightened the arm is forcefully swung forward from the shoulder and the object released.

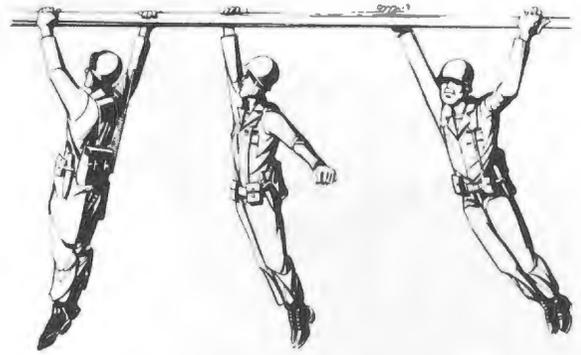
h. Vaulting (fig. 33). Vaulting is employed to overcome low barriers or fences. The object to be surmounted is approached at an angle. The hand on the side next to the obstacle is placed on the top of the obstacle and with a straight arm the body weight is pushed up-

ward. At the same time the leg on the side next to the obstacle is thrown upward and over the top followed by the other leg. In landing the weight comes down on the leading leg first followed by regaining the balance on both legs. The free arm serves as a balance. A direct (front) approach can be used at which time both legs go over the object together.

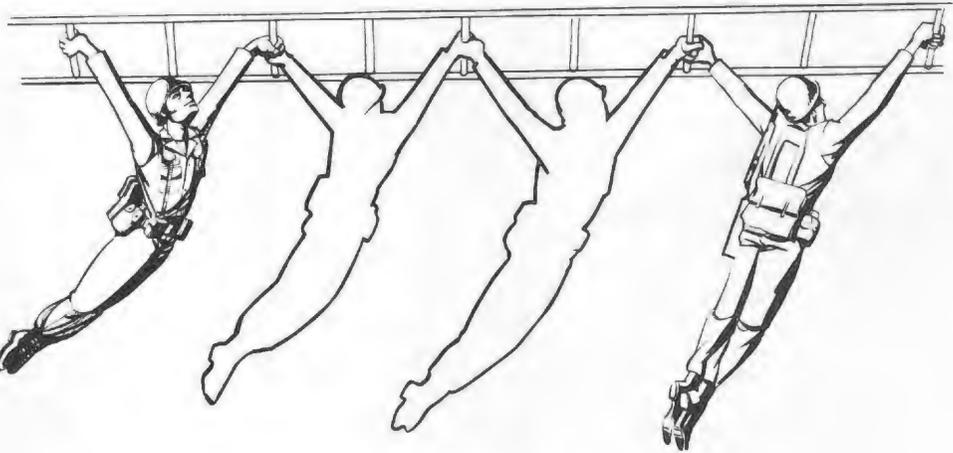
i. Carrying. There are three basic individual means of carrying men in combat situations



A ROPE OR CABLE



B. PIPE OR BEAM



C. HORIZONTAL LADDER

Figure 30. Traversing horizontal objects.



A HIGH CRAWL

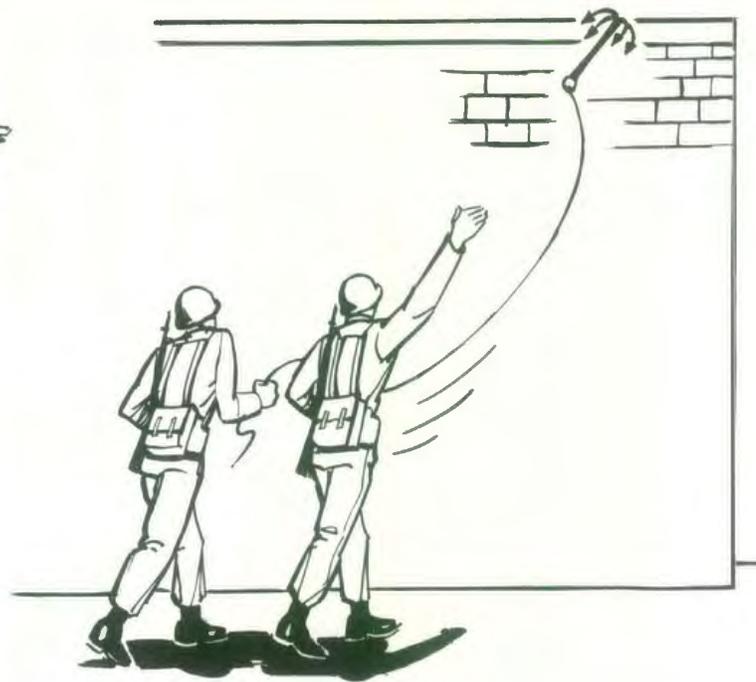


B. LOW CRAWL

Figure 31. Crawling.



A. OVERHAND THROW



B. UNDERHAND THROW

Figure 32. Throwing.

and one of these methods may be used in carrying objects.

(1) *Fireman's carry* (I, fig. 16). "A" stands sideways in front of "B." "A" bends his knees and leans forward, placing one arm through "B's" crotch, grasps the wrist of "B's" arm, which is hanging over his shoulder, and then "A" runs forward.

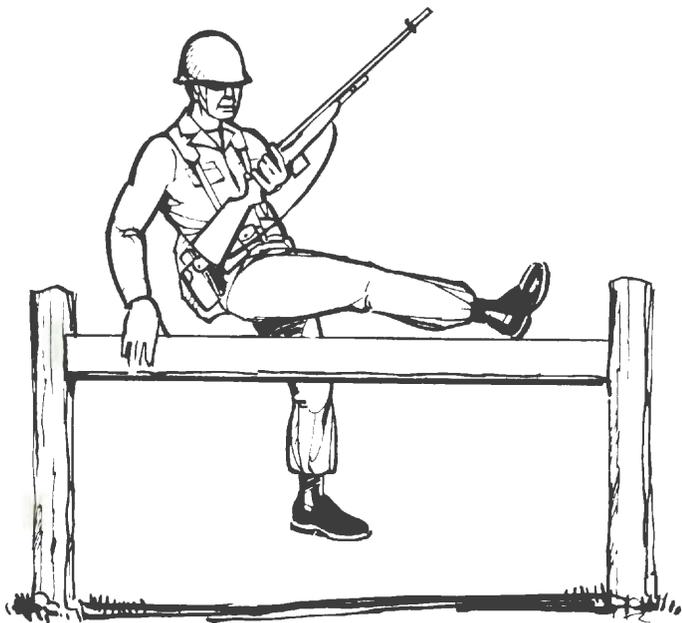
(2) *Saddle-back carry* (J, fig. 17). "A" stands in front of "B." "B" mounts "A's" hips and clasps his arms in front of "A's" chest. "A" grasps "B's" thighs.

(3) *Single-shoulder carry* (J, fig. 16). "A" stands in front of and facing "B." "A" assumes a semisquatting position. "B" leans forward until he lies across "A's" right shoulder. "A" clasps his arms around "B's" legs and straightens up, lifting "B" from the ground. "A" then runs forward. This method may also be used to carry heavy objects.

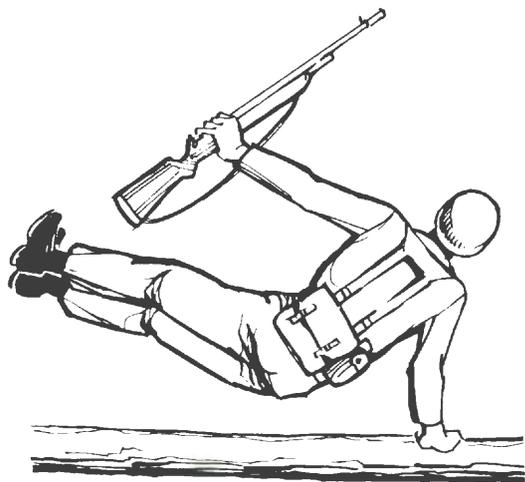
j. *Balancing* (fig. 34). Balancing the body

while walking or running on a narrow object, when crossing obstacles, is a skill which requires practice and confidence. Balance is required in negotiating a log placed across a stream, in crossing a narrow beam or rail, and in similar situations. To perform this skill, place the feet on the object to be crossed, hold the arms to the sides at shoulder level, and fix the eyes on the object approximately 5 yards in front of the feet. Generally, it is not a good practice to look down at the feet. Walk the beam by placing first one foot and then the other in the center of the beam, thereby moving forward, using the arms to aid in maintaining balance.

k. *Falling* (fig. 35). Injury will be avoided if men are taught to fall properly. Men should know how to use the body momentum to their advantage during a fall rather than to try resisting that force. If enough force is present, such as occurs during a fall while running or



A. SCISSORS VAULT
(SIDE APPROACH)



B. LEGS TOGETHER
(DIRECT APPROACH)

Figure 33. Vaulting.

in jumping downward from a height, the man can extend his hands to catch the weight and at the same time duck the head and roll forward onto his feet. The key to falling without injury from the standing position is relaxation and rolling to take the brunt of the fall on the outside of the leg, hip, and buttocks.

l. Swimming (fig. 36). There is no doubt as to the benefits of swimming and water survival techniques to the soldier. There are, however, problems of training time and facilities to overcome in teaching all men to swim. A full explanation of this skill is available in chapter 17.



A. BEAM OR RAIL



B. LOG

Figure 34. Balancing.

Section II. OBSTACLE COURSES

199. Purpose of Obstacle Courses

Obstacle type courses are a valuable part of physical readiness training. The challenge presented by the obstacles assists in developing and testing the basic physical skills. Success in combat many times depends upon the soldier's ability to perform one or more of these skills and in some cases he must be able to do these things while carrying his field equipment, even after he becomes tired.

200. Types of Courses

The two courses discussed in this chapter are both obstacle type. Their difference lies in their function.

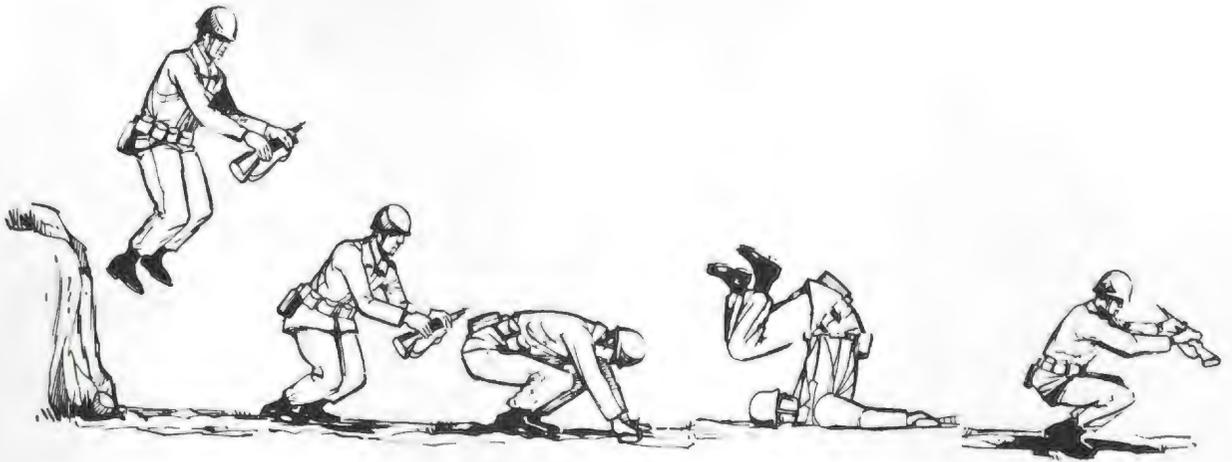
a. Conditioning Obstacle Course. This course consists of fairly low obstacles which are designed to be negotiated quickly. The obstacles serve to test various basic skills, and running

the course is a test of the soldier's physical condition. After men have received instruction and had an opportunity to practice the skills, they are to run the course against time.

b. Confidence Obstacle Course. This course is composed of higher and more difficult obstacles than those used in the conditioning course. The confidence obstacle course is designed to give the soldier confidence in his mental and physical capacities and to cultivate his spirit of daring. He is encouraged but not compelled to negotiate this course and the course is not run against time.

201. Safety Precautions

The instructor should take certain precautions to prevent injury to the men while they are negotiating obstacle courses. A few of the precautions follow:

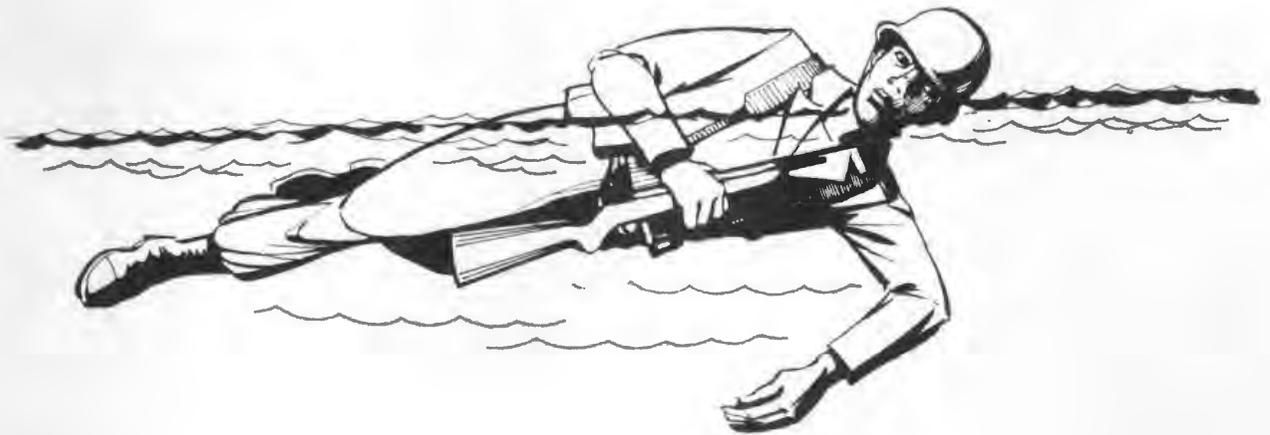


A. ABSORBING SHOCK BY FORWARD ROLL



B. ABSORBING SHOCK ON OUTSIDE OF HIP AND LEG

Figure 35. Falling.



SURVIVAL SWIMMING

Figure 36. Swimming and water survival skills.

a. Inspect the course for faulty construction of obstacles, protruding nails, rotten logs, condition of the landing pits, and other hazards to safety.

b. Have the men do warmup exercises before they run the course.

c. Explain and demonstrate the correct techniques for negotiating all the obstacles before allowing the men to try them.

d. Give the men at least two weeks of conditioning exercises before scheduling the obstacle and confidence courses.

e. Insure that negotiation of the higher and more dangerous obstacles is under the supervision of an assistant instructor.

f. Do not permit men who have neither practiced the basic skills nor run the conditioning obstacle course to participate in the confidence obstacle course.

g. Weather conditions may cause footing or handhold surfaces to be slippery. If such is the case, postpone training on the course.

Section III. CONDITIONING OBSTACLE COURSES

202. Construction of Conditioning Obstacle Course

a. Complete standardization of obstacle courses should not be attempted since topographical conditions always vary. Commanders should use ingenuity in constructing a course, making good use of streams, hills, trees, rocks, and other natural obstacles. Since the course is eventually run at high speed, it should not be dangerous.

b. The course should be wide enough for six or eight men to run simultaneously. This encourages competition. The lanes for the first several obstacles should be wider and the obstacles themselves easier than those that follow. This avoids congestion until the contestants scatter out over the course. The last two or three obstacles should not be too difficult and should not involve high climbing. This prevents injuries and falls resulting from fatigue.

c. The total distance of the course should range from 300 to 450 yards and include from 15 to 25 obstacles. Normally the obstacles should be 20 to 30 yards apart and arranged so that those which exercise the same groups of muscles are separated.

d. The obstacles should be substantially built. Peeled logs, 6 to 8 inches in diameter, are ideal for many of the obstacles. Sharp points and corners should be eliminated. Landing pits for jumps or vaults should be filled with sand or sawdust to prevent injuries. The course should be constructed and marked so that it is not possible to side-step or detour obstacles. Sometimes, however, it is desirable to provide alternate obstacles of varying degrees of diffi-

culty. Signs should be placed to indicate the route. If possible, the course should be in the shape of a horseshoe or figure eight so that the finish is close to the start.

203. Use of the Obstacle Course

a. Before troops run an obstacle course they should be instructed in the proper technique of negotiating each obstacle. In each case this technique should be explained and demonstrated in detail, with emphasis on avoiding injury. Every individual should be given an opportunity to practice on each obstacle until he becomes reasonably proficient at negotiating it. Before the course is run against time, it is advisable for the men to make several runs at a slower pace. During such practice or trial runs, the instructor should observe the performances and make appropriate corrections. The men should never be permitted to run the course for time until they have practiced on all obstacles.

b. The best method of timing the runners is to have the timer stand at the finish and call out the minutes and seconds as each man finishes. If several watches are available, each wave of men may be timed separately. If only one watch is available, the different waves should be started at regular intervals, such as every 30 seconds. If a man fails to negotiate an obstacle, a previously determined penalty should be exacted.

204. Types of Obstacles

a. *Jumping Type Obstacles* (fig. 37). These obstacles may be ditches which the men can clear with one leap, trenches which the men can jump into, heights which require jumping downward, or hurdles.

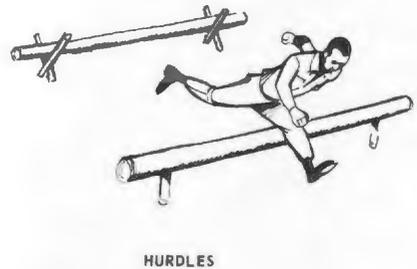
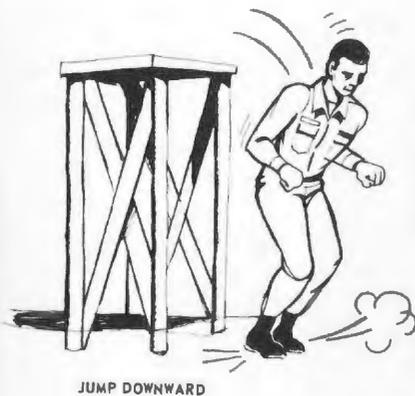
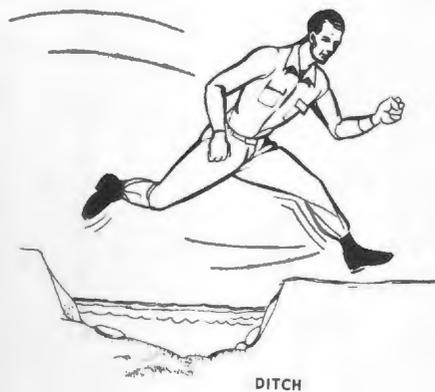


Figure 37. Jumping type obstacles.

b. Dodging Type Obstacles (fig. 38). Obstacles of this type are usually mazes consisting of posts set in the ground at irregular intervals. The intervals between posts should be rather narrow so that the participants must pick their way carefully through and around them. Lane guides may be established which by their construction guide the men to dodge and change direction.

c. Vertical Climbing and Surmounting Type Obstacles (fig. 39). These obstacles may be climbing ropes, either plain or knotted and 1½ inches in diameter; cargo nets, walls 7 or 8 feet high, or vertical poles 6 to 8 inches in diameter and 15 feet high.

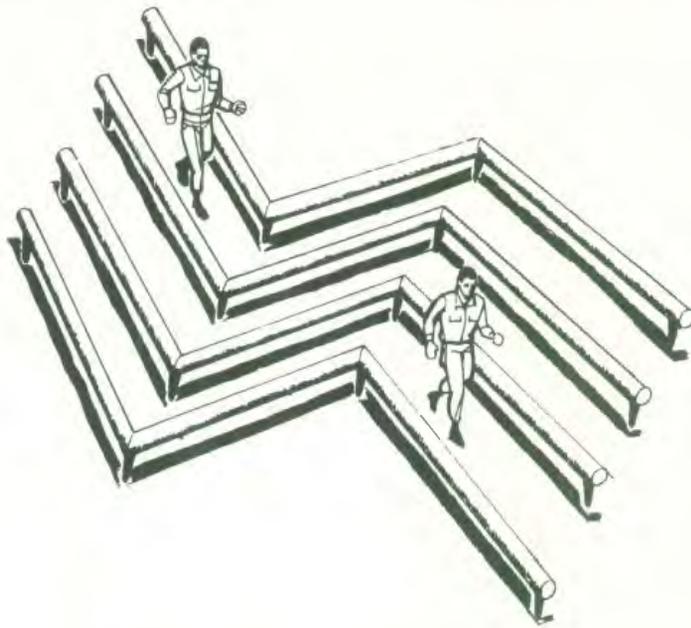
d. Horizontal Traversing Type Obstacles

(fig. 40). Horizontal obstacles may be ladders, ropes, pipes, or beams.

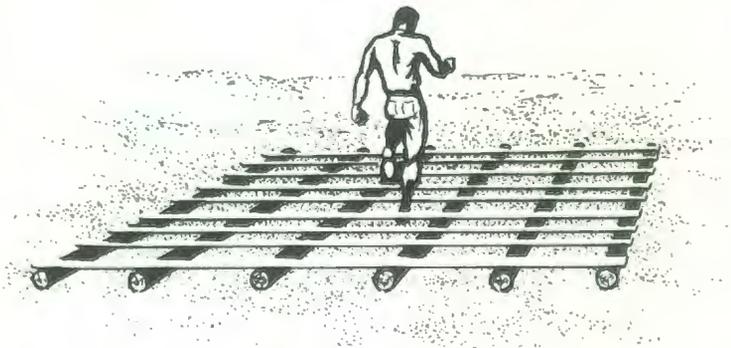
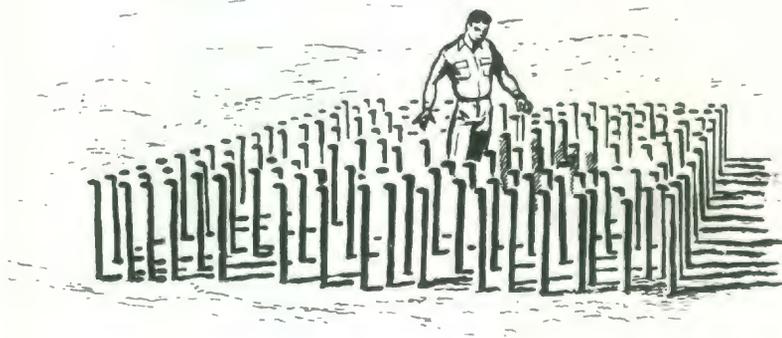
e. Crawling Type Obstacles (fig. 41). Obstacles which require crawling may be constructed of large pipe sections, low rails, and wire.

f. Vaulting Type Obstacles (fig. 42). Obstacles of 3 to 3½ feet in height such as fences or low walls may be used as a vaulting obstacle.

g. Balancing Type Obstacles (fig. 43). Beams, logs, and planks may be used as balance obstacles. These items may be used to span water obstacles and dry ditches, or raised off the ground somewhat to simulate these natural depressions.

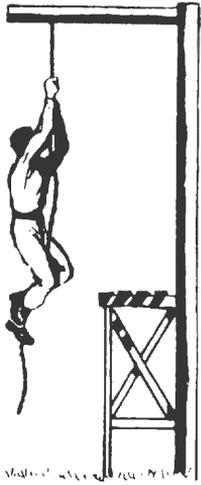


LANES TO GUIDE CHANGE OF DIRECTION

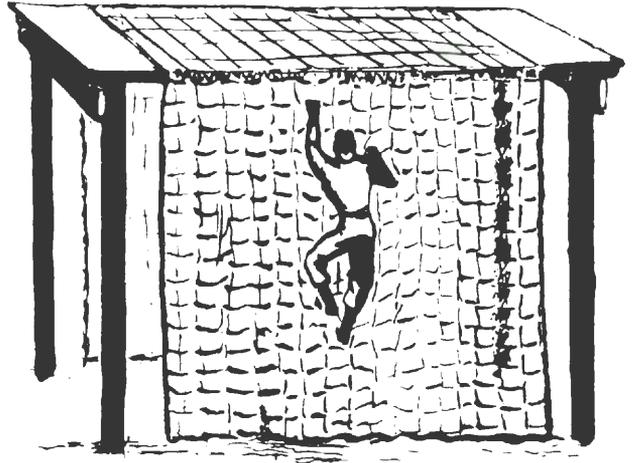


MAZES TO CAUSE CHANGE OF DIRECTION

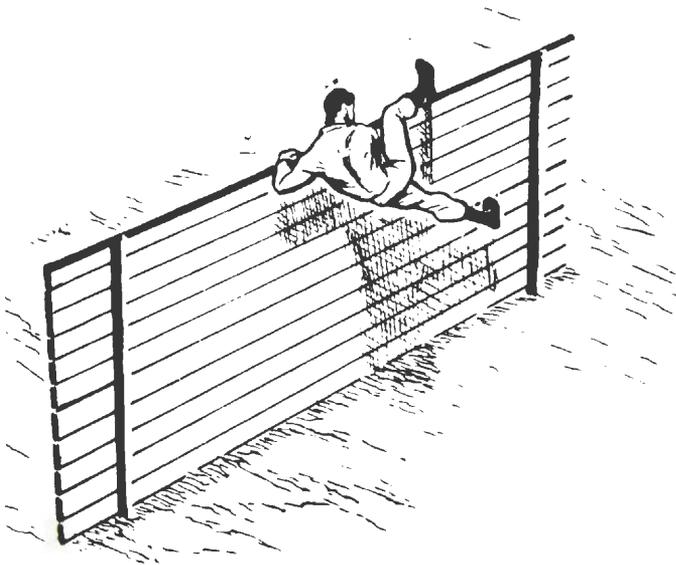
Figure 38. Dodging type obstacles.



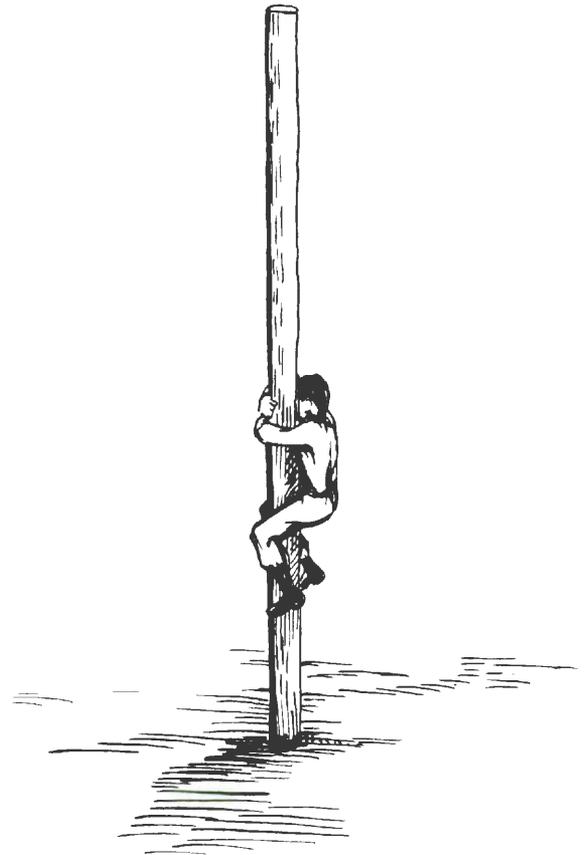
CLIMBING ROPE



CARGO NET

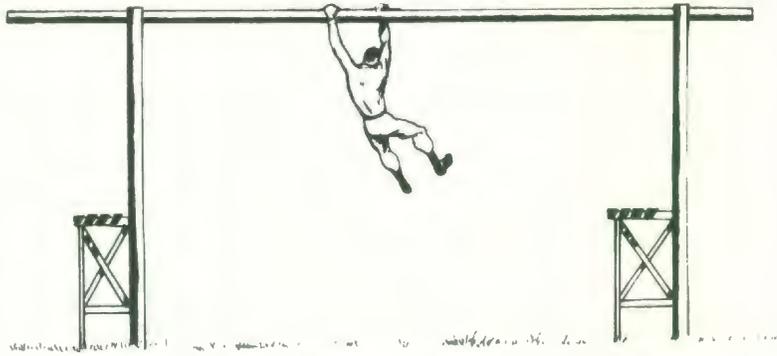


WALL



POLE CLIMB

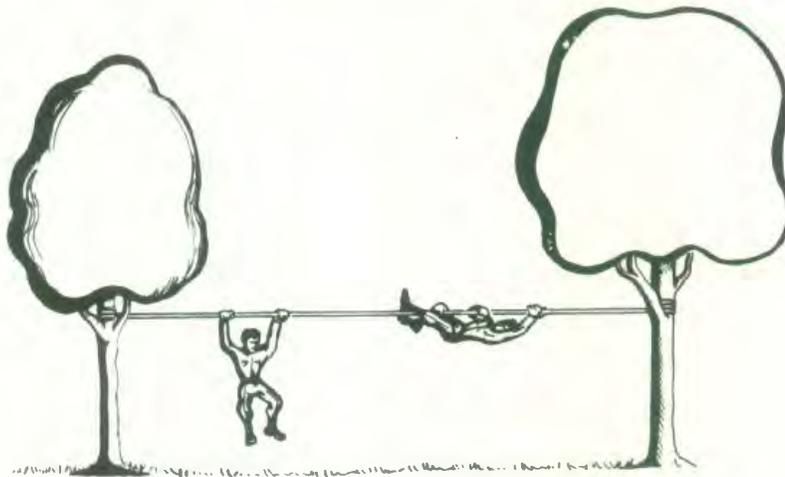
Figure 39. Vertical climbing and surmounting type obstacles.



A PIPE OR BEAM



B HORIZONTAL LADDER



C HORIZONTAL ROPE

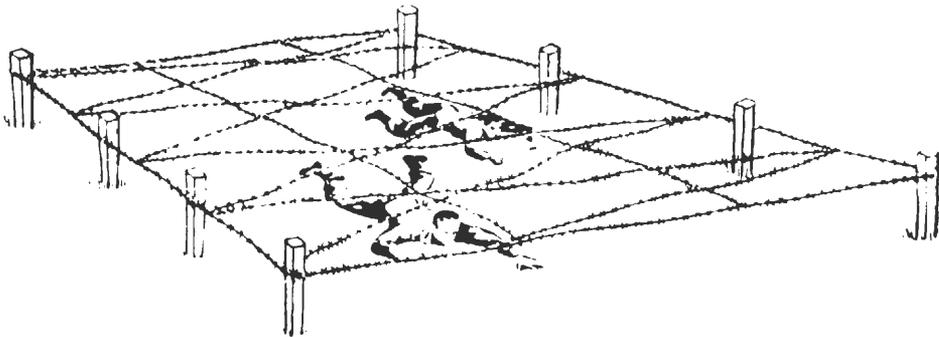
Figure 40. Horizontal traversing type obstacles.



TUNNEL

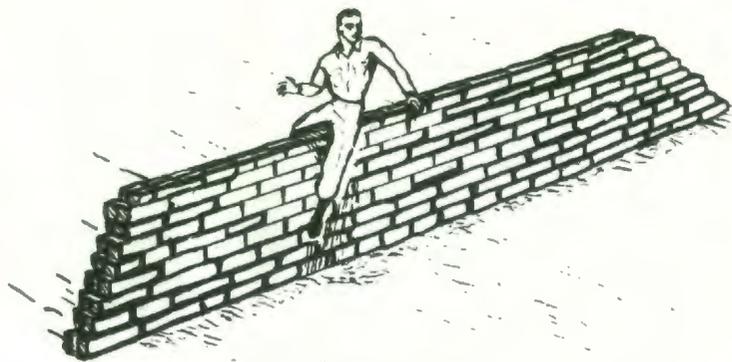


LOW RAIL

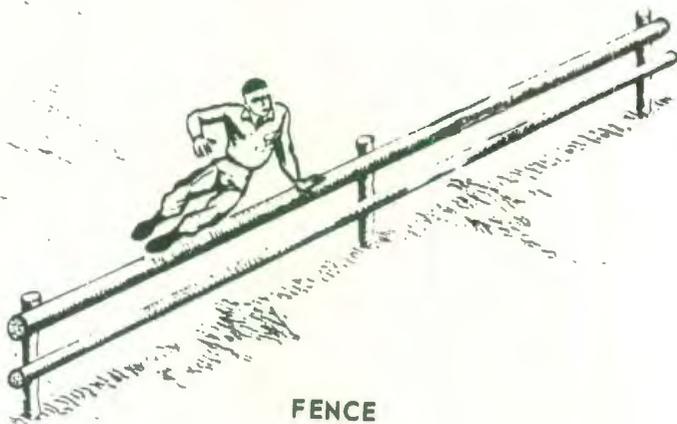


WIRE

Figure 41. Crawling type obstacles.



LOW WALL



FENCE

Figure 42. Vaulting type obstacles.

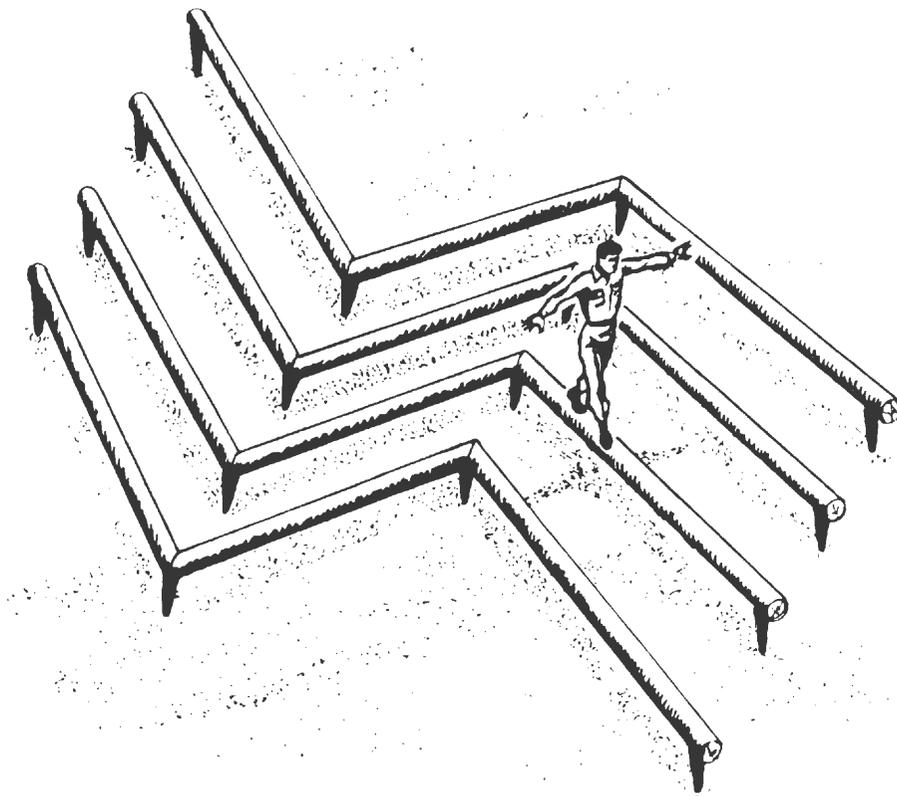
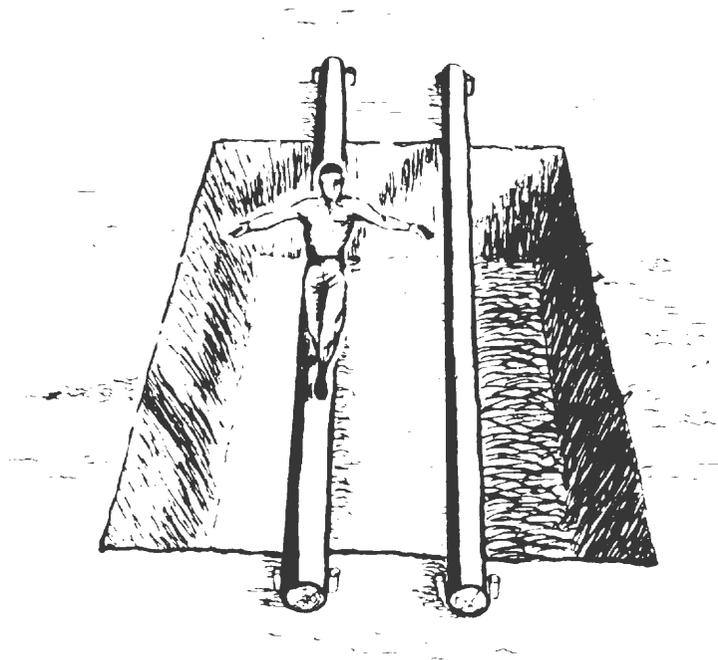


Figure 43. Balancing type obstacles.

Section IV. CONFIDENCE OBSTACLE COURSES

205. The Course

This modification of the obstacle course idea is designed to cultivate confidence and a spirit of daring rather than to exercise and condition the men. The negotiation of a confidence course, however, is strenuous enough to be an excellent physical conditioner. The men should NEVER attempt to take the obstacles at high speed and should not compete for speed. The obstacles vary from fairly easy to extremely difficult ones. Some are of considerable height, to accustom the men to climbing such heights without fear. Considerable emphasis is placed on obstacles that train and test a man's balance.

206. Course Arrangement and Construction

a. The confidence course accommodates four platoons, one platoon at each group of six obstacles. The course should be made up of about 24 obstacles, numbered and marked as follows:

- 1 to 6, white numbers on red background.
- 7 to 12, black numbers on a white background.
- 13 to 18, white numbers on a blue background.
- 19 to 24, white numbers on a black background.

b. For construction details of a confidence course refer to Folio No. 1 "Training Facilities," Corps of Engineers, drawing number 28-13-95. Figures 44 through 47 are intended to illustrate the method of negotiation.

c. A few simple pieces of equipment will be provided for men who do not have the strength, courage, or ability to negotiate the obstacles. This equipment includes bars for pullups, ropes to climb, parallel bars, bars of various heights to vault, bar bells, medicine balls, and platforms or places for practicing sit-ups. This group should be under an instructor. If the men are encouraged to volunteer to try the easier of the confidence obstacles, they will gradually take their places with the others.

207. Method of Use

The obstacles are divided into groups of six, and each group is designated by a different color (para 206). Each platoon starts at a dif-

ferent color. The men are separated into groups of 8 to 12 at each obstacle. At the starting signal from the company commander, they proceed throughout the course: 5 to 6, 6 to 7, 24 to 1, and so on. Any man may skip any obstacle he is afraid to try. The men proceed from obstacle to obstacle until time is called, then they assemble as ordered. The following general rules govern the use of the confidence course:

a. No compulsion is to be used. The men are encouraged to try the various obstacles, but they are not compelled to do so. If any man wishes to skip any obstacle, he is permitted to do so.

b. The manner of negotiating any obstacle is left to the discretion of the individual. However, the instructor assists any soldier who experiences difficulty.

c. The example of instructors and especially selected demonstrators will serve to inspire the men to greater effort.

d. If the men are new to the confidence course, a brief orientation is conducted at each obstacle, including an explanation and demonstration of a method of negotiating it.

e. Close supervision must be exercised at all times to prevent injuries, as some of the obstacles are quite high. Also, some of the obstacles should not be used when slippery or wet.

208. Negotiating the Obstacles

Although the men need not conform to any one method of negotiating the obstacles, there should be some uniformity in the approach to them. A general method of negotiating the obstacles is indicated below.

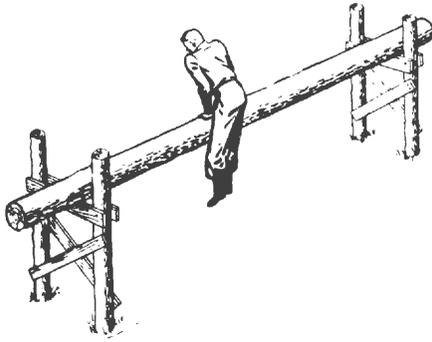
a. *Red Group*. This group contains the first six obstacles, 1 to 6 (fig. 44).

(1) *The belly buster*. Men may vault, jump, or climb over. Warn them that the log is not stationary.

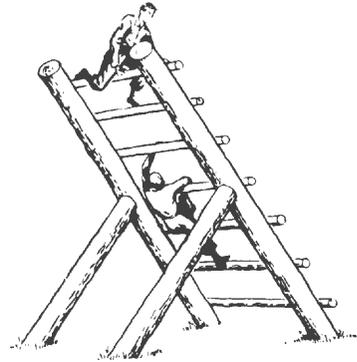
(2) *Reverse climb*. Climb the reverse incline and go down the other side to the ground.

(3) *The weaver*. Move from one end of the obstacle to the other by weaving the body under one bar and over the next.

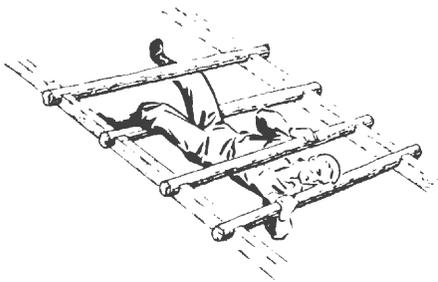
(4) *Hip-hip*. Step over each bar, either alternating legs or using same lead leg each time.



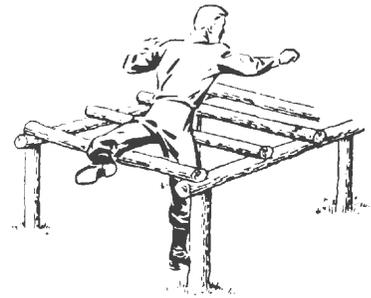
A. THE BELLY BUSTER



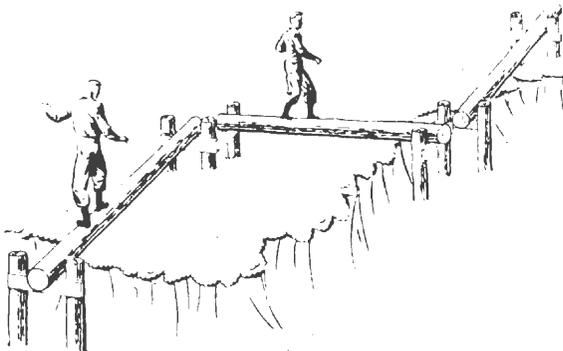
B. REVERSE CLIMB



C. THE WEAVER



D. HIP-HIP

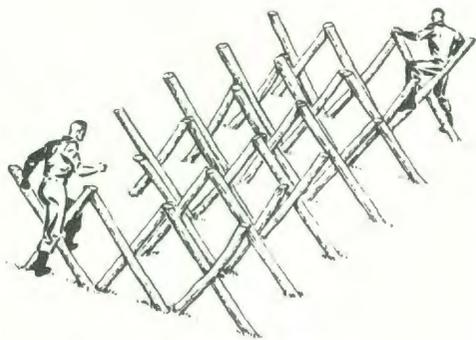


E. BALANCING LOGS

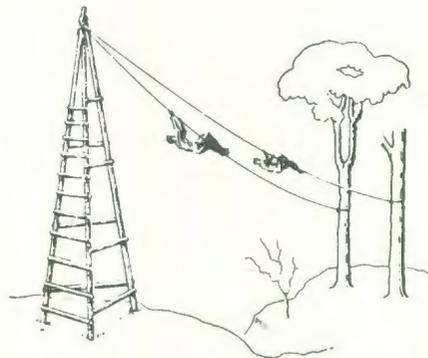


F. ISLAND HOPPER

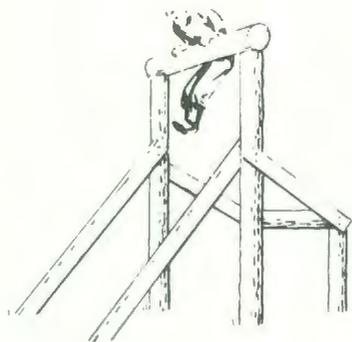
Figure 14. Red group.



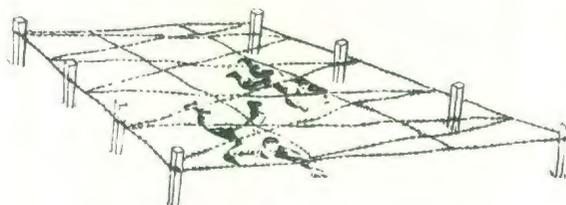
A. THE TOUGH NUT



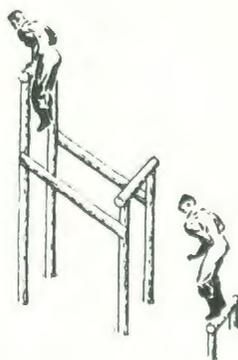
B. SLIDE FOR LIFE



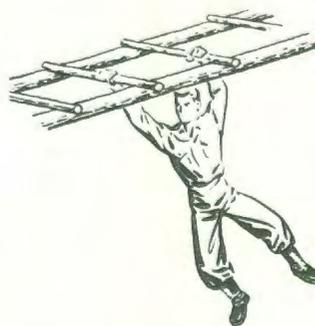
C. LOW BELLY OVER



D. BELLY CRAWL

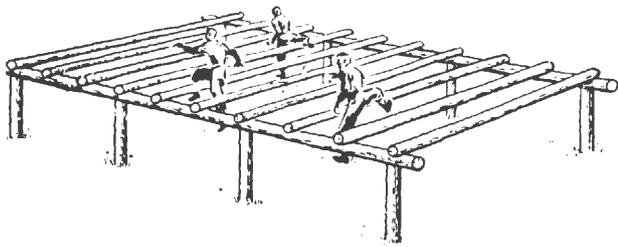


E. THE DIRTY NAME

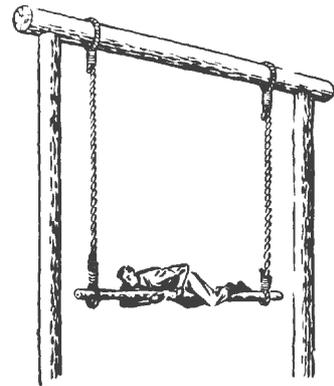


F. THE TARZAN

Figure 45. White group.



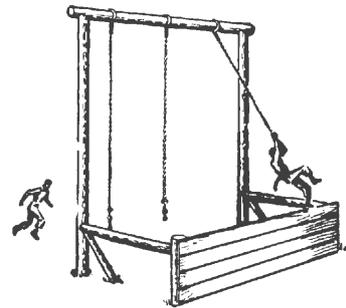
A. HIGH STEPOVER



B. SWINGER



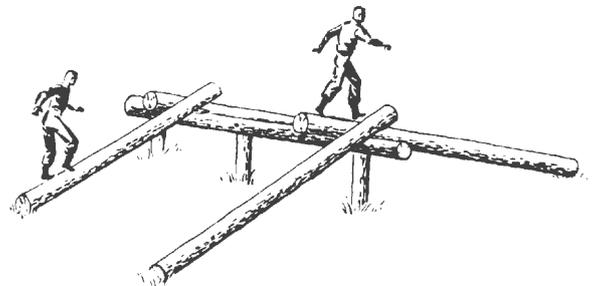
C. LOW WIRE



D. SWING. STOP AND JUMP



E. SIX VAULTS



F. EASY BALANCER

Figure 46. Blue group.

(5) *Balancing logs.* Step up on log, and retaining the balance, walk or run along the log.

(6) *Island hopper.* Jump from one log to another until the obstacle is negotiated.

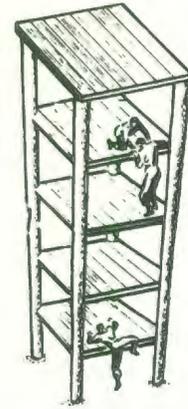
b. White Group. This group is composed of the second six obstacles, 7 to 12 (fig. 45).

(1) *The tough nut.* Step over each "X" in the lane.

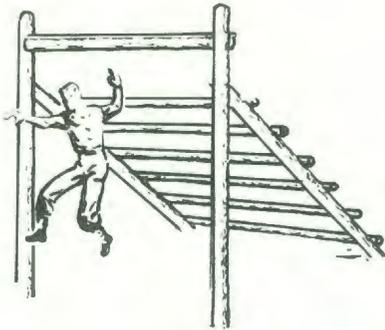
(2) *Slide for life.* Climb the tower, grasp the rope firmly and swing the legs upward. Hold the rope with the legs to distribute the weight between them and the arms. Braking the slide with the feet and legs, proceed down



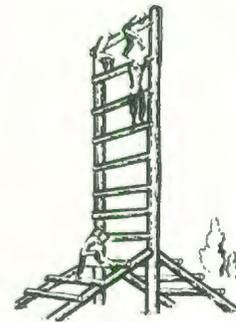
A. INCLINE WALL



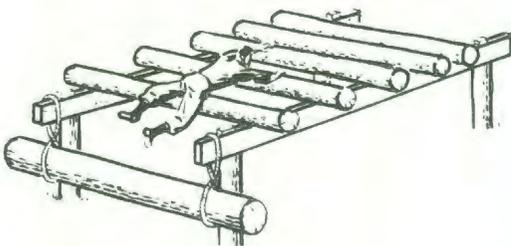
B. SKYSCRAPER



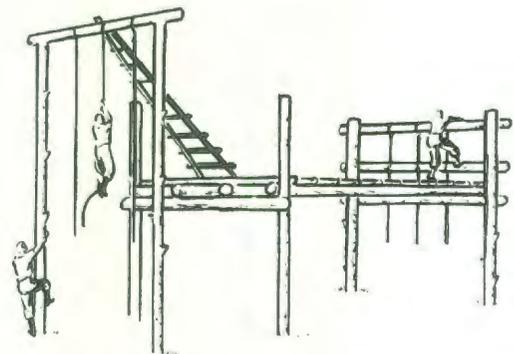
C. JUMP AND LAND



D. CONFIDENCE CLIMB



E. BELLY ROBBER



F. THE TOUGH ONE

Figure 47. Black group.

the rope. Warn the men that there is danger of getting rope burns on their hands. When the rope is slippery or wet, this can be a dangerous obstacle.

(3) *Low belly over.* Mount the low log and jump onto the high log, both arms grasping over the top of the log, the stomach area in contact with it. Swing the legs over the log and lower the body to the ground.

(4) *Belly crawl.* Move forward under the wire, belly down, to the end of the obstacle.

(5) *The dirty name.* Mount the low log and jump to or reach the higher logs in succession, then jump or drop to the ground. Warn the men about the height of the final log.

(6) *The tarzan.* Mount the lower log and walk the length of it and each successive, higher log until reaching the horizontal ladder. Grasp two rungs of the ladder and swing the body into the air. Negotiate the length of the ladder by releasing one hand at a time and swing forward, grasping a more distant rung.

c. *Blue Group.* This group is formed by the third six obstacles, 13 to 18 (fig. 46).

(1) *High stepover.* Step over each log, alternating the lead foot or using the same lead foot.

(2) *Swinger.* Climb onto the swung log and over to the ground on the opposite side.

(3) *Low wire.* Move under the wire on the back, using the hands to raise the wire to clear the body.

(4) *Swing, stop, and jump.* Gain momentum with a short run, grasp the rope, and

swing the body forward to the top of the wall. Release the rope while standing on the wall and jump to the ground.

(5) *Six vaults.* Vault over the logs, using one or both hands.

(6) *Easy balancer.* Walk up one inclined log and down the one on the other side to the ground.

d. *Black Group.* The last group is formed by the final six obstacles, 19 to 24 (fig. 47).

(1) *Inclining wall.* Approach the underside of the wall, jump up and grasp the top and pull the body up and over. Slide or jump down the incline to the ground.

(2) *Skyscraper.* Jump or climb to the first floor, climb up the corner posts or assist each other to any desired floor. Descend to the ground in any desired manner.

(3) *Jump and land.* Climb up the ladder to the platform and jump to the ground.

(4) *Confidence climb.* Climb the inclined ladder to the vertical ladder. Go to the top of the vertical ladder, then down the other side to the ground.

(5) *Belly robber.* Step on the lower log and assume the prone position on the horizontal logs. Crawl over the logs to the opposite end of the obstacle.

(6) *The tough one.* Climb the rope or pole on the higher end of the obstacle, then go down the ladder and across the log platform. Climb over or between the logs at the end and go down the rope or pole to the ground. Vault over the final log.

CHAPTER 17

COMBAT WATER SURVIVAL

Section I. INTRODUCTION

209. Military Swimming

Military swimming emphasizes the strokes that result in staying power rather than those that emphasize speed. The soldier should swim easily, silently, and with adequate vision. He should cultivate strokes that will enable him to tow another man and to carry equipment, as well as keep his face out of the water to breathe. The most important military strokes are the side stroke and the breast stroke. Treading water should be practiced to develop proficiency.

210. Combat Operations Training

a. If combat operations are highly coordinated and well executed, the engineer support troops will anticipate the water crossings and have boats and lifejackets at the site for all men of the combat units. In other independent actions units may be forced to overcome the water obstacle without such aid.

b. Time is a factor in training men to overcome water obstacles. The following procedure occupies a minimum of time and when a combat unit desires to undertake such training this sequence is recommended:

(1) Test all the men and divide them into swimming and nonswimming groups as a result of a 50-meter swim test (para 211). Size of the unit will determine the time required; this is usually about 2 hours.

(2) For those men who fail the 50-meter swim test conduct basic swimming instruction (para 211-221). At the conclusion of this instruction, test again. Those who pass are ready for combat water survival training.

(3) Conduct combat water survival as described in paragraphs 222 through 229. Again unit strength will determine the time required. Normally this period of training requires from 2 to 4 hours.

Section I. BASIC SWIMMING

211. Beginner Test

a. Jump into the water from a float or the bank of the pool.

b. Swim 50 meters, using any stroke.

c. Soldiers who fail this test are classified as nonswimmers and placed in a class for beginners.

212. Teaching Techniques

a. First, test all the men, classify them, and divide them into homogeneous groups for instruction.

b. Arrange the men in the appropriate part of the pool, shallow end for the beginners (4½ ft), and deep end (6 ft) for intermediate and

advanced swimmers. If there are few men, all will be able to push off in one group. For large classes, have the men count off by 2's and 4's and let one group push off at a time (for example, all No. 1's push off first, then all No. 2's). For endurance swimming around the pool, arrange floats to mark the "tracks" around which the men swim. Arrange the class so that all may hear and see.

c. Outline the program for the period.

d. Present the material as simply, clearly, and concisely as possible; then have the men practice. There should be little talk and much swimming.

e. Pair the men for mutual assistance. If

possible, have the same men work together at every practice period.

f. If there are not enough pools for adequate practice in the water, the instructor should give intensive practice in dry land swimming (practicing the form of the various strokes out of the water). Some dry land instructions precede water training in each stroke, even when the men are to get training in the water. The proper form for such instruction is explained in the discussion of each stroke.

g. The use of floats to teach nonswimmers or beginners is strongly recommended. The most useful floating device is composed of cans (para 221c). These cans are strapped on the side of the body that is uppermost in the water. They are strapped on the back of a man learning the breast stroke and side stroke. The use of the float gives confidence, and the beginner strokes with much more skill. He can be told to stroke for a prolonged period of time—even half an hour. Thus, he learns the stroke easily through repetition, conserving his strength and developing endurance while still a beginner. If floats are used, the depth of the water does not matter and the various groups of swimmers need not be segregated. When the soldier can swim a quarter mile with the cans, he can be readily trusted to swim without them. If the instruction pool or stream has little shallow water, the use of floats is essential. If floats are used, the fundamental skills of each stroke should be taught as rapidly as possible. The swimmer then changes from one stroke to another as he swims for prolonged periods of time, mastering the strokes by constant practice.

h. A certain percentage of nonswimmers exhibit a fear of entering the water. It is best to ignore their complaints, and to assume that they will learn to swim with the others. Frequently, simply placing them in the pool for half an hour in water up to their necks, accelerates their recovery from fear.

213. Floating

a. Some men are capable of floating and some are not, but regardless of the number of nonfloaters, everyone should be given floating instructions early in the swimming program. The first step is to ascertain whether the soldier is a floater. To do this, tell him to assume

the position of the "jelly-fish float" (A, fig. 48). If he stays up, with any portion of his back above the surface, he is a floater. If he sinks, he cannot be taught to float, and must be taught to stay up by means of gentle arm and leg movements. This float is executed as follows:

(1) Divide the group into working pairs, and have the pairs stand in water about 6 feet apart. Explain the fact that water will hold them up if they stay low in the water.

(2) Instruct the men to take a deep breath and hold it, bend forward at the waist, and slide the hands down the front of the thighs and the legs until they are floating face downward in the water with hands clasping ankles or knees (A, fig. 48). The ankles may be released and the arms and legs allowed to hang vertically. The eyes should be kept open. This is the "jellyfish float." For variation, the legs can be doubled up on the chest with the arms clasped below the knees.

b. Most men are heavy legged and cannot float in a horizontal position. To learn to float, stand in water about shoulder deep, take a full breath, lean backward gently, arch the back, tip the head backward, and raise the arms sideward and somewhat beyond the head. Then thrust the feet gently from the bottom and lie as relaxed as possible in the water (B, fig. 48). No attempt need be made to float horizontally, as the legs will rise if they are buoyant enough.

c. If the feet will not remain off the bottom of the pool, two things may be tried.

(1) Bend and separate the lower legs and extend the arms farther overhead (C, fig. 48).

(2) Move out into deep water where it is possible to float vertically with only the face above water (D, fig. 48). This is not usually a satisfactory or comfortable position. Therefore, if a man can float only in the vertical position, have him add gentle arm or leg movements, or both. The simplified leg movement is an alternate push with the soles of the feet. Extend the foot and push down from 8 to 12 inches. Then pull it back a bit with slightly bent knees, and again thrust out. This movement is much like walking upstairs with the feet close together. During this process the appropriate arm stroke is "finning."

A. JELLY FISH FLOAT



B. BUOYANCY TEST



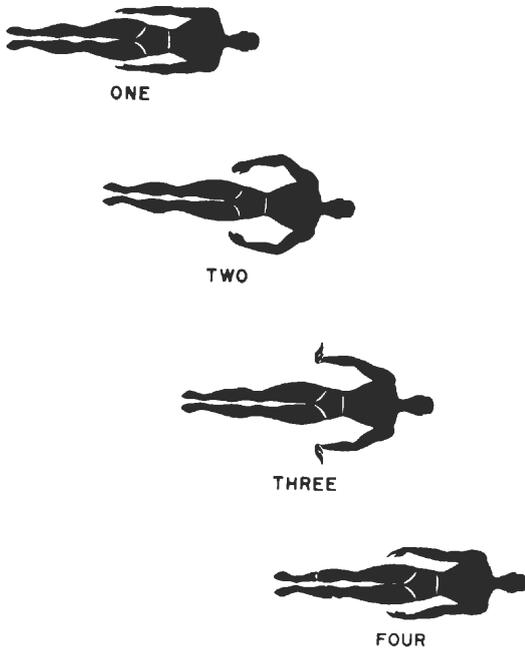
C. SEMIHORIZONTAL FLOAT



D. VERTICAL FLOAT



E. FINNING



F. SCULLING

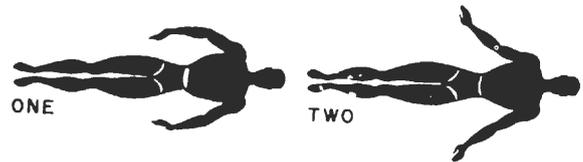


Figure 48. Techniques for staying afloat.



214. Finning

This is an arm movement which is used primarily on the back or in floating (E, fig. 48). First extend the arms along the sides then draw them up about a foot and thrust the hands out and downward towards the feet in a pushing movement, supplemented by a fishtail flip of the hands and wrists. This movement can be amplified into a sculling movement.

215. Sculling

Lying on the back, start the sculling movement with the arms by pressing the hands outward with the wrist bent backward. The little finger is nearer the surface than the thumb. Then sweep the hands inward towards the thigh with the wrists still bent backward, but with the thumb closer to the surface. The movement is with the hand and wrist primarily (F, fig. 48). The range of motion is from 14 to 20 inches. It is like sculling with an oar. There is little lost motion.

216. The Breast Stroke



This is one of the most useful strokes for military swimming (fig. 49). It provides good visibility and is not too tiring. It is useful in swimming through debris and oil-covered waters, for swimming with clothing on or with a load, and for pushing a tired swimmer along with the "tired swimmer's carry." It is not an easy stroke to master, but it should be thoroughly learned.

a. Arm Movement. The starting position is full extension in the water in the prone position. The head is up and the arms are pushed out ahead. Turn the palms outward and pull the arms outward, sideward, and slightly downward until the hands are opposite the shoulders and slightly below them. Then slice the hands to the front of the shoulders and bring the elbows against the sides. Thrust the arms forward with the palms down and slightly outward. The hands should be thrust straight forward from the shoulders.

b. The Leg Kick. This is much like the frog kick on the back. Draw the knees up sideward, rather than forward. Let the heels trail until they reach the limit of the upward motion of the knees, which is near the limit of a thigh "split." Then flex the lower legs at the knees, lifting the heels higher than the hips. Thrust

the legs sideward and outward, then squeeze them together. The soles of the feet should be facing as much as possible during the thrust and the squeezing action.

c. Coordination of Arm Stroke and Leg Kick. The whole movement is in three counts.

(1) Begin the arm pull and, near the finish of the pull, draw up the knees. The arm pull keeps the resistance created by the knees from slowing the swimmer's progress unduly.

(2) As the arm pull is finished and the hands are thrust forward, kick out the legs and then pull them together.

(3) Glide through the water until the momentum begins to fall off, then begin the next stroke.

d. Breathing. It is possible to breathe at any time in the breast stroke, but the usual way is to inhale through the mouth with the arm pull, and exhale through mouth and nose during the finish of the leg kick and the glide.

e. Body Position. In swimming for speed, the trunk and legs must be near the surface. This position, however, is tiring. Swimming with the trunk and legs projecting diagonally back and down at an angle of from 20 to 35°, is much slower, but is easier to sustain and not so tiring.

f. Land Drill. In land practice, the arm movement can be practiced in a standing position, with the trunk bent forward 90°. If the men can lie on small benches, they can practice the leg and arm strokes together. The leg kick can be practiced with one leg at a time while standing and combined with the arm stroke.

217. Side Stroke

This stroke is easy to learn and to use. With slight modifications it can be used for carrying others or when one arm is injured, or to carry a rifle with the top hand out of the water. The swimmer swims on one side (fig. 50). Usually he begins on the side that feels most natural. After learning on that side, however, he should learn to swim on the other side as well. As described below, the stroke is executed on the left side. Those who swim on the right side will reverse directions.

a. Arm Stroke. The starting position is lying on the left side. The left arm is extended in line with the body and beyond the head. The palm is down. The right arm is extended back-

BREAST STROKE

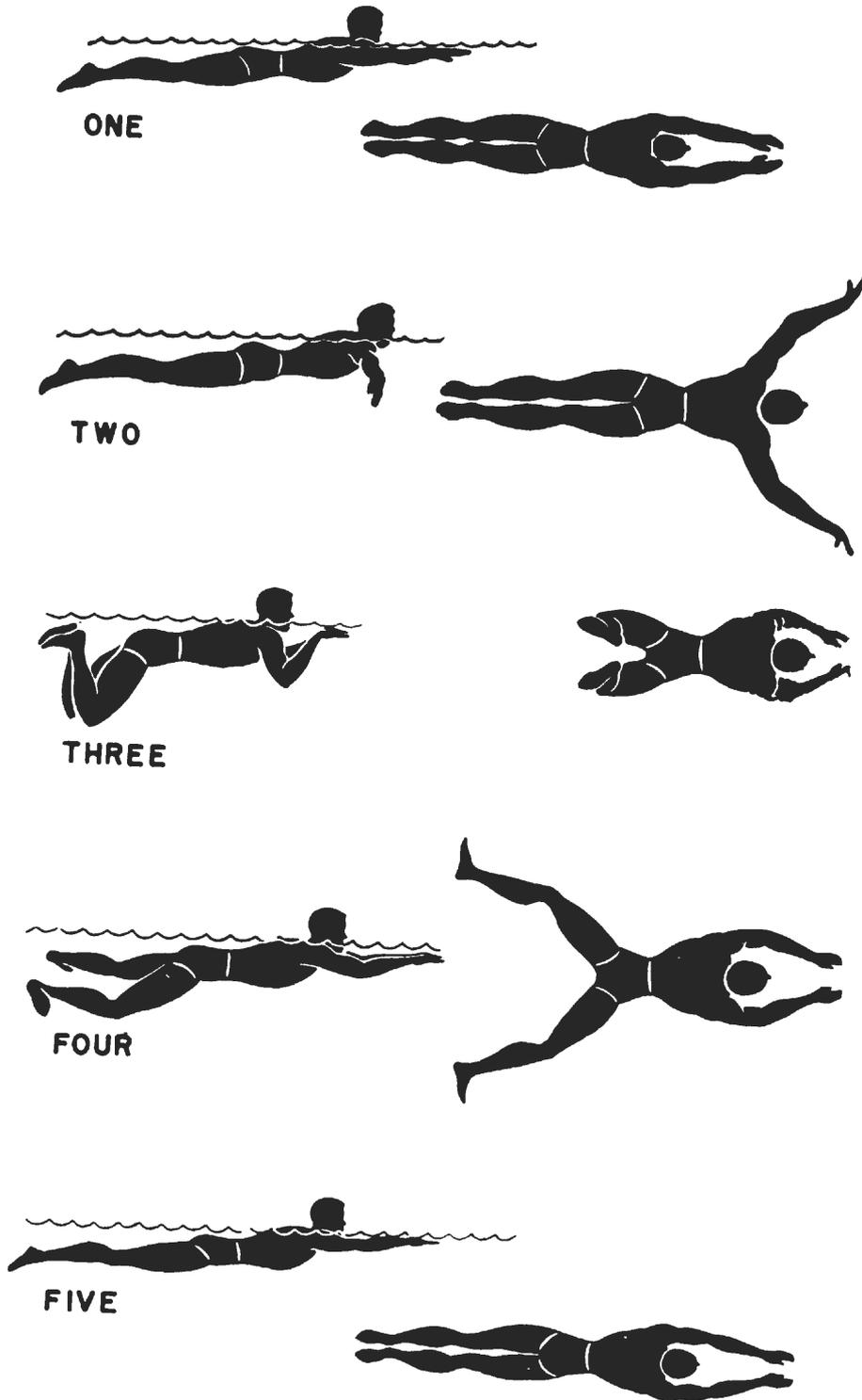


Figure 49. Breast stroke.

ward by the right thigh. Pull the left arm downward with the elbow straight and continue until it is straight down from the shoulder. Then flex the elbow and pull into the side. At the same time turn the palm toward the face. Then thrust forward to the original extended position. Bend the right arm at the elbow. Thrust the right hand upward in front of the chest, then push forward and downward in front of the chin or face. Here the right hand catches the water and pulls backward to its original position by the right thigh. The right hand starts forward just in time to meet and pass the left hand at the neck or face. The coordination is as if the left hand were pulling a handful of water down and handing it to the right hand to carry it on to the end of its stroke.

b. The Leg Kick. This is the "scissors kick." First draw the feet up, with the right foot in front about 12 inches, until the knees are bent to a right angle. Then straighten the right knee and thrust the right foot forward, downward, and backward in a semicircular sweeping motion. At the same time, straighten the left knee and thrust the left foot backward, downward, and forward in a sweeping motion, resembling a kick. This double leg stroke resembles the closing of a pair of scissors cutting through a large piece of water. The sole of the right foot is presented to the water during the thrust and the toes are pointed back during the backward sweep. The left foot is extended throughout the stroke. The legs come together at the end of the stroke and remain in line with toes pointed downward during the glide.

c. Coordination of Arms and Legs. From the position of left arm extended forward, right arm by the right side, and legs straight and together, begin the stroke with the downward pull of the left arm. As this arm pulls downward, start to thrust the right arm forward, and draw up the knees to begin the kick. The catch and pull of the right arm and the kick of the legs coincide with the completion of the pull of the left arm and its thrust forward to the gliding position.

218. Underwater Swimming

Underwater swimming is particularly useful for escaping from strafing attacks by planes or rifle or machinegun fire from the shore. It is

also used when swimming beneath blazing oil. Two methods of underwater swimming are commonly used. These are identical with the breast stroke and the side stroke, except that the head is held straight forward.

a. A variation of the side stroke is sometimes used. The pull of the right arm and the kick of the leg are identical, but the swimmer rolls somewhat on his face and performs a longer reaching stroke with his left arm.

b. When swimming in water known to be clear of obstruction, a modification of the breast stroke can be used. In this stroke the arms pull clear through to the legs and the glide is with arms by the sides. Usually, however, the arms should be ahead for protection.

219. Treading Water

As soon as a man masters the frog and scissor kicks he learns the methods of treading water. Those most commonly used are as follows:

a. Stand erect in the water and use the frog kick (A, fig. 51) exactly as in the elementary back stroke. If necessary, use the arms to fin or scull.

b. Stand erect and use the scissors kick (B, fig. 51), either single or alternate (in the alternate kick, the left leg is forward in one kick and the right leg in the next kick). If necessary, use the arms to fin or scull at the same time.

c. To stay afloat without using the legs, assume the position of the balanced or vertical float and scull with the hands.

220. Entering Water

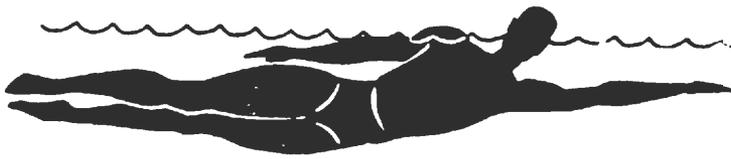
In military swimming, men usually enter the water either by walking or jumping in. They should dive only when some other entrance is impossible. However, a shallow dive may be needed at times and surface diving should be mastered.

a. Jumping Into Water.

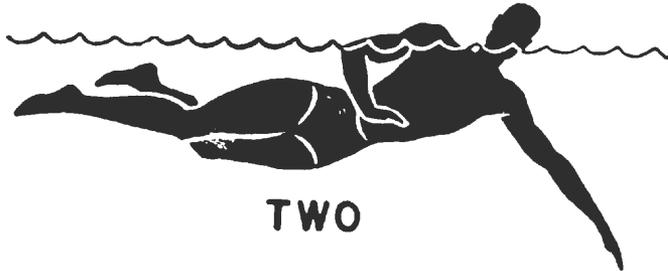
(1) *The stride jump.* Enter the water with one leg forward and the other backward, much like the position of the scissors kick. If jumping from a low height, spread the arms sideward to prevent the head from going below the water level.

(2) *Jumping from a height.* Jump feet first, holding the nose with the thumb and forefinger of the left hand, and covering the

SIDE STROKE



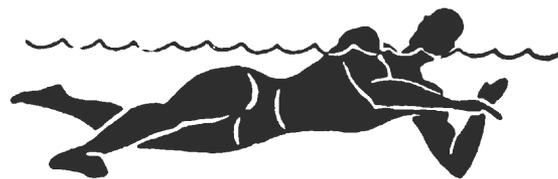
ONE



TWO



THREE



FOUR

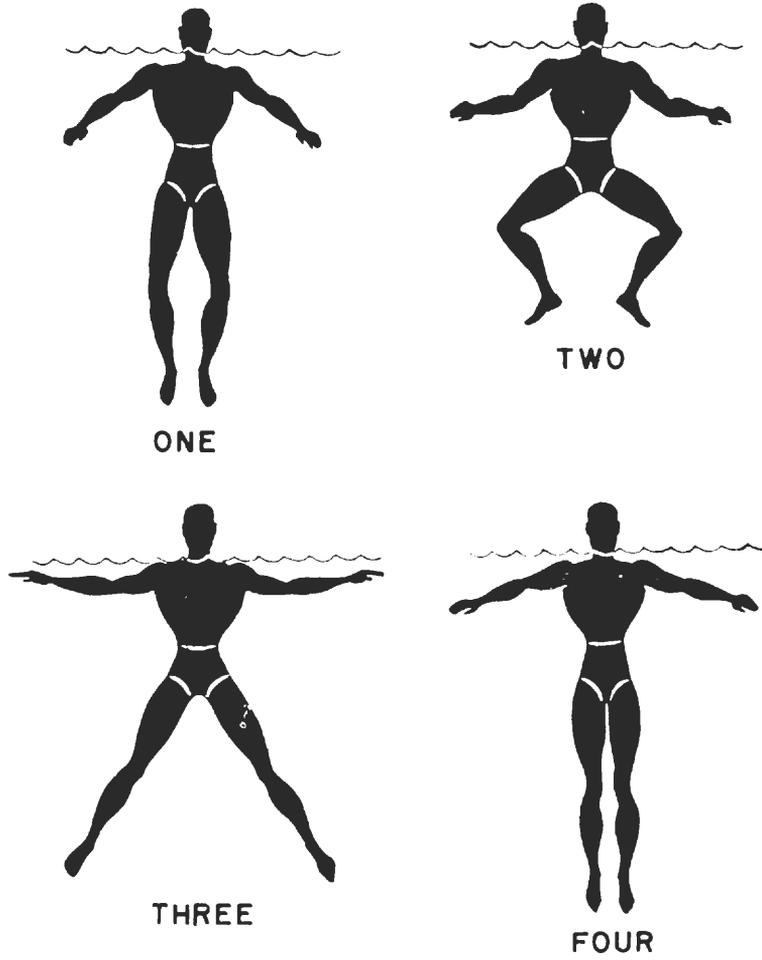
Figure 50. Side stroke.

mouth with the palm. In jumping without a life-belt, extend the right arm overhead to aid in balance. If jumping with a kapok lifejacket encircle the left arm with the right arm, and grasp the left shoulder, or the top of the life-jacket near that shoulder, to prevent the jacket from being forced upward and breaking the neck. If jumping through burning oil with-

out a lifejacket, hold the right elbow in front of the eyes to protect them, and grasp the left shoulder with the right hand.

b. Shallow Dive. Occasionally it is necessary to enter water of unknown depth rapidly; for example, to escape sudden enemy firing. In such circumstances, it is advisable to dive very close to the surface. On reaching the edge of

A. TREADING WATER USING FROG KICK



B. TREADING WATER USING SCISSORS KICK

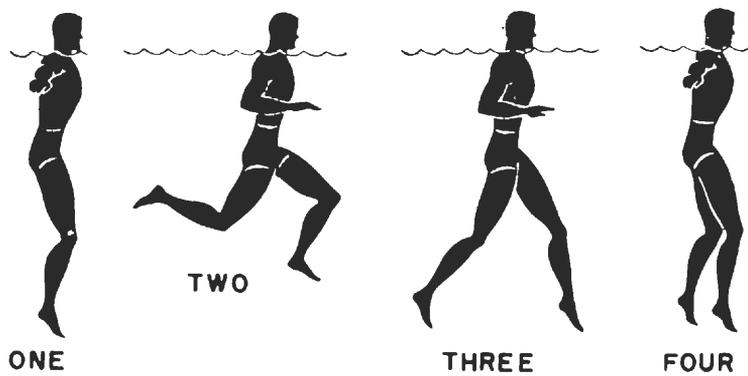
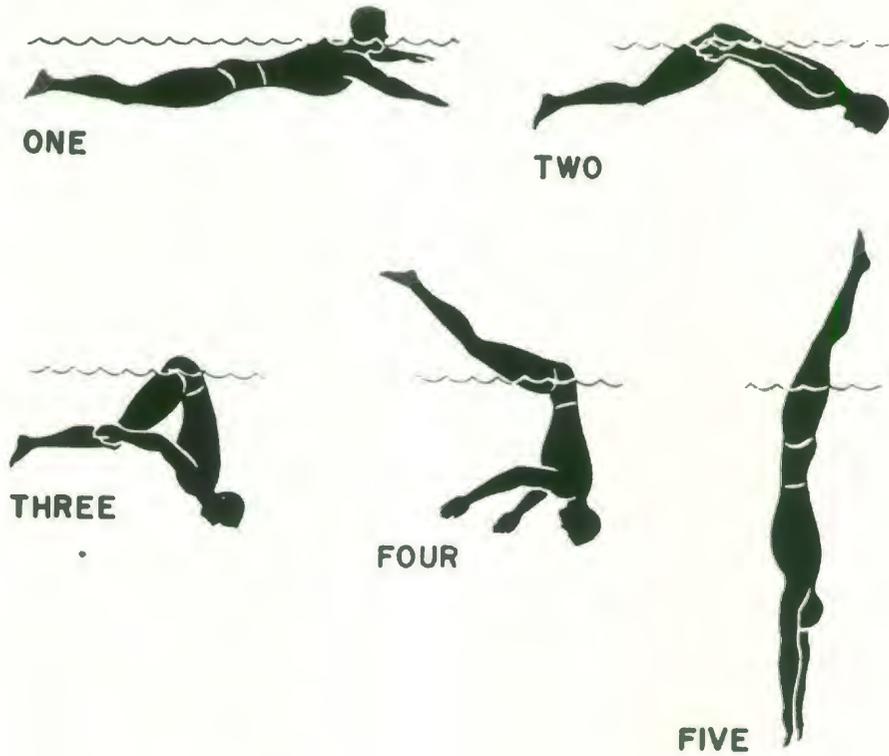


Figure 51. Treading water.

A. JACK KNIFE SURFACE DIVE



B. UNDERWATER SURFACE DIVE

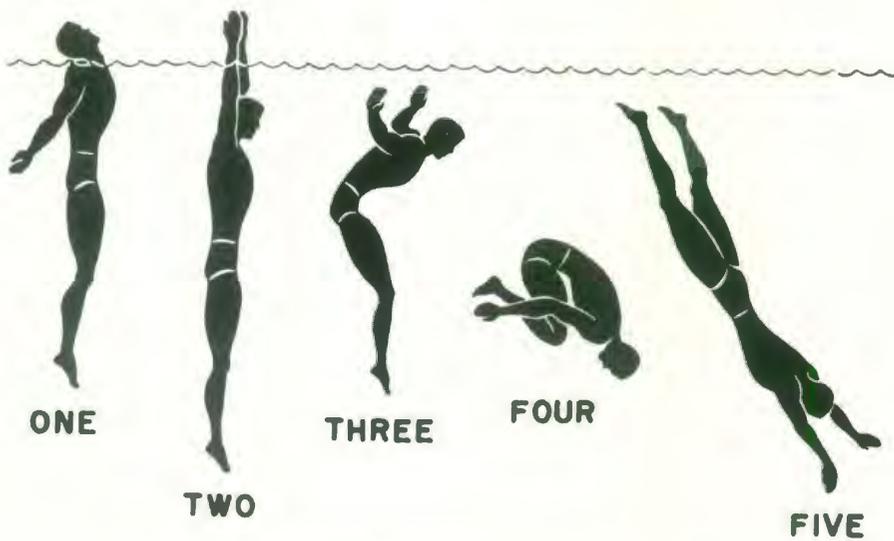


Figure 52. Surface dives.

the water on the run, dive outward almost parallel to the surface and with the arms overhead, thumbs locked together, fingers straight forward and palms down. Immediately upon entering, use the head and arms to control upward and downward direction. An upward tilt of the hands, arms, and head results in a sharp rise to the surface. A downward tilt results in a deeper submerging.

c. Surface Dive. When swimming on the surface, it is sometimes necessary to submerge quickly and swim under water. This may be done in two ways:

(1) *Jackknife surface dive.* Bend sharply at the hips, thrust the arms overhead towards the bottom and begin to swim with a breast stroke towards the bottom (A, fig. 52). This method is quick, but the legs usually project above the water as the swimmer submerges, attracting attention.

(2) *Underwater surface dive.* Drop the legs to the vertical with the arms by the sides, and submerge with an upward double arm sweep (B, fig. 52). Then, bend forward and start swimming forward. This method is practically noiseless.

221. Facilities

a. If a natural lake or stream is used, the

water where beginners are to be instructed should be from 3½ to 4 feet deep. There should be no sudden drops into deep water. The water should be quiet, and there should be a vantage point from which the instructor can see all those in the group. Water for advanced swimmers and divers should be 8 to 12 feet deep, especially beneath the diving board. If an inside pool is used, water temperature should be about 5° F cooler than the air temperature but never over 78° F.

b. If a dock is to be built, it should be H-shaped. The water on one side should be shallow for beginners' instruction. With this type of dock, the instructor has numerous vantage points from which to teach.

c. Cans for aid in staying afloat are extremely useful and should be provided. These may be made by soldering together the bases of two No. 10 cans, and providing two loops of wire, 5½ inches apart, in the middle, through which to pass webbing straps or tape for fastening the cans around the chest. The cans should be painted with waterproof paint to prevent rusting. Each can should be numbered. Water aids, such as kick boards and inflated rubber tubes, are useful but not essential. Lifesaving equipment, such as ring buoys and a long pole should be at hand.

Section III COMBAT WATER SURVIVAL TRAINING

222. Reason and Purposes for Training

Streams, rivers, lakes, and oceans are part of the terrain. A trained combat soldier can breach these obstacles. With his ability to survive in this environment he makes the water a friend, not a foe, and an avenue, not an obstacle.

a. In an effort to better prepare soldiers for water hazards they may encounter throughout their training and in combat, combat water survival training was developed.

b. This training can be administered to most any combat unit. The experiences the soldier undergoes will not readily be forgotten and may prove invaluable in combat or simulated combat situations.

c. Before going into the specifics of combat water survival training, it should be emphasized that this instruction in no way attempts to teach a soldier to swim. All men should have

previously passed a required 50-meter swim test before being admitted to water survival training. Those who fail to swim the required 50 meters should engage in a remedial or beginning program of swimming prior to combat water survival training.

223. Purposes and Benefits of Training

There are several purposes and benefits of combat water survival training. They can be summarized as follows:

a. A man is given insight into his abilities and limitations when swimming with clothing, equipment, and weapon.

b. The experiences of going through the training help to eliminate fear and panic in the water.

c. The soldier is taught the proper techniques of swimming with clothing, equipment, and weapon.

d. The training serves as a warning to the individual as to the difficulties he may encounter while progressing through swamps, crossing rivers, lakes, and other water hazards.

e. The performance ratings as a result of the training afford information to leaders concerning the men most likely to lose their self-composure under strenuous conditions.

224. Orientation Prior to Training

There are certain basic principles or "teaching points" which should be impressed upon the men in an orientation which is presented at the training site, but before the actual water survival training begins. The leader conducting the orientation should be thoroughly familiar with the purposes of the water survival instruction and should be able to competently present the subject to the unit. In presenting his orientation, it is recommended that he bring the entire group to the side of the pool, seat them there, and proceed with his orientation. In addition to the purposes and benefits of the training, the following must be included:

a. Basic Principles.

(1) *Conservation of strength.* The swimmer wearing clothing and carrying equipment should be taught to use a slow, steady stroke while in the water. The body should be held low in the water to make maximum use of body buoyance and the men should be instructed to swim to the desired point in a straight line.

(2) *Panic and improper breathing techniques are dominant causes of drowning.* The swimmer must overcome a natural tendency to excite or panic when entering the water with equipment. A composed swimmer should have complete control of his faculties. His breathing should be done by taking a "bite" of air and developing a rhythm, thus breathing through the mouth and exhaling through the nose. The breath need only be one-half to three-quarters of a normal breath. The soldier should be made aware that there are generally two types of panic. The first being the man who loses control, struggles, gasps, expends energy, and finally sinks. The second is the man who simply gives up and sinks without even shouting for help.

(3) *Proper uniform when operating near water.* The men are briefed on how to wear

their clothing when operating in swamps or near any body of water. The accepted procedure is as follows:

(a) *Trousers unbloused.* Bloused trousers tend to fill with air and create difficulty for the swimmer in water movement, as the air caught in the trouser leg tends to keep the legs too high in the water.

(b) *Field jacket and/or fatigue shirt (buttoned up) outside of trousers.* These two articles of clothing are worn in this manner in order that they may catch and hold air. This trapped air will make floating much easier and help keep the man above the surface. A flotation demonstration will illustrate the air-catching ability of the clothing. The demonstration utilizes floating to include clothing and equipment, but without weapon.

(c) *Harness worn loosely.* The harness is not buckled at the waist for safety purposes. It is extremely difficult to remove a buckled harness in water. Thus, the soldier wears the harness in a loose manner in the event he should unexpectedly encounter a water hazard.

(4) *Use of proper techniques.* The soldier should learn proper techniques. The demonstrations which follow are to be given while the orientation is in progress. The purpose of the demonstrations is to show the soldier how he should perform in the water and to give him an indication of what is expected of him. There are three demonstrations (fig. 53).

(a) Removal of harness (para 227a).

(b) Swim with equipment and weapon (para 227b).

(c) Jump off highboard and swim to shore (para 227c).

b. *Safety.* A principal factor which should be emphasized throughout this orientation is: *The soldier's safety is the primary concern at all times.* The soldier is instructed to jettison his equipment if he has any difficulty whatsoever. Lifeguards are provided at Stations One, Two, and Three (para 225a). Instructors and lifeguards are to be impressed with the need for constant alertness during the progress of the instruction.

c. *Action After Orientation.* Upon completion of this segment of instruction, the officer in charge should direct the platoon leaders to take their respective platoons to a break area which should be located near the pool. The pla-

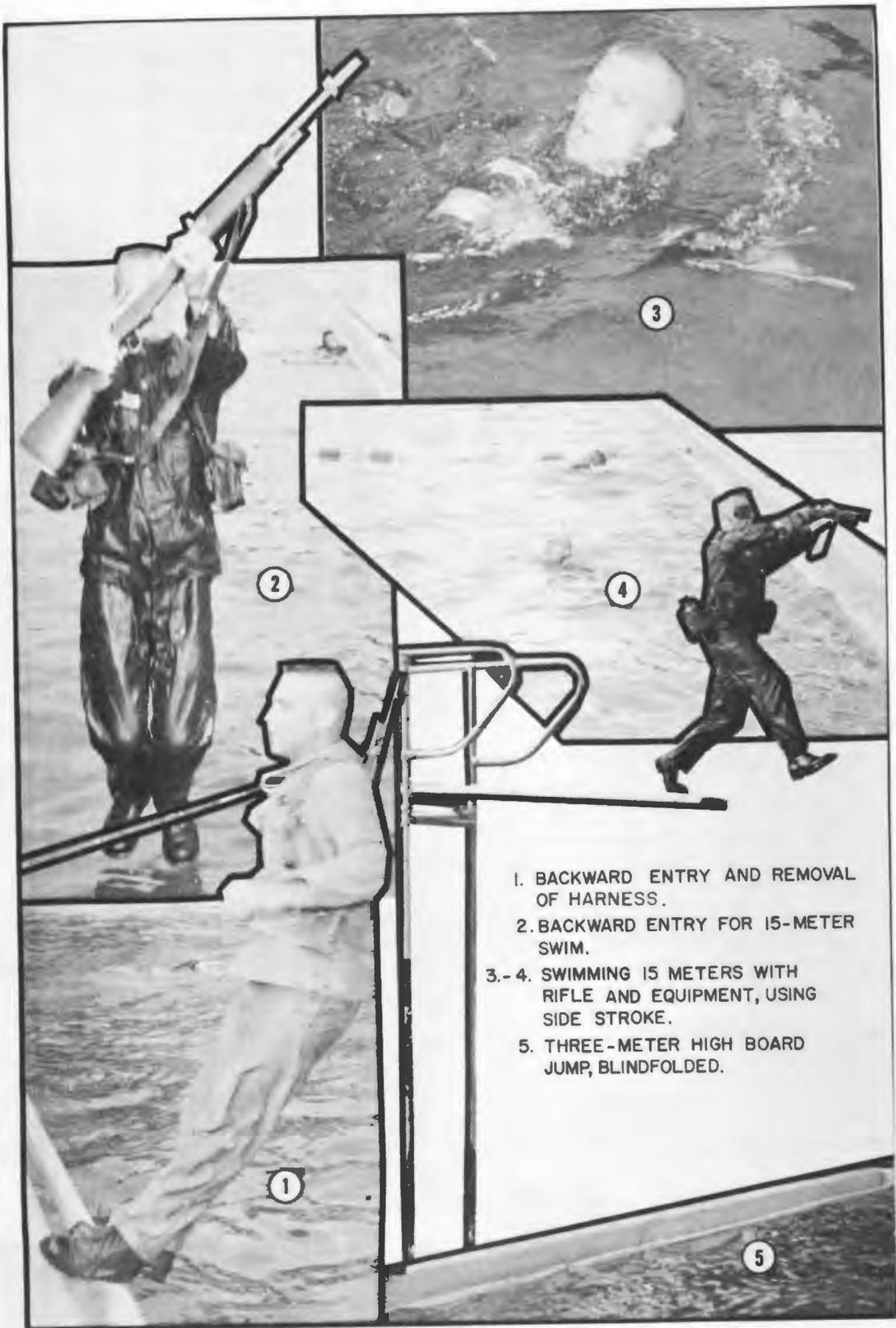


Figure 55. Combat water survival skills.

COMBAT WATER SURVIVAL SCORE CARD

SQUAD _____ PLATOON _____ COMPANY _____ MAJOR UNIT _____ DATE _____

NAME	HARNES REMOVAL		15-METER SWIM WITH WEAPON		HIGHBOARD		REMARKS
	S	U	S	U	S	U	

CODE: S - SATISFACTORY
U - UNSATISFACTORY

Figure 54. Combat water survival scoreboard.

toon leader of the first platoon should be instructed to send his first two squads to Station One immediately. When a squad completes this station, they will move to Station 2. When squads 1 and 2 clear the first station, squads 3 and 4 of the 1st platoon will then proceed from the break area to Station 1. The remaining platoons will follow in turn. Thereafter, this steady flow of men from one station to another will continue until the entire company has completed all three stations.

225. Personnel and Instructors

a. Assignment of Personnel. Thirteen personnel are needed to handle this water survival class for a company-size group. Beginning with the orientation, the instructors are divided as follows:

- (1) Orientation: 1 officer, 1 demonstrator.
- (2) Station 1, harness removal: 2 NCOs, 2 lifeguards (2 lanes).
- (3) Station 2, swim with equipment and weapon 2 NCOs, 2 lifeguards (2 lanes).
- (4) Station 3, highboard jump: 2 NCOs, 1 lifeguard (1 lane).

The total of 13 instructors and lifeguards may be decreased by one since the orientation demonstrator may also be the demonstrator at one of the stations.

b. Rating the Abilities of Men. Prior to the start of the class, the squad leaders are issued scorecards (fig. 54), one for each squad with the names of the men listed thereon. As each man finishes a station the instructor grades him and when a squad finishes he sends the squad on to the next station. Their card is forwarded with the squad leader. At Station 3, where the men no longer proceed as a unit, the scorer grades the men as soon as they have finished the station. A problem of constantly switching from one card to another, to score the individuals, should not exist since the men are still in squad order when they come through the final station.

226. Uniform and Personnel Equipment

The proper manner in which the soldier should wear his equipment when operating near water has been mentioned previously. The required equipment follows.

a. In addition to his general clothing, fatigues, boots, and socks, the soldier should be wearing the standard Army harness with ammunition pouch and first aid pouch attached. The wearing of the field pack is optional. Actually, the field pack would tend to be an asset to the swimmer since its added flotation would help keep him above the surface. The wearing of a cap is not necessary.

b. To briefly restate, the equipment should be rigged as follows:

- (1) Harness open.
- (2) Top shirt button buttoned and shirt outside the trousers.
- (3) Trousers unbloused.
- (4) Weapon over shoulder, or held at high port when entering the water (as required at each station).

227. Station Organization

There are three stations through which the men move in the combat water survival class. Generally, the men move from station to station one squad at a time. NCOs are at each station to rate the soldier's ability. The three stations are as follows:

a. Station 1.

(1) *Objective.* At this station the soldier's equipment is rigged for river crossing; that is, with harness open, top shirt button buttoned, shirt on the outside of the trousers, trousers unbloused, rifle attached to harness and over his shoulder. The weapon is attached to the harness by looping the harness strap (coming from the ammunition pouch) around the sling of the weapon, and fastening the strap to the metal ring at the shoulder junction of the harness. He must enter the water, come up, compose himself, submerge, remove his harness, and swim to the nearest shore (1, fig. 53). For the purpose of recovering the harness and weapon, a line with a snaplink at the end is attached to the harness and is held by the man next in line. After the man in the water has removed his harness, the man holding the line pulls in the equipment.

(2) *Method.* The instructor proceeds to orient the two squads on what is expected of them. The first man in the squad will enter the water, at the instructor's command, by jumping off the side of the pool backwards. His rifle is attached to his harness and over his shoulder

with the recovery line attached. The next man in file holds the recovery line. After the swimmer has successfully removed the harness and swims to shore, the "recovery" man pulls in the equipment. He then becomes the examinee while the next man in the file holds the line. After being rated, the swimmer falls in at the end of his squad.

b. Station 2.

(1) *Objective.* At this station the soldier enters the water backwards wearing his equipment and holding his rifle. He enters the water with the weapon held at port arms. The soldier is taught to swim with the weapon held close to his body to reduce the drag which the weapon exerts; by doing this he improves arm and leg coordination. Upon assuming the swimming position he should hold the weapon under water but in line with his body, muzzle in the direction he is swimming. The man should grip the weapon directly above the upper handguard (2, 3, 4, fig. 53). This station is the one which reveals the most failures. The swimmer usually fails to control his body and develop a proper rhythm. If he fails to control his body, he then enters a stage of panic, generally in three phases:

(a) Loses mental control and body coordination.

(b) Fails to kick legs and begins to fight for breath (also fails to follow verbal instruction).

(c) The panic is concluded by either:

1. Wildly thrashing and fighting, or
2. Quietly slipping under the water.

(2) *Method.* The instructor gives the first man the command to enter the water. He then walks along the side of the pool as the swimmer is swimming his 15 meters and rates the swimmer upon completion of the swim. The soldier then goes on to Station 3 while the instructor returns to the starting line to give the GO command to another swimmer.

c. Station 3.

(1) *Objective.* At this station the soldier enters the water blindfolded off a highboard (5, fig. 53). This gives him a surprise falling effect such as he would have at night falling off a riverbank, out of a boat, or in similar situations of sudden and unexpected entry into water. He must come up, compose himself, remove the blindfold, and swim to the edge of the

pool. He must control his breathing under this type of surprise condition.

(2) *Method.* Upon completion of Station 2, the soldier individually moves on to Station 3 where he completes the highboard jump while blindfolded. At this station there are two NCOs; one on the ground helping the man up the ladder and then rating him in the water, and one located on the stationary end of the diving board to guide the blindfolded man out along the board until he steps off into midair. The instructor on the ground issues the mask or blindfold and emphasizes to each man before he goes up the ladder the importance of keeping his weapon at port arms and well away from his body when making the jump. The reduces the possibility of the force of the water pushing the weapon into the man's face.

d. Action at Conclusion of Training.

(1) After completing all stations the soldier returns to the break area, changes to dry clothing, and remains in that area until the entire company has completed the class.

(2) At the conclusion of the class, one NCO collects all of the scorecards and retains them. Those soldiers failing the course are encouraged to improve their swimming and should be tested again at a later date.

228. Facilities and Equipment

a. Facilities. The facilities required to successfully administer combat water survival instruction include:

(1) A swimming facility 35 meters in length.

(2) A diving board, preferably 3 meters long—two sets each.

(3) Standard lifesaving equipment usually found at any swimming pool.

b. Equipment. This consists of the following:

(1) Clothing—underwear, socks, fatigues—two sets each.

(2) Boots—2 pairs.

(3) Weapon (unserviceable rifles may be used, two for each lane or station in place of individual weapons).

(4) Harness.

(5) Ammunition pouch.

(6) First aid kit.

(7) Clipboards—five, one for each scorer.

(8) Scorecards—one for each squad (mimeographed locally).

(9) Pencils or pens—five, one for each scorer.

(10) Training aid for Station 1—the side stroke (optional).

(11) Two rescue lines—to recover equipment, Station 1.

(12) Blindfolds—three to be used at the highboard jump, Station 3.

229. Evaluation of the Method

a. Combat water survival training offers the soldier an insight into his true capability when forced to swim, perhaps for his life, while wearing field equipment. A strong swimmer, under ideal conditions, is not necessarily a capable swimmer when equipment and clothing replace a bathing suit. This difference is something which the individual should understand and appreciate.

b. The side stroke with scissors kick, removal of load, and unexpected entry into the water are presented to the soldier as survival techniques. This instruction does not attempt to make a man a better swimmer; it strives to teach him to stay alive—to survive.

c. Panic in water is the primary cause of drownings; water survival instruction attempts to make the individual aware of this danger. To eliminate panic is relatively impossible; to attempt to contain it is realistic. If a man shows a tendency to panic, which often times becomes obvious during the class, he should be given extra swimming instruction to build his confidence. During later tactical training near water hazards, he should be paired up with a known superior swimmer within his squad. Confidence near water is essential. Roughly two-thirds of the earth's surface is covered by water and the soldier is expected to function successfully in and around water.

CHAPTER 18

INDIVIDUAL EXERCISE PROGRAMS

Section I. INTRODUCTION

230. Purpose and Scope

If you are responsible for your own physical fitness program, this chapter will assist you to understand the need for exercise and will aid the planning and execution of your individual program. Exercise activities included are the Chairborne Conditioner, 6-12 Plan, Weight Training, and Isometric Contraction. Each of these activities can be completed in 15 minutes or less.

231. Need for Exercise

Keeping physically fit is a problem that faces every combat, combat support, and combat service support soldier. Even though we are frequently engaged in training that requires some physical effort, in many cases it is not enough to prepare us to meet the intense physical demands of combat.

a. Attaining a satisfactory level of physical readiness is not an insurmountable objective for anyone. Available time appears to be the most difficult obstacle to the development of physical readiness. In most cases, regular physical training programs are centralized, requiring the individual to temporarily leave his work area. The problems involved in setting an hour aside two or three times each week are numerous. However, most of us can devote 15 minutes each day to physical fitness with little, if any, impact on our daily work schedule—especially if it does not require us to leave our work area.

b. There are many good physical fitness programs available to the individual or group. Regardless of the type or duration, to be effective the program must contain exercises that are strenuous and are challenging to the individ-

ual. Space will not permit the inclusion of all available means of individual exercise. The four programs selected for this chapter have met the requirement of minimum space and minimum time.

c. These programs are quite strenuous and will develop a satisfactory level of physical readiness. However, if the individual desires additional development of endurance it is recommended that he supplement these programs with a 15-minute period of wind sprints and double timing on an alternating daily basis.

232. Progressive Training

If you are 40 years of age and over, or if you are under 40 and performing duties which require little or no physical activity, you must plan your physical conditioning program to assure a moderate beginning, moderate but steady progression, and sufficient "warmup" before starting your vigorous exercise. To avoid organic or bodily harm never rush into vigorous activity without adequate "warmup," and conduct your conditioning program on a daily basis over an extended period of time, **NEVER ON AN UNDULY ACCELERATED OR CRASH BASIS.** For additional information concerning programs of physical fitness for individual personnel see chapter 8.

233. Evaluating Your Fitness

Periodically you may be required to undergo physical fitness testing, or you may desire to test yourself to determine the effectiveness of your personal program of exercise. Regardless of age do not test unless a pretest period of conditioning has taken place.

Section II. THE CHAIRBORNE CONDITIONER

234. Definition and Purpose

The Chairborne Conditioner is an apparatus that employs both isotonic (moving) and isometric (stationary) exercises as the nucleus of the program. The exercises are designed to develop strength and endurance in all the major muscle groups of the body. The principles of progression, overload, and balance are employed when the exercises are performed properly.

235. The Apparatus

The conditioning apparatus (fig. 55) can be constructed in any unit motor pool with welding equipment. The only materials necessary are scrap metal and pipe, found in most salvage yards. The list of material follows:

a. Galvanized Pipe.

(1) Two 1¼-inch by 4-foot horizontal supports (rest on floor).

(2) One 1¼-inch by 3-foot horizontal cross support (rests on floor between vertical uprights).

(3) Two 1¼-inch by 5-foot vertical uprights.

(4) Two 1-inch by 5-foot telescoping vertical uprights.

(5) One 1¼-inch by 3-foot, 3-inch top horizontal bar (pullup bar).

(6) One 1¼-inch by 2-foot, 10-inch bottom horizontal bar (isometric bar).

(7) Two 1-inch by 9-inch foot braces (attached to vertical uprights).

(8) Four 1-inch by 18-inch telescoping horizontal stabilizers (rest on floor and extend the horizontal supports).

(9) Four 1-inch by 16-inch legs (for bench).

b. Scrap Metal.

(1) Two ¼-inch by 8-inch by 4-inch foot plates.

(2) Two ¼-inch by 8-inch by 3-inch horizontal bar supports (Detail A, fig. 55).

c. Construction Details.

(1) Isometric handles may be constructed of 1-inch rolled steel or 1-inch pipe. The handles and handgrips are shaped to form as indicated on the diagram (Detail A, fig. 55).

(2) The bench is constructed of ¼-inch

steelplate; however, the substitution of ammunition boxes is acceptable.

(3) Holes, ½-inch in diameter, are drilled 4 inches apart in both inner and outer vertical uprights. The holes are drilled so that the height of the apparatus can be adjusted and locked by insertion of a 7/16-inch bolt.

236. The Program

The program consists of two tables, each with 10 exercises. Progression is controlled by required repetitions or, in some cases, by application of maximum effort. Each table can be completed within 15 minutes.

237. Progression

To start the program, begin with table I and execute each exercise for the required number of repetitions as indicated. A starting dosage and a maximum dosage is controlled by the individual. When the maximum dosage for table I can be executed during a 15-minute exercise period, you may progress to table II. To maintain your level of development, repeat your maximum attainable dosage keeping within the 15-minute exercise period. Substitution of exercises should be kept to a minimum, but if a full 15 minutes of strenuous exercise is accomplished and all muscle groups are exercised, there should be no appreciable difference in the overall development.

238. Table I

a. *Exercise 1, Sidestraddle Hop.* This is a two-count warmup exercise done at moderate cadence. The starting position is the position of attention. On count *one* jump slightly into the air, swinging the arms out to the sides and up to a vertical position, hands touching (A, fig. 56). At the same time spread the feet wider than shoulder-width apart. On count *two*, using a slight flexing of the knees and ankles, jump slightly into the air and return to the starting position by swinging the arms back down to the sides. Twenty repetitions of this exercise is the standard dosage throughout the program.

b. *Exercise 2, Hand Walk.* Remove the lower horizontal bar. Adjust the upper horizontal

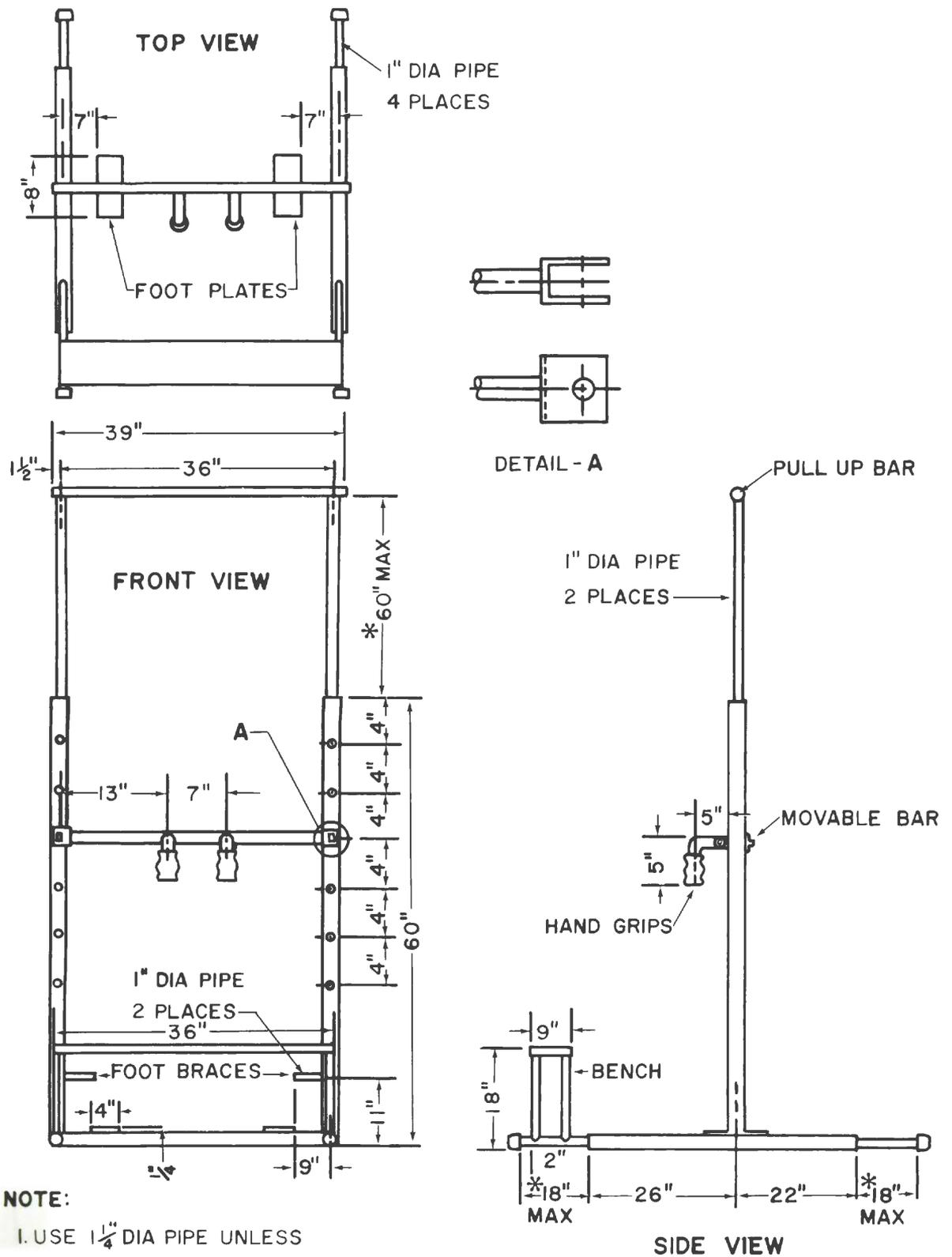


Figure 55. Chairborne conditioner apparatus.

bar so that it is high enough to permit a dead hang with the feet off the ground (B, fig. 56). From the dead hang release one hand and drop the arm to the side of the body. Then raise that arm and regrab the horizontal bar. Release the bar with the other hand and drop that arm to the side. Repeat this as many times as possible.

c. *Exercise 3, Sit-ups.* Lie down with the fingers interlocked and placed behind the head. Hook the toes under the foot braces. Raise the trunk and upper body to an upright sitting position, twisting it to the left and then forward and downward until the right elbow touches the left knee (C, fig. 56). Lower the body to the starting position. Sit up again but twist the body to the opposite direction as before, touching the left elbow to the right knee. Again lower the body to the starting position. The starting dosage is 20 sit-ups. Progression should be continued until 40 sit-ups are attained.

d. *Exercise 4, Double Step-up.* Starting at one end of the bench, step up onto the bench and walk across it. Step down from the other end; turn around and repeat the process to return to the starting point (D, fig. 56). Each return to the starting point constitutes a repetition. The starting dosage is 20 repetitions. Maximum dosage is 35 repetitions. This exercise should be done at a rapid cadence.

e. *Exercise 5, Isometric Bar Lift.* Adjust the lower bar so that it is slightly higher than the beltline. Placing the feet on the footplates at the base of the frame, grasp the lower bar so that the hands are spread shoulder-width apart. Assume a crouched position and lift with maximum effort using the arms, back, and legs (E, fig. 56). Starting dosage is four repetitions of a stress time of 5 seconds followed by a 5-second rest prior to the next repetition. Progression is obtained by lengthening stress periods to 6, and later 7 seconds. Do not increase the number of repetitions.

f. *Exercise 6, Knee Lift.* Adjust the upper bar to the same height used in Exercise 2. Adjust the lower bar so that it stops rearward movement of the hips when the dead hanging position is assumed (F, fig. 56). Keeping the arms extended, flex the legs and raise the knees as high as possible. Hold this position for 5 seconds, then return to the starting posi-

tion. After 2 seconds in the starting position, raise the knees again. Each return to the starting position constitutes one repetition. The dosage is five repetitions. Progression is obtained as in Exercise 5.

g. *Exercise 7, Isometric Pull.* Adjust the lower horizontal bar to a position where it is slightly higher than the beltline. Grasp the handles and pull outward (G, fig. 56). Apply maximum effort and hold for approximately 5 seconds. Relax for 5 seconds between repetitions; perform four repetitions. Moving the body closer to or farther away from the bar will change the stress from the upper arms to the forearms. Progression is obtained as in Exercise 5.

h. *Exercise 8, Isometric Compression.* Maintain the position as in Exercise 7, (H, fig. 56). Grasping the handles in the same manner, press in with maximum effort and hold for approximately 5 seconds. Relax for 5 seconds between repetitions; perform four repetitions. Progression is obtained as in Exercise 5.

i. *Exercise 9, Isometric Press.* Remove the lower horizontal bar. Adjust the upper horizontal bar until it is about 6 inches lower than the extended arms can reach. Stepping on the footplates at the bottom of the frame, grasp the bar with both hands and push up (I, fig. 56). Keep both the legs and arms slightly flexed and the back straight. Apply maximum effort for 5 seconds then relax for 5 seconds. Complete four repetitions. Progression is obtained as in Exercise 5.

j. *Exercise 10, Pushups.* Grasping the foot braces with both hands, assume the front leaning rest position (J, fig. 56). Keeping the back and legs straight, lower the body until the chest is lower than the hands; then return to the starting position. The maximum possible number of repetitions should be completed.

239. Table II

There is no limit on the maximum number of repetitions attainable in Exercises 3, 4, and 6 of table II. The only limit imposed is that the entire program of 10 exercises outlined in either table should not exceed 15 minutes.

a. *Exercise 1, Sidestraddle Hop.* This is a two-count warmup exercise done at a moderate cadence. The starting position is the position of attention. On count *one* jump slightly into the

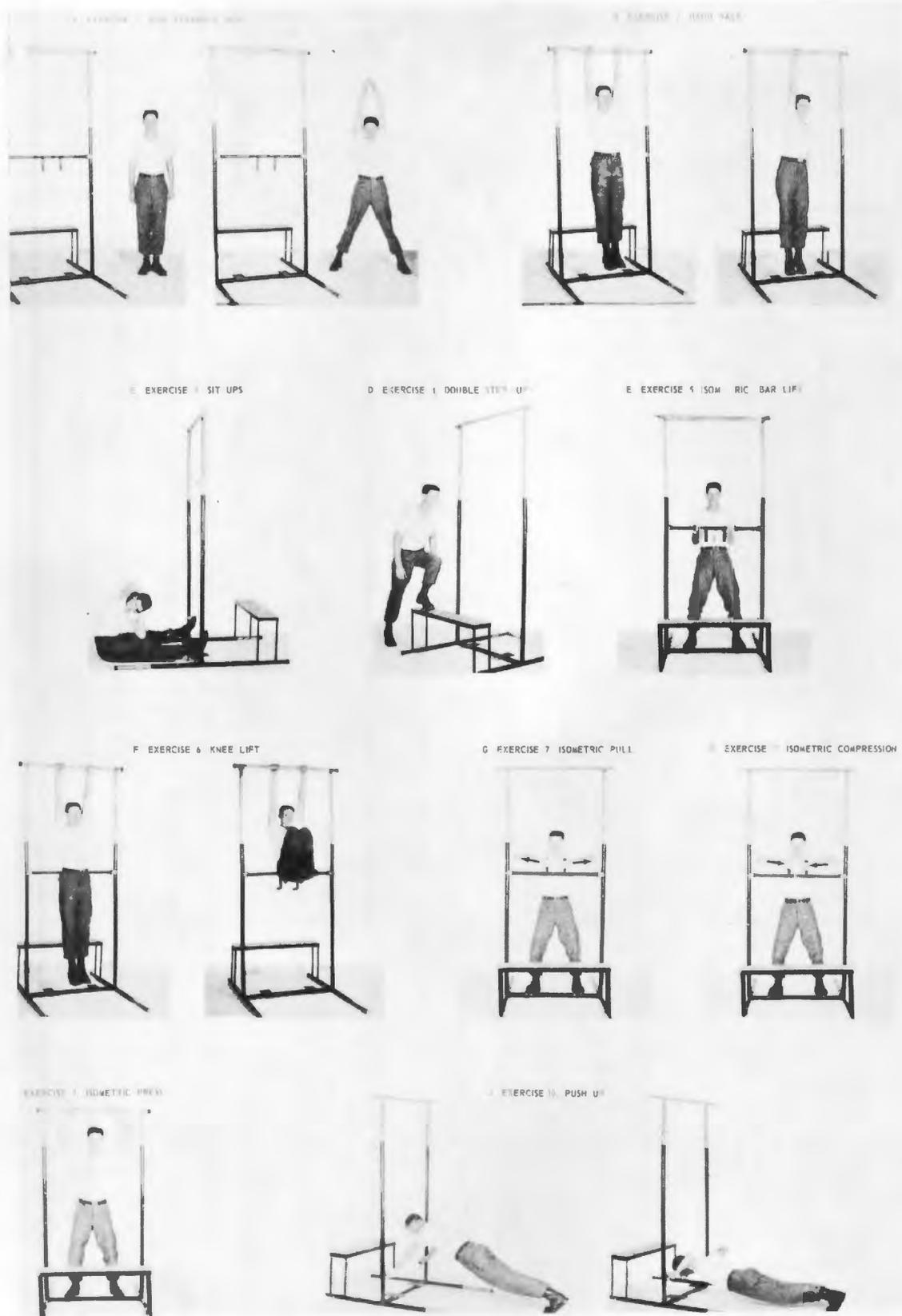


Figure 56. Chairborne conditioner exercise, table I.

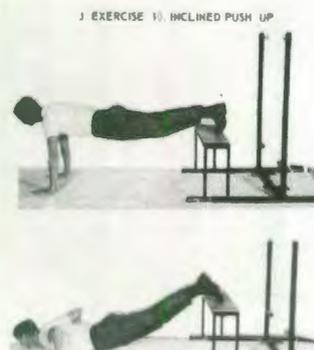
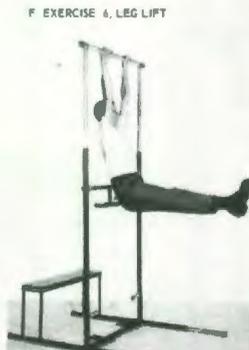


Figure 57. Chairborne conditioner exercise, table II.

air, swinging the arms out to the sides and up to a vertical position, hands touching (A, fig. 57). At the same time spread the feet wider than shoulder-width apart. On count *two*, using a slight flexing of the knees and ankles, jump slightly into the air and return to the starting position by swinging the arms back down to the sides. Twenty repetitions of this exercise is the standard dosage throughout the program.

b. *Exercise 2, Pullup.* Adjust the horizontal bar so that it is high enough to permit a dead hang with the feet off the ground. Grasp the bar with both hands, palms facing forward. By flexing the arms, raise the body to a position where the chin is higher than the bar (B, fig. 57), then lower the body to the dead hang position. Repeat as many times as possible.

c. *Exercise 3, Bench Sit-ups.* Sit on the bench and hook the feet under the foot braces. With the fingers interlocked behind the head, lean back until the head touches the floor (C, fig. 57). Return to the starting position. The starting dosage is 15 sit-ups.

d. *Exercise 4, Step-up.* Face the bench and step up on it with one foot, bringing the trailing foot up next to the leading foot. Step back down again, leading with the same foot used first in stepping up (D, fig. 57). Perform half of the total repetitions then change the sequence of moving the feet to use the other leg in stepping up and repeat the same amount of exercise. The starting dosage is a total of 40 step-ups. This exercise should be done at a rapid cadence.

e. *Exercise 5, Isometric Bar Lift.* Adjust the lower bar so that it is slightly higher than the beltline. Placing the feet on the footplates at the base of the frame, grasp the lower bar so that the hands are spread shoulder-width apart. Assume a crouched position and lift with maximum effort using the arms, back, and legs (E, fig. 57). Starting dosage is four repetitions of a stress time of 8 seconds followed by a 5-second rest prior to the next repetition. Progression is obtained by lengthening stress pe-

riods to 10 seconds. Do not increase the number of repetitions.

f. *Exercise 6, Leg Lift.* Adjust the bars and assume the starting position as shown in F, figure 57. Keeping arms and legs extended, raise the legs to a horizontal position and hold in that position for 2 seconds. Then lower the legs slowly to the starting position. Five repetitions is the starting dosage.

g. *Exercise 7, Isometric Pull.* Adjust the lower horizontal bar to a position where it is slightly higher than the beltline. Grasp the handles and pull outward (G, fig. 57). Apply maximum effort and hold for approximately 8 seconds. Relax for 5 seconds between repetitions; perform four repetitions. Moving the body closer to or farther away from the bar will change the stress from the upper arms to the forearms. Progression is obtained by lengthening the stress period to 10 seconds.

h. *Exercise 8, Isometric Compression* (H, fig. 57). Maintain the position as in Exercise 7. Grasping the handles in the same manner, press in with maximum effort and hold for approximately 8 seconds. Relax for 5 seconds between repetitions; perform four repetitions. Progression is obtained by lengthening the stress period to 10 seconds.

i. *Exercise 9, Isometric Press.* Remove the lower horizontal bar. Adjust the upper horizontal bar until it is about 6 inches lower than the extended arms can reach. Stepping on the footplates at the bottom of the frame, grasp the bar with both hands and push up (I, fig. 57). Keep both the legs and arms slightly flexed and the back straight. Apply maximum effort for 8 seconds then relax for 5 seconds. Complete four repetitions. Progression is obtained by lengthening the stress period to 10 seconds.

j. *Exercise 10, Inclined Pushup.* Assume the front leaning rest position with the feet on the bench (J, fig. 57). Keeping the back and legs straight, lower the body until the nose touches the ground. By extending the arms, raise the body to the starting position. Repeat as many times as possible.

Section III. THE 6-12 PLAN

240. Definition and Purpose

To assist you in regulating dosage and progression and to provide a convenient set of exer-

cises, the 6-12 Plan of physical fitness has been developed. This is a basic program and will take 18 weeks to complete if you follow

TABLE I

PROGRESSION GUIDE

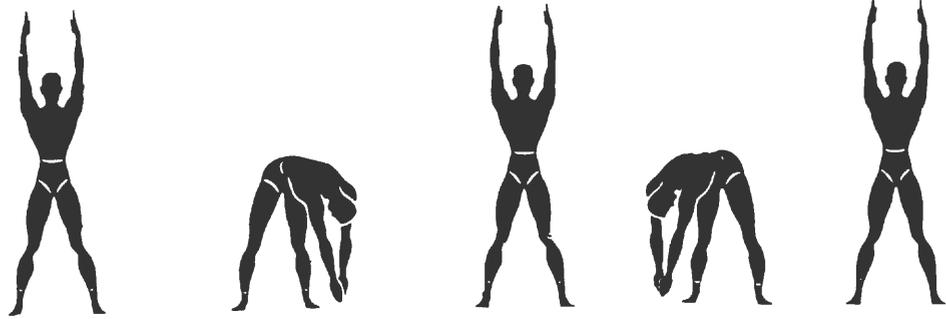
AGE GROUP	LEVEL	EXERCISES					
		1	2	3	4	5	6
17	A	15	18	14	15	15	250
to	B	13	16	13	13	13	235
29	C	11	14	12	11	11	210
30	A	13	14	12	13	13	200
to	B	11	13	11	11	11	185
39	C	9	12	10	9	9	165
40	A	11	11	10	11	11	150
to	B	9	10	9	9	9	135
44	C	7	9	8	7	7	120
45	A	9	8	8	9	9	100
to	B	7	7	7	7	7	90
49	C	5	6	6	5	5	80
50	A	7	6	6	7	7	75
to	B	5	5	5	5	5	70
59	C	3	4	4	3	3	60
60	A	4	5	4	4	4	50
and	B	3	4	3	3	3	40
over	C	2	3	2	2	2	30
Minutes for each exercise		2	1	1	1	2	5

1. Side straddle, arms overhead and straight, palms facing.
 - Turn trunk to the left and bend forward over the left thigh, attempt to touch the fingertips to the floor outside the left foot, keep the knees straight. Alternate the movement to the opposite side.
 - Down and up to one side is one repetition.
2. Kneeling front rest, hands shoulder width apart. The weight is supported on the knees and by the arms.
 - Bend elbows and lower body until chest touches the floor. Keeping knees on the floor, raise body by straightening the arms.
 - Down and up is one repetition.
3. Supine position, fingers interlaced and placed behind the head.
 - Maintaining the heels on the floor, raise the head and shoulders until the heels come into view. Lower the head and shoulders until fingers contact the floor and head rests on the hands.
 - Up and down is one repetition.
4. Body erect, feet slightly spread, fingers interlaced and placed on rear of neck at base of the head.
 - Bend the upper trunk backward, raise the chest high, pull the elbows back, and look upward. Keep the knees straight. Recover to the erect position, eyes to the front.
 - Bending backward and recovery is one repetition.
5. Body erect, feet spread less than shoulder width, hands on hips, elbows back.
 - Do a full knee bend, at the same time bend slightly forward at the waist. Touch the floor with the extended fingers, keeping the hands about six inches apart. Resume the starting position.
 - Down into the touch position and return to the starting position is one repetition.
6. Run in place, lift feet 4 to 6 inches off floor. At the completion of every 50 steps do 10 "Steam Engines". Repeat sequence until the required number of steps is completed.
 - Count a step each time left foot touches the floor.

Steam Engines - Lace the fingers behind the neck and while standing in place raise the left knee above waist height, at the same time twist the trunk and lower the right elbow to the left knee. Lower the left leg and raise the right leg touching the knee with the left elbow thus completing the movement to that side. Continue to alternate the movement until the sequence is completed.

Figure 58. 6-12 plan exercise, table I.

TABLE I, CONTINUED



EXERCISE 1



EXERCISE 2



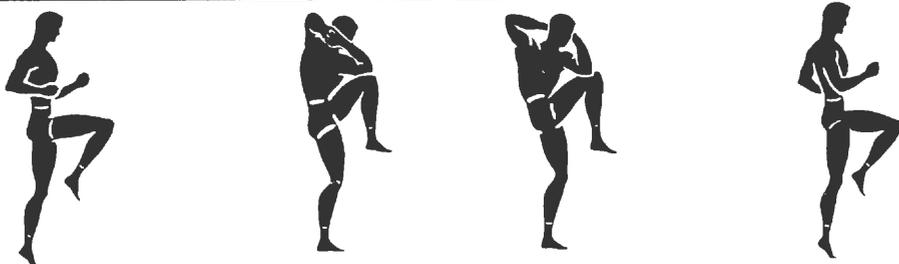
EXERCISE 3



EXERCISE 4



EXERCISE 5



EXERCISE 6

Figure 58—Continued.

TABLE II

PROGRESSION GUIDE

AGE GROUP	LEVEL	EXERCISES					
		1	2	3	4	5	6
17	A	17	17	17	9	19	300
to	B	15	15	15	8	17	270
29	C	13	13	13	7	15	245
30	A	15	15	15	8	17	235
to	B	13	13	13	7	15	210
39	C	11	11	11	6	13	190
40	A	13	13	13	7	15	175
to	B	11	11	11	6	13	155
44	C	9	10	9	5	11	135
45	A	11	11	11	6	13	125
to	B	9	9	9	5	11	110
49	C	7	7	7	4	9	100
50	A	9	9	9	5	11	95
to	B	7	7	7	4	9	85
59	C	5	5	5	3	7	75
60	A	6	7	7	4	9	70
and over	B	5	5	5	3	7	60
	C	4	4	4	2	5	50
Minutes for each exercise		1	1	1	1 1/2	1 1/2	6

1. Wide side straddle, arms overhead and straight, palms facing.
 - Bend at the knees and the waist, swing the arms down, and reach between the legs as far as possible. Look at the hands. The thighs are parallel to the floor during the bend. Recover to the starting position with a sharp movement.
 - Down and up is one repetition.

2. Front leaning rest position with body straight from head to heels.
 - Bending at the waist and keeping the knees locked, jump forward to a jack-knife position bringing the feet as close to the hands as possible. With the weight on the hands, thrust the legs to the rear resuming the front leaning rest position.
 - Up into the jack-knife position and return to the front leaning rest position is one repetition.

3. Supine position with arms straight overhead, palms facing.
 - With a sharp movement sit up, bringing the heels as close to the buttocks as possible and the knees to the chest. Swing the arms in an arc overhead to a position outside the knees and parallel to the floor. To recover swing the arms overhead keeping them straight. At the same time move the legs forward until they are straight.
 - Sitting up and returning to the supine position is one repetition.

4. Feet spread more than shoulder width apart, fingers laced behind the neck and elbows are back.
 - Bend forward at the waist vigorously, then twist the trunk to the left, then to the right and return to the erect position.
 - Keep the knees locked and back straight.
 - Bend forward, twist left, twist right, and return to the erect position is one repetition.

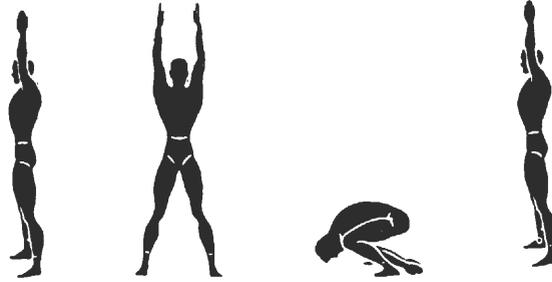
5. Bend forward at the waist, grasping the right toes with right hand, left toes with left hand, knees are slightly bent.
 - Walk forward retaining this position.
 - Count a repetition each time a foot contacts the floor.

6. Run in place, lift feet 4 to 6 inches off floor. At the completion of every 50 steps do 10 "Heel Clicks". Repeat sequence until the required number of steps is completed.
 - Count a step each time left foot touches the floor.

Heel Clicks - Jump upward about 12 inches and bring the heels together. Before landing on the floor, separate the feet 15 to 18 inches. Immediately upon contact with the floor repeat the jump and heel click.

Figure 58—Continued.

TABLE II, CONTINUED



EXERCISE 1



EXERCISE 2



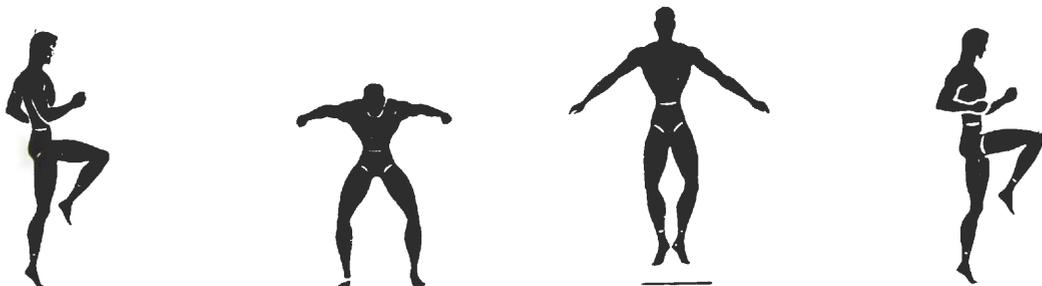
EXERCISE 3



EXERCISE 4



EXERCISE 5



EXERCISE 6

Figure 58—Continued.

TABLE III

PROGRESSION GUIDE

AGE GROUP	LEVEL	EXERCISES					
		1	2	3	4	5	6
17	A	10	19	19	16	10	350
to	B	9	17	17	15	9	315
29	C	8	15	15	14	8	280
30	A	9	17	17	14	9	270
to	B	8	15	15	13	8	240
39	C	7	13	13	12	7	210
40	A	8	15	15	12	8	200
to	B	7	13	13	11	7	180
44	C	6	11	11	10	6	160
45	A	7	13	13	10	7	150
to	B	6	11	11	9	6	135
49	C	5	9	9	8	5	120
50	A	6	11	11	8	6	115
to	B	5	9	9	7	5	105
59	C	4	7	7	6	4	95
60	A	5	9	9	7	5	90
and	B	4	7	7	6	4	80
over	C	3	5	5	4	3	70
Minutes for each exercise		11 1/2	1	1	11 1/2	1	6

1. Feet spread less than shoulder width apart, hands on hips, elbows back.
 - Do a full knee bend, trunk erect and thrust the arms forward. Recover to the erect position, and with knees locked, bend forward at the waist and touch the toes and recover to the erect position.
 - Down into the full knee bend, recover, touch toes and recover is one repetition.
2. Front leaning rest position with body straight from head to heels.
 - Lower the body until the chest touches the floor, keep body straight. Recover by straightening the arms and raising the body.
 - Down and touch the floor and recovery to the front leaning rest position is one repetition.
3. Supine position, arms overhead, palms facing.
 - With a sharp movement sit up, thrust the arms forward and touch the toes.
 - Keep the legs straight and the heels in contact with the floor.
 - Sit up, touch toes, and resume the supine position is one repetition.
4. Supine position, arms overhead, palms upward.
 - Raise the legs and swing them backward over the head until toes touch the floor. Recover by returning legs to the starting position.
 - Touch toes overhead and recover to supine position is one repetition.
5. Erect position, feet together.
 - Bend knees and place hands on floor, shoulder width apart. Thrust legs to the rear, body straight from head to heels. Move legs forward assuming squat position, elbows inside of knees. Assume erect position.
 - Down into full squat, legs to the rear, back to full squat and return to the erect position is one repetition.
6. Run in place, lift feet 4 to 6 inches off floor. At the completion of every 50 steps do 10 "Knee Touches". Repeat sequence until the required number of steps is completed.
 - Count a step each time left foot touches the floor.

Knee Touches - From a stride position, bend the knees and touch the knee of the rear leg to the floor, straighten legs, jump upward and change position of the feet. Again bend knees and touch the opposite knee. Continue alternately touching each knee.

Figure 58—Continued.

the moderate progression as to the time prescribed for each level of achievement. The time can be shortened as explained below. This plan consists of six basic exercises a day which can

be completed in 12 minutes. There are six tables of six exercises each, thus allowing you to progress from table to table. The plan is progressive, fits any age group, contains balance

TABLE III, CONTINUED

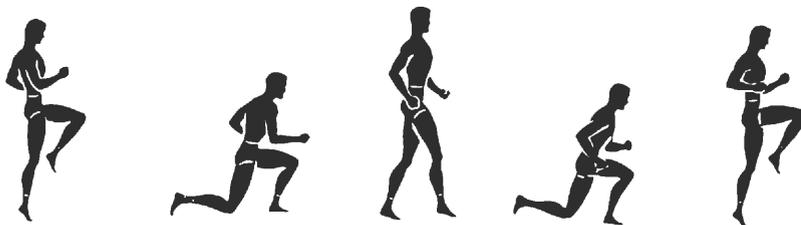
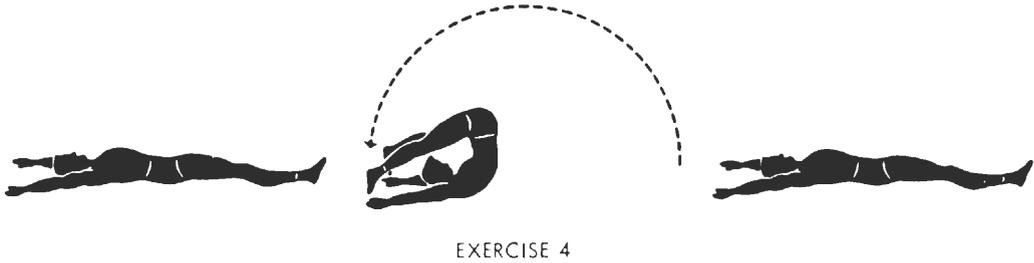
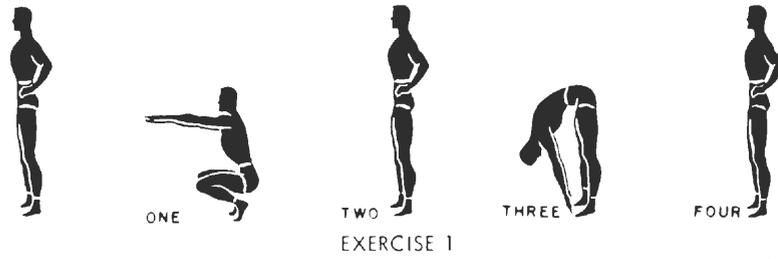


Figure 58—Continued.

TABLE IV

PROGRESSION GUIDE

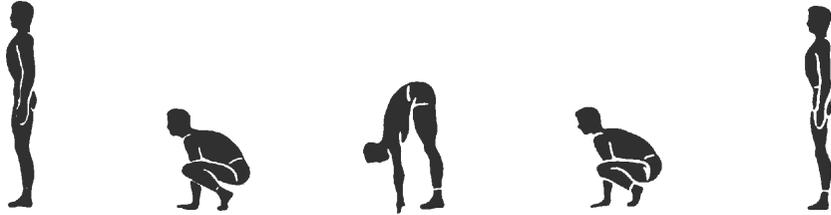
AGE GROUP	LEVEL	EXERCISES					
		1	2	3	4	5	6
17	A	12	9	12	24	25	400
to	B	11	8	11	22	23	380
29	C	10	7	10	21	21	360
30	A	11	8	11	23	23	305
to	B	10	7	10	21	21	290
39	C	9	6	9	20	20	275
40	A	10	7	10	20	21	225
to	B	9	6	9	18	18	215
44	C	8	5	8	16	16	205
45	A	8	6	8	16	16	175
to	B	7	5	7	14	14	165
49	C	6	4	6	12	12	155
50	A	6	5	6	13	13	135
to	B	5	4	5	11	11	130
59	C	4	3	4	10	10	120
60	A	5	4	5	10	10	100
and	B	4	3	4	9	9	95
over	C	3	2	3	8	8	90
Minutes for each exercise		1	2	1	1	1	6

1. Erect position, hands at sides, feet spread slightly.
 - Bend knees, incline trunk forward, and place hands on floor between legs. Straighten knees, keeping feet in place and fingers touching floor. Again bend knees and resume the first position. Recover to the erect position.
 - The above sequence is one repetition.
2. Erect position, hands at sides, feet together.
 - Bend knees, place hands on floor between legs. Thrust legs to the rear. Execute two complete push-ups and then thrust the legs forward bending the knees with arms between the knees. Recover to the erect position.
 - The completion of all eight counts is one repetition.
3. Back position with arms out to sides and legs raised to the vertical.
 - Lower legs to the left, raise legs to the vertical, lower to the right, again raise to the vertical.
 - Keep legs together and the head and hands in contact with the floor throughout the exercise.
 - The above sequence is one repetition.
4. From back position, raise legs with heels 10 to 12 inches from the floor.
 - Spread legs as far as possible, close them together. Continue to open and close legs until required repetitions have been completed.
 - Opening and closing legs is one repetition.
5. Front leaning rest position, body straight from head to heels.
 - Bend the left knee and bring the left foot as far forward as possible, return left leg to original position. Repeat movement with the right leg. Continue exercise alternating left and right legs.
 - A leg thrust forward and returned to the rear is one repetition.
6. Run in place, lift feet 4 to 6 inches off floor. At the completion of every 50 steps do 10 "Jumping Jacks". Repeat sequence until the required number of steps is completed.
 - Count a step each time left foot touches the floor.

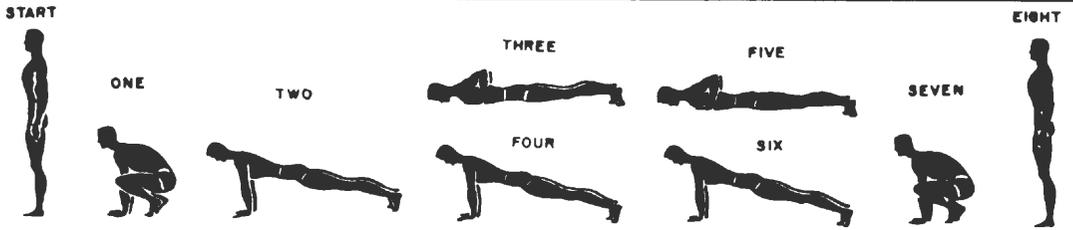
Jumping Jacks - Feet spread shoulder width apart, arms extended overhead. Jump upward, bring heels together and at same time squat to a full knee bend position, bring the arms downward and place hands on the floor elbows inside of knees, directly under the shoulders. Jump to the side straddle and swing the arms sideward overhead.

Figure 58—Continued.

TABLE IV CONTINUED



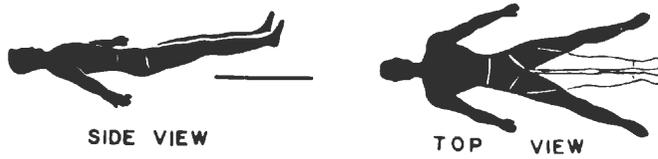
EXERCISE 1



EXERCISE 2



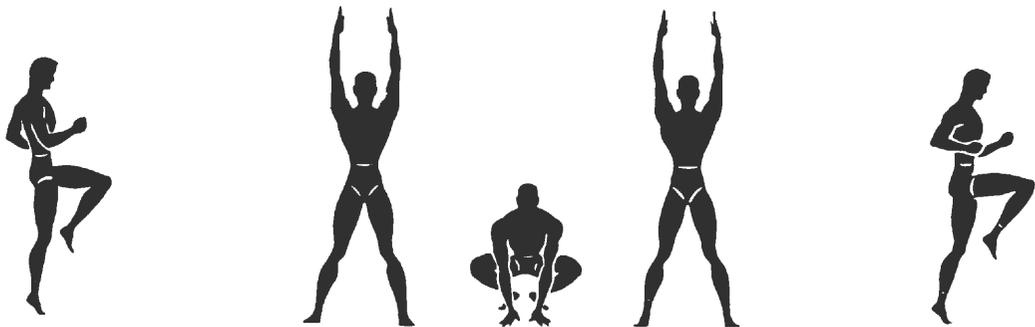
EXERCISE 3



EXERCISE 4



EXERCISE 5



EXERCISE 6

Figure 58—Continued.

TABLE V

PROGRESSION GUIDE

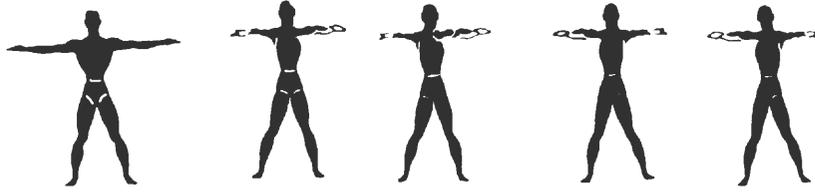
AGE GROUP	LEVEL	EXERCISES					
		1	2	3	4	5	6
17	A	14	13	28	14	30	450
to	B	13	12	27	13	28	430
29	C	12	11	26	12	26	410
30	A	12	12	25	12	26	350
to	B	11	11	24	11	24	330
39	C	10	10	23	10	22	310
40	A	11	11	23	11	23	250
to	B	10	10	21	10	21	240
44	C	9	9	19	9	19	230
45	A	9	9	20	9	20	200
to	B	8	8	18	8	18	190
49	C	7	7	16	7	16	180
50	A	7	7	16	7	16	170
to	B	6	6	14	6	14	155
59	C	5	5	12	5	12	140
60	A	6	6	12	6	12	115
and	B	5	5	11	5	10	110
over	C	4	4	9	4	9	105
Minutes for each exercise		2	1	1	2	1	5

1. Feet spread more than shoulder width, arms sideward at shoulder level, palms up.
 - Turn trunk to the left as far as possible then recover slightly, repeat to the left and recover slightly. Turn trunk to the right as far as possible, recover slightly, repeat to the right and recover slightly.
 - The head and hips remain to the front throughout the exercise.
 - The above sequence is one repetition.
2. Front leaning rest position, body straight from head to heels.
 - Bend the elbows slightly and push with the hands and toes bouncing the body upward and completely off the floor. In contact with the floor resume the front leaning rest position.
 - Propelling the body upward and the return to the floor is one repetition.
3. Back position, hands interlaced and placed under head, knees bent with feet flat on the floor.
 - Sit up bending the trunk forward and attempting to touch the chest to the thighs. Recover to the back position without moving the feet.
 - Sit up and recovery to the back position is one repetition.
4. On back, arms sideward, feet raised 12 inches from the floor, knees straight.
 - Keeping the legs together, swing legs as far to the left as possible, swing legs overhead, then to the right as far as possible and recover by swinging legs to the front.
 - Legs stop momentarily at each position and do not contact floor until all repetitions are complete.
 - One repetition is completed when legs make the complete circle.
5. From a stride position do a deep knee bend and grasp the right ankle with the right hand, left ankle with the left hand, arms outside knees.
 - Walk forward maintaining the grasp of the ankles.
 - One repetition is counted each time the left foot contacts the floor.
6. Run in place, lift feet 4 to 6 inches off floor. At the completion of every 50 steps do 10 "Hand Kicks". Repeat sequence until required number of steps is completed.

Hand Kicks - Stand in place and kick left leg upward, at the same time extend the right arm touching the toe and hand. Repeat with right leg extending left arm.

Figure 58—Continued.

TABLE V CONTINUED



EXERCISE 1



EXERCISE 2



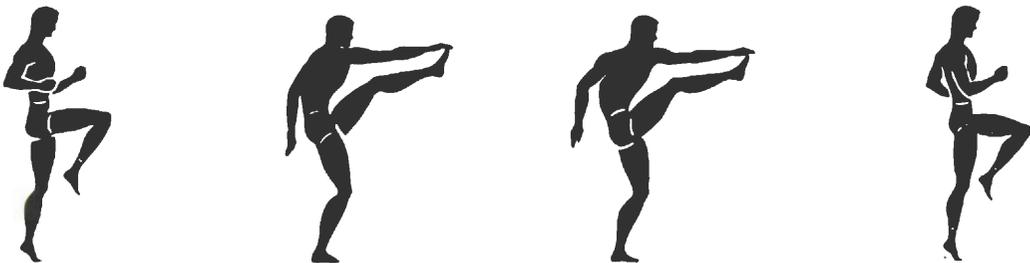
EXERCISE 3



EXERCISE 4



EXERCISE 5



EXERCISE 6

Figure 58—Continued.

TABLE VI

PROGRESSION GUIDE

AGE GROUP	LEVEL	EXERCISES					
		1	2	3	4	5	6
17	A	17	15	32	32	35	500
to	B	16	14	30	30	33	480
29	C	15	13	28	28	31	460
30	A	15	13	30	30	31	400
to	B	14	12	28	28	29	380
39	C	13	11	26	26	27	360
40	A	13	10	27	27	27	310
to	B	12	9	25	25	25	285
44	C	11	8	23	23	23	265
45	A	11	9	23	23	23	250
to	B	10	8	21	21	21	230
49	C	9	7	19	19	19	210
50	A	9	8	19	19	19	200
to	B	8	7	17	17	17	190
59	C	7	6	15	15	15	175
60	A	8	7	15	15	17	140
and	B	7	6	13	13	15	130
over	C	5	5	10	10	12	120
Minutes for each exercise		2	1	1	1	1	6

1. Feet spread shoulder width apart, left fist clenched and overhead, right fist clenched at waistline in rear of body.
 - Simultaneously thrust the left fist as far to the right as possible and the right fist as far to the left as possible. Recover and repeat. Reverse the hands with the right fist above the head and the left in rear at the waistline. Repeat the movement to the opposite side by thrusting the upper body to the left with the arm motion.
 - The above sequence is one repetition.
2. Front leaning rest position.
 - Bend elbows slightly and push with the hands and toes bouncing the body upward and completely off the floor. At the height of the bounce, clap the hands and quickly return them to a position directly under the shoulder to catch the body weight.
 - Push off the floor, clap hands, and return to the front leaning rest position is one repetition.
3. Back position, arms extended to the side at 45 degrees.
 - Raise the legs and the trunk into a V position bringing the trunk and legs as close as possible. Return to back position.
 - Raising the legs and trunk and recovery to the back position is one repetition.
4. Prone position with hands clasped in small of the back.
 - Arch the body, holding the head back and rock forward, relax and repeat the movement.
 - Arch the body, rock forward, and relax is one repetition.
5. From a sitting position lift the hips supporting the body on the hands and feet.
 - By moving the arms and legs walk on all fours either forward or backward.
 - A repetition occurs each time the left hand contacts the floor.
6. Run in place, lift feet 4 to 6 inches off floor. At the completion of every 50 steps do 10 "Pike Jumps". Repeat sequence until required number of steps is completed.

Pike Jumps - Jump forward and upward from both feet, keeping the knees straight. Swing the legs forward and touch the toes with the hands at the top of each jump.

Figure 58—Continued.

TABLE VI CONTINUED



EXERCISE 1



EXERCISE 2



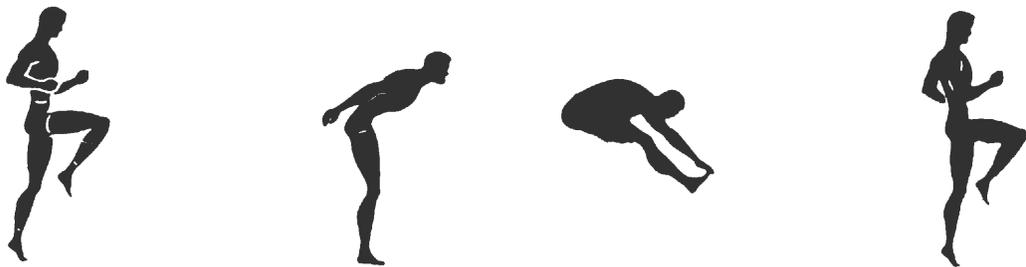
EXERCISE 3



EXERCISE 4



EXERCISE 5



EXERCISE 6

Figure 58—Continued.

and variety, and applies the principle of overload in a safe and gradual manner. Begin at table I (fig. 58) with the number of repetitions as indicated for your age.

241. Levels of Achievement

There are three levels of achievement for each age group. These levels are indicated as A, B, and C. Start at the C level for your age group. At the end of a 1-week period, or when you can do all exercises at that level within 12 minutes, progress to the B level. At the end of the second week, or when you can accomplish that level within 12 minutes, progress to the A level. At the conclusion of the third week or when you are able to achieve the A level within the time limitation, move on to table II (fig. 58).

242. Progression from Table to Table

As you progress to a new table, you will find a different and more challenging set of exercises. Find your age group, start at C level, and progress as on the previous tables. When you accomplish the C, B, and A levels for your age group, move on to the next table.

243. Maintenance Level

Attempt to work through all six tables. If this proves to be too difficult, then maintain your exercise at the—

a. A-level on table IV (fig. 58) if you are in the 45 to 49, 50 to 59, or over 60 age group.

b. A-level on table V (fig. 58) if you are in the 17 to 29, 30 to 39, or 40 to 44 age group.

244. Time Devoted to Each Level

If you are just starting an exercise program, do not rush through the first table. Remember, you should remain at each level for about a week before moving upward. The time allotment stated for each exercise at the bottom of the tables is a guide; some men may take more and some less time on the individual exercises. At the end of a 1-week period (or if you continued a particular level for a longer period),

when you can comfortably perform the six exercises in 12 minutes, move on to the next level. To a certain degree you must be the judge of your ability to progress from level to level and table to table. If you have attained a certain degree of physical fitness before starting this program, some of the beginning tables may present little challenge to you. As a guide the following minimum time limit for remaining at each level may assist you.

<i>Age group</i>	<i>Time</i>
17 to 29	2 days
30 to 39	3 days
40 to 44	4 days
45 to 49	5 days
50 to 59	6 days
60 and over	7 days

245. Careful Performance

To achieve the maximum benefit, perform each exercise exactly as specified. Read the descriptions and study the illustrations. Do not slight the movements.

246. Use of a Sensible Approach

Follow these points as they apply before starting or during your exercise program.

a. If you have the slightest doubt about your ability to participate in this exercise program, consult a physician.

b. Stop immediately if you notice undue breathlessness or chest pain while taking part in these exercises. If these conditions persist, consult a physician.

c. Unless you have exercised regularly and know yourself to be in good physical condition, start at table I with the C level appropriate to your age.

d. If you are out of shape, admit that fact to yourself, hide your pride; after all, you are in the privacy of your own quarters. Set your goal for the longer, steadier pull toward fitness. Resist the urge to pass over the lower numbered tables to find a table that will test your fitness. You are not trying to test, but rather to develop.

Section IV. WEIGHT TRAINING

247. Definition and Purpose

a. Weight or barbell training should not be confused with the more common types of weight lifting used as a competitive sport.

Weight lifting is designed to develop specific muscles groups so that the individual is capable of lifting a large amount during a single lift. In contrast, weight training is the system-

atic development of all the major muscle groups by the use of calisthenics reinforced with weight to provide resistance.

b. This exercise table (fig. 59) is designed to develop strength and muscular endurance, and muscle tone of the five major muscle groups: legs, arms, back, trunk, and shoulder girdle. The exercises of the table can be completed within 15 minutes and the program is progressive and applies the principle of overload in a safe, gradual manner. Care should be taken in the completion of these exercises. Insure that the back is straight during the lifting phase of all exercises. When exercises require assuming the standing position with the weight, always grasp the weight while in a squatting position and then rise to a standing position.

248. Progression

A starting number of repetitions and pounds of weight will be specified for each exercise; after each fourth or fifth day of exercise, the repetitions should be increased by one until the maximum of 10 has been reached. At this time the weight should be increased by 5 pounds and the process repeated starting again with the initial dosage.

249. Warmup

A warmup exercise is important to prepare the body for the more vigorous exercises that are to follow. Ten repetitions of the High Jumper exercise are excellent for a warmup period.

250. Circulo-Respiratory/Cardio-Vascular Activity

Muscle endurance is controlled chiefly by the amount of blood that passes through the blood vessels of the muscles. To increase this flow of blood, exercises which cause the heart to increase its pumping volume are essential. Therefore, an exercise which will require fast body movement is needed in all physical fitness programs. To provide such exercise 3 to 5 minutes of rope skipping is recommended to increase the individual's development potential.

251. Table for Weight Training

a. *Exercise 1, Squat* (A, fig. 59). Starting dosage—6 repetitions, 50 pounds (commonly called the flatfoot deep knee bend). Place the bar upon the shoulders. Stand with feet about

18 inches apart. Keeping the feet flat, lower the body into the low squat position. Come erect and repeat. Exhale as you lower into the squat position and inhale as you come up. This constitutes one repetition.

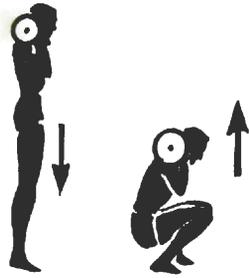
b. *Exercise 2, Waist Bender* (B, fig. 59). Starting dosage—6 repetitions, 40 pounds. Assume the standing position with the bar across the shoulders, feet shoulder-width apart. Bend forward at the waist until the upper body is parallel to the ground; return to the starting position. Each time you return to the upright position will constitute one repetition.

c. *Exercise 3, Curl* (C, fig. 59). Starting dosage—6 repetitions, 40 pounds. Grasp the barbell with the palms facing to the rear and assume the standing position, feet shoulder width apart. With the barbell held in front of the hips, flex the elbows and lift the weight until the bar touches the upper chest. Lower the barbell back to the hip level position. Inhale deeply with the upward movement and exhale on the downward movement. Each time the bar touches the chest will constitute one repetition.

d. *Exercise 4, Side Bender* (D, fig. 59). Starting dosage—6 repetitions per side, 40 pounds. Assume the standing position, feet shoulder width apart, with the bar across the shoulders. Bend to the left as far as possible and return to the starting position. Repeat six times and then execute the same procedure to the right for six repetitions.

e. *Exercise 5, Standing Press* (E, fig. 59). Starting dosage—6 repetitions, 45 pounds. Grasp the bar with the palms facing forward and assume the starting position. Curl the weight to the upper chest position. Inhale deeply and press the bar upward to an overhead position. Exhale as you lower the bar to the chest position. Each time the bar is pressed upward constitutes one repetition.

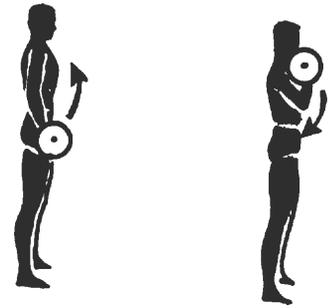
f. *Exercise 6, Upward Row* (F, fig. 59). Starting dosage—6 repetitions, 40 pounds. Grasp the bar, hands close together, palms to the rear, and assume the standing position. Starting with the bar held in front of the hips, flexing the elbows and the shoulder girdle muscles, lift the bar straight up to an overhead position. Inhale deeply as you lift the bar. Exhale as you lower the bar to the hip position. Each time the bar returns to the hips will constitute one repetition.



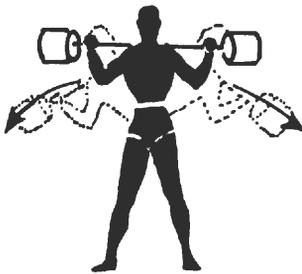
A. EXERCISE 1, SQUAT



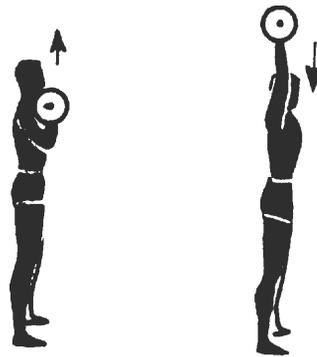
B. EXERCISE 2, WAIST BENDER



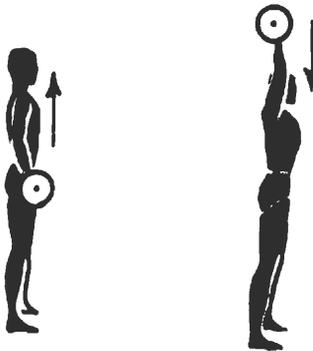
C. EXERCISE 3, CURL



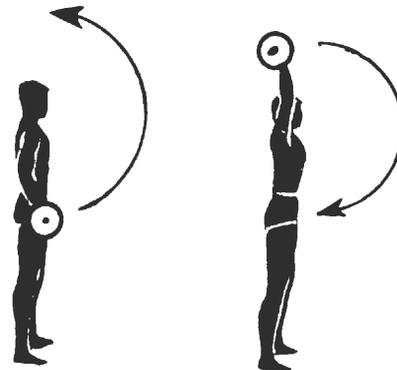
D. EXERCISE 4, SIDE BENDER



E. EXERCISE 5, STANDING PRESS



F. EXERCISE 6, UPWARD ROW



G. EXERCISE 7, SHOULDER CURL

Figure 59. Table for weight training.

g. Exercise 7, Shoulder Curl (G, fig. 59). Starting dosage—6 repetitions, 25 pounds. Grasp the bar, palms down, and assume the standing position. Keeping the elbows locked, curl the bar, pivoting the arms at the shoul-

ders until the bar is in an overhead position and as far to the rear as possible. Return the bar in the same manner to the hip position. Each time the bar returns to the hip position will constitute one repetition.

Section V. ISOMETRIC EXERCISING

252. Definition and Purpose

Isometric exercises are founded on the little known, but proven fact, that a muscle will grow only so fast regardless of the type or duration of the activity. The principle of *overload*, that the muscles develop commensurate with demand, merely reinforces this fact. Isometric exercising is simply the application of maximum effort during an exercise period. It is the fastest means of creating muscle growth; however, it will not develop circulo-respiratory or muscular endurance.

253. Isometric Principle and Procession

The isometric principle is to apply force gradually over a 5- to 10-second period until the maximum application is applied. Relaxation follows for approximately 5 seconds and then force is applied. This process continues until the prescribed dosage, as indicated for each exercise, is complete. In addition to the exercises contained in this section the application of isometric force is utilized in some of the exercises which are part of section II.

254. Place in Your Program

Isometric exercises may be designed to be performed with or without equipment. The three tables of isometric exercises presented in this section will provide a variety from which to choose and apply to your particular situation. Each table requires 15 minutes or less to complete.

255. Table I: Doorframe Exercises

The following exercises are designed for use with a standard doorframe found in all offices or barracks (fig. 60).

a. Exercise 1, Arm Press. Stand in the doorway with the legs straight, knees locked. Using your arm muscles, press hard upward against the top of the doorframe. Repeat for three repetitions applying gradual effort to maximum contraction.

b. Exercise 2, Leg Press. Stand in the doorway with the hands on the top of the doorframe, elbows locked. With your knees bent, press hard with your leg muscles. Repeat for three repetitions beginning with a gradual ef-

fort and increasing to maximum contraction. A low platform may be necessary to reach the top of the doorframe and still maintain a bent knee position.

c. Exercise 3, Side Press. Extend both arms to the side of the doorway. Palms are shoulder high, facing outward. With both arms, press hard against the sides of the doorframe. Repeat for three repetitions. Begin gradually and increase to maximum contraction.

d. Exercise 4, Lateral Raise. Extend both arms to the sides of the doorway, arms down, palms facing inward. With the back of the hands, press hard against the sides of the doorframe. Repeat for three repetitions. Begin with a gradual effort and increase to maximum contraction.

e. Exercise 5, Neck Press. Place your forehead against the doorframe, hands clasped behind the back. Using your neck muscles, press hard against the doorframe. Repeat for three repetitions, then reverse your position so that the back of the head is resting on the doorframe. Again do three repetitions. Begin gradually with both exercises and increase to maximum contraction.

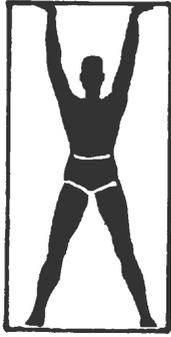
f. Exercise 6, Door Pull. Stand facing the edge of the open door and grasp the doorknobs. Pull outward with both arms (if doorknobs are not available grasp the edge of the door). As you apply outward pressure, move the body toward and away from the door. Repeat for three repetitions. Begin with gradual effort and increase to maximum contraction.

256. Table II: Chairborne Conditioner Isometric Exercises

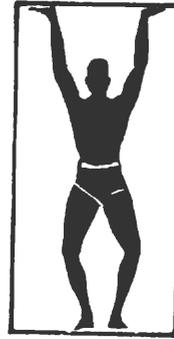
The following exercises are designed for use with the Chairborne Conditioner (fig. 61).

a. Exercise 1, Shoulder Press. Place the telescoping bar at a height just above the top of the head. Grasp the bar (overhand grip) so that the forearms are vertical. Keep the feet directly under the bar with your back and knees straight. Push up on the bar with graduated effort to maximum contraction. Perform three repetitions.

b. Exercise 2, Arm Curl. Set the movable bar about waist high. Place hands about shoulder



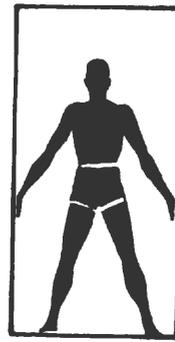
A. EXERCISE 1, ARM PRESS



B. EXERCISE 2, LEG PRESS



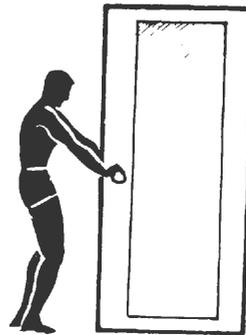
C. EXERCISE 3, SIDE PRESS



D. EXERCISE 4, LATERAL RAISE



E. EXERCISE 5, NECK PRESS



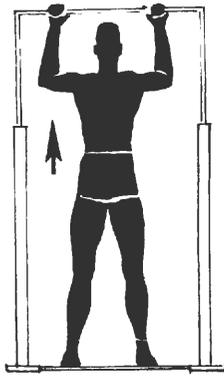
F. EXERCISE 6, DOOR PULL

Figure 60. Doorframe isometric exercises, table 1.

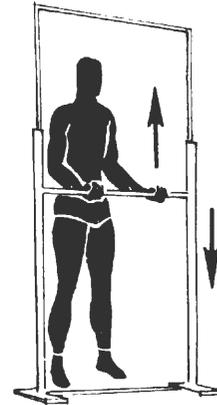
width apart (underhand grip). Keep the elbows close to the body. Keep the knees and back straight. Try to pull up on the bar with graduated effort to maximum contraction. Per-

form three repetitions. Reverse direction of pressure (press down) for three repetitions.

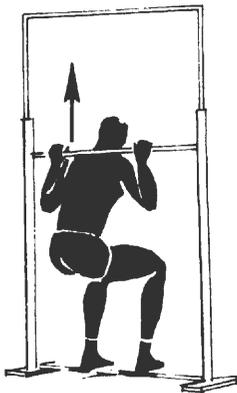
c. *Exercise 3, Squat Rise.* Set movable bar at height so that your thighs are parallel with



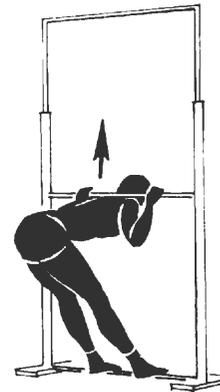
A. EXERCISE 1, SHOULDER PRESS



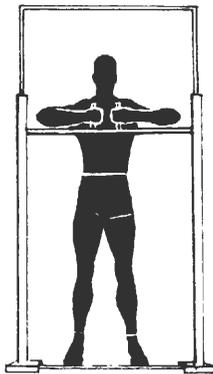
B. EXERCISE 2, ARM CURL



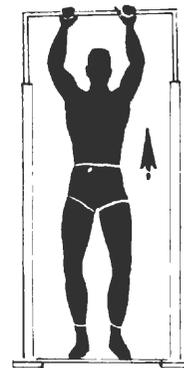
C. EXERCISE 3, SQUAT RISE



D. EXERCISE 4, BACK RISE



E. EXERCISE 5, OUTWARD INWARD PRESS

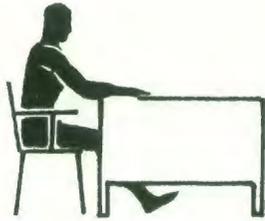


F. EXERCISE 6, LEG PRESS

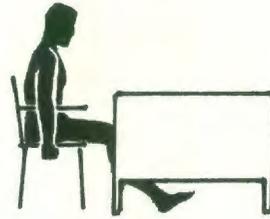
Figure 61. Chairborne conditioner isometric exercises—table II.

the floor when squatting under the bar. Back straight with bar on shoulders (overhand

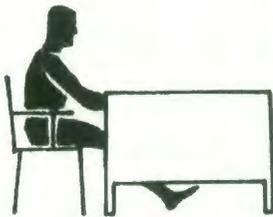
grip). Try to straighten to a standing position. Perform three repetitions.



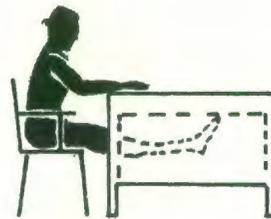
A. EXERCISE 1, ARM PRESS



B. EXERCISE 2, CHAIR LIFT



C. EXERCISE 3, DESK LIFT



D. EXERCISE 4, LEG RAISER



E. EXERCISE 5, ABDOMINAL CONTRACTIONS



F. EXERCISE 6, NECK CONTRACTIONS

Figure 62. Desk isometric exercises, table III.

d. Exercise 4, Back Rise. Standing with feet directly under movable bar, bend over so that back is parallel with floor with bar across shoulders (overhand grip). Try to straighten up to an upright position with graduated effort to maximum contraction. Perform three repetitions.

e. Exercise 5, Outward/Inward Press. Grasp movable bar isometric handles. Pull outward using the shoulder and arm muscles. Repeat for three repetitions with gradual effort to maximum contraction. Press inward using the shoulder and arm muscles. Repeat for three repetitions with gradual effort to maximum contraction.

f. Exercise 6, Leg Press. Place the telescoping bar at a height just above the top of the head. Grasp the bar (overhand grip) so that the elbows are locked, the knees are bent. Using the leg muscles, apply gradual effort to maximum contraction, attempting to straighten legs. Repeat for three repetitions.

257. Table III: Isometrics at the Desk (fig. 62)

The following exercises are designed for use while sitting at a desk or table.

a. Exercise 1, Arm Press. Place the arms on top of the desk, palms down. Press downward

with the arm muscles. Begin gradually and increase to your maximum effort. Repeat for three repetitions.

b. Exercise 2, Chair Lift. Grasp the bottom of the chair seat with both hands. Pull upward with the arm muscles. Begin gradually and increase to your maximum effort. Repeat for three repetitions.

c. Exercise 3, Desk Lift. Place the hands under the desk, palms up. Lift upward with the arm muscles. Begin gradually and increase to your maximum effort. Repeat for three repetitions.

d. Exercise 4, Leg Raiser. Lift the legs until the toes touch the inside top of the desk. Using the leg muscles, press upward with the toes. Begin gradually and increase to your maximum effort. Repeat for three repetitions.

e. Exercise 5, Abdominal Contractions. Contract the stomach muscles and hold at maximum effort for 10 seconds. Relax for 5 seconds, then repeat for three repetitions. Repeat this procedure for both inward and outward contractions.

f. Exercise 6, Neck Contractions. Fold the arms, lean forward and place them on the desk top. Bow the head, placing the forehead on your arms. Using the neck muscles, apply downward pressure. Begin gradually and increase to maximum effort.

PART FOUR
COMPETITIVE CONDITIONING ACTIVITIES
CHAPTER 19
LEADERSHIP OF COMPETITIVE ACTIVITIES

Section I. INTRODUCTION

258. Description and Function

Competitive conditioning activities consist of dual combatives, relays, team contests, and team sports in which individuals or teams are competing against an opponent to win. These activities contribute to the development of circulo-respiratory and muscular endurance, strength, and coordination. Also, benefits of competition are the development of aggressiveness, teamwork, and the will to win.

259. Place in the Program

Usually the proper place for competitive activity is after men have entered the slow improvement stage of conditioning. Muscles and joints should be strengthened by preconditioning to withstand the strain placed upon them by sudden stops and turns, body contact, bearing of weight, and falls. Competition is satisfying to most men and the inclusion of such activity provides variety and interest to physical readiness training. For specific scheduling suggestions see chapters 5, 7, and 8.

260. Time Required

Time required to complete these activities varies with the type of competition scheduled. For example, a dual combative table, a relay table, or a single team contest can be completed within 15 minutes. In contrast, team sports will take a minimum of 45 to 60 minutes to complete.

261. Area and Equipment

Some of the competitive activities included in the following chapters require specific types of

areas and equipment; others do not require special areas and have no equipment requirement. The area requirements can usually be satisfied on available training fields. When items of equipment are required, or specific courts or field layouts are to be marked off, such information will be included in the applicable chapters.

262. Progression

The scheduling of competitive activities in an orderly and progressive manner is desirable providing there is adequate time within the training program to include all types of competition. If time is available, the progression should be from relays to dual combatives, to team contests, and finally to team athletics. If time is limited, there is no reason why any of these activities should not be conducted, providing a basic level of conditioning has been developed prior to their use.

263. Leadership

a. The principal factor for success as a leader of competitive activity is an energetic, dynamic, enthusiastic approach. The leader's attitude is reflected by the group, so he must carry on the activity in a snappy and vigorous manner.

b. Confidence is another essential element which insures success. The lack of confidence on the part of the leader creates an impression of indecision and uncertainty in the men. Confidence grows out of experience and a thorough knowledge of the activity. Mastery of subject

matter is the first step in developing confidence, assurance, and poise.

c. Do not allow the men to take advantage of the informality of the situation and thus waste time. Maintain control and organization through the leader or captain of each competitive element.

d. The following suggestions are offered for the leaders of competitive combatives, contests, and sports:

(1) Get the activity underway quickly by selecting and teaching only the minimum essentials.

(2) Rules should add to the enjoyment of the activity and not interfere with the spirit of competition.

(3) Stop the activity before interest begins to lag.

(4) Train competitors to "stop, look, and listen" instantly upon hearing the whistle.

(5) In team contests, clearly distinguish sides.

(6) Always insist on fair play; enforce the rule impartially.

e. The following technique is recommended for presenting competitive activity.

(1) Name the activity.

(2) Briefly explain the objective of the activity and give only the pertinent rules.

(3) Have a demonstration at "slow speed," and answer questions.

(4) Organize groups into teams and appoint captains.

(5) Arrange teams in the proper starting positions.

(6) Conduct the activity.

264. Competitive Units

Units for competition should be those organizations that make up the soldier's training, TOE, or TD organization. In the great majority of situations, the unit will be the squad.

265. Provisions for Instruction

One of the most effective methods of increasing interest and participation in competitive activities is to provide instruction in those activities with which most men are unacquainted. Such instruction can be conducted during the regular physical training periods. Careful planning is required to keep all men continuously engaged in vigorous activity. The materials in the following chapters of this part should be used as a guide for instructional purposes.

266. Officiating

a. Every effort should be made to provide good officiating for all competitive activities. Nothing causes dissatisfaction among participants in team activities more quickly than poor officiating. If good officials are not available, provision should be made to develop them.

b. The unit commander should designate interested personnel from each company to attend clinics and coaching schools that may be conducted by civilian agencies such as high school and college officials' associations. In addition to this type of clinic, Special Services may hold rules clinics and teach the mechanics of officiating. Each company should have several competent and qualified officials available for games on company and platoon level.

c. The official should be issued a uniform or marking that will make him clearly distinguishable from the members of either team. A regulation striped official's shirt is not necessary. A distinctively marked or colored T-shirt is adequate. The official should also be supplied with all equipment necessary for the officiating of the particular competition.

267. Organized Competition

Competition is one of the best ways of maintaining interest in the physical training program during the sustaining stage. Organized competition provides enjoyable, vigorous physical activity that has proved to be one of the best supplements to conditioning drill activities.

Section II. TOURNAMENTS

268. Intra-Unit Tournaments

Intra-unit tournaments in various competitive

activities may be conducted during physical training periods. The unit is divided into teams

and the various teams report to the area designated for the activity. The only problem presented is that the contest must be terminated within the time allotted for physical training.

a. If facilities are available, competition in three or four activities may be carried on simultaneously. In this case, as a company or platoon forms for physical training, the team members for one activity are directed to one area, the team members of another activity to a second area, and so on.

b. The lower levels of competition are sometimes conducted during the regular physical training hours. The higher levels, involving better teams and a strong spectator interest, are arranged during off-duty time. This practice often helps develop solidarity and loyalty within units represented by the competing teams.

c. The following sports can be carried on during the regular training program:

<i>Spring</i>	<i>Summer</i>	<i>Fall</i>	<i>Winter</i>
Pushball	Softball	Touch football	Basketball
American ball	Speedball	Basketball	Soccer
Volleyball	Military fieldmeet	Soccer	Volleyball
Soccer	Swimming	Cross-country running	

d. Competition in horseshoes, tennis, table tennis, badminton, bowling, and other individual sports should be conducted in the recreational sports program which is carried on during off-duty hours.

269. Selection of Activities

Several factors must be taken into consideration in the selection of an activity for tournament play.

a. *Popularity of the Sport.* The men should want to participate in the activity. Seasonal sports should be used at the appropriate time of the year whenever possible.

b. *Knowledge of the Sport.* The selection of an activity should be influenced by the unit's general knowledge of the conduct and rules of the various activities under consideration. Unfamiliar activities require additional time for instruction and familiarization. Competent officials are also difficult to locate for such activities.

c. *Available Facilities and Equipment.* The facilities and equipment available must be inventoried prior to the selection of an activity. There must be adequate playing area. The number of contests that can be scheduled at one time may be limited by both the facilities and equipment.

d. *Adaptability of the Activity to a Competitive Program.* The activity selected should be one that provides an opportunity for the largest number of players to participate.

e. *Time Available to Conduct a Competitive Program.* This includes the amount of time that facilities will be available and also the amount of time the unit can devote to the competitive physical training program.

270. Types of Tournaments

Two types of tournaments are suggested for consideration. (For further information see DA Pam 28-6.)

a. *Single Elimination.* This type of tournament is best suited for a short duration in which extensive participation is not practical. It is the method of determining a winner with the fewest number of contests. The single elimination tournament, however, is the least desirable tournament to use with respect to the goal of maximum participation.

b. *Round Robin Tournament.* The round robin tournament does not eliminate a team from competition and it allows every team to play every other team. The winning team is that team with the best won-lost record. The disadvantage to this type of tournament is that requires many more contests than the single elimination tournament to determine the winner. If it is at all practical to conduct a round robin tournament, it is strongly advised.

271. Suggestions for Scheduling

a. Allow for inclement weather conditions in scheduling outdoor events. Do not schedule contests for every available date. Leave an open date at regular intervals so that any contest postponed for weather or other reasons may be conducted without disrupting the tournament schedule.

b. Make advance arrangements for facilities. It is desirable to plan a tournament far enough in advance so that playing areas and equip-

ment may be reserved through the officer in charge of the facilities, thus eliminating last minute conflicts.

c. Post schedules and contest rules. When schedules have been approved and cleared, they should be posted in a conspicuous place in the unit area. It is also suggested that a copy of the tournament and contest rules be posted.

272. Facilities and Equipment

In the organization of a tournament, several necessities that must not be overlooked are—

a. *The Condition of the Playing Areas.* Prior to using an area check it for any deficiencies in the markings or condition of the playing area; deficiencies should be remedied before a scheduled contest.

b. *Uniforms.* Whenever possible the unit should supply a means of distinguishing the members of the competing teams. It is suggested that each unit have on hand four sets of twelve T-shirts, each set being a different color. Prior to a contest these shirts are issued to the competing teams (each team receives a different color). At the completion of the contest, the shirts are returned to the issuing agency.

c. *Game Equipment.* Insure that the equipment necessary for the conduct of the particular event is at the proper place at the scheduled time. All equipment should be checked before each contest, so that deficiencies may be noted before causing complications during the conduct of the game.

273. Point System

a. *Advantages.* The point system determines an overall winner for a designated period of time; for example, a training cycle. It is a means to retain interest in all activities conducted throughout the program, since the team standings in each sport contribute points toward the overall championship. It also helps to maintain unit solidarity in that each team should be a natural element of the larger unit, for example, squads in a company. The point system offers an incentive to the members of a competing unit to work together for a common goal.

b. *Disadvantages.* The most obvious disadvantage to the point system is that if one team is successful early in the cycle and accumulates a point total that virtually assures it of the championship, interest on the part of other teams naturally wanes.

274. Awards

It is desirable that some recognition be given to the winning team or individual. Verbal recognition in the form of a command announcement or even the submission of a photograph of the winning team to a local publication is considered adequate recognition. In most instances it is not practical for a unit to present trophies or medals to winners of unit competition in various activities. However, if trophies and medals are desired and money is available for their purchase, the preceding statement should not be construed as a definite statement of policy.

Section III. ATHLETIC CARNIVAL

275. General

When men reach the latter part of the slow-improvement and sustaining stage of training, interest in the program may lag if there is no change in course content to arouse the desire to participate. An event which does not require a high degree of skill yet demands strenuous activity is the athletic carnival. This is a series of team contests conducted on a station-to-station basis during a two-hour period. All contests are carried on simultaneously by all teams, two teams at each station, providing vigorous exercise, stimulating competition, and

enjoyment for all. Because of the healthy rivalry that it arouses, it is an excellent form of intersquad or interplatoon competition.

276. Purpose and Advantages

The objective of the athletic carnival is to provide activity for everyone in the participating units. Activities are chosen that will develop aggressiveness, teamwork, a will to win, competitive spirit, and stimulate interest and build esprit de corps. The athletic carnival can be included as part of the physical training program or as part of the off-duty recreational

program. It is a form of contest that can be conducted in nearly all circumstances because it can be easily modified, requires a minimum amount of equipment, and can be readily organized.

277. Level of Competition

The athletic carnival is flexible. It can be adjusted to large or small groups. A company size unit is the most desirable but it may also be administered within a larger unit. If it is conducted within a company, the participating units will be the squads, and if it is held within a larger unit, the platoons comprise the teams. The larger size unit requires more extensive organization and administration.

278. Selection of Events

In organizing an athletic carnival, it is important that the events selected be simple and easy to administer (chap 21-22). All rules and regulations should be clearly understood by everyone, and the technique of performing any event should not require previous practice. In selecting the events, the interest and capabilities of the men and available equipment and facilities must be considered.

279. Equipment and Facilities

The site at which the contest is to be conducted must be large enough to permit the events to be grouped about a central control point. If there are facilities available such as volleyball courts, softball fields, or basketball courts, they should be utilized. A public address system is desirable at the control point for the initial orientation of the teams, and for subsequent announcements of the time lapses, cumulative scores, and final standings.

280. Personnel

Efficient administration of the athletic carnival is dependent upon the personnel who act as referees, judges, and scorers. Individuals within the units who have had athletic or officiating experience should be utilized. Prior to the day of the event, all administrative personnel should be briefed and assigned a specific task in order that they may become familiar with the rules and organization of the contests which they are to conduct. The following personnel should be available:

a. A primary instructor or supervisor who is in charge of the control center and who is responsible for the successful operation of the athletic carnival. He must have an assistant to act as a timer and scorer.

b. One assistant instructor in charge of each event. He should be—

(1) Familiar with the rules of the game which he is to conduct.

(2) A good leader to insure proper supervision and control over the teams which are participating in his event.

(3) Enthusiastic to provide proper motivation.

(4) Confident in himself and in his ability to judge infractions of the rules. He must be fair in his judgment and penalize without hesitation when infractions occur.

c. Several men to serve as runners between event stations and the control point. These men collect and deliver scores.

281. Team Organization for Competition

The size of the teams is determined by the level on which the carnival is organized. Maintaining the integrity of the unit promotes esprit de corps. But this does not preclude grouping two squads into one team.

a. By using the smaller unit as the competing element, selection of contests is made easier. There should be twice as many teams as there are events so that all teams have the opportunity to play each game and still not have to play any other team more than once (figs. 63 and 64). Each team is numbered, and during the orientation the team leaders are given a schedule for their team's rotation.

b. After the orientation, teams are dispersed to their starting stations. Upon the completion of an event, each team proceeds to its next station. A blackboard should be at the central point, listing the teams, rounds, events, and point totals. After the second round of play, the team standings are announced frequently. At the conclusion of the athletic carnival, final scores and team standings are announced.

282. Conduct of Events

a. The assistant instructor at each station takes charge of his group and gives a brief explanation of the major rules of the event for which he is responsible. He is in a position to

FOUR EVENTS - EIGHT TEAM ROTATION

EVENTS	ROUNDS			
	I	II	III	IV
KEEP AWAY	1 - 5*	2 - 6	3 - 7	4 - 8
SIDELINE SOCCER	2 - 8	3 - 5	4 - 6	1 - 7
AMERICAN BALL	3 - 6	4 - 7	1 - 8	2 - 5
KICK BALL	4 - 7	1 - 8	2 - 5	3 - 6

* TEAM NUMBERS

Figure 63. Four events—eight team rotation.

be seen and heard by all when he is presenting his explanation, and he speaks clearly and distinctly to avoid confusion and misinterpretation of the rules. A short demonstration is desirable if it will help clarify the event.

b. The assistant instructor should make certain that the teams can be clearly distinguished; for example, T-shirts versus fatigue jackets, caps versus capless, or by the use of colored jerseys. He should teach a whistle response (teams stop play immediately upon hearing whistle), get the event started as quickly as possible, and make any necessary corrections as the contest progresses. The rule of good officiating is to use a minimum of calls, yet maintain control of the contest. Penalize when necessary, but refrain from disqualifying contestants or teams.

c. Keep the activity moving as rapidly as possible and when the central control point sounds the whistle to stop the play, all compe-

tion ends immediately. The assistant instructor then assembles the group, forwards the team scores to the central point, and upon the signal from the central control point, rotates the teams to their next station. It is essential that the rotation and orientation of the teams be carried on in a quick and orderly fashion, because of the minimum time allotted between contests.

d. Upon completion of the final event, the assistant instructors move their teams to the central control point for the announcement of team winners, presentation of awards (if any), and final critique.

283. The Scoring System

The system for determining the winner of the athletic carnival is simple and efficient (fig. 65). At the completion of competition, the scorer totals the points that each team has scored in all contests. The scorer then sub-

SIX EVENTS - TWELVE TEAM ROTATION

EVENTS	ROUNDS					
	I	II	III	IV	V	VI
KEEP AWAY	1 - 7*	2 - 8	3 - 9	4 - 10	5 - 11	6 - 12
SIDELINE SOCCER	2 - 12	3 - 7	4 - 8	5 - 9	6 - 10	1 - 11
AMERICAN BALL	3 - 11	4 - 12	5 - 7	6 - 8	1 - 9	2 - 10
KICK BALL	4 - 9	5 - 10	6 - 11	1 - 12	2 - 7	3 - 8
PUNCH BASEBALL	5 - 8	6 - 9	1 - 10	2 - 11	3 - 12	4 - 7
GOAL-HI	6 - 10	1 - 11	2 - 12	3 - 7	4 - 8	5 - 9

*TEAM NUMBERS

Figure 64. Six events—twelve team rotation.

ROUNDS	SQUAD 1		SQUAD 2		SQUAD 3		SQUAD 4		SQUAD 5		SQUAD 6		SQUAD 7		SQUAD 8	
	SQUAD 1	OPONENTS	SQUAD 2	OPONENTS	SQUAD 3	OPONENTS	SQUAD 4	OPONENTS	SQUAD 5	OPONENTS	SQUAD 6	OPONENTS	SQUAD 7	OPONENTS	SQUAD 8	OPONENTS
ROUND 1																
ROUND 2																
ROUND 3																
ROUND 4																
TOTAL																
SQUAD SCORE MINUS OPONENTS' SCORE																
STANDING																

Figure 65. Sample scoring chart—four events, eight teams.

tracts the number of points scored against a team from the number of points the team has scored. The resulting scores are placed in a column with the highest score at the top and the lowest at the bottom (some teams will have a minus total; that is, a team may have more

points scored against them than they have scored). The team with the highest total is the winner. This type of scoring system encourages a team to prevent the opposing team from scoring.

CHAPTER 20

COMBATIVES

Section I. INTRODUCTION

284. Description and Function

Combatives are strenuous, short competitive contests in which two men who are opponents attempt to overcome each other in a bout of skill and strength. These contests help to develop the soldier's resourcefulness, confidence, strength, agility, coordination, and the will to win. There are three tables of combatives each of which can be completed in 15 minutes.

285. Area and Equipment

Any level ground area can be used. Extremely hard ground should be avoided as some of the combatives require ground contact. A whistle is needed to control the bouts during the competition since voice commands may go unheeded.

286. Formation

The extended rectangular formation is used for dual combatives. To pair the men with an opponent from the extended rectangular formation, the leader commands:

a. EVEN NUMBERS TO THE RIGHT,
RECOVER!

b. EVEN NUMBERS ONE PACE FORWARD,
MARCH!

c. ODD NUMBERS ABOUT, FACE!

d. YOU ARE NOW FACING YOUR OPPO-
NENT.

e. ODD MEN IN THE REAR, PAIR UP.

287. Dosage and Progression

The tables are progressive in difficulty, and progression from the lower numbered table to the higher numbered tables should be followed.

288. Place in the Program

The possibility of close contact with an enemy in combat faces the soldier at all times. He must be trained to react aggressively and violently in such instances. Combatives may be used as an introduction to such hand-to-hand contact and should be followed by hand-to-hand combat training (FM 21-150). In addition, men enjoy competition, and this type of activity is a welcome change from the formal type of conditioning activity.

289. Leadership

a. Combatives are conducted on an informal basis. The men are allowed to remain at ease between activities and are allowed to brush themselves off after being on the ground.

b. The instructor tells the men that all combatives begin and end on his whistle signal. He demonstrates each activity before having the men perform it, explaining it in simple terms.

c. When he stops one activity, he gets the men in place for the next one by commanding, RE-FORM.

d. To get the most out of combatives, the men must be urged to overcome their opponents as quickly as possible.

e. The instructor must closely supervise combatives to insure that contestants do not use unfair or unsportsmanlike tactics. To avoid unnecessary injury, instructors must see that the bouts are closely controlled and opponents equally paired. Adjustments should be made in apparent cases of mismatched abilities.

Section II. COMBATIVE TABLES

290. Combatives Table I

a. *Open Hand Slap Boxing* (A, fig. 66). The men assume a boxer's stance, palms open, fingers extended and joined. Each contestant tries to slap his opponent about the head and upper body with the open hand. This is a good warm-up activity.

b. *Wrist Tug O'War* (B, fig. 66). Two men sit on the ground with the soles of their feet in contact. Each man grasps his opponent's wrists so that the hands are directly over their feet. At the whistle, each man tries to pull his opponent from the sitting position to his feet.

c. *Arm Lock Wrestle* (C, fig. 66). Two men sit back to back with legs spread and arms locked at the elbows. Each man has his right arm inside his opponent's left side so that his left arm or shoulder touches the ground. The man who first wins three bouts is the winner.

d. *Bulling* (D, fig. 66). Two men assume the Westmoreland wrestling hold, each grasping his opponent's neck with the right hand and his right elbow with the left hand. They try to force each other to move one foot by pushing, pulling, or otherwise manipulating. The man who first wins two bouts is the winner.

e. *Indian Wrestling* (E, fig. 66). Two men lie on the ground, side by side, with their heads in opposite directions. They link right elbows. On the instructor's signal or by mutual agreement, each man raises his right leg, approximately straight, and far enough to engage his opponent's heel. To start the contest, each man usually raises his leg three times rhythmically and, the third time, engages his opponent's heel and tries to roll him over backward. The right leg is used for three bouts, then the left leg for three bouts.

291. Combatives Table II

a. *Wrist Bending* (A, fig. 67). Opponents pair off and face each other, raise their arms forward, and, with palms forward, interlock their fingers. At the starting signal, each man attempts to bend his opponent's wrist. The arms are kept up and forward and are not allowed to swing around and down to the sides. The man who first wins two bouts is the winner.

b. *Back-to-Back Push* (B, fig. 67). Two men stand back to back with elbows locked. Each man has his right arm inside his opponent's left arm. At the starting signal, each pushes backward, trying to move his opponent. They are not allowed to lift and carry each other; only pushing is permitted. The man who pushes his opponent the farthest wins. The man who first wins two bouts is the winner.

c. *Hop and Pull Hand* (C, fig. 67). The men are matched in pairs. Each man grasps his opponent's right hand and, hopping on his right foot, attempts to pull his opponent off balance. Either contestant automatically loses if he touches his free hand or his lifted foot to the ground. For successive bouts, they alternate hands and feet.

d. *Westmoreland Wrestling* (D, fig. 67). Each contestant grasps the back of his opponent's neck with his right hand and opponent's right elbow with his left hand. In this position each man attempts to pull, push, or force his opponent to touch the ground with any part of the body other than the feet. The man who first wins two bouts is the winner.

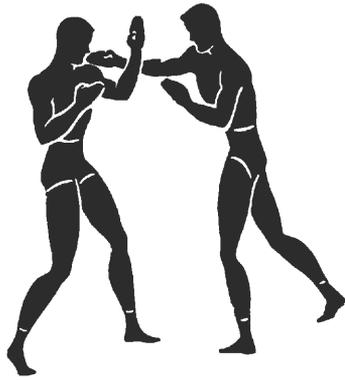
e. *Crab Fight* (E, fig. 67). Two men sit on the ground facing in opposite directions with their hands on the ground behind them. At the whistle, they raise their hips and butt with their shoulders and bodies, each trying to make the other touch the ground with his hips. The man who first wins two bouts is the winner.

292. Combatives Table III

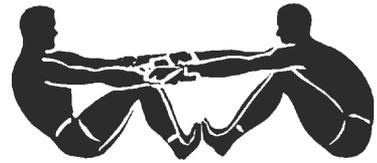
a. *Hand Wrestling* (A, fig. 68). The men stand facing each other. Their right feet are forward and braced side by side. The men grasp right hands for the first bout (left for the second bout). Each man pulls, pushes, makes sideward movements, and otherwise maneuvers to force his opponent to move one or both feet from the original position. The contestant who first wins two bouts is the winner.

b. *Back-to-Back Tug* (B, fig. 68). Two men stand back to back with both arms linked at the elbows. Each man has his right arm inside his opponent's left arm. At the starting signal, each attempts to pull his opponent. Lifting and

A. OPEN HAND SLAP BOXING



B. WRIST TUG O'WAR



C. ARM LOCK WRESTLING



D. BULLING



E. INDIAN WRESTLING

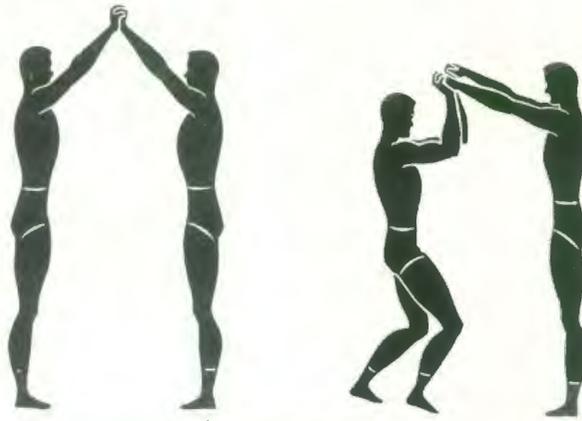


1



2

Figure 66. Combatives table I.



A. WRIST BENDING

B. BACK-TO-BACK PUSH



C. HOP AND PULL HANDS



D. WESTMORELAND WRESTLING



E. CRAB FIGHT



Figure 67. Combatives table II.

carrying are permitted. The men must maintain their original direction and keep their arms linked. After a predetermined time, the player pulled or carried the farthest is the loser.

c. Wrestling To Lift Off Feet (C, fig. 68). Contestants face each other. Each man places his right arm under the left arm of his opponent and around his body. The left arm is over the opponent's right shoulder. Each man tries



A. HAND-WRESTLING

B. BACK-TO-BACK TUG



C. WRESTLING TO LIFT OFF FEET



D. ARM PULL BETWEEN LEGS



E. ROOSTER FIGHT



Figure 68. Combatives table III.

to lift the other off his feet. The man who first wins two bouts is the winner.

d. Arm Pull Between Legs (D, fig. 68). Two men are paired off, back to back. Each bends forward and, extending his right arm between his legs, grasps his opponent's right wrist. At

the starting signal, each man attempts to pull his opponent. After a predetermined time, the player who has pulled his opponent the farthest is the winner. The man who first wins two bouts is the winner. Repeat with the left hand and then both hands.

e. Rooster Fight (E, fig. 68). Each contestant grasps his left foot with his right hand from behind, and right arm with left hand. He hops on his right foot, and by shoulder butting

his opponent, or by feinting and sudden evasions, forces him to let go of his foot or arm. The contestant who first wins two bouts is the winner.

CHAPTER 21

RELAYS

Section I. INTRODUCTION

293. Description and Function

Relays are races in which each member of a team runs one leg of the race and the team effort decides the winner. Relays provide stimulating competition and contribute to the conditioning of personnel. They also develop aggressiveness, team spirit, and the will to win.

294. Place in the Program

Relays should be dispersed throughout the program for short periods of time to provide a change of activity. Each relay table can be completed in 15 minutes and this enables relays to be used as a sole activity, or as a part of a longer period.

295. Team Organization

a. Relays are conducted most efficiently in platoon-size groups. Teams of equal size must be organized. Competitive spirit is encouraged and team organization accomplished faster by basing team composition on unit organization such as squads, crews, or sections. Team captains should be designated. Extra men may be used as officials.

b. The number of men on a relay team should be limited to not more than ten. If larger teams are used the men will spend too much time awaiting their turns and too little time actually participating. Two to six teams are ideal for relay competition. It is difficult to keep track of winners when a greater number of teams compete.

296. Administration of Relays

a. The time spent on any one relay should be relatively short. If one team achieves a substantial lead in a long relay, the competitive spirit and enthusiastic participation of the

other teams may decrease. Several short relays are generally better than one long relay.

b. To maintain competitive spirit throughout a number of relays, determine the teams that win, place, and show in each relay and their total points for all relays. This can be done by awarding points to all teams on the basis of position at the finish of each relay. The team with the greatest number of points is the winner of the entire set of relays.

c. Difficulties commonly encountered in conducting relays may be avoided by the following procedures:

(1) The last player in a relay race should be conspicuously identified; for example: by a handkerchief around his head or arm, taking off his shirt, putting on his hat or taking it off, or by some other means.

(2) Another way to keep track of the progress of the race is to have each player sit or squat as soon as he is finished.

(3) Judges at the starting line can keep the runners from starting too soon.

(4) To prevent contestants from turning before they run the full distance, they should be required to run around a peg, pole, or assistant instructor.

(5) Batons, handkerchiefs, tent pegs, or other objects should be passed from one runner to the next when relays are run on a circular track.

d. During a unit's first participation in a relay, they must be informed of the rules and scoring system. Violation of the rules should not result in disqualification. Instead, point penalties may be imposed. A point penalty is imposed by subtracting a one-point penalty from the team total at the conclusion of the relay.

e. Careful administration will prevent most violations. For efficient conduct of relays follow this procedure:

- (1) Announce the name of the relay.
- (2) Form the men in relay position.
- (3) Briefly explain the relay and the rules for running it.

- (4) Demonstrate.
- (5) Have a definite finish line, and insure that the men know where it is.
- (6) Answer questions and conduct the relay.
- (7) Determine winner and award points.

Section II. RELAY TABLES

297. Events

The following relays are grouped into a table of activities. Each table is planned for a platoon-size group (30-60 men), and requires 15 minutes for completion. Adequate warmup for participants is provided by conducting several repetitions of exercises 1 and 2 of a Conditioning Drill prior to conducting the relays. The recommended relay tables require an area 40 x 60 meters in size. Each table provides a variety of activity. The tables are progressive in the overload applied and should be scheduled in numerical order, although not necessarily on successive days.

298. Relay Table I

a. *60-Meter Lane Relay* (a, fig. 69). Each team is assembled in single file on the starting line. On a signal the first man of each team runs to the turn-around-line 30 meters away, then runs back and touches the next man in line waiting at the starting line. The winning team is the first team to get its last man across the finish line. If a man starts before being touched by the preceding runner, the team may be penalized.

b. *Wheelbarrow Race* (b, fig. 69). The players of each team pair off and line up in a single file. The first man walks on his hands, his partner grasping his ankles. They advance to the distance line (25 meters) behind which they exchange positions and return to the starting line. After the first two men return and cross the starting line, the next pair starts. The rear man must always hold his partner's ankles.

c. *Squad Front Relay* (c, fig. 69). The teams form in a line along the starting line with a 10-foot interval between them. The members of each team lock elbows so that they are linked together. At the starting signal, the teams run to the distance line (20 meters) where the left

flank man acts as a pivot. The team swings around on the pivot man and returns to the base line. If a team "breaks" it must re-form before continuing. The first team to completely cross the base line intact is the winner.

d. *Crab Walk Race* (d, fig. 69). The players of each team line up in a single file. The first man of each team assumes the crab walk position with his feet forward on the starting line. At the starting signal he moves forward to the distance line (10 meters). He touches the line with his feet and then returns to the starting line in the reverse position with the head and hands leading. The second man may not start until the first man touches the finish line.

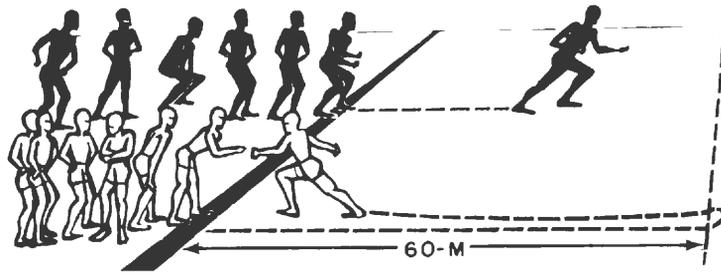
299. Relay Table II

a. *100-Meter Lane Relay* (a, fig. 70). Conducted exactly as the first relay of table 1 except that the start and turn-around-line are 50 meters apart. This relay provides progression in sprinting.

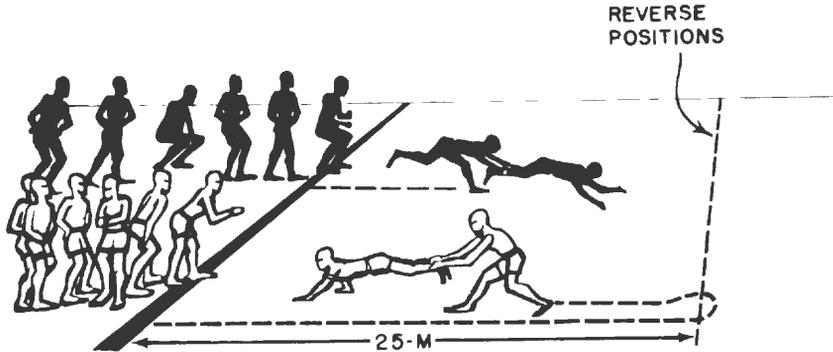
b. *Frog-Jump Relay* (b, fig. 70). Each team lines up in a single file. The first man assumes a squatting position on the starting line. At the starting signal he progresses to the distance line (15 meters) and back by leaping forward, catching his weight on his hands, and bringing up his legs to the squat position.

c. *Simple Relay* (c, fig. 70). Each team lines up in a single file. Place a marker on the distance line (20 meters) in front of each team. Each team member grasps the belt of the man ahead of him. At the starting signal, each team runs as a unit to the marker, circles it, and returns to the starting line. The first team to completely cross the starting line intact is the winner.

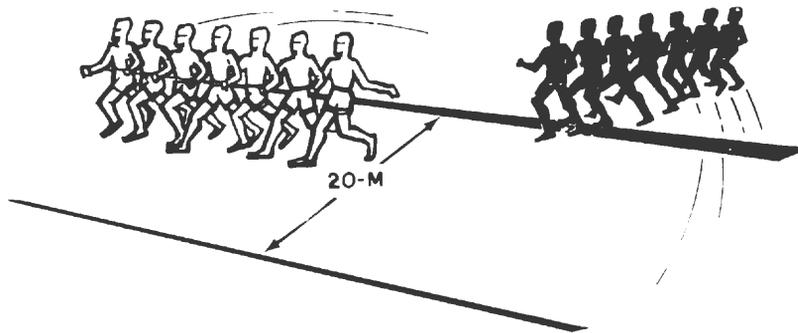
d. *Fireman's Carry Relay* (d, fig. 70). The players of each team line up in pairs one behind the other. One man in each pair carries



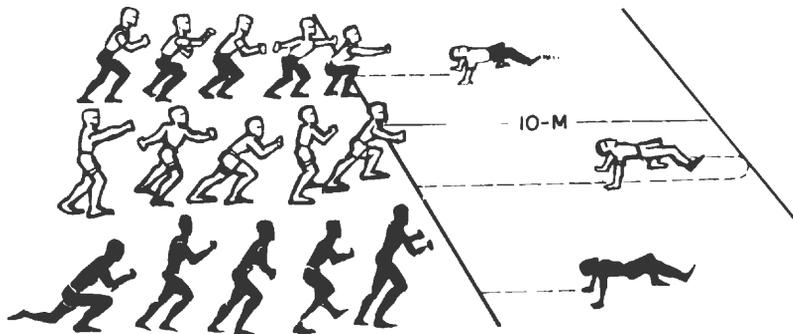
a. 60-METER LANE RELAY



b. WHEELBARROW RACE

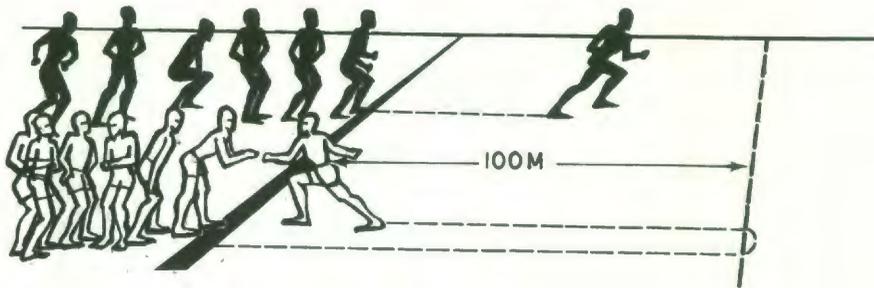


c. SQUAD FRONT RELAY

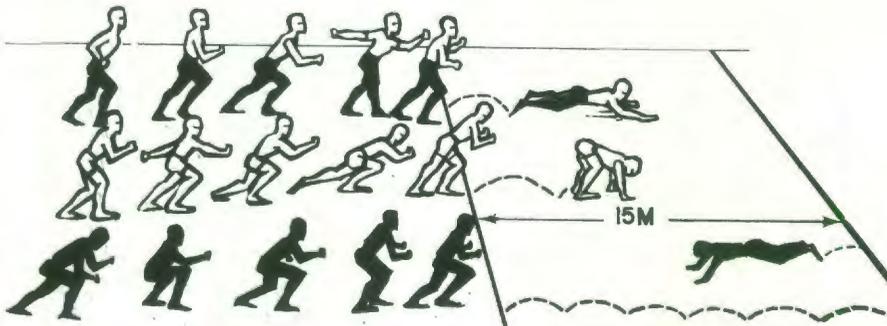


d. CRAB WALK RACE

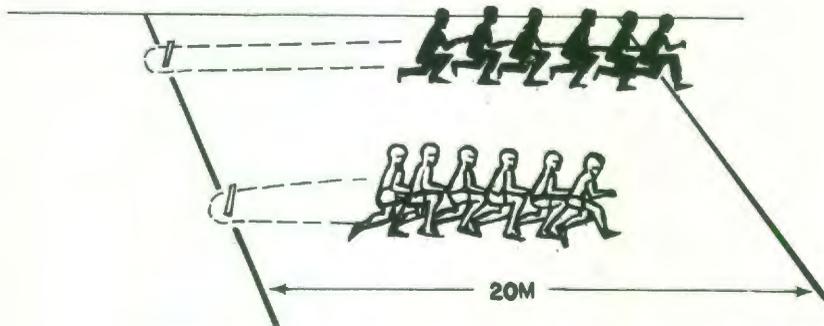
Figure 69. Relay table I.



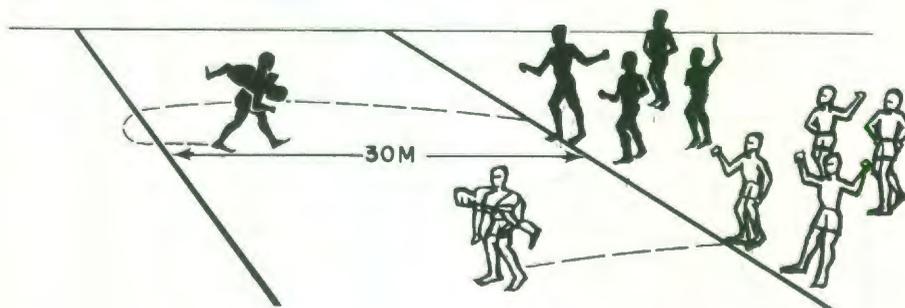
a. 100-METER LANE RELAY.



b. FROG-JUMP RELAY.



c. SIMPLE RELAY.



d. FIREMAN'S CARRY RELAY.

Figure 70. Relay table II.

his partner to the distance line (30 meters) using the fireman's carry. At the distance line the men exchange places and return to the starting line. As a variation, the man to be carried lies on the ground and his partner picks him up to the proper position. This relay may be performed with the other carries described in guerrilla exercises.

300. Relay Table III

a. *200-Meter Circle Relay* (a, fig. 71). A course is laid out in either a circular, rectangular, or oval pattern that is 200 meters around. Each team provides one runner on the starting line. On a signal the runners race around the 200-meter track and touch their next teammate, waiting at the starting line, who runs the same course. Each team member runs one lap of the course.

b. *Bear and Crab Race* (b, fig. 71). Each team lines up in a single file. At the signal to start, the first man in each column assumes the bear walk position and walks to the distance line (15 meters) and then runs back to the starting line where he touches off the second man and goes to the rear of the line. The second man assumes the crab walk position and crab walks, with his feet leading, to the distance line. He runs back to the starting line and touches off the next man, who walks bear fashion. The rest of the members of each team alternate in this manner. The relay ends when the No. 1 man is back at the head of the line.

c. *Pilot Relay* (c, fig. 71). The players are grouped in three's, arms interlocked at the elbows, and end men with their backs to the starting line. The middle man runs forward; the two outside men run backward. They run to the turning point (15 meters), where they start back, this time with the middle man running backward and the two outside men running forward. The next set of three players starts when the first set crosses the starting line.

d. *Saddle Back Relay* (d, fig. 71). Mark two parallel lines 15 meters apart. Each team selects a rider. The remaining members of each team count off. The even-numbered players from each team form in single files behind one line and the odd-numbered players from each team form in single files behind the other line directly across from their teammates. At the

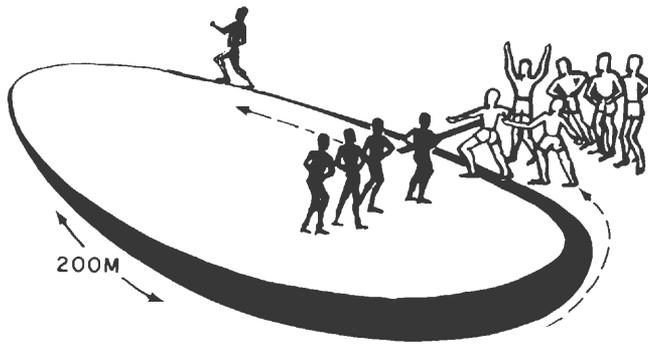
starting signal, the rider mounts the back of the No. 1 player of his team who carries him across to the other line where the rider changes mounts to the No. 2 man without touching the ground. The No. 2 man carries the rider to the No. 3 man. The relay continues until all of the mounts have carried the rider. If a rider falls off, he must mount again at the point of the fall. If he falls in changing mounts, he must get back on his original mount before making the change.

301. Relay Table IV

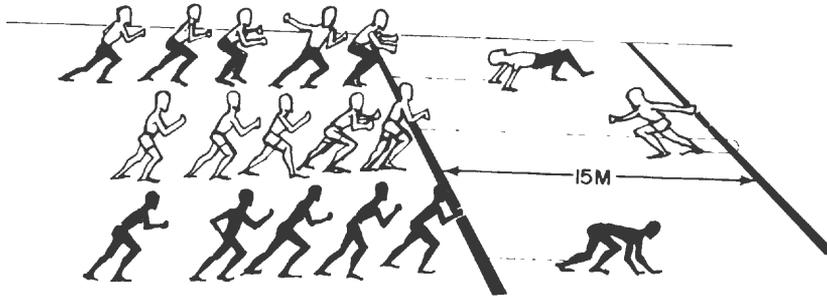
a. *100-Meter Circle Relay* (a, fig. 72). A course is laid out in either a circular, rectangular, or oval pattern that is 200 meters around. Each team is divided in half with each half positioned at starting lines on opposite sides of the track. Each runner races halfway around the track and touches a teammate who completes the lap. Each runner then waits in file at his first finish line and in turn completes the second half of the lap when touched by the preceding runner. The first team to return all runners to their original starting line is the winner.

b. *In-and-Out Relay* (b, fig. 72). Each team lines up in a file with players 2 meters apart. At the starting signal, the first player runs back through the column in a zigzag fashion. He alternates going to the right of one teammate and to the left of the next. Upon completing the run he lines up 2 meters behind the last man. As soon as the first runner has passed the second man, the latter starts to run. This continues until all the players have realigned their original order. The team that finishes first is the winner. It may be desirable to have this relay continue until all men have run through their entire team two or three times in succession.

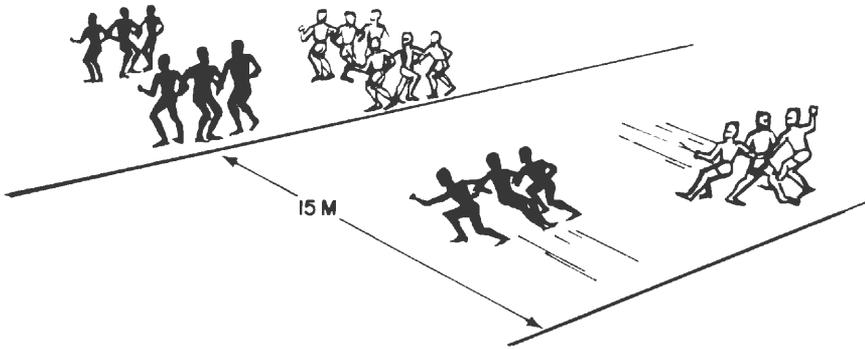
c. *Circle Race* (c, fig. 72). Each team forms a circle and hold hands with all men facing out except one who faces in and is the "driver." At the starting signal, the teams race to the distance line (20 meters) and back, keeping the circle intact. All the men in the circle must cross the distance line completely. The "driver" gives directions and orders. When the circle breaks, it must be re-formed before it can continue. The first team completely over the starting line is the winner.



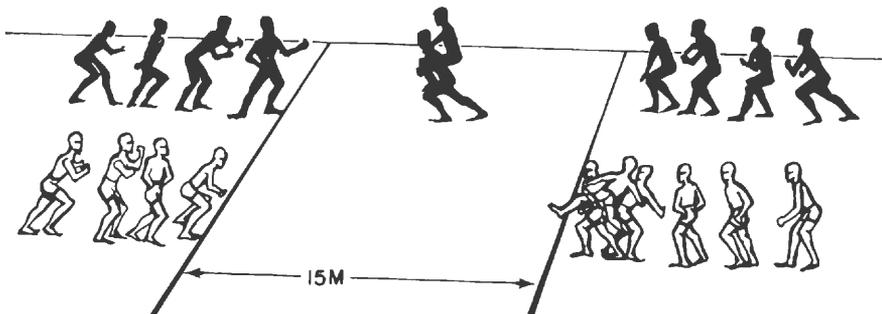
a. 200-METER CIRCLE RELAY



b. BEAR AND CRAB RACE

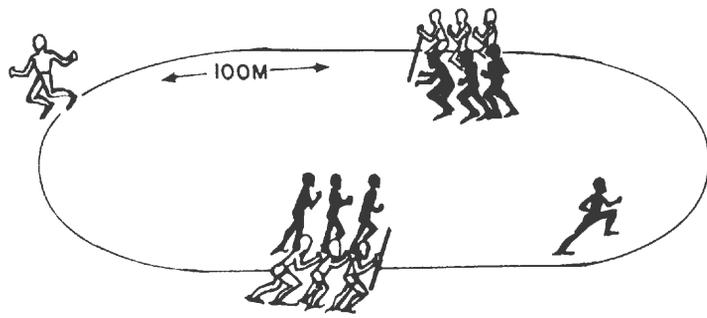


c. PILOT RELAY

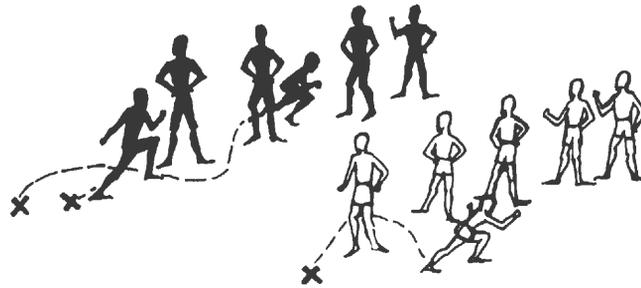


d. SADDLE BACK RELAY

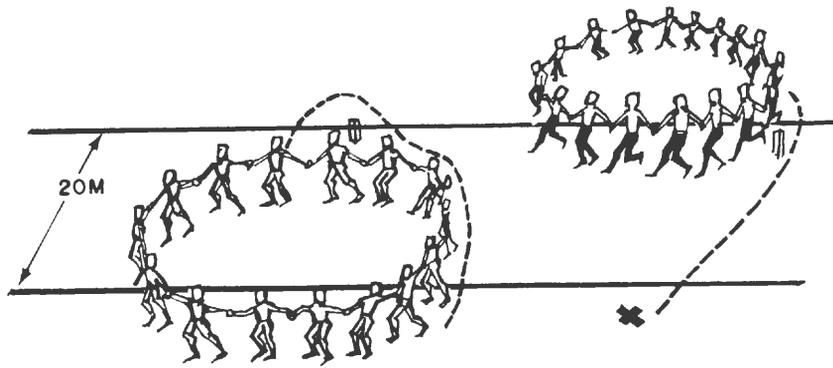
Figure 71. Relay table III.



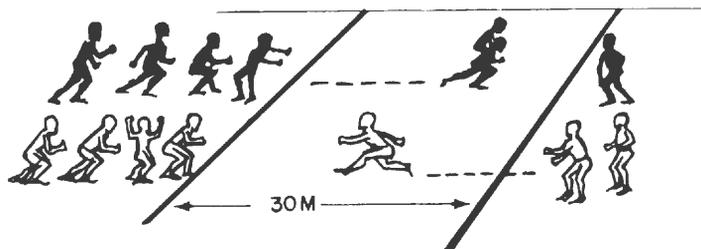
a. 100-METER CIRCLE RELAY.



b. IN-AND-OUT RELAY



c. CIRCLE RACE.



d. HORSE AND RIDER RELAY

Figure 72. Relay table IV.

d. *Horse and Rider delay* (d, fig. 72). Each team lines up in a single file. At the signal to start, the second man in each column leaps upon the back of the first man who carries him across the distance line (30 meters). At the distance line, the rider dismounts and runs

back to the starting line. There he picks up the third man in the column, and carries him to the distance line where the first player has remained. This continues until the last man is carried across the distance line.

CHAPTER 22

TEAM CONTESTS

Section I. INTRODUCTION

302. Description and Function

Team contests are competitive activities in which men as a team compete with another team to win. They are guided by simple rules and organization. Their function is to provide competition, opportunity for body contact, and contribute to the development of physical readiness. In competing and working together as a team, men develop aggressiveness, the will to win, and teamwork.

303. Area and Equipment

A level training field is sometimes the only area required. Many contests have no equipment requirement. In contests requiring equipment the need is for standard items such as logs, balls, nets, goals, and similar type equipment. Specific requirements for area and equipment are listed with each contest description.

304. Progression

Team contests of a strenuous nature should be

introduced after a basic period of conditioning has been completed and men are in the slow improvement stage of conditioning. Progression can take place from the less active to the more vigorous contests, and then from the non-contact to the contact or combative-type contests.

305. Time Requirement

Once men learn the skills and rules involved all team contests can be completed within 15 minutes. Some contests are less demanding in time, and in such instances two or more contests should be combined into a 15-minute block to provide a satisfying period of competition. This combination will make scheduling more convenient as blocks of time which are less than 15 minutes in duration are difficult to include in the training schedule.

Section II. TEAM CONTEST DESCRIPTIONS

306. Introduction

Various type team contests are included to provide the opportunity for men to develop and test their skills. Those contests related to a team sport serve as good lead-up activity toward learning the skills of that sport. Most of the contests require running, several emphasize strength, some are related to a team sport (chap 23), several are combative and feature body contact, and still others are contests with the team using a log. Team contests provide opportunity to develop confidence, aggressiveness, and teamwork.

307. Punch Baseball

a. Players. 8 to 12 men on each side (fig. 73).

b. Equipment. Volleyball, three bases, and homeplate.

c. Area. A baseball diamond. The distance between bases is 30 feet. The pitcher's box is 20 feet in front of homeplate.

d. The Game. The players in this game assume the same position as in softball. The team at bat hits in the order of catcher, pitcher, first baseman, and so on. The batter hits the ball with his forearm or closed fist. The pitcher

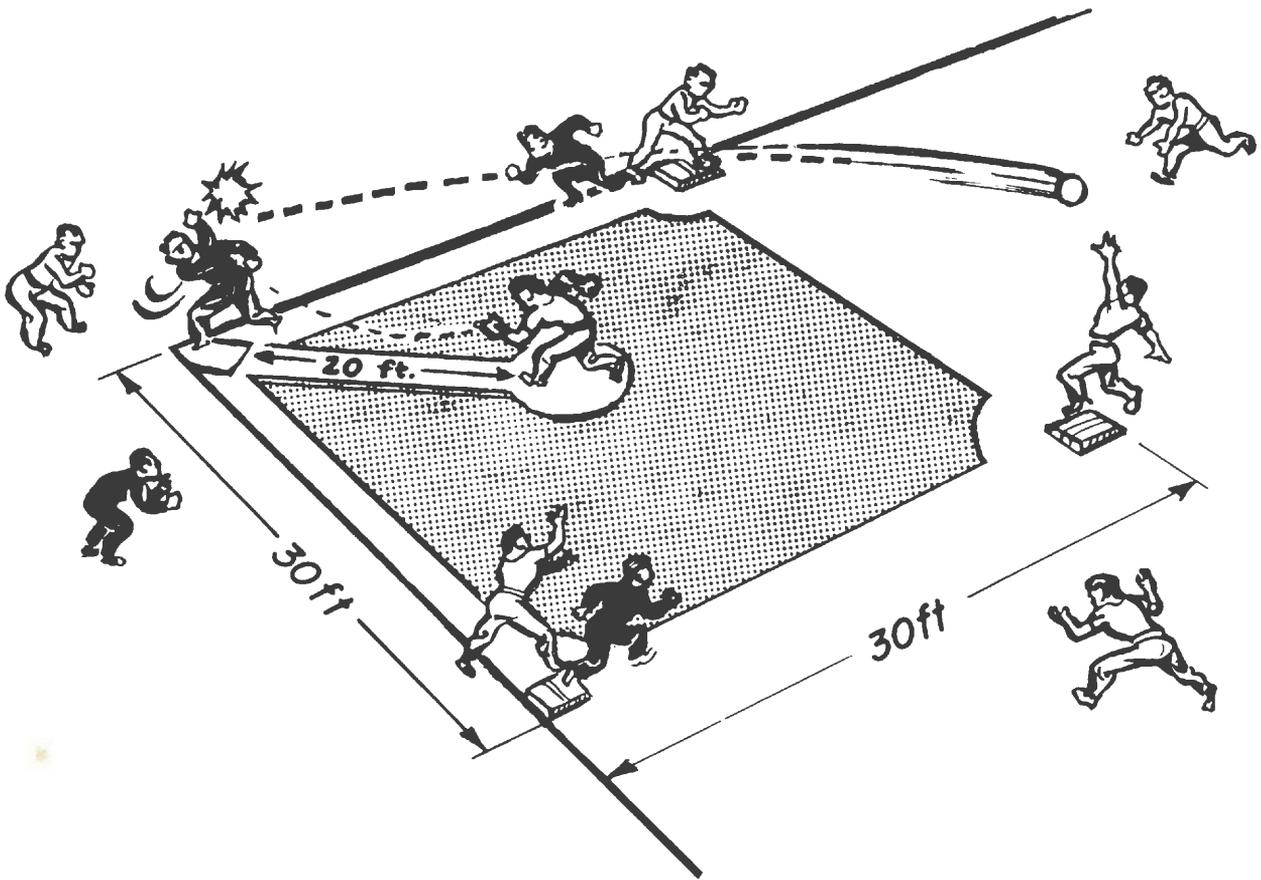


Figure 73. Punch baseball.

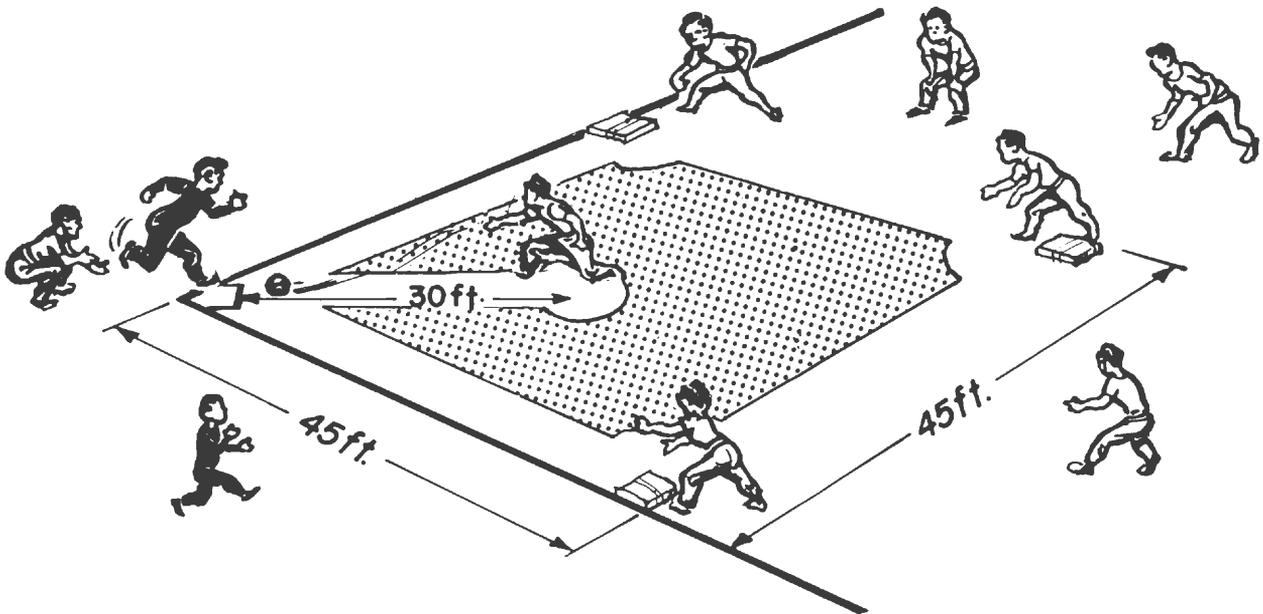


Figure 74. Kick ball.

must use an easy underhand pitch and must adhere to softball rules for pitching. Base runners may advance only on hits. Outs are made as follows:

- (1) Catching a fly ball.
- (2) Getting the ball to the first baseman before the batter reaches the base.
- (3) The batter hitting three fouls.
- (4) Forcing a base runner at any base.
- (5) Tagging a base runner with the ball.

e. Scoring. A run is scored each time a base runner crosses the home base. Three outs retire a side and nine innings constitute a game. With the exception noted above, the game is played as softball.

f. Variation. The ball is rolled on the ground to the batter who kicks it. Otherwise, the game is played as above.

308. Kick Ball

a. Players. 9 to 12 men on a side (fig. 74).

b. Equipment. Soccer ball and bases.

c. Area. The distance between bases is 45 feet. The pitcher's box is 30 feet in front of home base.

d. The Game. The pitcher rolls the ball to the batter who kicks it. After kicking the ball, the batter circles the bases. He must make a home run. On a fair ball, not caught on the fly, the fielder throws the ball to the pitcher who throws to either the first or third baseman. The ball then must reach home base via the first, second, and third baseman in that order, or via the third, second, and first baseman. The basemen must be standing on their base when they relay the ball to the next base. Three outs constitute an inning and nine innings a game. Putouts are made by the—

- (1) Batter kicking three fouls.
- (2) Fielder catching any fly ball.
- (3) Ball beating the runner around the bases to home plate.

e. Scoring. If the batter succeeds in beating the ball around the bases, he scores a run for his team.

f. Variation. The game may be played in an identical manner except that the ball is put into play by the pitcher tossing a volleyball to the batter who hits it with his fist or forearm. The pitcher must use an underhand throw.

g. Variation. The game may be played by placing the ball on home base and letting the batter kick it from that point. The above rules apply.

h. Variation. Do not count a caught fly ball as an out; play it as any fair hit ball.

309. Kick Pin Baseball

a. Players. 10 to 12 on each side; a pitcher, catcher, three basemen, and the remainder outfielders (fig. 75).

b. Equipment. One soccer ball, four tenpins. Tin cans may be substituted for the tenpins.

c. Area. Baseball diamond with 45 feet between bases. Pitcher's box is 20 feet in front of home plate.

d. The Game. The tenpins are placed on the outside corner of each base and in the middle of home plate. The pitcher rolls the ball at home plate pin. The batter must stand beside the pin until the ball is pitched. The batter kicks the ball and circles the bases on the outside of the pins and finally touches home plate. The batter is out when—

- (1) A pitched ball knocks over the home plate pin.
- (2) The ball is caught on the fly by an opponent.
- (3) The batter knocks over the home pin or any other base pin during his turn at bat.
- (4) A base pin in advance of the runner is knocked over by a baseman hitting it with the ball, provided the ball has been fielded and passed in the order of the bases (that is, to first, second, etc.) to a baseman who knocks over a pin before the runner reaches that point.

(5) The runner is hit by the ball while he is between the bases, the ball having been passed counterclockwise (first, second, etc.) around the bases to the point where the runner is advancing. Three putouts constitute a side out. Any predetermined number of innings may be played.

e. Scoring. The batter cannot stop on any base and he must make a home run to score.

310. Line Soccer

a. Players. 20 to 80 men on a side (fig. 76).

b. Equipment. One soccer ball.

c. Area. 120 to 150 feet wide by 240 to 300 feet long. (Use larger area when available.)

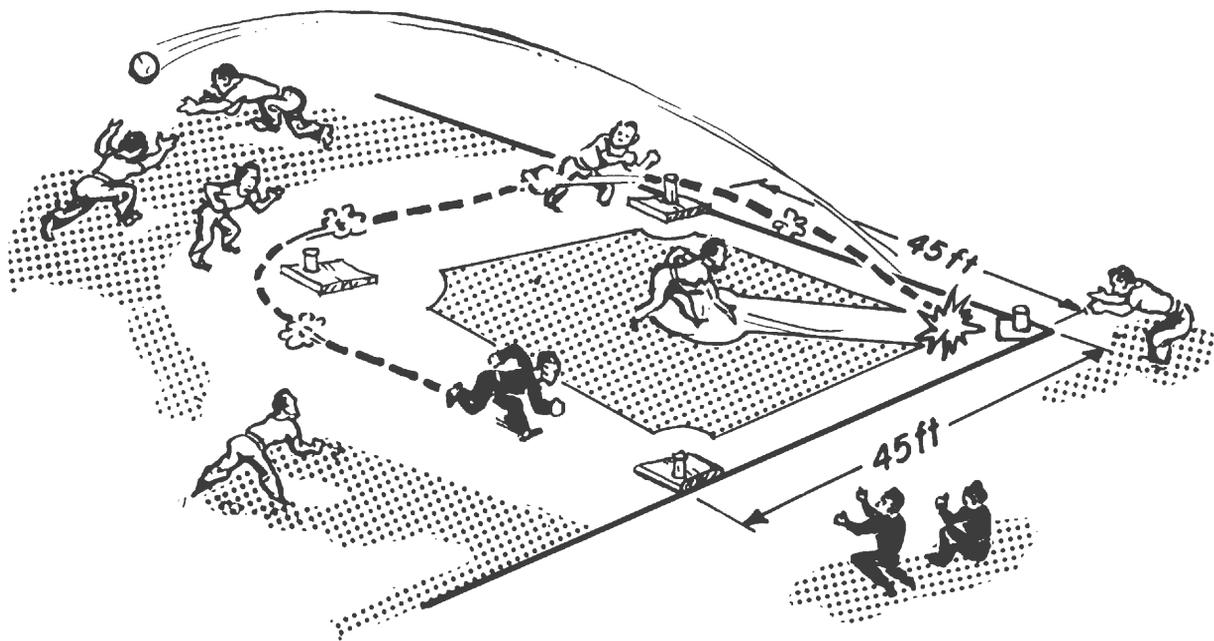


Figure 75. Kick pin baseball.

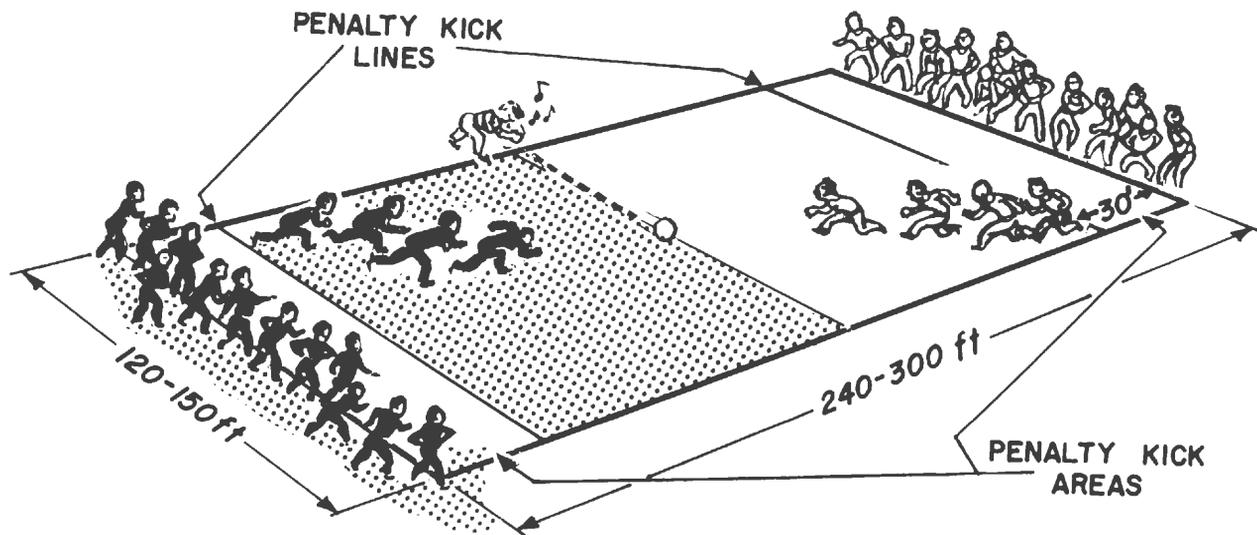


Figure 76. Line soccer.

Lines 30 feet from and parallel to the end lines mark off the penalty area.

d. *The Game.* All the men on each side line up in a single line across the field on their own goal line. The first four or six men at the left of each line come out as the whistle is blown, and the ball is rolled out into the middle of the playing area by the game leader. The players try to kick the ball across the opponent's goal

line, not higher than the height of the shoulders. They continue playing until one side has scored a goal. All the remaining players on each side guard their goal. In doing so, they are not permitted to use their hands or to leave the goal line. After each goal, a new set of players advances to the center, usually in successive order from the goal line.

(1) When the ball is kicked above the

heads of the goal defenders, a free kick is given to the defensive team. The ball is placed on the goal line for this kick.

(2) When the ball goes out of bounds over the side lines, the opposite side puts it back into play with a throw-in from the spot where it crossed the side line.

(3) On all free kicks, the opponents must be at least 5 yards away from the ball at the moment it is kicked. No goal may be scored directly from a free kick.

(4) No one is permitted to use his hands and arms. When this rule is violated, the opposite side is given a free kick at the spot of the foul. If the defenders use their hands within their own penalty area (the 30-foot area in front of their end line), a penalty kick is awarded the other side. For the penalty kick, the ball is placed on the line 30 feet from the goal line. The ball is in play immediately after the kick if the goal is not made.

e. Scoring. Each goal scores one point. A goal from a penalty kick also counts one point.

311. Side Line Soccer

a. Players. 50 to 100 men (fig. 77).

b. Equipment. A soccer ball.

c. Area. A field from 100 to 150 feet wide and 200 to 300 feet long.

d. The game. The game requires no goal posts, may be administered with a minimum of marking, and provides continuous action for large numbers of men. Divide the group into two equal teams. From each team select six goal tenders. These men may use both their hands and their feet to play the ball. They cannot run with the ball and they must remain in the goal tenders' area (15 feet from the goal line). If a goal tender moves out of this area, the opposing team is awarded a penalty kick. A goal is scored when the ball is kicked over the goal line at a height not greater than the upstretched hands of the goal keepers.

(1) Each team selects from its members six men who are placed outside both sides of the playing field, three from each team to a side and in alternate positions. These men play up and down the side line throwing and kicking the ball back into the field to the advantage of their own team. Side line players are not allowed to run with the ball, but they may use their hands as the goal tenders do. No goals

may be scored directly on a throw or kick by a side line player.

(2) To start the game, the ball is placed in the center of the field. One member from each team stands facing each other over the ball. The rest of the members of the team (except the side line players) remain in the goal tenders' area until the whistle is blown. Upon this signal the two players put the ball in play by trying to kick it to their advantage. The rest of the players (with the exception of the goal tenders and side line players) may play anywhere on the field. After each goal, the play is started as at the start of the game.

(3) The goal keepers and the side line players should be rotated with the field players. If a player other than a goal tender or side line player uses his hands in playing the ball, the offended team is awarded a free kick from the point of the foul. For flagrant roughness, the offended team is awarded a penalty kick from the penalty kick line 45 feet in front of the goal line. Only the six goal tenders may protect the goal on these kicks. The game continues for a predetermined length of time.

e. Scoring. Field goals and penalty kick goals are scored as one point each.

312. American Ball

a. Players. 9 to 15 men on each side (fig. 78).

b. Equipment. Soccer ball, volleyball, or basketball.

c. Area. A field 80 by 200 feet.

d. The Game. The game is started at the center of the field by a tossup between two members of opposing teams who try to tip the ball to a member of their own team. The teams line up anywhere on the field, usually in a man-to-man setup. The game is resumed in this manner after each goal.

(1) The ball is carried, kicked, or passed from one player to another. Each team tries to score by throwing the ball to its catcher, and tries to stop the other team from scoring by gaining possession of the ball by intercepting it or by trying to stop the progress of the ball by using legal tackles and blocks. A ball thus stopped is put in play by the possessing team at the spot by centering the ball backward. The team not in possession cannot rush until the ball is centered.

(2) A goal is made when the catcher, in

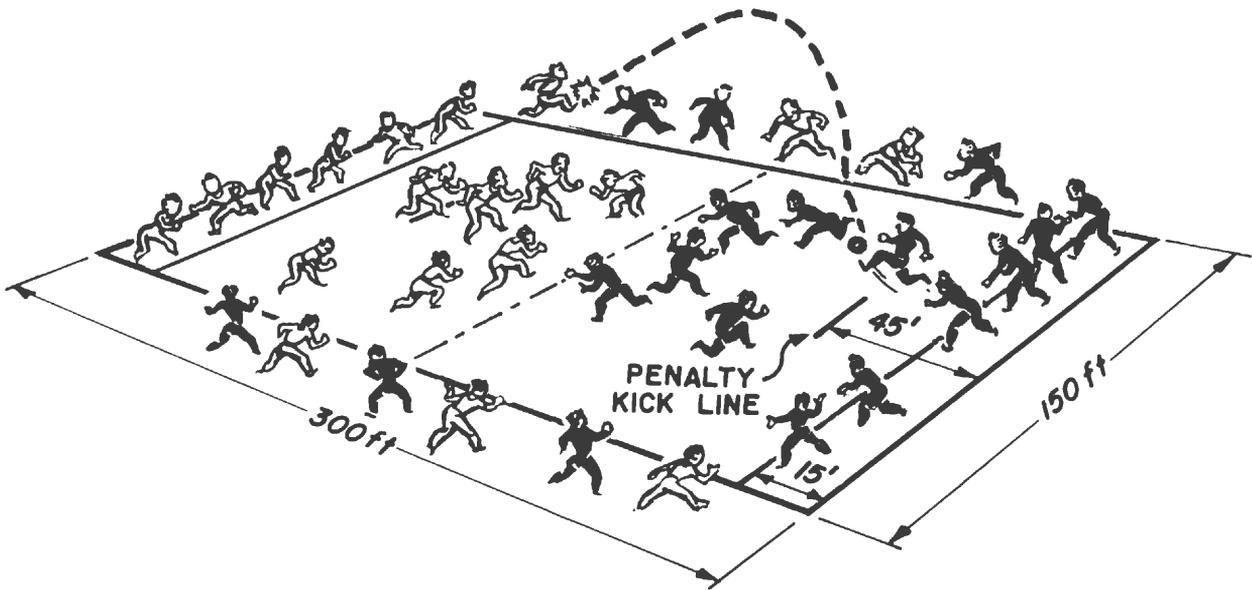


Figure 77. Side line soccer.

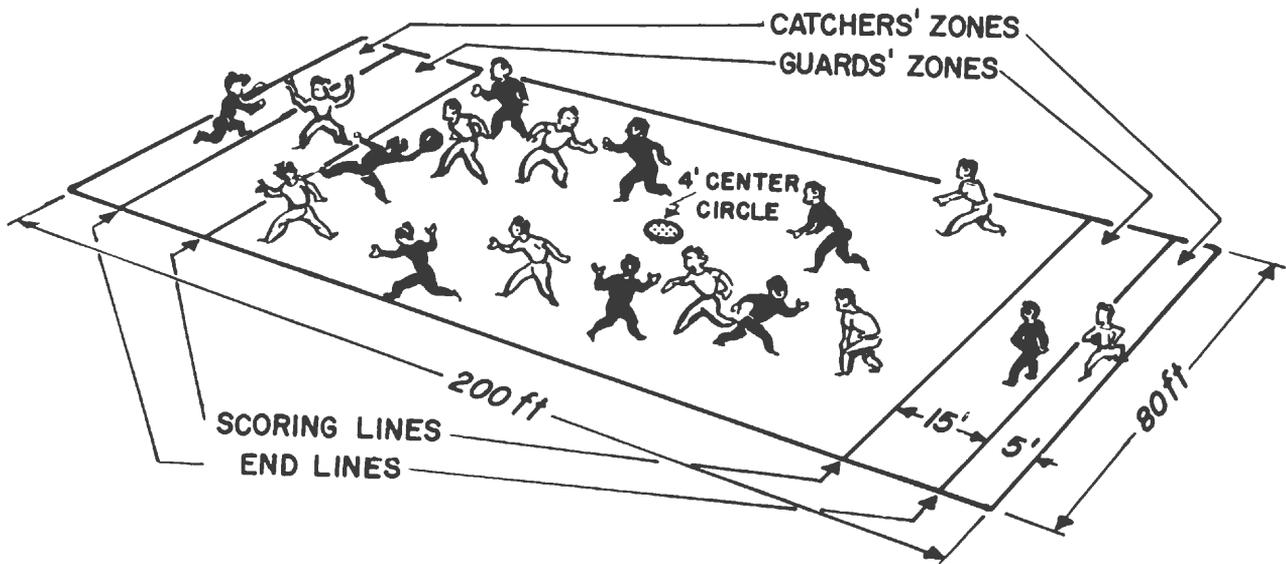


Figure 78. American ball.

his area, catches an aerial pass from a teammate who passes the ball from in front of the scoring line. If the catcher takes possession of the ball when an attempted try for a goal fails and the ball is recovered in the catcher's zone or goes out of bounds behind the zone, he must throw the ball onto the playing field within 5 seconds after gaining possession of it.

(3) The guard playing in the guard zone tries to stop the pass to the catcher and return the ball to a teammate. When a ball goes out of

bounds it is awarded to the opponents and is put into play again by throwing it into the playing area. If a ball is "tied up" on the playing field and cannot be moved, a jump ball is called at the point where the ball's progress was stopped.

(4) A game consists of two 10-minute periods with an intermission of 5 minutes between periods.

e. Penalties.

(1) A player shall not touch or cross the

scoring line. If a goal is made in violation of this condition, it does not count.

(2) No player, except the catcher, should be inside the catcher's zone at any time during the game. Penalty: Ball awarded to opposing team out of bounds (side line).

(3) The catcher shall not be outside his zone at any time. Penalty: Ball awarded to opposing team out of bounds (side line).

(4) A player shall not take more than 10 seconds in making a free throw for the goal. If more time is taken and the goal is made, it does not count.

f. Personal Fouls.

(1) Tackling an opponent above the shoulders, below the knees, or leaving the feet in making a tackle.

(2) Tripping, blocking from the rear, or leaving the feet while blocking.

(3) Unnecessary roughness.

(4) Tackling an opponent who doesn't have the ball. The penalty for all personal fouls is one free throw taken from the scoring line. A player who makes four personal fouls shall be disqualified from further participation in the game.

(5) Scoring: Successful passes to the catcher from the field of play and on free throws count one point. The team scoring the greatest number of points wins.

(6) Variation: Increase the number of catchers and guards in equal numbers.

(7) Variation: Replace two-handed touch for tackling in order to stop progress of the ball.

313. Goal Hi

a. Players. 2 to 20 men (fig. 79).

b. Equipment. Basket on a 10-foot standard and one basketball. Basket standard is in a circle with a 4-foot radius. Another circle is drawn with a 15-foot radius around the standard. Then another circle with a 30-foot radius is drawn around the standard.

c. Area. Level ground 75 feet square.

d. The Game. Both teams shoot for the same goal. Start the game by awarding the ball to one team out of bounds. The object of the game is to score a basket. The ball may be passed or dribbled.

(1) Players are not allowed to touch the standard. If the standard is touched by the

team in possession of the ball, the opponents are awarded the ball out of bounds. If the standard is touched by the team not in possession of the ball, the referee decides if play shall continue or if the offender shall be penalized for the foul. Deliberate shaking of the goal is a foul, the penalty for which is a free throw. No player shall attempt a goal if he receives the ball on or inside the circle nearest the standard.

(2) There shall be no running with the ball, striking, tripping, or other unnecessary roughness. Penalty: Free throw from the 15-foot line. After a successful free throw or field goal, the ball goes to the opponents out of bounds.

(3) A game consists of two 10-minute periods with a 5-minute rest between periods.

e. Scoring. Free throw, 1 point; field goal from the middle circle, 2 points; field goal from the outer circle, 3 points. The team scoring the most points wins the game.

314. One-Basket Basketball

a. Players. 5 to 6 men on a side (fig. 80).

b. Equipment. 1 basket and basketball.

c. Area. 20 by 30 feet.

d. The Game. Both teams shoot for the same goal. The game is started by awarding the ball to one team out of bounds. The object of the game is to score a basket. The ball may be passed or dribbled.

(1) The player who recovers the ball from a shot taken and missed by a teammate may immediately shoot at the basket. If an opponent recovers the ball, he must first pass to one of his teammates before any player of his team may shoot at the basket. Regulation basketball rules apply in penalizing fouls. Penalty for any foul is one free throw from the line 15 feet from the basket. After a basket is scored, the ball is awarded to the opponent out of bounds behind the 15-foot line.

(2) A game consists of two 10-minute periods with a 5-minute rest between periods.

e. Scoring. Two points for a field goal; one point for a free throw. As a variation in scoring, eliminate free throws and award the ball to the offended team out of bounds.

315. Quick Lineup

a. Players. 40 to 200 men (fig. 81).

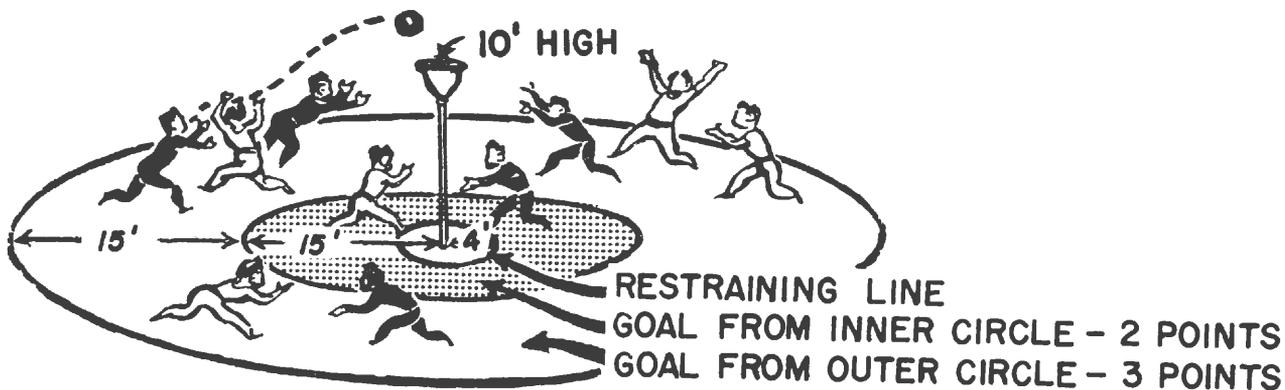


Figure 79. Goal hi.

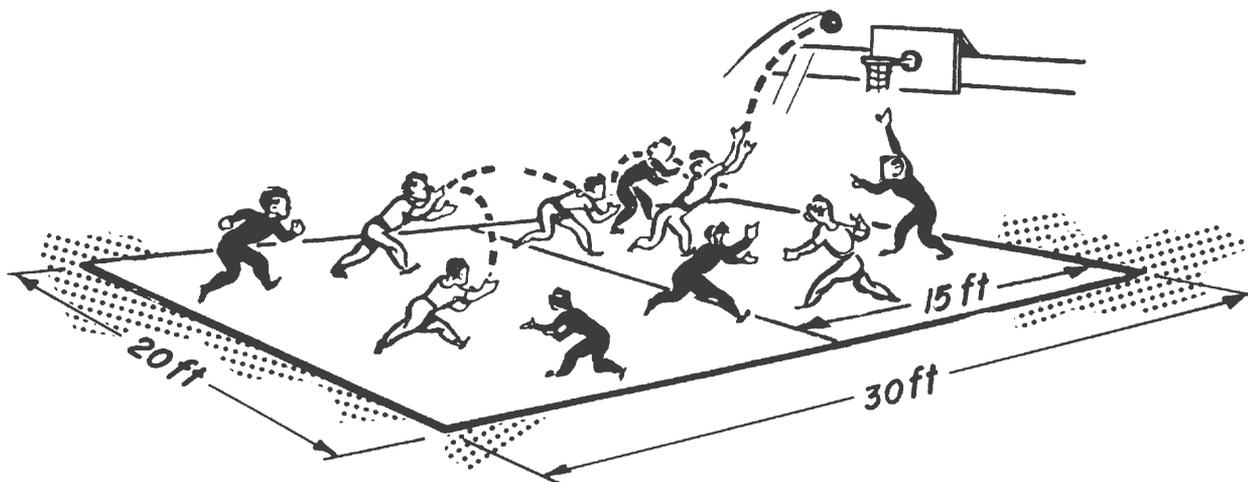


Figure 80. One-basket basketball.

b. *Equipment.* None.

c. *Area.* 100 feet square.

d. *The Game.* Players line up in four lines to form a square. They fall in by heights with the tallest man on the right in each line.

(1) The leader stands in the middle of the square. He tells the group that regardless of where he goes and stops on the field, the No. 1 line should always face him; No. 2 line should always line up on his left; No. 3 line should always be behind him, and No. 4 line to his right. At each stop, the leader faces a new direction.

(2) The leader to start the contest runs to the new position, and the lines can break ranks to follow as soon as he clears the line he chooses to pass through. All men run to their new position individually and quickly reform in the proper order.

e. *Scoring.* The first side forming a new line in proper order scores one point. The first side scoring five points wins the game.

f. *Variation.* Have men line up in close interval or at normal interval.

316. Spoke Tag

a. *Players.* 20 to 40 men (fig. 82).

b. *Equipment.* None.

c. *Area.* Any area free from rough, cutting surfaces.

d. *The Game.* Divide the group into even files with three or four players to a file. Form the files so that each represents a spoke in a large wheel. Each man is seated facing the center.

(1) One man is "it." He jogs around the outside of the wheel, selects any spoke, stops and slaps the last man of the spoke vigorously on the back. The slap is passed from man to



Figure 81. Quick lineup.

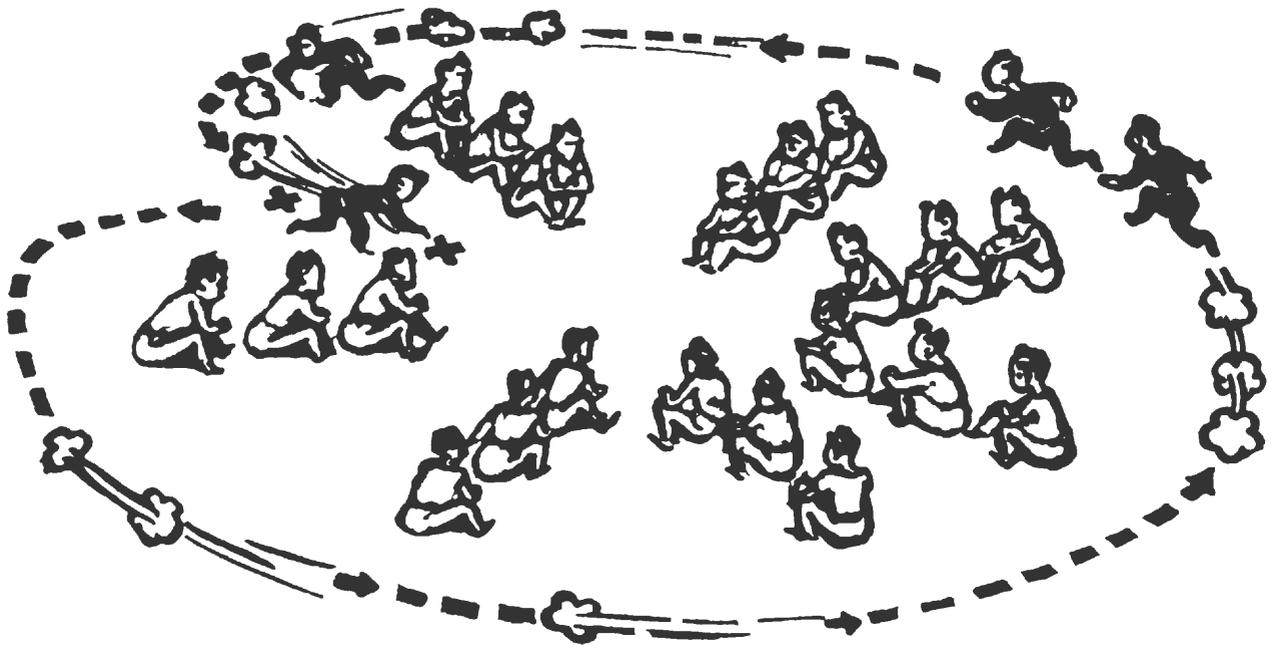


Figure 82. Spoke tag.

man up to the front and each man rises as he is slapped. No one (including "it") can move out of line until the first man (the one nearest the center) of the spoke starts to run, then all must race in the same direction.

(2) The object is for the individual members of the spoke and "it" to race around the circle and avoid being last. The last one to get around and be seated in a place in the spoke line becomes "it."

e. Scoring. None.

f. Variation. Have spokes stand instead of sit. Rules prohibit pushing, tripping, pulling by runners, and interference by spokes not running.

317. Chain Dodge Ball

a. Players. 20 to 40 men (fig. 83).

b. Equipment. Soccer ball or volleyball.

c. Area. Any level area.

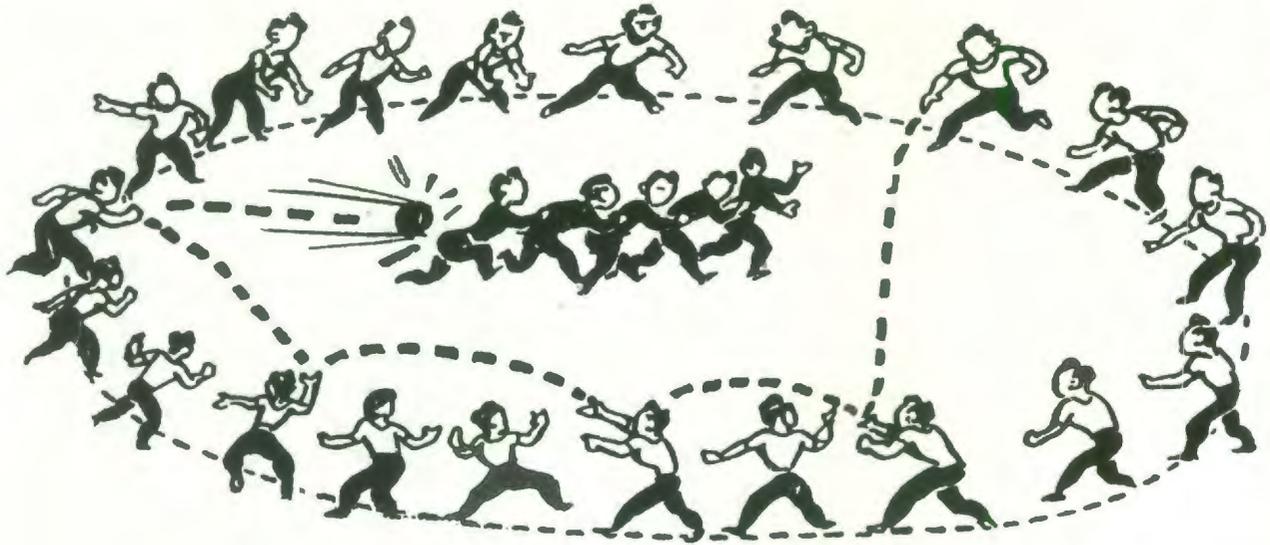


Figure 83. Chain dodge ball.

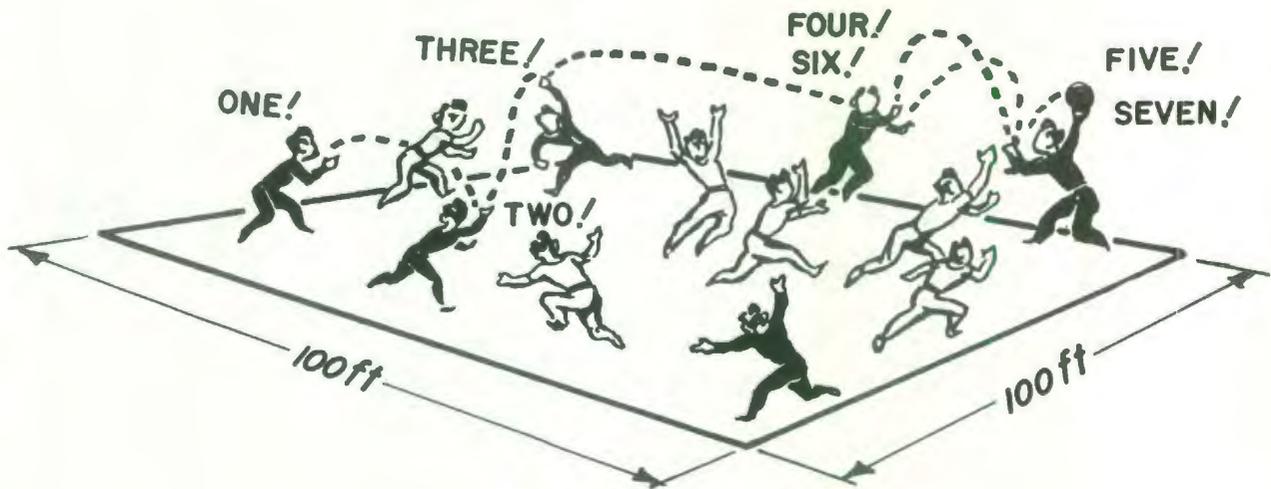


Figure 84. Keep away.

d. The Game. Divide the players into teams of five or six men. Put one team in the circle and arrange them in a file, each man grasping the player in front of him around the waist, forming a chain.

(1) Remaining teams form a circle around the chain and attempt to hit the end man with the ball. Players forming the circle may pass the ball around in any manner. The players in the chain attempt to keep the end man from being hit.

(2) Only the first man of the chain may use his hands to prevent the ball from striking

the end man. When the end man of the chain is hit, he leaves the game.

(3) Players then throw at the new end man, and continue until the entire team is eliminated. Each team in turn should go into the circle until all have had an opportunity to act as the chain.

e. Scoring. The team that stays in the circle for the longest time wins the game.

f. Variation. Count the number of direct throws necessary to eliminate the teams. The winning team is the team that requires the

greatest number of throws to eliminate all its members.

g. Variation. Do not play as a team game, but send five men into the circle forming a chain as above. When the end man is hit, he leaves the chain to take the place of the man who hits him. The man who hits him goes into the circle at the front of the chain.

318. Keep Away

a. Players. 2 to 20 men on each side (fig. 84).

b. Equipment. A basketball or soccer ball.

c. Area. Any space with boundaries. An area 100 feet by 100 feet is ideal.

d. The Game. Divide the group into two teams and mark them so that they may be easily distinguished. The game is started with a center jump as in basketball.

(1) The team that gets the ball passes it among the team members, attempting to pass it successfully ten times in succession. The other team attempts to get the ball.

(2) Running is permitted, but tripping, pushing, and pulling are not allowed. When the offensive team is guilty of one of these violations, the other team is given the ball. When the defensive team commits any of the above fouls, the offensive team is granted completion of the series of ten passes and a score is counted.

(3) Each time a team makes a successful pass, the player catching it calls the number of the catch. "One" is called on the first catch; "two" on the second, and so on.

(4) When the ball touches the ground or is caught by the opponents, all previous counts are disregarded and as soon as the team in possession makes a successful pass, the count starts again. After a score, the game is restarted by a center jump.

e. Scoring. A team counting ten consecutive catches wins one point. The team that first reaches a predetermined number of points wins the game.

319. Pushball

a. Players. 10 to 50 men on a side (fig. 85).

b. Equipment. A large pushball 5 to 6 feet in diameter.

c. Area. 240 to 300 feet in length, 120 to 150 feet wide. Mark a line 15 feet long in the middle of the field and parallel to the end lines.

Mark a line 45 feet on either side of this center line and parallel to it, extending it across the entire field. Mark another line 15 feet in from each end line and parallel to it, extending it across the entire field.

d. The Game. Four 10-minute quarters are played. Two-minute rests are given between quarters and 5 minutes between halves. The object of the game is to propel the ball over the opponent's goal line by pushing, rolling, passing, carrying, or any other way except kicking.

(1) The ball is placed on the center line with the opposing captains 3 feet from it. The rest of the players are all 45 feet from the ball, on their half of the field. On the referee's starting whistle, the captains immediately play the ball with their respective teams coming to their assistance.

(2) At quarter time, the ball remains dead for 2 minutes at the spot where it was when the quarter ended. At half-time the teams exchange goals. The play is then started as it was in the beginning.

(3) Players may use any means of interfering with an opponent's progress except striking and clipping (throwing the body across the back of an opponent's leg as he is running or standing). Legal use of force may be applied to all opponents whether they are playing the ball or not. For striking an opponent, the offender is removed from the game and his team penalized half the distance to their goal. The penalty for clipping is the same.

(4) When any part of the ball goes out of bounds, it is a dead ball or an out-of-bounds. The teams line up at right angles to the side lines and 3 feet apart at the point where the ball went out. The referee then tosses the ball between the teams.

(5) When, for any reason, the ball becomes tied up in one spot for more than 10 seconds, the referee declares the ball dead. The ball is then put into play as it is for an out-of-bounds situation.

e. Scoring. A goal is scored when the ball, or any part of it, is propelled across the opponent's end line. A goal counts five points. The team scoring a goal has the privilege of trying for a point after the goal. To try for this extra point, the ball is placed on the opponent's 5-

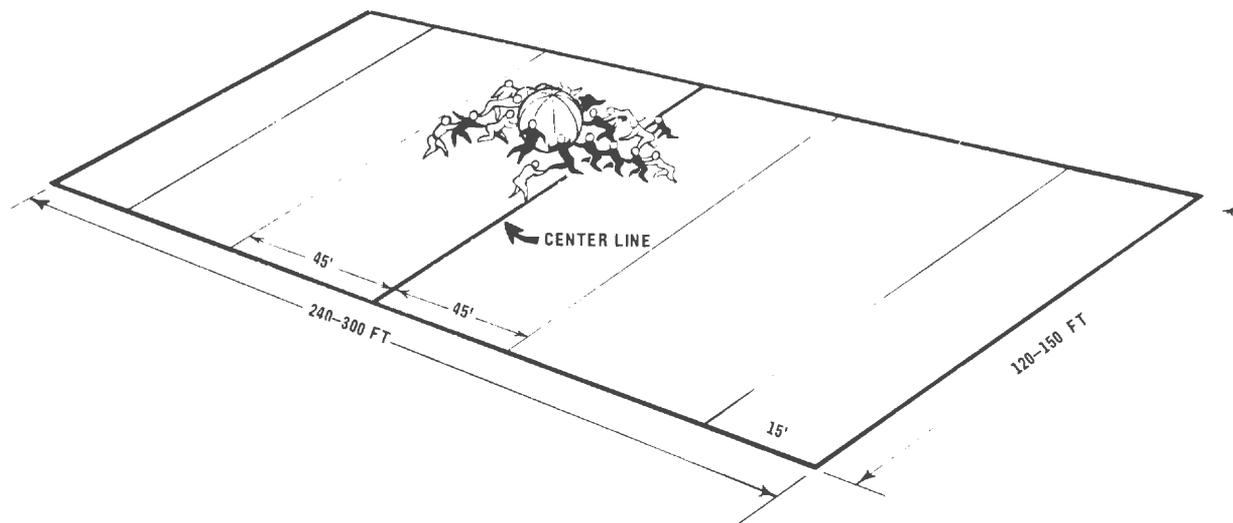


Figure 85. Push ball.

yard line. The teams line up across the field separated by the width of the ball. Only one man may have his hands on the ball; the member of the team who just scored is directly in front of the ball. On the referee's signal, the ball is put into play for 1 minute. If any part of the ball is driven across the goal line in this 1-minute period, the offensive team scores one point. The defending team may not score during the opponent's try for the extra point.

320. Line Rush

a. Players. Any number up to 50 on each side (fig. 86).

b. Equipment. None.

c. Area. A field, 75 by 100 feet.

d. The Game. One team lines up behind one goal line and the other in midfield. On the starting signal, the team standing behind the goal line seeks to cross the field to the other goal within 30 seconds, while the team in the center seeks to prevent it by catching and holding the runners. At the end of 30 seconds the teams change.

e. Scoring. Count the number of men crossing the far goal at the end of 30 seconds. After each team has had from three to five tries, the scores are added and the winner declared. A man scores one point when any part of his body is across the goal line.

321. Human Tug of War

a. Players. 10 to 20 on a team (fig. 87).

b. Equipment. None.

c. Area. 40 to 60 feet.

d. The Game. Draw a line in the center of the area. Divide the players into two equal teams; line them up in single file on opposite sides of the center line facing each other. Each man places his arms around the waist of the teammate in front of him. The two leaders of the opposing teams grasp each other around the waist. On signal, the teams try to pull each other over the center line within a 30-second time limit.

e. Scoring. The team pulled across the center line loses. If neither team is pulled over the center line, but one team breaks its file, that team loses the match.

f. Variation. Use a $\frac{3}{4}$ - or 1-inch rope and space the first man on each team 10 feet apart. The team pulled across the center line loses.

322. Master of the Ring

a. Players. Any number (fig. 88).

b. Equipment. None.

c. Area. A clearly marked circle large enough to contain all the players.

d. The Game. All the players stand inside the circle. At the signal, the teams attempt to throw each other out of the circle. All tactics are fair except unnecessary roughness. When any part of the body touches across the line,

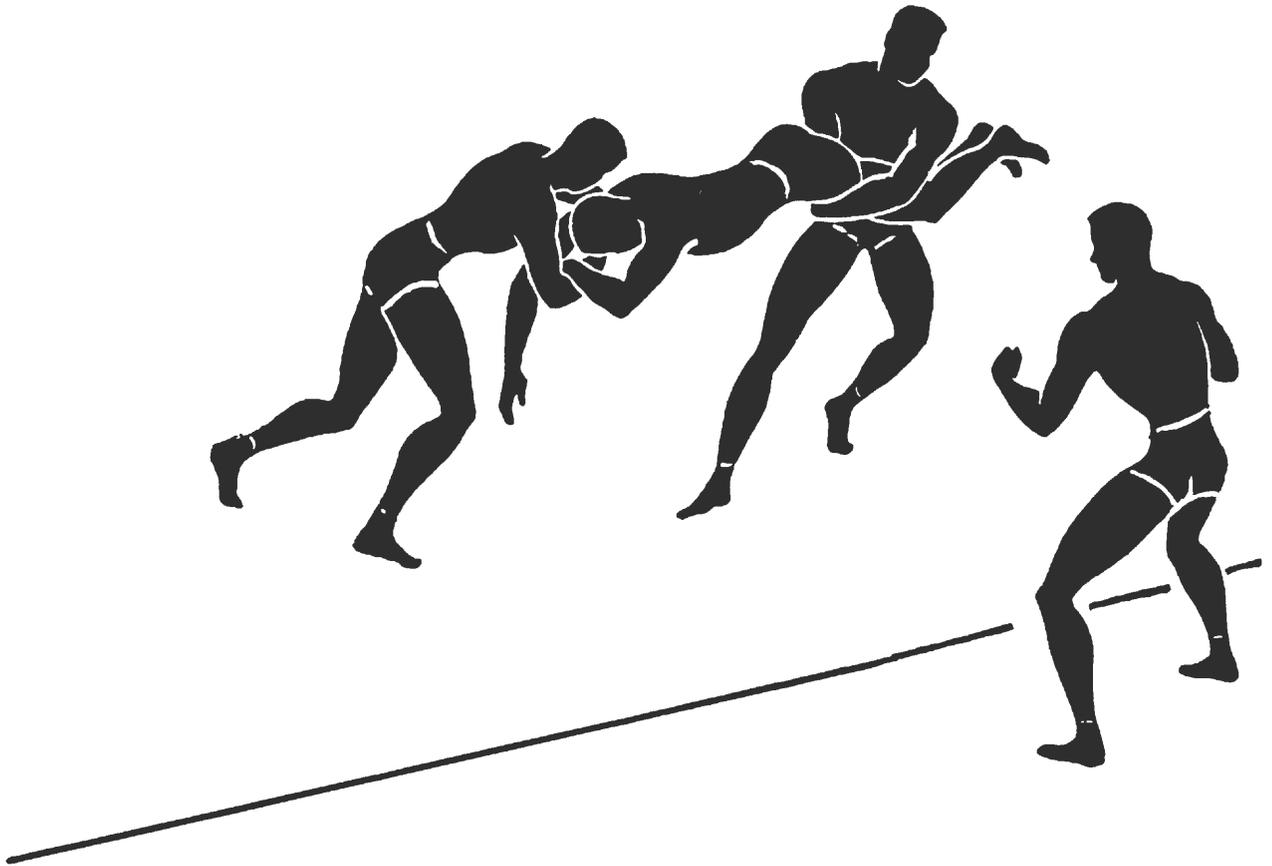


Figure 86. Line rush.

the player is out and leaves the circle at once. Several officials are needed to spot the players who cross the line.

e. Scoring. The player who remains in the circle when all the others are out is the master of the ring.

f. Variation. The players are divided equally into two teams. Each team is clearly marked. Upon signal, each team tries to throw the opponents out of the circle. The winning

team is the team that eliminates all the opponents from the circle.

g. Variation. The players are divided equally into two teams. Each team sends only one man into the circle. When one man has been forced out of the circle, the losing side only sends in another man. The team which eliminates all the opponents is the winner.

h. Variation. A pit, approximately 4 feet deep is used rather than a ring on the ground.



Figure 87. Human tug of war.



Figure 88. Master of the ring.

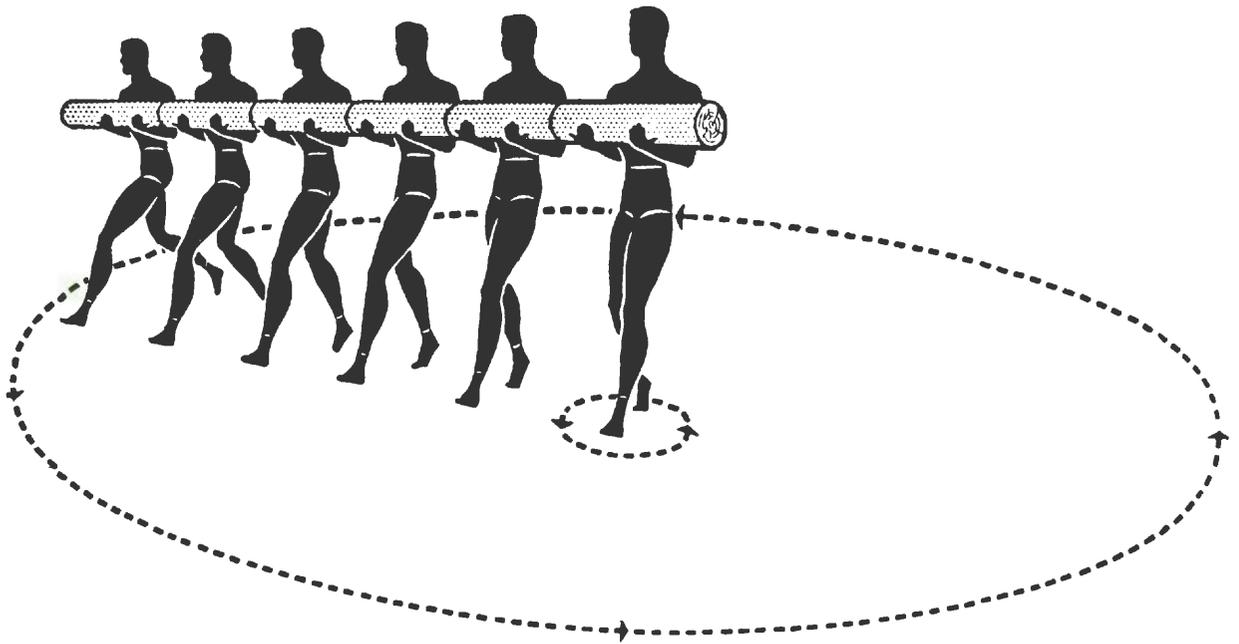


Figure 89. Log pivot circle.

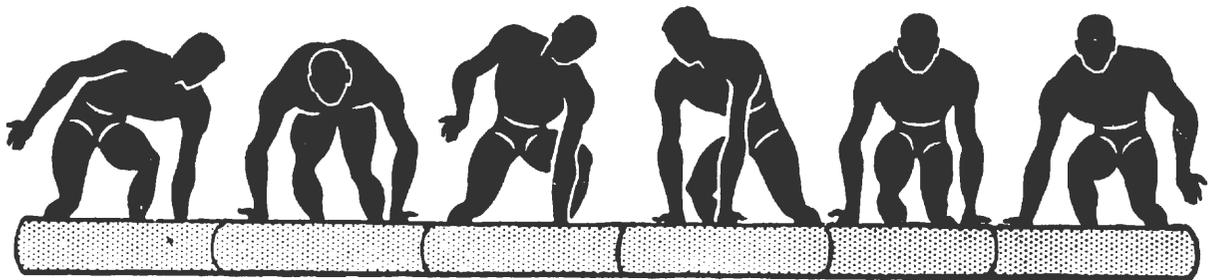


Figure 90. Rolling race.

The contest may then be used as an individual or team activity.

323. Log Pivot Circle

The log is held in the bend of the arms in front of the chest (fig. 89). At the commands, 1. CIRCLE RIGHT, 2. MOVE, the left flank man holds the pivot and the log is carried around 360°, back to the original position. This movement may also be performed to the left and at double time. Commands may be given such as: CIRCLE RIGHT, CIRCLE HALF-RIGHT, CIRCLE HALF-LEFT, and so on. The first team to complete the prescribed movement is the winner.

324. Rolling Race

Each team tries to roll its log a measured distance by pushing it (fig. 90) with the hands and driving the body forward with the legs. The first team to get the entire length of the log across the finish line wins.

325. Prone Push Contest

Two teams lie prone, facing each other with a log between them (fig. 91). Both teams place their hands against the log, keeping their arms straight. Then, by driving with the legs each team attempts to push the other a measured distance to the rear.

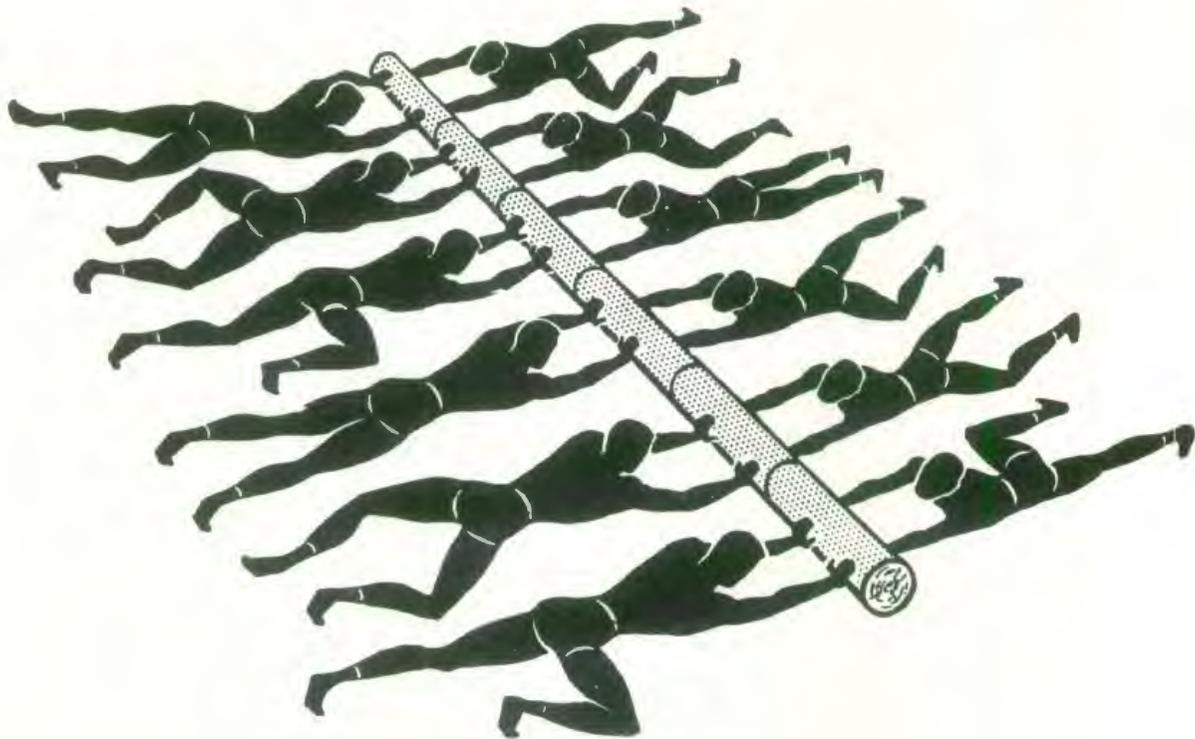


Figure 91. Prone push contest.

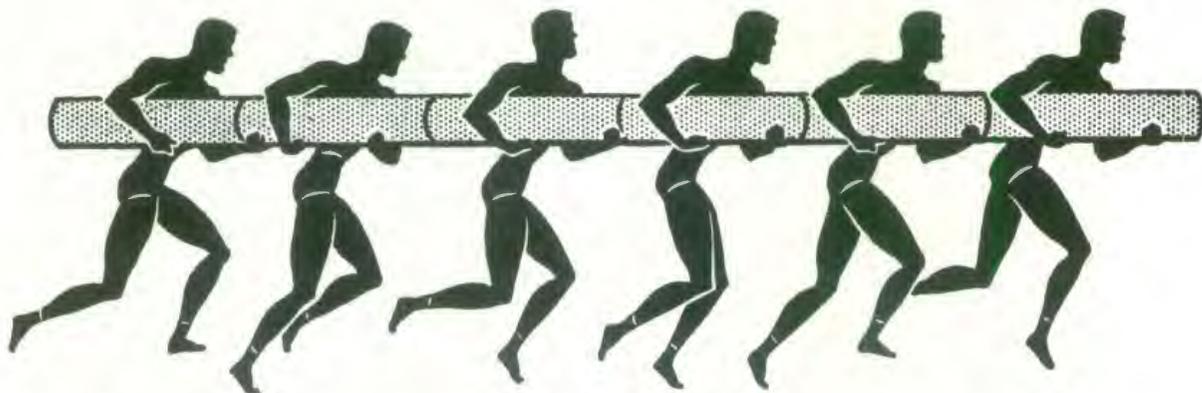


Figure 92. Shuttle relay race.

326. Shuttle Relay Race

This race is run by pairs of teams, each pair consisting of a Team A and a Team B (fig. 92). Team A members run 50 yards with the log

held under their right arms. At the distance line they give the log to Team B whose members bring it back to the starting line. The team pair finishing first is the winner.

CHAPTER 23

TEAM ATHLETICS

Section I. INTRODUCTION

327. Place in the Program

Team athletics deserve a prominent place in the physical training program because they contribute to the increased combat efficiency of the soldier. Because of the competitive nature of athletics and their natural appeal, the men take part in them with enthusiasm. Athletic teams formed at intramural and higher levels are a strong unifying influence and provide one of the best means of developing esprit de corps.

328. Preconditioning Necessary

Men must undergo conditioning prior to participation in athletics. Muscles, organs, joints, and ligaments not accustomed to stress and strain involved in sudden stops and starts, falls, body contact, rapid turns, prolonged running and the other rigors of athletic competition are subject to injury when not properly preconditioned. Although athletics should not be introduced until men are physically pre-

pared, there is still opportunity to engage in competition through lead-up contests. Men learn many of the skills required for athletics while participating in team contests (chap 22). For example, when the men play "keep away," a team contest, they are learning the skill of passing which is required in basketball.

329. Benefits of Athletics

Athletics are beneficial primarily in sustaining interest in the program and in maintaining a sustaining level of physical fitness. Conditioning activities should be continued and athletics considered as a supplement, and not a substitute for other types of conditioning activities. All of the desirable traits of physical fitness cannot be developed through athletics, yet the contribution is significant. For athletics to make a proper contribution to physical conditioning the sports selected must be vigorous.

Section II. BASKETBALL

330. Introduction

Basketball has enjoyed increased popularity and growth within the past few years. It should be comparatively easy for an instructor to create interest in basketball among military personnel, both for conditioning and recreational purposes. Few sports have the potentialities that basketball has for developing coordination, endurance, skill, teamwork, and the will to win. It is an excellent activity for the sustaining stage.

331. Basic Skills and Fundamentals

Men prefer to compete rather than practice,

yet many men need some instruction and practice to achieve satisfaction from participation. Some practice or brief instruction should be part of every beginning period when the sport is first introduced. The following basic skills should be practiced:

a. Shooting Baskets.

(1) *One-hand set shots.* Shoot from a balanced position. Keep both feet on the floor. Follow through.

(2) *Two-hand set shots.* Shoot from a balanced position and apply equal pressure on the ball with each hand. Keep both feet on the floor. Follow through.

(3) *Lay-ups.* Jump high, reach high before releasing the ball, spin the ball, using the backboard when possible.

(4) *Shooting while on move.* This is usually a one-hand shot. Shoot off opposite foot from the hand that releases the ball.

(5) *Free throws.* These are two-hand underhand throws and one-hand push shots. Put a slight backspin on the ball.

b. Ball-Handling.

(1) *Two-hand chest pass.* Step in the direction of the pass. Use a wrist action to release the ball with a backspin.

(2) *One-hand and two-hand bounce pass.* Step in the direction of the pass. Bounce the ball a reasonable distance in front of the receiver, putting a backspin on the ball with a wrist action.

(3) *One-hand baseball pass.* Step in the direction of the pass; throw as you would throw a baseball. This is used mostly for long passes.

(4) *Two-hand overhead pass.* Hold the ball above the head with the arms extended. Throw with a wrist action. This pass is used mainly to get the ball to the pivot man who is close to the basket.

c. Dribbling.

(1) *Changing hand with ball.* Only one hand may touch the ball at one time while dribbling. The hands may be alternated.

(2) *Change of pace.* Changing speed and direction while dribbling.

(3) *Dribbling exercise with eyes not directly on ball.* Change direction; change hands; keep the head up with the eyes directed toward possible passing or shooting situations.

d. Footwork.

(1) *Pivoting.* Give all men practice in pivoting; the pivotman or center may require special practice. One foot remains stationary while the opposite foot is mobile.

(2) *Individual defense.* Stress footwork and the position of the hands and body.

(3) *Check position of feet when shooting various types of shots.* Points to check: the position of balance, correct foot forward when in shooting position, and the distance between each foot.

332. Small Group or Team Practice

a. Man-to-Man Defense.

(1) *Switching.* Each defensive man is responsible for defending against a designated man, until a screen or block forces the defensive men to change defensive responsibility.

(2) *Nonswitching.* Each defensive man is responsible for a designated man with the defensive man going through or behind screens and blocks.

b. Man-to-Man Offense. Various types of offensive formations have been especially designed to combat man-to-man defense. Use textbooks written by professional coaches for technical knowledge.

c. Zone Defense. There are numerous variations of this type defense aimed at defending a restricted area in front of the basket. The defensive target is the ball, not the man.

d. Zone Offense. The zone offense forces the defense to adjust position, as a unit, rapidly and often. Zone offense is most effective when employing rapid movement of the ball within the defense area.

e. Defense Against Fast Break. Stress rebound work on the offensive team.

f. Fast Break Offense. Move down court into scoring or offensive territory quickly before the defense can get set.

333. Practice Drills

a. Keep-Away. Divide unit into two groups. Designate each individual's defensive responsibility by name or number. Use half of a basketball court as the playing area. The team in possession of the ball passes it among the team members until the defense gets possession of it. Basketball rules apply. Continue with each team taking turns as it gets possession of the ball.

b. Shooting Exercise. Divide unit into small groups. Each group has a ball. Designate the various positions on the floor where the shooting practice is to be done. Use a prearranged scoring method. Play numerous games, giving each group an opportunity to shoot from all positions on the floor.

c. Dribbling Exercise. Divide unit into two or three groups. Each group has a ball. Conduct a dribbling relay. Place obstacles for dribblers to avoid and designate the path each team will follow.

d. Defense Exercise. Use the two free throw circles and the restraining circle at center

court. Place five men around the outside of each circle. One man is in the center of each ring. It is the job of the man in the center to intercept or deflect the path of the ball which is passed from man to man by the men outside of the circle. No pass may be made to an adjacent man in the circle. When the man inside the circle succeeds in intercepting, deflecting, or touching the ball, the passer takes his place.

334. Facilities and Equipment

a. Facilities. In some sections of the country, outdoor facilities may be used, and they are easily constructed. The minimum dimensions of a court for competition are approximately

74 feet by 42 feet; maximum dimensions are 94 feet by 50 feet. Figure 93 shows a court and details of backboard construction.

b. Equipment. A basketball is the only required equipment. For highly organized competition, however, uniforms, special shoes, and other equipment may be required.

335. Rules

So-called college rules, or more correctly, The National Collegiate Athletic Association rules, are used in conducting basketball in the Army physical training program. Each year a new paperbound guide booklet is published and sold by the NCAA.

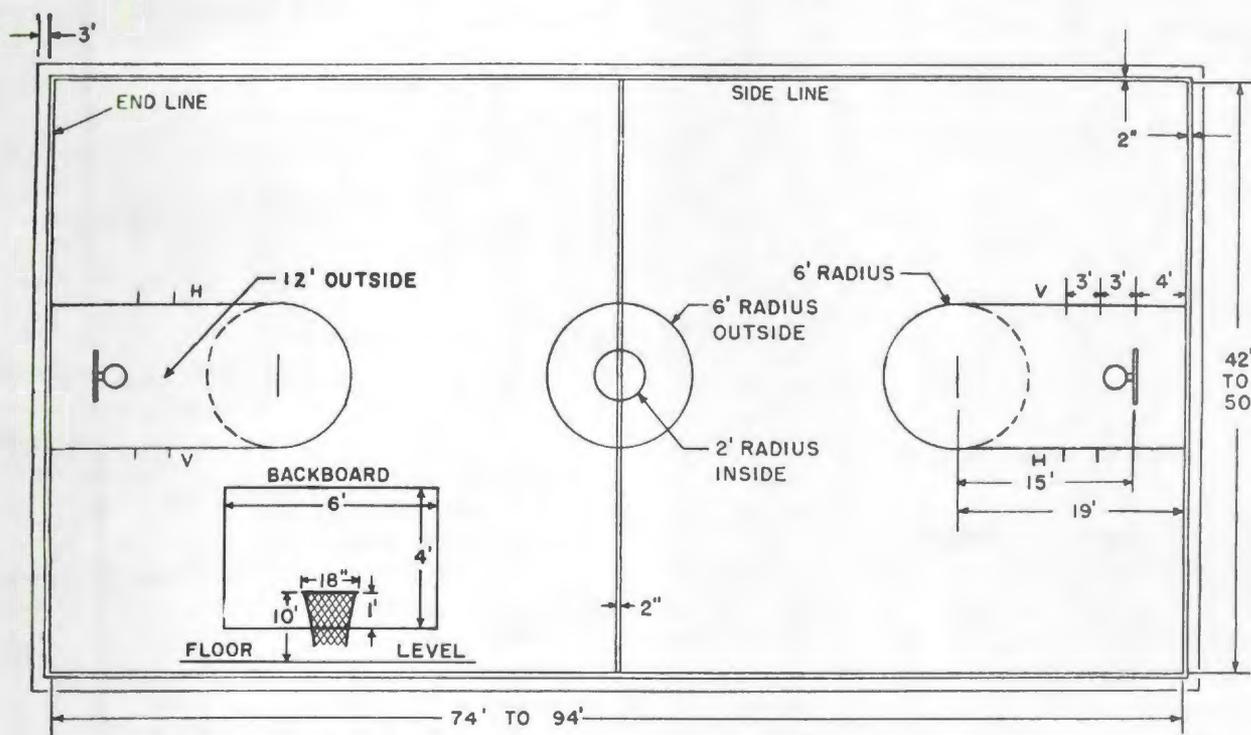


Figure 93. Basketball court and backboard.

Section III. CROSS-COUNTRY AND DISTANCE RUNNING

336. Introduction

Long distance running gives some benefits that cannot be obtained in the same degree from any other sport. It builds powerful leg muscles, increases the lung capacity, and develops endurance. For these reasons, cross-country and distance running should be included in the Army physical training program. These sports

require only a few miles of open space that is available at any Army station.

a. Short cross-country runs and middle-distance runs can be used to supplement other activities, particularly the team sports or the sports that develop precision or agility rather than endurance. Short cross-country runs can be scheduled once a week, gradually increasing

the distance as the physical condition of the men improves with other activities such as the conditioning exercises.

b. There is a common belief that long distance running is too strenuous, often resulting in permanent injury to the heart. While distance running may be harmful to the man who overdoes the sport when he is not in proper physical condition, the conditioned, supervised distance runner is in no greater danger of strain than the man engaged in any other athletic activity.

337. Cross-Country Runs

Cross country is a distance run held on a course laid out along roads, across fields, over hills, through woods, and on any irregular ground. A flat cinder or dirt track is not a suitable surface for cross-country running. Opinions vary as to the proper length of a cross-country course. Some runs are as long as 6 miles. Five miles used to be accepted as standard, but recently there has been a tendency to shorten the run to 4 or even 3 miles. Only if time is available for a full season cross-country program should the physical training instructor try to train men for a 5-mile course. If time is limited, or if cross-country running is being used to supplement other activities, the 3-mile course is long enough for most men.

338. Place in the Program

Cross-country should be used only after the men reach the sustaining stage of conditioning. This type of running should then be scheduled occasionally to provide variety in the program. Cross-country running has the advantage of allowing mass participation. Interest can be stimulated by putting the runs on a competitive basis.

339. Basic Skills

a. Running form in cross-country races varies with the terrain and the contour of the course. On a flat course use the same form as used in a 1-mile run. The body lean should be between 5 and 10 percent. A lean of more than 10 percent places too much weight and strain on the legs. A lean of less than 5 percent is retarding. In running uphill, lean forward at a greater angle and cut the length of the stride.

To gain an added lift, swing the arms high and bring the knees up high on each stride. Do not slow down after reaching the crest of the hill, but resume the flat course stride as soon as the ground levels off.

b. The runner's stride will naturally lengthen in going downhill, but he should not stretch his stride or increase his pace too much. There is less control and less balance when running downhill; therefore, there is greater danger of turning an ankle and/or falling. Keep the arms low, swinging freely, and use them as a brake and as a balance. Coming onto the flat from a downhill run, do not slow down but float or coast into a flat course pace. More energy will be used in attempting to brake the speed of descent than in maintaining the faster pace and slowing down gradually.

c. Run on the toes or the balls of the feet rather than on the heels. Landing on the heels throughout a 3- to 5-mile course would jolt the entire body. Runners who have a tendency to strike the heel on the ground should wear a cotton or sponge rubber pad in the heels of their shoes, to prevent injury to their heels.

340. Practice Methods

a. Conditioning is more essential to distance and cross-country running than to any other sport. Championship distance running depends on stamina, and stamina can be developed only through constant training. A man of only average ability can become an outstanding distance runner by steady and careful training. Hiking is the best method for getting into condition before the season opens. Long walks build up the leg muscles. During the first month of the season, training should be gradual, starting with short distances, and increasing day by day. At first the legs will become stiff, but the stiffness gradually disappears if running is practiced for a while every day. To prevent strain, it is essential to limber up thoroughly each day before running.

b. In the mass training of a large group, leaders should be stationed at the head and the rear of the column and they should make every effort to keep the men together. After determining the abilities of the men in cross-country running, it is advisable to divide the unit into three groups. The poorest conditioned group is started first, the best conditioned

group, last. The starting time of the groups should be staggered so that all of them come in about the same time.

c. In preliminary training, the running is similar to ordinary road work in that it begins with rather slow jogging, alternating with walking. The speed and distance of the run is gradually increased. As the condition of the men improves, occasional sprints may be introduced. At first the distance run is from $\frac{1}{2}$ to 1 mile. It is gradually increased to 2 or 3 miles. On completing the run, the men should be required to continue walking for 3 or 4 minutes before stopping to permit a gradual cooling off and return to normal physiological functioning.

341. Facilities and Equipment

a. A course 3 or 5 miles long should be measured and marked by one of the three methods specified below:

(1) Directional arrows fastened to the top of a tall post and placed at every point where the course turns. Such signs should also be placed at every other point where there may be doubt as to the direction of travel.

(2) A lime line placed on the ground over the entire course.

(3) Flags. They should be clearly visible to the runners.

(a) A red flag indicates a left turn.

(b) A white flag indicates a right turn.

Section IV. SOCCER

343. Introduction

a. Soccer is one of the best athletic activities for developing endurance, agility, leg strength, and a great degree of skill in using the legs. The game is the most popular sport in Europe and is the national game of many Central and South American countries. In recent years it has become popular in the United States.

b. A soccer ball is the only equipment needed for the game, and the men can learn to play it easily. The men do not need much skill to participate, but the amount of skill they can develop is unlimited.

344. Place in the Program

Soccer should be introduced into the physical

(c) A blue flag indicates the course is straight ahead.

b. There should be at least one stopwatch (preferably three) for timing the runners.

342. Rules

a. *Team Members.* A cross-country team shall consist of seven men, unless otherwise agreed. In dual meets, a maximum of 12 men may be entered, but a maximum of seven shall enter into the scoring.

b. *Scoring.* First place shall score 1 point, second place 2, third place 3, and so on. All men who finish the course shall be ranked and tallied in this manner. The team score shall then be determined by totaling the points scored by the first five men of each team to finish. The team scoring the least number of points shall be the winner.

Note. Although the sixth and seventh runners of a team to finish do not score points toward their team's total, it should be noted that their places, if better than those of any of the first five of an opposing team, serve to increase the team score of the opponents.

c. *Cancellation of Points.* If less than five (or the number determined prior to the race) finish, the places of all members of that team shall be disregarded.

d. *Tie Event.* In case the total points scored by two or more teams result in a tie, the event shall be called a tie.

training program during the latter part of the slow improvement stage and used as a competitive activity in the sustaining stage. It is primarily a spring or fall sport. Any level field is suitable for competition. The boundaries for the soccer field are similar to the dimensions for a football field (fig. 94). Goalposts are essential to the game, but they are easily constructed and are usually of a temporary nature, so that they may be removed when not in use.

345. Basic Skills

a. *Passing.* Passing with the feet is the primary means of moving the ball. Short passes are easier to control and can be executed more

accurately than long ones. Emphasis should be continually placed on the skill of passing.

b. Dribbling. The ball is dribbled by a series of kicks with the inside or outside of the foot. Do not kick with the toe. Keep the head over the ball when kicking and propel it only a short distance at a time. Keep it close to the feet. When the ball gets very far from the feet while dribbling, an opposing player can easily take it away.

c. Instep Kicking. The instep kick, which is the basic soccer kick, is made from the knee joint instead of from the hip as in football. The toe does not come in contact with the ball. It is pointed downward and the instep (the shoe laces) is applied to the ball with a vigo-

ground as the foot strikes the ball. The ball should be well under the body at the time of contact. This kick is used for short passes and for dribbling.

e. Foot Trapping. The foot trap is the method of stopping the ball by trapping it between the ground and the foot. Place the sole of the foot on top of the ball at the instant it touches the ground, but do not stamp on it. Keep the foot relaxed. This is an effective way to stop a fast moving ball.

f. Shin Trapping. The shin trap is a method of stopping the ball with the shins. Stand just forward of the spot where the ball should strike the ground and allow it to strike the shins in flight or on the bounce. Use either one

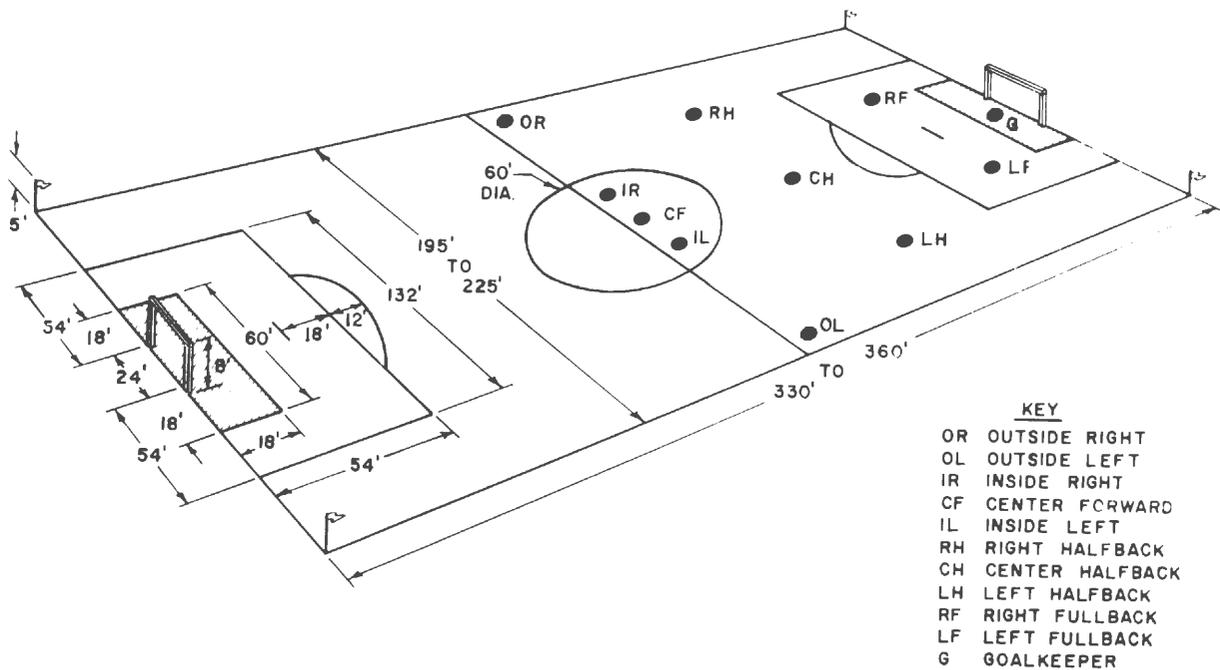


Figure 94. Soccer field with positions.

rous snap from the knee. For a stationary ball, the nonkicking foot is alongside the ball at the time of the kick. For a ball rolling toward the kicker, his nonkicking foot stops short of the ball; for a ball rolling away from the kicker, his nonkicking foot stops beyond the ball. The kicker must keep his eye on the ball until it leaves his foot.

d. Inside-of-the-Foot Kicking. The ball is kicked with the inside of the foot and the leg is swung from the hip. The toe is turned outward and the sole of the foot is parallel with the

or both legs from the knee down, but do not allow the ball to strike the toe.

g. Body Trapping. The body trap is another method of gaining control of a ball in flight. Intercept the ball with any part of the upper body except the arms and hands. Keep the body relaxed and inclined toward the ball. To keep the ball from bouncing, move backward from it as it strikes the body. This will drop the ball at the feet in position for dribbling or passing.

h. Heading. Heading is the technique for

changing the direction of the flight of a ball by butting it with the head. Tense the neck muscles and jump up to meet the ball. Butt the ball with the forehead at about the hairline to reverse its direction; use the side of the head to deflect it to the side. Always watch the ball, even during contact.

346. Offensive and Defensive Positions

The forwards usually play on the offensive half of the field and remain in a W formation (fig. 95). The fullbacks usually play on the defensive half of the field. The halfbacks are the backbone of the team; they move forward on the offense and back on defense. The goalkeeper almost always remains within a few feet of the goal.

347. Drills to Develop Basic Skills

Drills of kicking, passing, shooting, trapping, heading, and dribbling are necessary to teach the basic skills before attempting team competition.

b. The player propels the ball by kicking it with the feet or any part of the legs, by butting it with his head, and by hitting it with any portion of his body except his arms or hands.

c. The goalkeeper is the only man allowed to use his hands on the ball, but he may only handle the ball in the goalkeeper's area. The term "hands" includes the whole arm from the point of the shoulder down.

d. A goal is made by causing the ball to cross completely the section of the goal line lying between the uprights and under the cross bar.

e. Each goal scores one point for the team scoring the goal.

f. The penalty for a foul committed anywhere on the playing field (except by the defensive team in its penalty area) is a free kick awarded to the team opposing the team that committed the foul.

●
**OUTSIDE
LEFT**

●
**CENTER
FORWARD**

●
**OUTSIDE
RIGHT**

●
**INSIDE
LEFT**

●
**INSIDE
RIGHT**

BASIC FORMATION FOR FORWARDS

Figure 95. Basic formation for soccer forwards.

a. A team circle formation may be used for practice of these skills. Form as many circles as there are teams.

b. Several drills are recommended for developing skill in kicking, passing, dribbling, and shooting (fig. 96).

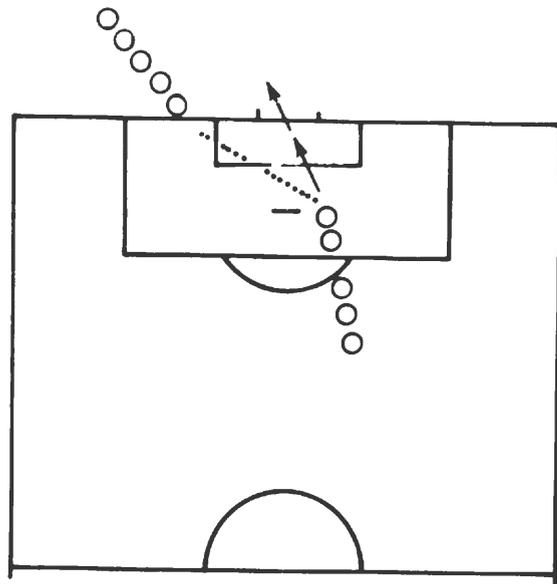
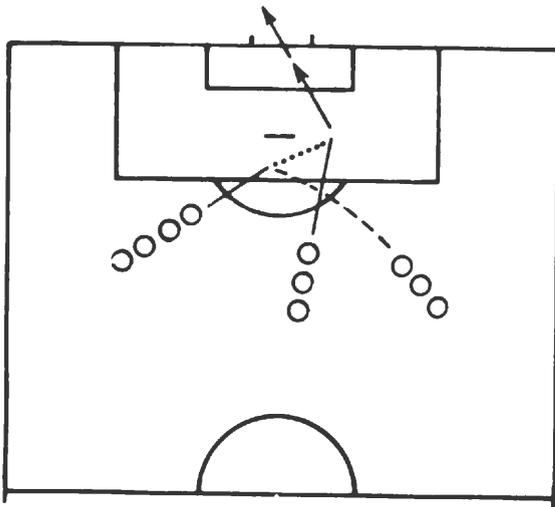
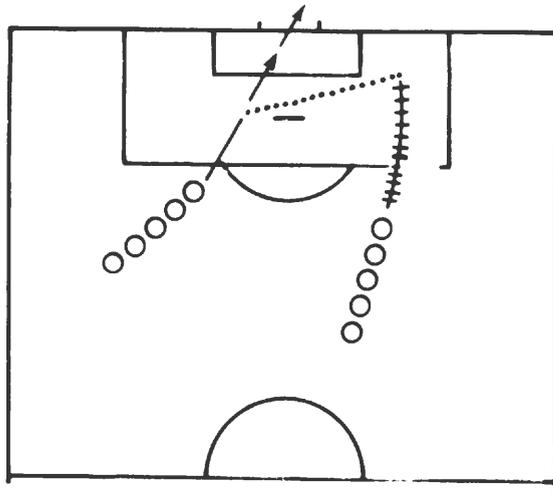
348. Abridged Rules

a. A soccer team is composed of 11 players (fig. 94).

g. All opponents must be at least 10 yards from the ball when a free kick is taken.

h. The penalty for a foul committed by the defensive team in its penalty area is a penalty kick.

i. A penalty kick is a free kick at the goal from the spot 12 yards directly in front of the goal. The only players allowed within the penalty area at the time of the kick are the kicker and the defending goalkeeper.



KEY

- BALL PASSED ON GROUND
- - - - - BALL KICKED IN AIR
- → → BALL SHOT AT GOAL
- ##### DRIBBLING
- RUNNING
- ○ ○ PLAYERS

Figure 96. Soccer drills.

j. An official game consists of four quarters.
k. Teams change goals at the end of every quarter.

l. In the event of a tie, an extra quarter is played.

m. After a ball has crossed a side line and

has been declared out of play, it is put back into play by a free kick from the side line by a member of the team opposing the team that caused the ball to be out of bounds. The kick is taken from the point at which the ball crosses the side line as it goes out of bounds.

n. When the offensive team causes the ball to go behind the opposing team's goal line, excluding the portion between the goalposts, the opposing team is awarded a goal kick—a free kick taken within the goal area that must come out of the penalty area to be in play.

o. When the defensive team causes the ball to go behind its own goal line, excluding the portion between the goalposts, the opposing

team is awarded a corner kick—a free kick taken by a member of the offensive team at the quarter circle, at the corner flagpost nearest to where the ball went behind the goal line. The flagpost must not be removed.

p. The game is started and, after a goal has been scored, is resumed by placing the ball in the center of the midfield line. Players must be on their side of the line until the ball is kicked. The ball must be kicked forward and must move at least 2 feet to be legal. The first kicker may not touch the ball twice in succession at the kickoff. The opposing team must be 10 yards from the ball until it moves.

Section V. SOFTBALL

349. Introduction

a. Softball is a game that is well known in America. It has become one of the principal on- and off-duty physical training activities in the Army.

b. Softball is patterned after baseball, but has different advantages because it requires less equipment and is easily adapted to every age group. It requires a smaller play area (fig. 97); the ball is larger and softer; and the bats are lighter, making them easier to handle. Because of its popularity, a majority of the men in the Army have a general understanding of softball and its rules.

350. Place in the Program

a. Softball is a sustaining type of activity. It does not require continuous exertion on the part of each player; however, it is an enjoyable and occasionally strenuous game that should be included in the physical training program.

b. When a group already knows something about pitching, fielding, and batting, the instructor should give only a brief review of these fundamental skills, but place more emphasis on the rules and offensive and defensive strategy. Most of the time devoted to softball should be used for organized competition.

351. Organization of Instruction

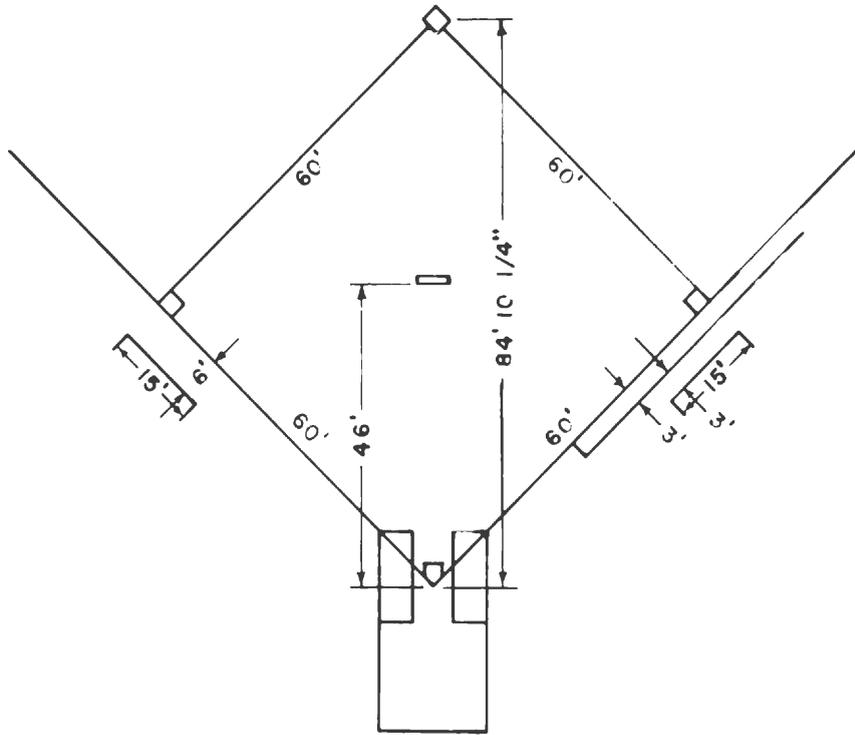
When instruction is given on the basic skills and techniques, the men should first be shown the correct method of executing each skill. The

class should then be divided into groups to practice. Ample time should be provided to familiarize each individual with the technique of playing each position as well as the basic skills necessary to play every position. When this instruction is completed, the class should be divided into teams for organized competition.

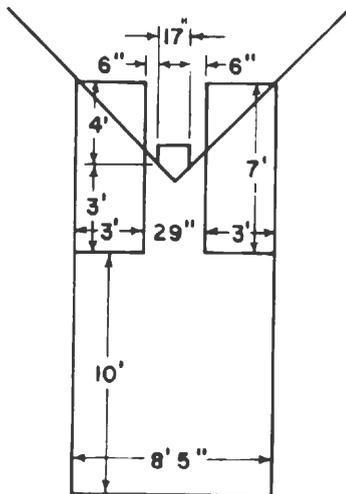
352. Basic Skills

a. Batting. Select a bat that balances easily; the hands grasp the handle at a point where the butt is neither too heavy nor too light. For a right-handed batter, the left foot points at about a 45° angle toward the pitcher, and the right foot points toward homeplate. The feet are about 8 inches apart. The head and eyes face the pitcher and the bat is over the right shoulder, hands away from the body. The batting position is slightly to the left rear of the center of the plate. In swinging, keep the eyes on the ball, twisting at the waist. As a result of the twist, the arms will swing automatically. The power of the swing is developed with a snap of the wrists and the extension of the arms in the followthrough.

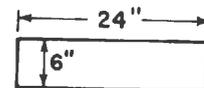
b. Bunting. The stance for bunting is the same as for batting. When the ball leaves the pitcher's hand, immediately bring the bat from over the shoulder, moving the right hand slightly up the handle, until the bat is directly over the plate. Rotate the body so that it faces the pitcher. The feet are comfortably apart. Meet the ball squarely, absorbing the shock



A. FIELD



B. HOME PLATE DETAIL



C. PITCHERS RUBBER

Figure 97. Softball field.

with the arms. Hold the edge of the bat perpendicular to the direction in which the ball is to be bunted.

c. Base Running. Upon hitting the ball, the runner must start quickly without watching where the ball goes. He should get to first base as fast as possible and be ready to continue running at the coach's direction. Speed is the most important factor, but running the shortest distance between bases is also essential.

d. Sliding. Use the hook slide going into the base, with the body relaxed, extending either foot in a sweeping motion, touching the toe to the bag.

e. Catching. Assume the knee bend position, with the upper arms parallel to the ground, forearms vertical, and palms down. As the ball strikes the mitt, grasp it with the bare hand. On high pitches, cup the fingers of the bare hand to prevent injury. On low pitches, extend the palms toward the pitcher with the thumbs down. Always avoid pointing the fingers toward the pitcher. The catcher must not sacrifice accuracy for speed in throwing to bases and must learn through experience when he can throw a player out at base.

f. Pitching. Pitching, to a large degree, determines a team's defensive strength, and pitching can only be developed through practice. To hold the ball, grasp it loosely with the fingers, the index, middle, and third fingers on one side and the thumb and fourth finger on the other side. The most effective manner of pitching is the windmill pitch. To start the windup, face the homeplate with both feet on the rubber. The ball is held in front with both hands. Raise the left foot to the rear as the right arm swings backward. The body pivots to the right, the left hand is extended and balances the motion, and the head and eyes remain on the catcher's glove. When the right arm reaches the 9 o'clock position, step forward with the left foot directly toward homeplate, swing the arm forward and twist the body to the left. With a snap of the wrist on the underhand swing release the ball, and follow through. Control is very important and must be gained through practice.

g. Infield Playing. An infielder must anticipate at all times what he should do in case he has to play the ball. On batted ground balls he should play the ball to his front. Field each

ground ball with the feet apart, hands well out in front. When the ball strikes the glove, secure it with the bare hand. The hands and arms should relax and the arms should be drawn backward toward the right hip preparatory to the throw.

h. Outfield Playing. An outfielder should be alert and fast and able to judge the ball so he can get in the best position to catch it. It takes practice to be a successful fielder. To catch a flyball, he extends the arms forward, forming a cup with the hands. He keeps his eyes on the ball until he has firm possession of it. He catches ground balls in the same way as the infielder (*g* above).

353. Drills

a. Pitching and Catching. Divide the class into two lines 50 feet apart; one side will pitch, the other will catch. Make corrections on form for both pitching and catching. Emphasize form and control. Change over.

b. Infield Play. Divide the class into 7-man groups. Place each group in a separate area, simulating (if necessary) the softball diamond (fig. 97). Designate a first, second, and third baseman, and a shortstop. Choose one man to hit balls, one to catch at homeplate, and another to retrieve balls which go into the outfield due to error. The player who hits the balls calls a play such as first base, double play, or throw it home. He then hits a ground ball to one of the infielders who, in turn, carries out the prescribed play. Demand enthusiasm and hustle. Change over occasionally and allow each man to play each position.

c. Outfield Play. Place seven men in the outfield, but do not designate definite positions. Have a player hit both fly and ground balls to the field. Use one player to catch balls at homeplate. After each ball has been played, have it relayed back to the hitter. Change positions so that each outfielder has an opportunity to play the various outfield positions.

d. Base Running. Divide the class into 15-man groups. Time each runner in a complete circuit of bases. Stimulate competition. Critique each runner.

e. Hitting and Bunting. Divide the class into regular 9-man teams. Place one team in the field to shag balls. The players on the other team take turns at bat, hitting ten balls each.

On the last pitch, they lay down a bunt and run to first base, trying to beat the throw. Change over.

354. Rules

Most men know something of softball rules to the extent needed for competition. However, for complete official rules, see the Amateur Softball Association Official Guide.

Section VI. SPEEDBALL

355. Introduction and General Description

Speedball is a game that offers vigorous and varied action with plenty of scoring opportunities. It is easy to learn and provides spontaneous fun. Little equipment is needed—a ball is all that is absolutely necessary. Speedball combines the kicking, trapping, and intercepting elements of soccer; the passing game of basketball; and the punting, dropkicking, and scoring pass of football.

a. Two teams of 11 men each play the game under official rules, but any number of players may successfully constitute a team. An inflated

ground, it cannot be picked up with the hands or caught on the bounce, but must be played as in soccer until it is raised into the air directly from a kick; then the hands are again eligible for use.

c. When the ball goes out of bounds over the side lines, it is given to a player of the team opposite that forcing the ball out, and is put into play with a basketball throw-in; when it goes over the end line without a score, it is given to a player of the opposing team who may either pass or kick it onto the field.

d. When two opposing players are contesting the possession of a held ball, the official

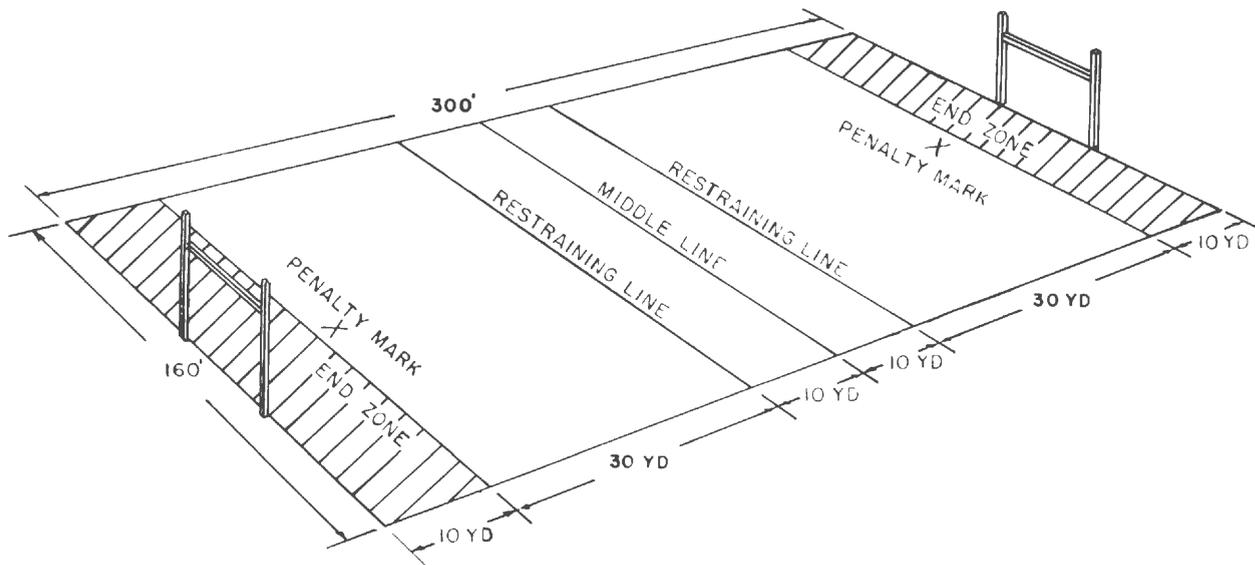


Figure 98. Speedball field.

leather ball, usually a soccer ball, is used. The playing field is a football field with a football goal post at each end (fig. 98).

b. The game starts with a soccer-type kick-off. The kicking team tries to retain possession of the ball and advance it toward the opposite goal by passing or kicking it. Running with the ball is not allowed, so there is no tackling or interference. When the ball touches the

tosses the ball up between them as in basketball.

e. Points are scored by kicking the ball under the crossbar of the goalposts, dropkicking the ball over the crossbar, completing a forward pass into the end zone for a touch-down, or by kicking the ball under the crossbar of the goalposts on a penalty kick.

356. Place in the Program

Speedball, like soccer, should be introduced into the physical training program during the latter part of the toughening stage, and used as a competitive activity in the sustaining stage. It may be played any time the weather permits, but it is primarily a spring or fall activity.

357. Basic Skills

a. The skills of kicking, passing, heading, and trapping from soccer, and skills of punting, dropkicking, and forward passing from football are combined with passing, receiving, and pivoting from basketball to make up the skills of speedball.

b. *Kickups and Lifts.* The kickup is a play in which a player lifts the ball into the air with his feet so that he may legally play the ball with his hands. The kickup is generally used to make the transition from ground play to aerial play. The technique of making the play depends upon whether the ball is rolling or stationary. To kick up a ball rolling or bouncing toward the player, the foot is held on the ground with the toe drawn down until the ball rolls onto the foot, then the foot is raised, projecting the ball upward. If the ball is stationary, the player rolls it backward with one foot then places the foot where the ball will roll onto it. He can then lift the ball with that foot. If a ball is rolling away from the player, he should stop it with a foot and play it as a stationary ball. There is also a method of raising the ball by standing over it with a foot on either side. He presses his feet against the ball and jumps into the air, propelling the ball into his hands.

358. Offensive Positions and Strategy

The positions of the players in speedball are much the same as in soccer. However, some of the positions are designated by different names. There are eleven players on each team. The forward line is composed of five players, the right end, right forward, center, left forward, and left end. The second line consists of right halfback, fullback, and left halfback. In the next line is the right guard and left guard. The player who defends the goal is the goal guard. The strategy employed in speedball during offensive play is very similar to that of soccer.

359. Defensive Play

There are two types of defensive formations in speedball: man-for-man and position defense. Man-for-man defense is recommended for beginning players.

360. Abridged Rules

a. *The Field.* It is 360 feet long and 160 feet wide (a regulation football field).

b. *Players.* Eleven on a team. The goal guard has no special privileges.

c. *Time.* 10-minute quarters, 2 minutes between. Ten minutes between halves. Five minutes for extra overtime periods. (Begin first overtime by a jump ball (*g* below) at center, same goals; change goals in the event of a second overtime period).

d. *Winner of Toss.* The winner of the toss has the choice of kicking, receiving, or defending a specific goal.

e. *Starting Second and Fourth Quarters.* The ball is given to the team that had possession at the end of the previous quarter, out of bounds, as in basketball.

f. *Half.* The team that received at the start of the first half, kicks off at the beginning of the second half.

g. *The Start of the Game.* The game is started with a kickoff from the middle line (50-yard line), both teams being required to remain back of their respective restraining lines until the ball is kicked. The ball must travel forward.

h. *Fly and Ground Ball.* The most characteristic feature of the playing rules of speedball is the differentiation between a flyball (or aerial ball) and a ground ball. A player is not permitted to touch a ground ball with his hands and must play it as in soccer. A flyball is one that has risen into the air directly from the foot of a player (example: punt, dropkick, placekick, or kickup). Such a ball may be caught with the hands provided the catch is made before the ball strikes the ground again.

i. *Kickup.* A kickup is a ball that is so kicked by a player that he can catch it himself. A bounce from the ground may not be touched with the hand because it has touched the ground since being kicked. This rule prohibits the ordinary basketball dribble, but one over-

head dribble (throwing the ball into the air and advancing to catch it before it hits the ground) is permitted.

j. Out of Bounds. If a team causes the ball to go out of bounds over the side lines, a free throw-in (any style) is given to the opposing team. When the ball goes over the end line without scoring, it is given to the opponents who may pass or kick from out of bounds at that point.

k. Tie Ball. In case two players are contesting the possession of a held ball, even in the end zone, a tie ball is declared and the ball is tossed up between them.

l. Kickoff. The kickoff is made from any place on or behind the 50-yard line. Team A (the kicking team) must be behind the ball when it is kicked. Team B must stay back of its restraining line (10 yards distance) until the ball is kicked (penalty—a violation). The ball must go forward before A may play it (penalty—violation). Kickoff out of bounds to opponents at that spot. A kickoff touched by B and going out of bounds, no impetus added, still belongs to B. A kickoff, in possession and control of B and then fumbled out of bounds, belongs to A at the spot. A fieldgoal from kickoff (under crossbar, etc.) scores 3 points.

m. Scoring Methods.

(1) *Fieldgoal (3 points).* A soccer-type kick, in which a ground ball is kicked under the crossbar and between the goalposts from the field of play or end zone. (A punt going straight through is not a fieldgoal for it is not a ground ball. The ball must hit the ground first.) A dropkick from the field of play that goes under a crossbar does not count as a fieldgoal. A dropkick from the end zone that goes under the crossbar counts as a fieldgoal; if it goes over the crossbar, it is ruled as a touch back.

(2) *Dropkick (2 points).* A scoring dropkick must be made from the field of play and go over the crossbar and between the uprights. The ball must hit the ground before it is kicked (usually with the instep).

(3) *End goal (1 point).* This is a ground ball which receives its impetus (kicked or legally propelled by the body) from any player, offensive or defensive, in the end zone and passes over the end line but not between the goalposts.

(4) *Penalty kick (1 point).* This is a ball kicked from the penalty mark that goes between the goalposts and under the crossbar. The penalty mark is placed directly in front of the goal at the center of the goal line.

(5) *Touchdown (1 point).* A touchdown is a forward pass from the field of play completed in the end zone. The player must be entirely in the end zone. If he is on the goal line or has one foot in the field of play and the other in the end zone, the ball is declared out of bounds. If a forward pass is missed, the ball continues in play, but must be returned to the field of play before another forward pass or dropkick may be made.

n. Substitutions. Substitutions may be made any time when the ball is not in play. If a player is withdrawn, he may not return during that same period.

o. Timeout. Three legal timeouts of 2 minutes each are permitted each team during the game.

p. Fouls.

(1) *Personal (four disqualify).* Kicking, tripping, charging, pushing, holding, blocking, or unnecessary roughness of any kind, such as running into an opponent from behind. Kicking at a flyball and thereby kicking an opponent.

(2) *Technical.* Illegal substitution, more than three timeouts in a game, unsportsmanlike conduct, unnecessarily delaying the game.

(3) *Violation.* Traveling with the ball, touching a ground ball with the hands or arms, double overhead dribble, violating tie ball, and kicking or kneeling a flyball before catching it.

(4) *Penalties.* (The offended player shall attempt the kick.)

	<i>Penalty</i>	<i>Location</i>
Personal	.... In field of play	..... 1 kick with no followup.
Technical	.... In field of play	..... 1 kick with no followup.
Violation	.... In field of play	..... Out of bound to opponent.
Personal	.... In end zone	..... 2 kicks with followup on last kick.
Technical	.... In end zone	..... 1 kick with followup.
Violation	.... In end zone	..... 1 kick with followup.

q. Summary of Fouls.

(1) Fouls in the field of play allow no followup while fouls in the end zone always allow followup.

(2) On penalty kicks, with no followup, only the kicker and goalie are involved.

(3) On penalty kicks, with a followup, the kicking side is behind the ball and the defending side behind the end line or in the field

of play. No one is allowed in the end zone or between the goalposts except the goal guard. The kicker must make an actual attempt at goal, and he cannot play the ball again until after another player plays it.

Section VII. TOUCH FOOTBALL

361. Introduction

Touch football has become a major Army game on the lower levels of competition. Considering its similarity to football and yet its comparative simplicity, it is easy to understand the popularity of the game. The modification of regulation football rules for touch football eliminates the necessity for much special equipment, training, and professional leadership. Touch football encourages participation, reduces the number of injuries, and simplifies the teaching of fundamental rules, techniques, and skills.

362. Place in the Program

Touch football is an excellent conditioning activity. It may be used in the latter part of the toughening stage, and during the sustaining stage of physical conditioning. It should be played in the fall when the interest in football is at its peak. Any level field can be used. Goalposts are desirable but not absolutely necessary. The field should conform as nearly as possible to the regulation size (fig. 99).

363. Organization of Instruction

Most men know something about football, but not all have had an opportunity to play. Several short periods should be devoted to the instruction of all men in the basic fundamentals found in paragraph 364. A desirable method is to give 5 to 10 minutes of instruction at the beginning of each football period and follow it by actual play.

364. Basic Skills

a. Offensive Stance. Touch football emphasizes speed; therefore, a high offensive stance should be used to facilitate a fast getaway. The feet should be about shoulder width apart and parallel, knees bent, thighs just above the horizontal and back nearly parallel with the ground. The head and eyes are up and the right hand is extended straight downward, the

fingers curled under, the thumb toward the rear. The left arm rests on the left thigh.

b. Defensive Stance. This type stance may be similar to the offensive stance or somewhat higher to allow for better visibility and free use of the hands to ward off blockers. The same principles of balance, body control, and vision used in the offensive stance are applicable to the defensive stance.

c. Shoulder Block. Touch football rules do not permit the blocker to have both feet off the ground at the same time (flying block); therefore, the blocker should maintain a wide base for shoulder, upright, or cross body blocks. For the shoulder block, the hands should be close to the chest, the elbows raised sideward, the feet under the body and widely spread, the head up, and the buttocks low. Upon contact, the feet should be moved rapidly in short, choppy steps to force the body forward, thus keeping the shoulder in contact with the component.

d. Upright Block. The upright block is useful in the open field and is executed by the player while standing nearly erect. The feet are widely spread, and the head is erect. The arms are raised and the hands are placed on the chest, forearms forward to contact the opponent. Due to the nature of the block, the opponent is contacted above the waist.

e. Cross Body Block. In performing the cross body block, the blocker uses the hip to contact the opponent, usually in the area of the thighs. The execution of this type of block requires the blocker to throw his head, shoulders, and arms past the target area, thus bringing his hip into contact with his opponent. Then, assisted by movement of the hands and feet which are in contact with the ground, he forces the opponent backward or down. The shoulder, upright, or cross body blocks may be used in the line or in the open field.

f. Ball Carrying. The first point to stress in

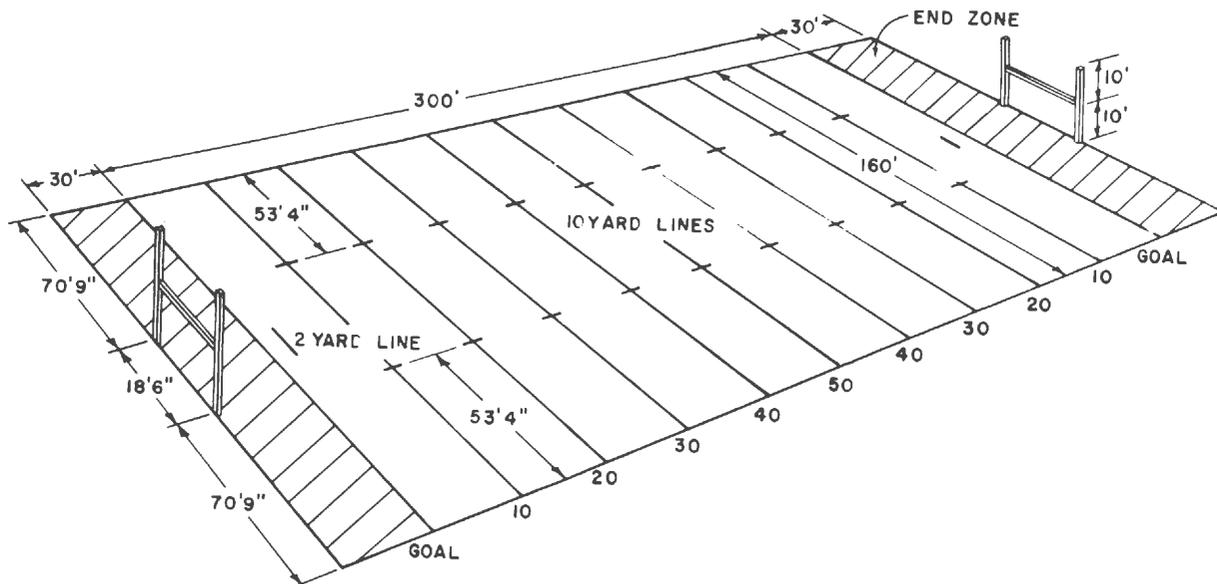


Figure 99. Touch football field.

ball carrying is the grip of the ball. The ball is placed in the arm with its long axis parallel to the forearm. It is held firmly and close to the body. The hand grips the lower point of the ball with the fingers spread to form a firm grip. It is difficult to teach the fine points of ball carrying in a few hours of instruction. Stress the principles. Teach runners to carry the ball in the arm away from the opponent. The runner should be cautioned to follow his interference and to keep his head up, so he can avoid his opponents.

g. Forward Passing. Forward passing is one of the principal means of advancing the ball in touch football. Teach the method of gripping or holding the ball with the fingers spread on the laces and toward the end of the ball, cocking his arm with the hand holding the ball close to the head and the wrist rotated so that the rear point of the ball is pointing toward the head. The ball is delivered with a baseball catcher's peg motion, by extending the arm and imparting a spiral to the ball. To make a successful forward pass, it is usually best for the passer to have the feet spread comfortably and in contact with the ground, the free hand extended to aid the balance. He throws the ball to a spot where the receiver can catch it without breaking his stride. Do not allow beginners to attempt jump passes, as the successful throw-

ing of this type of pass requires the skill of an experienced forward passer.

h. Pass Receiving. To catch a forward pass requires the receiver to keep his eyes on the ball, to run to the spot where he can reach the ball, to catch it without breaking stride, and to take it out of the air by relaxing the hands as the ball strikes. In receiving a pass over the shoulder, the little fingers are facing, with the thumbs outward and all fingers spread. In catching a pass while facing the passer, the receiver should catch a high pass with the thumbs facing and the little fingers out, and a low pass with the little fingers facing and the thumbs pointing outward.

365. Drills to Develop Fundamentals

It is recommended that the time available for instruction in the fundamentals be used in teaching the following skills: stance, shoulder block, cross body block, forward passing, and pass receiving.

a. Stance Drill. Use the extended rectangular formation (app B). Demonstrate the stance and tell the men they will execute the drill by the numbers. At the count of one, place the feet in position. At the count of two, bend the knees and trunk. At the count of three, lean forward and place one hand on the ground. (For the proper technique of assuming the

stance, see para 364). After checking for errors and making corrections, command *UP* and execute the drill again. Have the men do this several times before progressing to the next drill.

b. Blocking Drills. All the blocks may be practiced by forming the class into two lines facing one another and having the men pair off. Explain the drill, demonstrate the block desired, and designate one line as blockers and the other as opponents. After several practice blocks, have the blockers become the opponents and the opponents become the blockers. During the course of the drill, emphasize the three phases of blocking: the approach, contact, and followthrough.

c. Forward Passing Drill. Form the class in groups of ten men each. The groups form two lines with the men about 10 feet apart and the two lines 10 to 15 yards apart. Using at least one ball to a group, practice grip, balance throwing with a spiral, and followthrough. The ball is thrown by each man, in turn, to the next man in the opposite line who catches it and throws.

d. Passing and Receiving Drill. Each of the groups is formed as for the drill outlined in *c* above. One man, the center, is stationed between the two files with the ball. One file is designated as passers and the other as receivers. The center snaps the ball to the first passer. He passes to the first receiver who runs down the field at the snap of the ball. The receiver catches the pass and returns the ball to the center. Upon his return, the receiver joins the "passer" file and the passer joins the "receiver" file. This rotation continues until all men have an opportunity to throw and receive forward passes.

e. Other Drills. If time permits, other fundamental drills may be included, such as snapping the ball from center, kicking, lateral passing, and other individual skills of a specialty nature.

366. Offensive Formations and Play

a. A 9-man team is recommended. Three offensive formations (fig. 100) are suggested for this size team. Of the three formations illustrated, the double wing-back is the recommended for touch football.

b. To complete the instruction in offensive play, it will be necessary to insure that some

member of the team can perform the individual specialties. These special skills are passing the ball from center, punting, free kicking for kickoffs, backfield pivots, handoffs, and so on.

c. Men like to develop their own plays and should be encouraged to do so. Time must be made available for them to practice such plays before using them in a game.

367. Defensive Play

The class should be shown several defensive formations. Four different ones are illustrated for the 9-man team (fig. 101). The selection of a defense depends upon the opponent's offense. The 4-2-2-1 and the 5-1-2-1 are better pass defense formations than the 4-3-2 and the 5-2-2. The latter formations are weak "down the middle." However, the 4-3-2 and 5-2-2 are stronger against a running attack. If fewer men are employed on a team, the defense could be altered by eliminating either linemen or backs, as required.

368. Rules

It is important that the participants know the rules that govern touch football. Official National Collegiate Athletic Association football rules shall govern all plays except those special rules pertinent to touch football, as stated in the following subparagraphs.

a. Rule I—Field and Equipment.

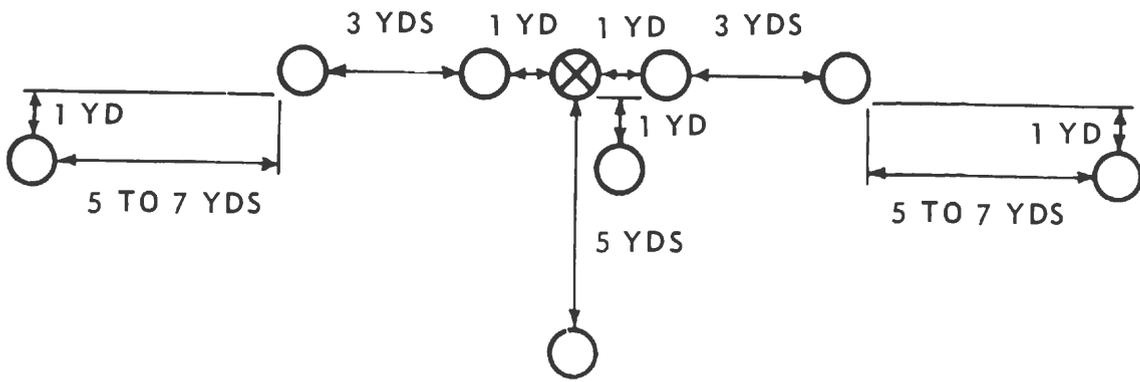
(1) *Section 1—Field* (fig. 99). The game shall be played on a regulation football field with goalposts. When space is limited, the dimensions of the field may be reduced to 300 feet long by 120 feet wide.

(2) *Section 2—Uniforms.* Distinctive jerseys, shorts, sweat suits, or trousers, and basketball shoes or regulation footwear may be worn. Pads, helmets, and cleated shoes are not authorized.

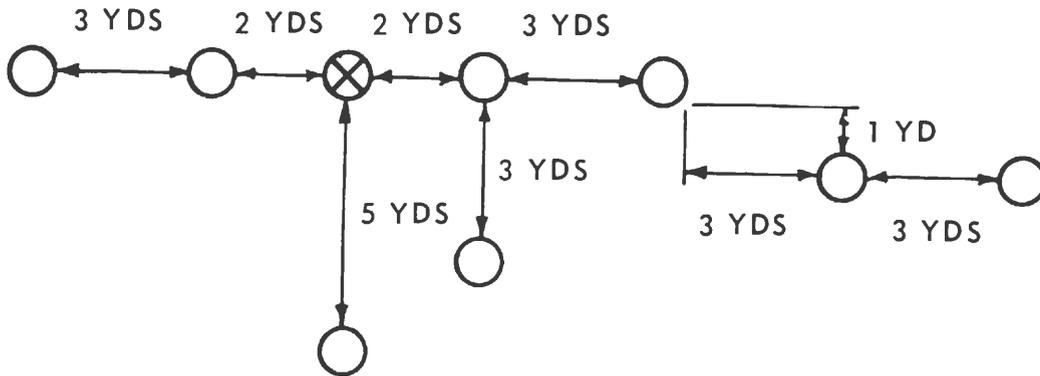
b. Rule II—Length of Game.

(1) *Section 1—Periods.* The game shall be played in four periods, each 10 minutes in length, with a 1-minute interval between the first and second and the third and fourth periods; and with a 10-minute interval between the second and third periods.

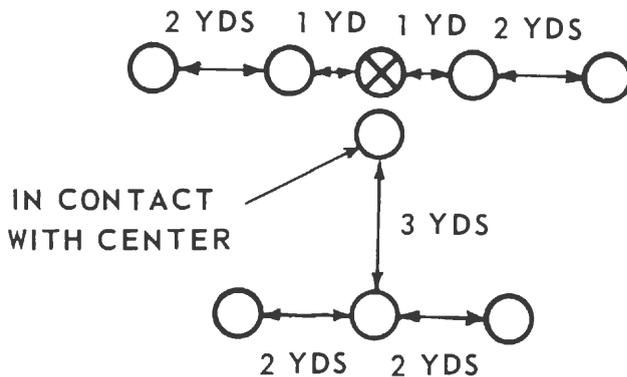
(2) *Section 2—Contest.* By mutual agreement of opposing coaches or captains, before



9-MAN DOUBLE WING



9-MAN SPREAD FORMATION (RIGHT)

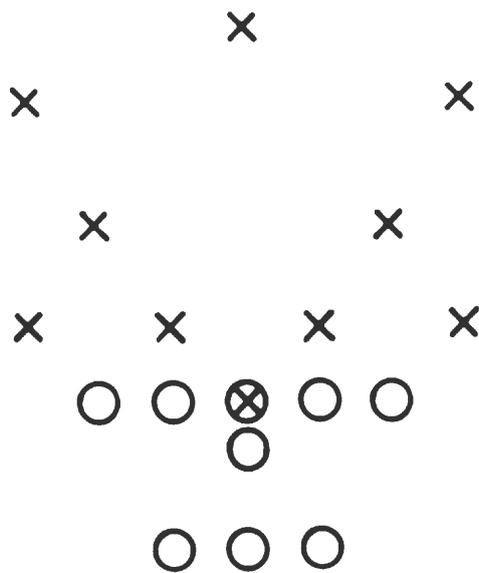


9-MAN "T" FORMATION

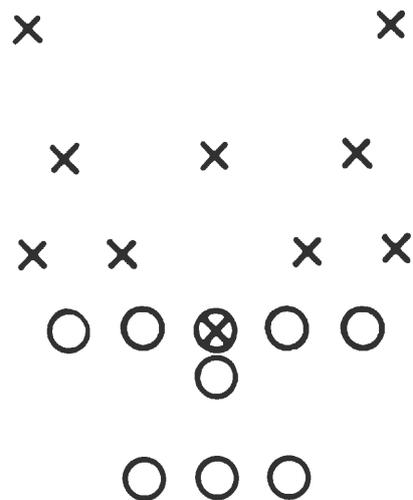
Figure 100. Offensive formations, touch football.

the start of contest, the length of the periods may be shortened or lengthened.

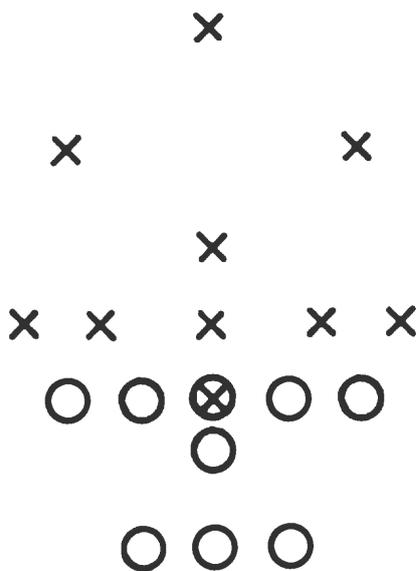
(3) Section 3—Time out. Time out shall be taken—



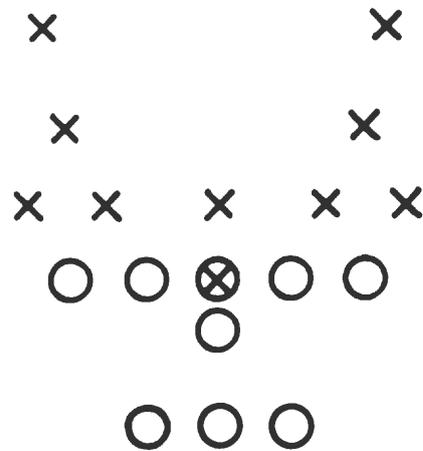
4-2-2-1 DEFENSE



4-3-2 DEFENSE



5-1-2-1 DEFENSE



5-2-2 DEFENSE

Figure 101. Defensive formations, touch football.

- (a) After a touchdown, fieldgoal, safety, or touchback.
- (b) During a try for a point.
- (c) After an incomplete forward pass.
- (d) When the ball goes out of bounds.
- (e) During the enforcement or declination of penalties.

c. Rule III—Players and Substitutes.

(1) *Section 1—Players (9-man game).* Each team shall consist of nine players. The offensive team shall have a minimum of five players on the scrimmage line when the ball is snapped.

Note. The following diagram designates the position of the players:

```

END    GUARD    CENTER    GUARD    END
          QUARTERBACK
          HALFBACK    HALFBACK
          FULLBACK
  
```

(2) *Section 2—Players (6-man game)* Each team shall consist of six players. The offensive team shall have a minimum of three players on the scrimmage line when the ball is snapped.

Note. The following diagram designates the position of the players:

```

END        CENTER        END
  HALFBACK    FULLBACK    HALFBACK
  
```

(3) *Section 3—Substitutions.* Unrestricted substitutions may be made when—

- (a) The ball is dead.
- (b) The clock is running, provided substitutions are completed and the ball is snapped within 25 seconds after the ball is ready for play.

d. Rule IV—Playing Regulations.

(1) *Section 1—Starting.* Starting the game and putting the ball in play after any score shall be as prescribed by the NCAA Football Rule Book, with exception of rule IV, sections 2 and 3.

(2) *Section 2—Kickoff.* The receiving team, in a 9-man game, shall have three players within 5 yards of its own restraining line until the ball is kicked.

(3) *Section 3—Restriction.* In a 6-man game, the only restriction on the receiving team is that all players must remain back of their own restraining line until the ball is kicked.

(4) *Section 4—Fumbled ball.* A ball that is fumbled and touches the ground during a run, kick, or lateral pass play, may not be advanced by either team. The ball may be touched and recovered by any player. It shall be dead and in possession of the player who first touches it after it strikes the ground.

Note. Players shall be warned against diving on fumbled balls and may be penalized for unnecessary roughness.

(5) *Section 5—Fumbled ball or lateral pass.* A fumbled ball or lateral pass, intercepted or recovered before it touches the ground, may be advanced by any player.

(6) *Section 6—Downed ball by legal touch.* The player in possession of the ball is downed and the ball is dead when such player is touched by an opponent with both hands simultaneously above the waist and below the head.

(7) *Section 7—Forward passing.* One forward pass may be made during each scrimmage play from behind the passer's scrimmage line.

(8) *Section 8—Eligible receivers.* All players of offensive and defensive teams are eligible to receive forward passes. Two or more receivers may successively touch a forward pass.

e. Rule V—Fouls and Penalties. Use of hands and arms, for both offense and defense, are prescribed in NCAA Football Rule Book.

Section VIII. VOLLEYBALL

369. Introduction

a. Volleyball is a popular sport. The game entails much physical activity, yet it is not strenuous. It is, therefore, a game for young and older men alike, for beginners and for skilled players. It may be played indoors or outdoors on any type of terrain. As an informal activity, volleyball can be played by any number of men; as an organized activity, it

provides, as few other sports do, a game for 12 men to play in a limited area.

b. While volleyball requires no great skill to play, it does permit a high degree of proficiency. A man naturally gets more enjoyment when he knows the game and plays it well. For this reason, instruction in the basic skills should be provided.

370. Organization

Usually a 10- to 15-minute period of instruction followed by scrimmage, during the first three or four classes, is enough to teach the basic skills, rules, and techniques of volleyball. More time can be given to teaching basic skills, if available, but the emphasis is on competitive play rather than on formal instruction. It is best to lecture and demonstrate to the entire class, then divide the class into smaller groups for practice. For drills and scrimmages, divide the class so that there will be from 12 to 24 men to each court. One court may be used for instruction by allowing 12 players at a time to execute the drill while the other class members observe, act as coaches, or retrieve balls. After the instruction phase of training has been completed, divide the class into 6-man teams. Organize the teams on the basis of ability. All teams should be as nearly equal as possible.

371. Place in the Program

Volleyball may be used occasionally as a competitive activity during the sustaining stage. It is a year-round sport, but it should be included in the physical training program only when it is impractical to conduct a more strenuous activity. It is an excellent off duty activity.

372. Basic Skills

a. Passing the Low Ball. A ball that is lower than the waist is one of the easiest to hit, but it is also a frequent cause of fouls: holding or carrying the ball. The best position for handling a low ball is to have the feet staggered, knees flexed, and arms flexed at the elbows and rotated so the thumbs are pointing outward, the palms up. When the fingers contact the ball, the entire body reacts in a lifting motion. The arms and hands swing upward in a scooping action. It is important that the fingers, not the palms, contact the ball, and that the ball is batted, not thrown.

b. Passing the High Ball. The chest pass is the most effective method of playing the ball. To receive the ball, the feet are staggered, knees are fixed, and the body is tilted forward. The elbows are raised sideward to a point in line with the shoulders. The wrists are extended in line with the forearm and the arms, wrists, and hands are rotated inward. To pass the ball, the hands are chest high, thumbs

pointing inward. The fingers are flexed, forming a cup, allowing them to contact the ball. On contact with the ball, the wrists are snapped while the fingers and elbows are pushed upward, sending the ball upward. A high ball is much easier to handle than a low one.

c. The Underhand Serve. Take a position behind the back line facing the net, left foot forward, holding the ball in the palm of the left hand. The left knee is flexed, the right knee is straight. Swing the right arm back and at the same time move the left hand (holding the ball) across the body in line with the right hip. Then swing the right arm forward hitting the ball off of the left hand with the palm of the right hand, raising the hips and arching the back in the same motion. Be certain to swing the right arm in a straight line, or the ball will be difficult to control.

d. Placement of the Serve. When the opposition is in formation, the server should try to place the ball in the right or left back area, and not near the net.

e. Setup. A setup is a ball hit into the air near the net by one player, so a teammate may hit or "spike" it sharply downward into the opponent's court. The chest pass is the best pass to use. The ball is sent approximately 10 feet into the air toward the spiker so it will descend from 4 to 20 inches from the net.

f. Spiking. The spike is a leap into the air and a sharp downward hitting of the ball into the opponent's court. A spiker must be able to spring easily from the floor, judge the movement of the ball, and strike it with a downward movement of his arm. To jump from the floor, step off with one foot and jump with the other. Stand with the right or left side to the net, facing the setup man. Much depends upon the setup man to place the ball in the proper position. The spiker jumps into the air and strikes the ball above its center so as to drive it downward. A snapping movement of the arm and wrist will drive the ball forward and downward with power and control. Aim for a weak spot in the opponent's defense.

g. Blocking. The block is a technique of defense used to prevent a spiker from driving the ball across the net. It is an attempt by one or more defensive players at the net to block a hard hit shot by using the force of the ball to

send it immediately back into the opponent's court. An effective block is for forwards on the defensive team to spring into the air at the time of the spike, placing both hands and arms in the expected path of the ball. An effective block tends to upset the offense and presents another element for the spiker to worry about. To be effective, the blocker must anticipate the path of the ball and time his block with the spike.

373. Drills to Develop Basic Skills

a. Passing. Divide the class into 24-man groups. Have them form a circle and begin passing a ball around the circle trying to prevent it from touching the floor. Another method is to divide the group with 12 men on each side facing the net. Form four ranks per side, with the first ranks passing the ball back and forth over the net until a pass is incomplete. Then have the second rank move up. Place the groups in a regular playing formation concentrating only on passing, using both the chest pass and the low pass.

b. Serving. Divide the men into two groups—one line to act as servers, the other as retrievers. Change over frequently giving each man a chance. When the men control the serve, have each server try to place the ball in the various areas of the court.

c. Spiking. Have two files on one side of the court facing the net. One file is the spiking line, the other is the setup line. One man from each file moves up to the net at one time. The spiker tosses to the setup, the setup sets the ball up for spiker, and the spiker drives it over the net. Rotate the files.

374. Offensive Play

a. Each member of a good offensive team should—

- (1) Be able to serve.
- (2) Know the capabilities and weaknesses of each of his teammates.
- (3) Have an understanding of all offensive plays.
- (4) Be able to analyze the opponent's weaknesses.
- (5) Always know what area of the court he is responsible for.
- (6) Be ready to "back up" a teammate receiving the ball.

b. The big offensive power is the spiker. It is also necessary, however, to build a well-balanced team that can serve, pass, and "setup."

375. Defensive Play

The reception and handling of serves and spikes is the primary duty of the team on defense.

a. Receiving the Serve. The forwards move to the rear of their area. The left and right backs cover the rear, the center back plays slightly forward of the other two backs.

b. Blocking. The block is made by the center forward and either the right or left forward. The forward not executing the block must cover the position left vacant.

376. Abridged Rules

a. The volleyball court is 30 feet wide by 60 feet long (fig. 102).

b. The top of the net is 8 feet high.

c. A volleyball team consists of six players.

d. A match consists of the best two out of three games.

e. The first team scoring 15 points wins the game, provided that they have two points more than their opponents.

f. A deuce game is a game in which both teams score 14 points. The game is continued until one team obtains a 2-point advantage over the other.

g. Only the serving team can score. If the serving team commits a fault, it loses the serve to the opposing team.

h. The team receiving the ball for service rotates one position in a clockwise direction.

i. The ball is put into play by serving from behind the back line.

j. A served ball touching the net results in the loss of the serve. At any other time during play, a ball touching the net is still in play.

k. The ball is out of play when it touches the ground or goes outside one of the boundary lines.

l. All line balls are good.

m. The players must hit or bat the ball; they may not throw, lift, or scoop it.

n. A player may not touch the ball with any part of the body below the knees.

o. A player may not play (touch the ball twice in succession. In receiving a hard-driven spike, a defensive player may make several

contacts with the ball even if they are not simultaneous. All such contacts, however, must constitute one continuous play, and all must be above the knees.

p. The ball may be touched no more than three times on one side of the net before being returned across the net to the opposing team.

q. A player must not touch or reach across the net.

r. A player may not cross the line under the net; he may touch it, however.

s. For complete official volleyball rules, see the United States Volleyball Association: Volleyball Official Guide.

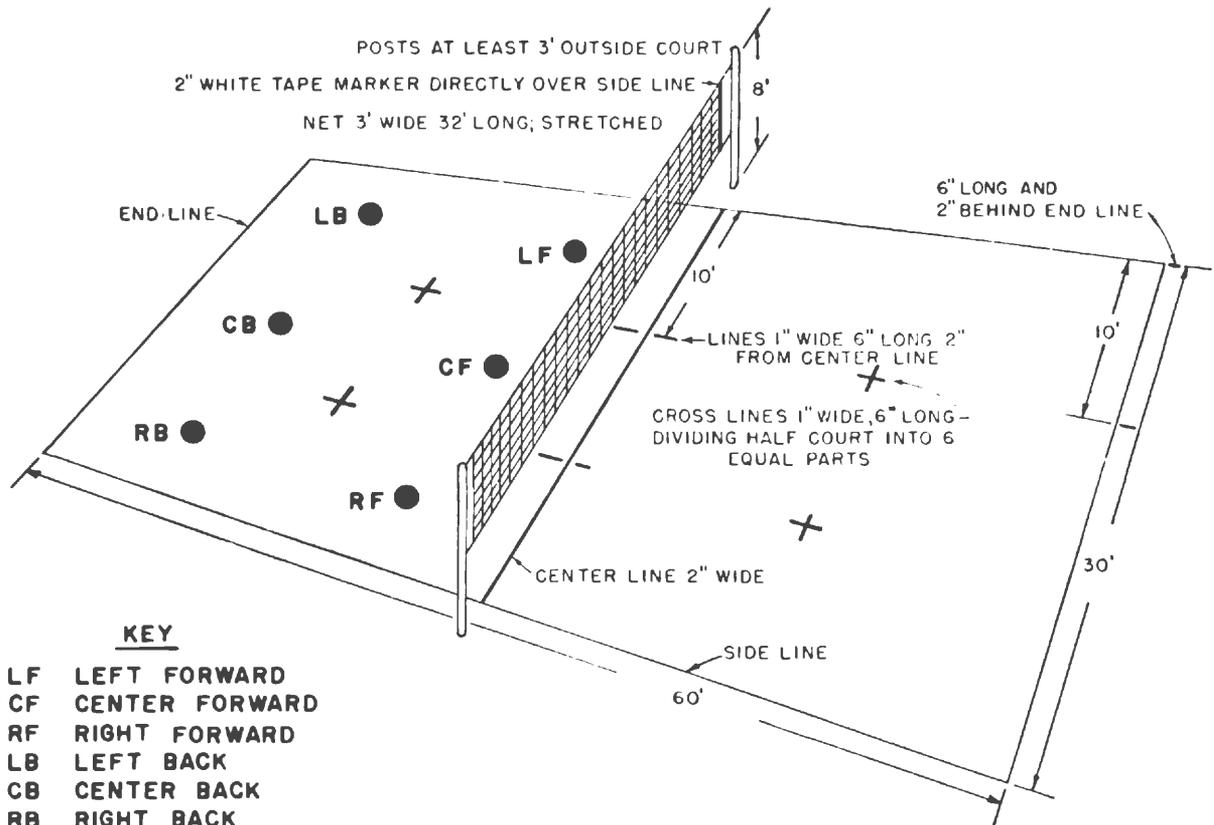


Figure 102. Volleyball court with positions.

PART FIVE
MEASURING PHYSICAL FITNESS
CHAPTER 24
TESTING PHYSICAL FITNESS

Section I. INTRODUCTION

377. Army Physical Fitness Tests

There are four tests authorized for use in measuring the physical fitness of male personnel within the Army. These tests are:

a. The Physical Combat Proficiency Test (chap 25).

b. The Army Minimum Physical Fitness Test—Male (chap 26).

c. The Airborne Trainee Physical Fitness Test (chap 27).

d. The Inclement Weather Physical Fitness Test. This test is a substitute test for the PCPT to be used only during individual training in BCT, AIT, and combat support training when severe weather will not permit the administration of the PCPT (USCONARC Pam No. 600-1 (app A)).

378. Requirement to Administer Tests

Tests will be administered as specified by AR

600-9, by appropriate Army directives, and at such other times as the commander or the situation direct. Tests are also used to determine those individual personnel who meet minimum physical fitness standards for entrance into specialized courses of instruction.

379. Test Scorecard

A common scorecard, DA Form 705, (Physical Fitness Testing Record) (fig. 103), is used for scoring the three standard tests. The scorecard is divided into five parts. Part I is the Physical Combat Proficiency Test Score Table; part II is the performance report for this test; part III is the performance report for the Army Minimum Physical Fitness Test—Male; part IV contains the directions for completing the scorecard; and part V is the statement of qualification to indicate the examinee's attainment of test standards.

Section II. THE EVALUATION OF PHYSICAL FITNESS

380. Responsibility

The commander is responsible for the physical fitness of his command, and for the measurement and evaluation of its physical readiness.

381. Methods of Evaluation

a. The commander has several methods available to him of evaluating the physical condition of his command. The primary methods being inspection, observation, medical examination, and testing.

(1) Formal inspection procedures, utilizing inspection officers and standardized rating

criteria, may be used to assist in the evaluation of unit physical fitness.

(2) Routine observation of physical performance can serve as a general indicator of a unit's physical readiness; however, mere observation is not a reliable or accurate means of evaluation.

(3) Medical examination may be utilized to detect any individual disability or detrimental physical condition, and to guide in application of remedial, therapeutic, or limited exercise programs.

(4) Physical fitness testing, utilizing

PART III ARMY MINIMUM PHYSICAL FITNESS TEST-MALE PERFORMANCE REPORT										
PRINT NAME (LAST, FIRST, MIDDLE INITIAL)					SERVICE NUMBER	RANK	AGE	HEIGHT (IN INCHES)	WEIGHT	
SMITH JAMES B.					04066315	2d LT.	23	71	180	
TEST NUMBER		FIRST TEST			SECOND TEST		THIRD TEST		FOURTH TEST	
		20 FEB. 67								
DATE OF TEST										
UNIT (PLATOON, COMPANY)										
H & H CO. 32d SERVICE BN.										
EVENTS	STANDARDS		PASSED	FAILED	PASSED	FAILED	PASSED	FAILED	PASSED	FAILED
	17-29	30-39								
SQUAT BENDER OR	10	9	JJM							
SQUAT STRETCH	10	9								
PUSH-UP OR	19	17	JJM							
8 COUNT PUSH-UP	7	6								
SIT-UP OR	19	17	JJM							
BODY TWIST	10	9								
LEGS OVER OR	16	14	JJM							
LEG SPREADER	21	20								
SQUAT THRUST OR	10	9	JJM							
MOUNTAIN CLIMBER	21	20								
STATIONARY RUN OR	350	275	JJM							
1 2 MILE RUN	4 MIN	4 MIN								

PART IV DIRECTIONS FOR COMPLETION OF TESTING RECORD	
1. FOR EXAMINEE:	
A. PRINT ALL REQUIRED PERSONAL INFORMATION IN SPACES PROVIDED.	
B. ENTER YOUR RANK BY TITLE, FOR EXAMPLE, CAPT, MSGT, PVT.	
C. IF YOU ARE TAKING THE PCPT, THE OFFICER IN CHARGE OF THE TEST WILL PROVIDE YOU WITH THE DATA TO RECORD IN THE "WEATHER CONDITIONS" SPACE.	
2. FOR ADMINISTRATORS AND SCORERS:	
A. FOR TEST ADMINISTRATION METHODS AND STANDARDS SEE FM 21-20	
B. PROVIDE EXAMINEES TAKING PCPT WITH WEATHER DATA AS FOLLOWS: THE TEMPERATURE IS _____ DEGREES, AND CONDITION IS (CLEAR, CLOUDY, RAIN, OR SNOW).	
C. SCORES ARE TO RECORD THE TIME OF THE 40-YARD LOW CRAWL IN WHOLE SECONDS, THE DODGE RUN AND JUMP AND THE 150 YD MAN CARRY TO THE NEAREST HALF SECOND (EXAMPLE 24.5), AND THE MILE RUN IN MINUTES AND WHOLE SECONUS (EXAMPLE 7:45). THE RAW SCORE FOR THE HORIZONTAL LADDER WILL BE RECORDED IN TOTAL RUNGS.	
D. TO RECORD PERFORMANCE ON THE AMPFT-M, THE SCORER IS TO ENTER HIS INITIALS IN THE APPROPRIATE SPACE OPPOSITE THE TEST EVENTS AS SELECTED AND EXECUTED BY THE EXAMINEE.	
3. FOR OFFICER VERIFYING QUALIFICATION:	
A. ENTER REASON FOR TEST (BCT, AIT, EIB, OCS, RANGER, AIRBORNE TRAINEE, SEMI-ANNUAL EVALUATION, ANNUAL EVALUATION, OR OTHER).	
B. INDICATE ABBREVIATED NAME OF TEST ADMINISTERED (PCPT, PFCPT, 3BN TPFT, OR AMPFT-M).	
C. CHECK THE QUALIFICATION, RECORD THE DATE, AND SIGN YOUR NAME AND RANK.	

PART V STATEMENT OF QUALIFICATIONS						
TEST NUMBER	REASON FOR TEST	TEST NAME (ABBREVIATE)	QUALIFICATION		DATE	VERIFYING SIGNATURE AND RANK
			YES	NO		
FIRST TEST	SEMI-ANNUAL EVALUATION	AMPFT-M	✓		20 FEB 67	John M Jones, 1st Lt.
SECOND TEST	SEMI-ANNUAL EVALUATION	PCPT	✓		5 AUG 67	R. B. Stack, Capt.
THIRD TEST	RANGER APPLICATION	PCPT	✓		10 JAN 68	Howard J. Little, 2nd Lt.
FOURTH TEST						
REMARKS						

Figure 103—Continued.

standard Army tests, is the most efficient method of evaluating both individual and unit physical fitness.

b. It is difficult to accurately measure all objectives of a physical fitness program. Intangible objectives such as confidence and aggressiveness present a problem to measurement. The use of either inspection or observation will be necessary to evaluate objectives of this nature.

382. Basic Concept of Testing

The basic concept of physical fitness testing rests on the fact that regular administration of standardized physical fitness tests is the best known method of evaluating physical readiness. Physical fitness tests are also an invaluable aid in the construction of exercise and physical training programs as tests reveal deficiencies in the program which indicate change is needed. In order for physical fitness testing to contribute to a successful physical training program there must be proper utilization of test standards, valid and accurate test results, proper use of tests, and an awareness of the value of testing.

a. Army physical fitness standards are constructed to statistically reflect the minimum level of physical readiness that is acceptable for military personnel. These standards, when applied to a command, serve as a statistical indicator of the level of unit or individual physical readiness. They are not the desired goal of the Army physical conditioning programs except in the sense of representing the mandatory level of achievement for military personnel. In some cases service schools, service agencies, and organizational units may require attainment of higher standards in accordance with their missions or course of instruction. Personnel within these schools, agencies, or units are required to attain these standards as a minimum.

b. The success of any physical testing program depends upon obtaining valid and accurate test results. Since Army physical fitness tests are designed to measure the condition of the entire body, all personnel participating in the test must take all events in the test. In addition, all personnel participating in tests should exert a maximum effort in each event.

The test events are designed so that conditioned men will suffer no ill effects from a maximum expenditure of effort.

c. Physical fitness tests are designed to be used as an evaluation device. They should not be given frequently as an exercise program. Too frequent testing leads to a decrease in motivation which adversely affects performance on regularly scheduled tests.

d. Physical fitness testing has many specific values for the individual, physical training instructor, and commander. Some of the specific applications are as follows:

(1) Physical fitness tests serve to give the individual an indicator of his overall physical fitness while simultaneously revealing the relative condition of various body areas through individual event scores. Testing also provides a basis for motivation in comparison of individual test scores.

(2) The physical training instructor can derive a thorough evaluation of the effectiveness of his physical training program from test results. These results indicate the strong and weak areas of both the unit and the individual.

(3) The commander may use physical testing results in evaluation of the physical condition of his unit. Publication of unit and individual test scores can provide motivation and inspire unit pride.

383. Supervision of Test Administration

Supervision of a physical testing program is necessary to insure that the objectives of the program are met. Proper supervision should provide for uniformity in testing, training of test judges, and control of test preparation and performance factors.

a. The commander should insure that testing is uniform with regard to events, judging, scoring, clothing, motivation, equipment, and facilities.

(1) The order of test events should be arranged so that personnel are not placed at a disadvantage by improper scheduling of strenuous events within the test order.

(2) All judges should be well-trained nonparticipants. If possible, the same judges should evaluate all elements of the participating unit.

(3) Judges who score test events should be instructed in their responsibility to maintain impartial and uniform scoring standards.

(4) The same degree of command emphasis and motivation should be provided to all elements of the command.

b. Commanders should insure that judges are well-trained nonparticipants. If possible, time should be allocated prior to the test for the training and testing of judges. A committee of judges should be formed to score all elements of a unit being tested. A comprehensive training program for judges should include instruction in test procedure, scoring, test event performance, and judicial responsibility.

c. Preparation for a physical fitness test should be directed at securing the most accurate evaluation of the personnel participating in the test. Preparatory requirements include selection and training of judges and scorers, a check of available equipment and facilities, ob-

taining necessary transportation to the test site, briefing and orientation of administrative and participating personnel, and confirmation of scheduling.

d. Commanders should exercise stringent control of the factors that influence test performance. Men should not be tested in a fatigued or depressed state. In order to prevent this occurrence commanders should insure that—

(1) Personnel to be tested do not participate in physically tiring duties prior to the test, to include such activity as guard mount, walking to a distant test site, or strenuous training.

(2) Tests are not scheduled on Monday, paydays, or a day following holidays.

(3) Test participants are in the proper state of motivation; i.e., not in a depressed or uninformed state, or during periods of low morale.

Section III. USE AND INTERPRETATION OF TEST RESULTS

384. Purpose of Interpretation

a. The purpose of physical fitness testing is to establish an index by which the individual's physical readiness can be measured. An evaluation of this fitness is determined by converting raw scores for each test event. Methods for computing and interpreting test scores are explained in paragraph 385.

b. Properly interpreted test results reveal the following to the unit commander:

(1) *The physical condition of the individual soldier.* This is accomplished by comparing the score achieved with the specific standards which have been established for the various authorized tests.

(2) *The level of physical fitness of the entire unit.* By computing scores as outlined in paragraph 385, the commander can establish unit averages for each test event and the total score average. He can further compare levels of physical fitness with other units of his command or with units of other commands.

(3) *Deficiencies in his physical training program.* If scores are low, it is an indication the training has not been extensive enough, not vigorous enough, not properly balanced, not

progressive, or suffers from some other type deficiency.

(4) *The men who are below average in physical fitness.* Special attention can be devoted to this group. One method which has been employed successfully is to assign the platoon leaders the responsibility for improving the performance of men who are below average through remedial training (chap 9).

c. Commanders are cautioned not to determine individual and unit physical fitness by using only total scores. Detailed study of results on each test event is more important. An individual can have a relatively high total score, yet have limited strength and endurance in a particular body area. For example, an individual may have a total score of 391 points, which is considered to be above average; however, study of each test event score may reveal an individual scored only 11 rungs (31 points) on the horizontal ladder. Although 391 points is considered to be a high score, the individual is not totally fit. He must therefore concentrate more on exercises to improve the strength of the arm and shoulder girdle. If similar results were found to be prevalent throughout a com-

mand, a change in the conditioning program to correct this deficiency may be indicated.

385. Methods for Interpretation of Test Scores

The results of test scores are meaningless unless they are intelligently interpreted to indicate the weakness and strength of the individual, the platoon, the company, or the battalion. There are various mathematical "tools" to aid in the interpretation of test scores.

a. Average Raw Score. In order to determine the raw score of a unit, the individual scores of that particular group should be averaged. To obtain the average raw score of a company, for example, do the following:

(1) Total the number of men of the company participating in a particular event, e.g., horizontal ladder.

(2) Total the number of rungs completed for the company.

(3) Divide the total number of rungs by the total number of men performing the ladder event. This resulting figure is the average raw score in the horizontal ladder event for the company (200 men do 11,000 rungs; divide 11,000 by 200 equals 55 rungs).

b. Average Point Score. The raw score is converted to a point score according to the scoring table for each of the participating individuals on each of the events. The recommended method to find the average point score is to proceed exactly as for determining the raw score. For example, 15,800 points were scored in a company total of 11,000 rungs. These points divided by the 200 men who participated in the ladder event equals 79 points for the company.

c. Comparison of Unit's Graph. For purposes of determining strength and weakness of given units, and generally understanding the physical fitness of his men, the platoon leader, company commander, or battalion commander can effectively make a comparison of his unit by—

(1) First, determining the point score average of his unit on each event as outlined in paragraph 385*b* above.

(2) Second, determining the overall point score average of his unit by adding the averages of each event and dividing by the number of events.

(3) Third, comparing test results. The table in figure 104 is a sample of a comparison of companies for the battalion commander. From this table it is apparent that all companies are deficient in circulo-respiratory endurance as evidenced by low average scores on the 1-mile run event. The battalion commander will recognize the need for additional running activities in the program. Similar graphs could be prepared indicating platoon results for the company commander.

d. Physical Fitness Progress Chart. To portray improvement effectively, a chart similar to that illustrated in figure 105 may be used. This table is a sample company progress chart, showing the improvement from the first to the second administration of the physical fitness test. To compute the entries for the chart, the following method is recommended:

(1) On the first administration of the physical fitness test, determine the point score averages of the platoon, company, or battalion whichever the case may be, by methods outlined in *b* above, for each of the events. Record this average point score on the table for each event and for each unit.

(2) On the next administration of the test, determine average point scores as on the first test and again record the results on the table.

(3) Divide the point score averages of the first test by the point score averages of the second test.

(4) Subtract this figure from 100.

(5) This result is the percentage of improvement from the first to the second test in that particular event. Record this percentage of improvement on the table for each event and for each unit. For example, 60 is first test average and 75 is second test average:

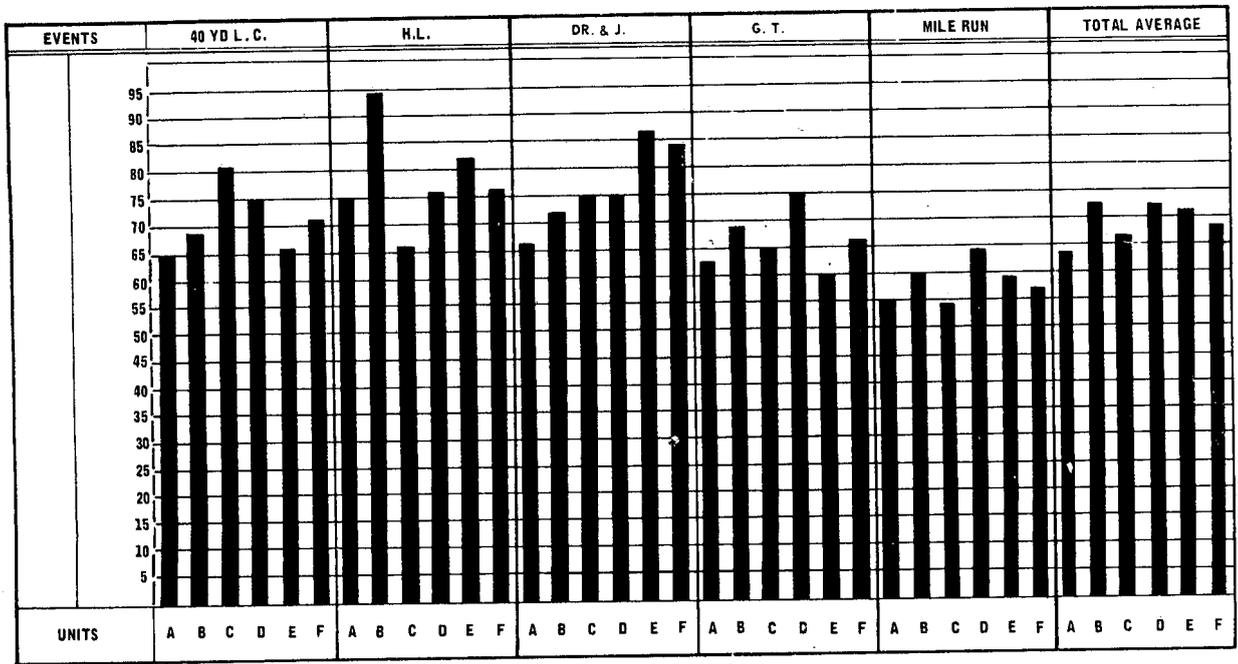
$$75/60 = 1.25$$

$$1.25 - 1.00 = .25 \text{ or}$$

25% improvement from the first to the second test.

e. Value of Progress Chart. A number of important deductions can be obtained from such a chart by the unit commander. Referring to the sample progress chart in figure 105, the company commander knows, for example, that—

(1) There was some overall improvement between the two tests, but 5.2 percent is much



COMPARISON OF UNIT PCPT PERFORMANCE

Figure 104. Comparison of unit PCPT performance.

PLATOON	40 YARD LOW CRAWL			HORIZONTAL LADDER			GRENADE THROW			DODGE, RUN AND JUMP			ONE-MILE RUN			TOTAL AV. PERCENTAGE IMPROVEMENT OF PLATOONS
	AVERAGE SCORE		IMP %	AVERAGE SCORE		IMP %	AVERAGE SCORE		IMP %	AVERAGE SCORE		IMP %	AVERAGE SCORE		IMP %	
	1ST	2ND		1ST	2ND		1ST	2ND		1ST	2ND		1ST	2ND		
1ST	62	68	9.5	66	70	6.0	65	73	12.2	66	73	7.1	63	69	9.8	8.9
2ND	73	79	7.9	64.1	68	6.1	72	74	2.1	78	81	3.6	59	62	4.0	4.7
3RD	74	74	0.0	73	75	2.2	72	74	2.2	76	76	0.0	77	79	2.4	1.4
4TH	78	80	2.2	65	67	1.9	78	82	4.2	79	83	5.5	59	64	9.6	4.7
COMPANY AVERAGE	71.8	75.2	4.7	67.0	70.0	4.5	71.8	75.8	5.6	74.7	78.3	4.8	64.5	68.5	6.2	5.2*

* OVERALL AVERAGE IMPROVEMENT OF COMPANY

Figure 105. Improvement between first and second test.

too low a percentage to indicate improved physical fitness of the company.

(2) The company average, as indicated on the bottom line of the chart, shows the low crawl and the horizontal ladder improvement to be less than the other events. Consequently, the physical training program for the company should be reviewed to see if proper balance is being maintained.

(3) The company improved as a whole from the first to the second test, with the first platoon high and the third platoon low.

(4) The company showed greatest improvement on the 1-mile run, averaging 6.2 percent improvement.

(5) The third platoon was consistently low on both tests and showed the least amount of improvement. This platoon should spend additional time in remedial conditioning to raise their overall physical condition.

f. Individual Progress. The company and the battalion commanders are interested in the physical condition of their men as a unit, but the platoon leader is specifically concerned about the fitness of the individual man. Total test scores are sometimes misleading for they do not indicate specific weakness and strength. Recording scores of each event facilitates anal-

ysis of each individual and provides the platoon leader greater detail concerning each man.

386. After Test Action

a. Scoring tables are printed on the scorecard to facilitate conversion of raw scores to point scores as the test events are completed.

b. At the completion of a test the following action should be completed in relation to scorecards:

(1) Raw scores are converted to point scores by use of the scoring tables. For example, 30 seconds in the low crawl equals 79 points.

(2) Point scores are totaled for the five events to determine individual total test scores.

(3) Total scores are entered on a unit score sheet and posted in the area.

(4) Unit average scores are computed and compared.

(5) The percentage of improvement between the present and the previous administration of the test is computed for each unit.

(6) Individual scorecards are forwarded to the personnel section and entered in the individual's record.

CHAPTER 25

PHYSICAL COMBAT PROFICIENCY TEST

Section I. INTRODUCTION

387. Primary Test

The Physical Combat Proficiency Test is the primary Army Physical Fitness Test and is the standard test for the measurement of physical fitness and selected physical skills. To successfully complete this test requires agility, coordination, strength, and endurance. There are two versions of the Physical Combat Proficiency Test as follow:

a. For all personnel to be tested other than those undergoing individual training the skills tested are crawling, traversing, throwing, dodging, jumping, and running. These skills are measured by five events including the 40-yard low crawl; horizontal ladder; dodge, run and jump; grenade throw; and 1-mile run.

b. For personnel undergoing BCT, AIT, and CST these same skills are measured with the exception of throwing. Weight carrying is substituted and the 150-yard man carry is used in place of the grenade throw. This version of the

test is known as the Physical Combat Proficiency Test-Modified.

388. Test Standards

A test standard based upon a total point score serves as an indicator of general physical proficiency. This total is a combination of the point scores earned in each of the five events. Individual personnel must score a total of 300 points (and participate in all five events) to be considered as meeting minimum physical fitness standards.

389. Combat Ready and Combat Support Standards

In addition to a total point standard, the following test event standards are established in measurement of physical readiness (see AR 600-9 for application of these standards):

<i>Event</i>	<i>Combat-Ready</i>	<i>Combat Support</i>
40-yard Low Crawl	36 sec.-60 points	45 sec.-45 points
Horizontal Ladder	36 rungs-60 points	21 rungs-45 points
Dodge, Run, and Jump	25 sec.-60 points	27 sec.-45 points
Grenade Throw	15 points-60 points	8 points-45 points
One-Mile Run	8 min. 33 sec.-60 points	9 min. 33 sec.-45 points (Plus total of 300 or more)

390. Failure to Attain Standards

Scores below these standards indicate that specific areas of the body lack conditioning and deficiencies in skill exist. However, failure to

attain all combat ready or combat support standards does not invalidate the indication of minimum physical fitness of the individual scoring 300 or more total points.

Section II. ADMINISTERING THE PHYSICAL COMBAT PROFICIENCY TEST

391. Preparation for Test

The person responsible for administering the test to a unit or organization should complete

the necessary arrangements for testing to include the following:

a. *Planning.* Organize the procedures and

techniques to be used in the conduct of the test. A rehearsal is desirable, especially if personnel who are to administer the test have had no prior experience.

b. Coordination. Arrange the time of test administration with the unit training officer. Coordinate with the unit commander concerning matters of uniform, the number of men to be tested, the entry of personal data on scorecards, and other similar administrative matters. Arrange for personnel support of the test to include the following:

(1) *Construction personnel.* Usually, post engineer or troop labor is used for setting up the test area.

(2) *Examinees.* Examinees are personnel who participate in the test to include enlisted personnel and officers up to age 40.

(3) *Test administration personnel.* Personnel required to administer the test consist of one officer and 19 enlisted men, preferably noncommissioned officers. Test administration personnel should not be members of the organization to be tested.

c. Inspection of Facilities and Equipment. Inspect and check the testing area to see that everything needed to meet the requirements of the test is available and safe to use. Permanently installed facilities should be checked for standardization and safety. Facilities and areas which must be reconstituted for each administration of the test must also be inspected. It is particularly important to maintain the running surface of the dodge, run, and jump area in a flat or level condition. In locations where the ground is soft, banked turns are soon erected by the men as they follow the same running pattern. The turn areas should be raked as frequently as required during the conduct of the event to assure a level surface. The official in charge of the test should insure that materials needed, such as colored pencils,

flags, and other items are available and on hand prior to the test.

392. Scoring the Test

a. Each examinee is given a scorecard which he carries throughout the test. The cards are not to be rolled, folded, or defaced in any way. Before the test starts the record section of the unit, or each examinee, must fill in the basic information requested.

b. In the use of Part I of the scorecard, to convert raw scores to point scores, go down the proper event column until the actual performance in time or rungs is reached. The point value to be awarded is opposite in the first column at the extreme left of the card.

393. Test Requirements

a. Uniform for Testing. The prescribed uniform is combat boots and the field uniform of the season. No headdress is worn and when climatic conditions permit, jackets or outer shirts may be removed. It is recommended that a long sleeve garment be worn during the 40-yard crawl event as protection for the elbows regardless of weather. In cold weather, gloves may be worn. If gloves are worn in traversing the horizontal ladder, care must be exercised to insure the gloves are securely buckled to the wrists to prevent being pulled off through repeated contact with the rungs. Officials should be uniformly and distinctively dressed for contrast with men being tested.

b. Time Required. Approximately 2 hours testing time will be required for testing 100 men, and 3 hours for testing 200 men. Testing time may be shortened by testing more than the prescribed number of examinees simultaneously on any one event. If time of administration is to be shortened, additional space and facilities must be provided, as well as additional testing and scoring personnel.

c. Sequence of Test Events. The order of test events for each group follows:

TEST ORDER

<i>Event</i>	<i>Group I</i>	<i>Group II</i>	<i>Group III</i>	<i>Group IV</i>
40-Yard Low Crawl	First	First	First	First
Horizontal Ladder	Second	Third	Third	Fourth
Dodge, Run, and Jump	Third	Second	Fourth	Third
Grenade Throw or 150-Yard Man-Carry	Fourth	Fourth	Second	Second
One-Mile Run	Fifth	Fifth	Fifth	Fifth

394. Procedure for Completing Test

a. *The 40-Yard Low Crawl.* All groups are initially assembled at the 40-yard low crawl area and perform the event simultaneously. When all groups have completed the crawl, they move to the next assigned area.

b. *Horizontal Ladder, Dodge, Run, and Jump.*

(1) *First round.* Initially, group I goes to the horizontal ladder and group II moves to the dodge, run, and jump. When each group completes the initial event, they exchange events. After running that event, they move to the grenade throw or 150-yard man-carry.

(2) *Second round.* Groups III and IV arrive from the grenade throw or 150-yard man-carry area. Group III goes to the horizontal ladder and group IV moves to the dodge, run, and jump. When each group completes its event, the groups exchange events. After running the remaining event, they move to the 1-mile (run) area.

c. *Grenade Throw or 150-Yard Man-Carry.*

(1) *First round.* At the completion of the 40-yard low crawl, groups III and IV go to the grenade throw or 150-yard man-carry. The two groups are combined and complete this event together. After completion of the grenade throw or 150-yard man-carry they move to the horizontal ladder and dodge, run, and jump.

(2) *Second round.* Groups I and II arrive from the horizontal ladder and dodge, run, and jump. The two groups are combined and complete the grenade throw or 150-yard man-carry together. When finished, they move to the 1-mile run area.

d. *One-mile run.* When all groups have completed the previous events, groups I and II are sent to the starting point on one side of the track. At this time, groups III and IV are moved to the starting point on the opposite side of the track. The examinees are divided into groups of 36 men on each side of the track. Successive orders of 72 men each (36 men on each side of the track) are run until all examinees have completed the mile run event.

395. Assignment and Duties of Test Officials

A minimum of 20 personnel are required to administer the test. Some of these same personnel may be utilized to supervise the construc-

tion and layout of the test area. These personnel include:

a. *Chief Examiner.* The chief examiner is an officer who assumes overall responsibility for administration of the test. His responsibilities include:

(1) Procurement of necessary equipment and supplies.

(2) Arrangement for layout of the test area, construction of facilities, and proper completion of test area.

(3) Training of event supervisors, scorers, and demonstrators.

(4) Insuring that the test is properly administered and the test events are explained, demonstrated, and scored as prescribed in this chapter.

(5) Preparation of a final report at the conclusion of testing.

b. *Assistant to the chief examiner.* The assistant is a noncommissioned officer who assists the chief examiner in the preparation for and administration of the test.

c. *Event Supervisors.* The event supervisors are five noncommissioned officers. Each is in charge of one test event. They will be responsible for—

(1) Checking to see that necessary equipment is present for the conduct of their assigned test event.

(2) Reading test instructions to the examinees prior to administration of the event. Instructions must be read exactly as they appear in paragraph 396.

(3) Assuming overall responsibility for insuring that the event is properly demonstrated and correctly scored as specified in paragraph 392.

(4) Performing individual duties peculiar to the test event being administered.

d. *Scorers.* The scorers consist of the 13 remaining noncommissioned officers plus the event supervisors who serve as scorers when not administering their assigned events. They are responsible for—

(1) Supervising the execution of the test event in their respective lanes.

(2) Marking the score on the test scorecard of the examinees who are tested in their respective lanes.

(3) Assisting as demonstrators or to

carry out other assignments as specified by the chief examiner.

e. Demonstrators. Demonstrators are usually scorers who are capable of both good form and speed of execution in the correct demonstration of test events. A demonstrator is not needed for the 1-mile run as the event does not lend itself to demonstration.

f. Personnel and Duties for Particular Events.

(1) *Assistant event supervisor for the 40-yard low crawl.* Since there are 16 lanes in use during the 40-yard crawl, one official is utilized to assist the event supervisor in the conduct of this event. He should not have a scoring responsibility.

(2) *Organizer for the 1-mile run.* In the 1-mile run event, personnel are organized into two scoring teams. One team for each side of the track. In addition to an event supervisor and six scorers, each team will have two organizers. The organizers will form the examinees into 36-man groups, distribute identification numbers and, in general, assist the event supervisor to operate the event smoothly. These men should not have scoring responsibilities.

396. Procedure on Day of Test

On the day of the test, the examinees are to be assembled at the test area. They must be oriented as to the purpose of the test, the filling out of their test scorecards, the organization for the test, the application of the scoring table, and the sequence of events.

a. Use the following directions in orientation of the examinees: The instructions which are indented and printed in large type are to be read aloud to the examinees. Read all instructions slowly and distinctly. The directions printed in regular type, including those in parentheses, are for the chief examiner only and are *not* to be read aloud. The following instructions should be read to examinees just prior to their assignment to testing groups. **YOU ARE ABOUT TO BE GIVEN A TEST WHICH WILL BE A MEASURE OF YOUR PHYSICAL COMBAT PROFICIENCY. WE URGE YOU TO LISTEN CLOSELY TO THE TEST INSTRUCTIONS AND TO DO THE BEST YOU CAN ON EACH OF THE EVENTS. EACH OF YOU WILL NOW RECEIVE A**

COPY OF THE PHYSICAL COMBAT PROFICIENCY TEST SCORECARD.

b. Hand out scorecards and then say: **IN THE APPROPRIATE SPACES, PRINT THE INFORMATION AS REQUIRED ON THE SCORECARD.** If men received scorecards prior to coming to the test area and required information has been placed on the cards, reference to completion of the card contained herein may be omitted.

c. Provide time to complete the required information and aid those who have difficulty. Then say: **CHECK YOUR CARD TO MAKE CERTAIN YOU HAVE COMPLETED ALL INFORMATION AS REQUIRED.**

d. Pause briefly to allow time for check, then say: **YOU ARE TO CARRY THIS CARD WITH YOU AS YOU TAKE EACH EVENT. BEFORE YOU BEGIN EACH EVENT, HAND THE CARD TO THE SCORER. AFTER YOU COMPLETE THE EVENT HE WILL RECORD YOUR SCORE ON THE CARD AND HAND IT BACK TO YOU.** At this point, explain the score table to insure that men understand how raw scores are converted to point scores. Then say: **THERE WILL BE FOUR GROUPS AND YOU WILL BE ASSIGNED TO A GROUP. YOU WILL NOT ALL COMPLETE THE TEST EVENTS IN THE SAME ORDER. EACH GROUP WILL FOLLOW A DIFFERENT PATTERN. YOU WILL NOW BE ASSIGNED TO A TEST GROUP. STAY WITH YOUR GROUP THROUGHOUT THE ENTIRE TEST.**

397. Organization of Test Groups

a. At the completion of the orientation, the examinees are organized and assigned to one of four testing groups. Each testing group will consist of one-fourth the total number of examinees. For example, a unit with a strength of 200 will form four groups of 50 men each. A noncommissioned officer should be placed in charge of each group and be furnished with the order of events his group will follow. This NCO may be selected from the group. His duty is to lead the group from one event to another. When the groups are formed, articles of uniform and equipment not required in testing are to be grounded. When this is accomplished, groups individually move to their assigned lanes for the 40-yard crawl event.

b. A very important outcome of the test is to secure a score in each of the five events; disqualification on an event should be avoided.

This objective can be achieved by insuring that men understand the reasons for disqualification in each event.

Section III. DESCRIPTION OF TEST EVENTS

398. The 40-Yard Low Crawl—Test Event No. 1

a. *Purpose.* To test crawling ability and to measure endurance (fig. 106).

b. *Equipment.* One stopwatch. Any standard stopwatch may be used, either a so-called $\frac{1}{5}$ - or $\frac{1}{10}$ -second watch. The watch must be of the type to retain the minute count in addition to timing whole seconds.

c. *Facilities.* Sixteen lanes, six feet wide by 20 yards long, are required. Overall dimensions

to include the above area and additional space needed for test administration requires an area 32 yards wide by 40 yards long.

d. *Personnel.* One event supervisor, one assistant event supervisor, and 16 scorers. One scorer will serve as the demonstrator.

e. *Organization.* The event supervisor will conduct the event by assigning group I to lanes 1-4, group II to lanes 5-8, group III to lanes 9-12, and group IV to lanes 13-16. The examinees are formed about 10 yards in rear of the



Figure 106. The 40-yard low crawl event.

starting line, at which time the test event instructions are read.

f. Instructions. The event supervisor reads the following: THE 40-YARD LOW CRAWL TESTS YOUR ABILITY TO CRAWL RAPIDLY AND IS A MEASURE OF YOUR ENDURANCE. YOU ARE TO ASSUME A PRONE POSITION AT THE STARTING LINE WITH YOUR ELBOWS AND CHEST RESTING ON THE LINE. WHEN I GIVE YOU THE STARTING SIGNAL "GO," YOU ARE TO CRAWL THE LENGTH OF THE COURSE, AND WHEN YOU ARE NEAR ENOUGH TO THE END LINE OF YOUR LANE, REACH OUT AND TOUCH IT WITH YOUR HANDS; AND IMMEDIATELY TURN AROUND BY SPINNING ON YOUR STOMACH AND CRAWL BACK TO THE STARTING LINE. TIME IS MEASURED FROM THE WORD "GO" UNTIL YOUR HAND TOUCHES THE FINISH LINE. YOU MUST CRAWL LOW, KEEPING SOME PART OF YOUR TRUNK ON THE GROUND AT ALL TIMES. THIS MEANS EITHER YOUR HIPS, YOUR STOMACH, OR YOUR CHEST ON THE GROUND. YOU ARE ALLOWED TO CHOOSE YOUR OWN METHOD OF CRAWLING AS LONG AS THE FORM USED PERMITS GROUND CONTACT WITH AT LEAST ONE PART OF THE TRUNK THROUGHOUT THE CRAWL AND A LOW SILHOUETTE IS MAINTAINED. YOU CAN BE STOPPED FOR BREAKING GROUND CONTACT, FOR FAILURE TO MAINTAIN A LOW SILHOUETTE, AND FOR DIVING OR LUNGING AT THE START, ON THE TURN AROUND, OR AT THE FINISH. YOU WILL BE WARNED BY THE SCORER IF YOU COMMIT A VIOLATION. AFTER THE THIRD WARNING YOU WILL BE HALTED AND REQUIRED TO RERUN THE COURSE. SHOULD YOU AGAIN BE WARNED THREE TIMES, YOU WILL BE DISQUALIFIED FROM THE EVENT AND RECEIVE NO SCORE. WHEN YOU FINISH THE EVENT, GO TO THE REAR OF YOUR LANE, WATCH THIS DEMONSTRATION. (Demonstrate) ANY QUESTIONS?

g. Administration. After reading the instructions, answer any questions and give the com-

mand FIRST ORDER ON THE STARTING LINE. Run this order and successive orders until all examinees have completed the event.

h. Timing Technique. The event supervisor serves as the starter-timer. Time is called in whole seconds as the first examinee approaches the finish line. For example, 23-24-25-26. Continue to call the time until all men in the order have finished.

i. Scorer's Duties. At the conclusion of the demonstration, step up to your lane and take the scorecard of the first man in line. Proceed along the lane with the man as he performs the crawl, and insure that he maintains some part of his trunk on the ground and that he does not crawl on his hands and knees with his buttocks in the air. This is a violation and must be promptly corrected by a warning from the scorer. A violator will be stopped and required to repeat the event when it is necessary to warn him the third time. If it is necessary to stop the examinee, he is sent to the end of his lane to rest until his turn again occurs, at which time he crawls again. Not the time as his hand touches the finish line. (Time will be called out by the event supervisor for the event.) Record his time on the card and return the scorecard. As the next examinee steps forward, secure his card and repeat the process.

399. Horizontal Ladder—Test Event No. 2

a. Purpose. A test of ability to coordinate the forward movement of the body in hand-over-hand motion, and as a measure of arm and shoulder strength and endurance (fig. 107).

b. Equipment. One stopwatch.

c. Facilities. A four-lane ladder is required and should be constructed to the specifications as indicated in the directions. Ladder dimensions are: height, 9 feet; length, 20 feet; width, 16 feet. The area needed for the construction of the ladder and for test administration should be 10 yards wide by 25 yards long.

d. Personnel. One event supervisor and four scorers. One scorer will serve as the demonstrator.

e. Organization. The event supervisor will conduct the event by dividing the group into four files with an equal number of examinees in each file. With the group in files at the start-

ing end of the ladder, the test event instructions are read.

f. Instructions. The event supervisor reads the following: THE HORIZONTAL LADDER TESTS THE SHOULDER GIRDLE AREA AND GENERAL BODY COORDINATION. UPON MY SIGNAL, STEP UP ONTO THE SUPPORTS AND GRASP THE FIRST RUNG WITH BOTH HANDS USING THE FORWARD GRIP. ON THE COMMAND "GO" SWING YOUR FEET OFF THE SUPPORT AND AT THE SAME TIME BEGIN FORWARD PROGRESS GRASPING THE NEXT RUNG AND PROPELLING YOUR BODY FORWARD, YOU MUST ALTERNATE YOUR HANDS GRASPING EACH RUNG OF THE LADDER. WHEN YOU REACH THE END OF THE LADDER, TURN AROUND

AND COME BACK. CONTINUE TO TRAVERSE THE LADDER UNTIL YOU HEAR THE COMMAND "STOP" AT THE END OF A ONE-MINUTE PERIOD. THE LAPSE OF TIME WILL BE ANNOUNCED AT 15-SECOND INTERVALS. YOU WILL BE SCORED ON THE DISTANCE TRAVERSED OR "WALKED" ON THE LADDER DURING THE ONE-MINUTE PERIOD. IF YOU TIRE AND DESIRE TO STOP BEFORE THE EXPIRATION OF THE ONE-MINUTE PERIOD, YOU MAY DO SO. IN ORDER TO RECEIVE CREDIT FOR THE LAST RUNG, YOU MUST ACTUALLY HAVE YOUR BODY WEIGHT SUSPENDED FROM IT, RATHER THAN MERELY TOUCHING THE RUNG. IF YOU ACCIDENTALLY LOSE YOUR GRIP AND FALL OFF DURING THE



Figure 107. The horizontal ladder event.

FIRST TRIP DOWN THE LADDER, TO INCLUDE THE ACT OF TURNING AROUND, YOU WILL BE STOPPED AND PERMITTED TO GO TO THE END OF THE LINE TO ATTEMPT THE EVENT A SECOND TIME. ON THE SECOND ATTEMPT THE RUNG COUNT STARTS AT ZERO. IF YOU FALL OFF A SECOND TIME, AT ANY PLACE ON THE LADDER, NO FURTHER ATTEMPTS ARE PERMITTED AND YOU ARE SCORED WITH THE NUMBER OF RUNGS FROM YOUR SECOND ATTEMPT. YOU WILL BE STOPPED AND REQUIRED TO RERUN THE EVENT IF YOU USE THE SUPPORTS AT EITHER END OF THE LADDER TO ASSIST YOU IN TURNING AROUND, OR USE THE STARTING BLOCKS TO REST, OR AS A STOP TO SECURE A BETTER GRIP. ON THE SECOND ATTEMPT, SHOULD YOU AGAIN USE THE SUPPORTS OR THE FOOTRESTS, YOU WILL BE STOPPED AND RECEIVE THE SCORE ACHIEVED TO THAT POINT. WHEN YOU FINISH THE EVENT, GO TO THE REAR OF YOUR LANE. WATCH THIS DEMONSTRATION. (Demonstrate) ANY QUESTIONS?

g. Administration. After reading the instructions, answer any questions and then give the command FIRST ORDER UP AND READY. Run this order and successive orders until all examinees in the group have completed the event.

h. Timing Technique. The event supervisor serves as the starter-timer. Time is called at each 15-second interval; for example, 15-30-45, and also for each of the last five seconds as follows: 5-4-3-2-1-STOP.

i. Scorer's Duties. At the conclusion of the demonstration, step up to your lane and gather the scorecards from your men. Keep the cards in the same order that the men will traverse the ladder. When you have all cards, move to a position outside the ladder area and facing the ladder. Count the number of rungs the man traverses in 1 minute or less. The first time down the ladder counts 14, each succeeding complete traverse of the ladder is 13 rungs. Enter the total number of rungs traversed on the card and return the scorecard.

Note. If the man is unable to suspend all his

weight on one arm as required in alternating the hands, allow him to place both hands on the same rung.

400. Dodge, Run, and Jump—Test Event No. 3

a. Purpose. A test of agility and coordination in making rapid changes of direction while running, and as a measure of jumping ability (fig. 108).

b. Equipment. One stopwatch.

c. Facilities. This course contains four lanes consisting of four wooden obstacles per lane and a shallow ditch across the center of all lanes. The overall size of the area required for construction and test administration is 18 yards wide by 26 yards long.

d. Personnel. One event supervisor and four scorers. One scorers will serve as the demonstrator.

e. Organization. The event supervisor will conduct the event by dividing the group into four files with an equal number of examinees in each file. With the group in files at the starting line, the test event instructions are read.

f. Instructions. The event superior reads the following: THE DODGE, RUN, AND JUMP TESTS YOUR ABILITY TO RAPIDLY CHANGE DIRECTIONS WHILE RUNNING AND TO JUMP A SIX-FOOT WIDE DITCH. ON THE STARTING COMMAND "GO" BEGIN RUNNING FROM THE STARTING LINE AS FAST AS POSSIBLE. RUN BETWEEN THE FIRST TWO OBSTACLES FOLLOWING THE DIRECTIONAL ARROWS. JUMP THE DITCH AND RUN BETWEEN THE LAST TWO OBSTACLES CIRCLING COMPLETELY AROUND THE LAST OBSTACLE. ON THE RETURN, FOLLOW THE DIRECTIONAL ARROWS, CONTINUING TO WEAVE IN AND OUT BETWEEN THE OBSTACLES, JUMP THE DITCH, NEGOTIATE THE LAST TWO OBSTACLES, CIRCLE THE LAST OBSTACLE, AND START YOUR SECOND TRIP. FOLLOW THE SAME ROUTE AS ON YOUR FIRST TRIP. AT THE END OF YOUR SECOND COMPLETE ROUND TRIP, YOU WILL FINISH AT THE SAME LINE FROM WHERE YOU STARTED. MAKE YOUR RUN AS FAST AS POSSIBLE. YOU CANNOT USE YOUR HANDS TO ASSIST BY GRASPING THE OBSTACLES AND YOU

MUST JUMP THE DITCH. DIRECTIONAL ARROWS APPEAR ON BOTH SIDES OF THE OBSTACLE. GO THE WAY THE ARROWS POINT. YOU WILL BE SCORED ON YOUR ABILITY TO RAPIDLY DODGE AND RUN AROUND THE OBSTACLES AND TO JUMP THE DITCH. IF YOU INTENTIONALLY TOUCH ANY OF THE OBSTACLES, FAIL TO CLEAR A DITCH, OR RUN OUT OF THE PATTERN, YOU WILL BE STOPPED AND REQUIRED TO RERUN THE COURSE. SHOULD YOU AGAIN COMMIT ONE OF THESE OFFENSES YOU WILL BE DISQUALIFIED AND RECEIVE NO SCORE. TIME ENDS WHEN YOU CROSS THE FINISH LINE ON YOUR LAST TRIP. WHEN YOU FINISH THE EVENT,

GO TO THE REAR OF THE FILE IN YOUR LANE. WATCH THIS DEMONSTRATION. (Demonstrate) ANY QUESTIONS?

g. Administration. After reading the instructions, answer any questions and then give the command **FIRST ORDER ON THE STARTING LINE**. Run this order and successive orders until all examinees in the group have completed the event. For maintenance of area see paragraph 391.

h. Timing Technique. The event supervisor serves as the starter-timer. Time is called in seconds and half-seconds as the first examinee approaches the finish line. For example, 22 HUT, 23 HUT, 24 HUT, 25 HUT. Continue to call time until all men in the order have finished.



Figure 108. The dodge, run, and jump event.

i. Scoring Duties. At the conclusion of the demonstration, step up to your lane and take the scorecard of the first man in line. Remain at the starting point and visually observe his progress through the course to determine successful completion. Note each examinee's time in seconds to the nearest half second as he crosses the finish line. For example, a score completed to the full second will be recorded as 23.0. A score completed to the half second will be recorded as 25.5. If the examinee touches the obstacles, fails to clear the ditch, or gets confused in the pattern of progress in negotiation of the obstacles, stop him. Point out his error and place him at the end of the file for rest; direct him to run again when his turn comes. When he successfully completes the event, record his score and return the scorecard.

401. Grenade Throw—Test Event No. 4

a. Purpose. The grenade throw event tests ability to throw for distance and accuracy requiring both strength and coordination (fig. 109).

b. Equipment. Sixty practice hand grenades M30 and one flag. The grenades used in the grenade throw event are designated as grenades, practice, hand M30. Grenades for throwing will consist of the fuze assembly and body. The grenades should be detonated and reassembled minus the safety pin and pull ring, safety lever, cap, filler, and plastic plug. The remaining parts are assembled for throwing. A cloth flag is required. A red flag on a short handle is suggested.

c. Facilities. The grenade throw area contains seven lanes, each lane to consist of a throwing line and a target area 90 feet from the throwing line. The overall area for construction and test administration should be 75 yards wide by 60 yards long (para 404d).

d. Personnel. One event supervisor and seven scorers. Two scorers will serve as demonstrators, one as the thrower and the other as a scorer.

e. Organization. The event supervisor will move the examinees to a position near one of the target areas. With all men in position to see the target, the test event instructions are read.

f. Instructions. The event supervisor reads the following: THE GRENADE THROW

TESTS YOUR ABILITY TO THROW BOTH FOR DISTANCE AND ACCURACY. YOU ARE TO THROW SEVEN GRENADES AT THE TARGET WHICH IS 90 FEET FROM THE THROWING LINE. (Point out the throwing line.) THE FIRST TWO GRENADES ARE FOR PRACTICE AND WILL NOT COUNT ON YOUR SCORE. THE REMAINING FIVE GRENADES WILL BE SCORED. AT MY SIGNAL YOU ARE TO THROW ONE GRENADE AT A TIME, ATTEMPTING TO HAVE EACH GRENADE HIT THE CENTER OF THE INNER CIRCLE. YOU MUST THROW FROM THE KNEELING POSITION. IN THROWING, YOU MAY USE ANY OVERARM MOTION DESIRED. WHEN IT IS YOUR TURN TO THROW, ASSUME THE KNEELING POSITION AND WATCH ME. I WILL BE STATIONED IN REAR OF THE TARGET AREA WITH THIS FLAG. WATCH THE FLAG SIGNAL; WHEN THE FLAG GOES UP, SECURE A GRENADE; WHEN I DROP THE FLAG, MAKE YOUR THROW. IN THROWING, TAKE TIME TO AIM. EACH OF YOUR GRENADES WILL BE SCORED AS FOLLOWS:

8 POINTS FOR HITS IN THE INNER CIRCLE

7 POINTS FOR HITS IN THE INNER MIDDLE CIRCLE

6 POINTS FOR HITS IN THE OUTER MIDDLE CIRCLE

5 POINTS FOR HITS IN THE OUTER CIRCLE

1 POINT IF YOUR GRENADE HITS INSIDE THE SQUARE BUT FAILS TO HIT INSIDE THE CIRCLE AREA.

A GRENADE HITTING ON ANY LINE WILL SCORE THE NEXT HIGHER VALUE. WATCH THIS DEMONSTRATION. (Move examinees back to the throwing line and demonstrate.) ANY QUESTIONS?

g. Administration. After reading the instructions, answer any questions and then announce that the last man in the file will retrieve grenades for the first thrower. On command of the event supervisor RETRIEVE GRENADES, the retriever gathers the grenades and brings them to the starting line. At the same time, the first thrower moves out to the target area to serve as the retriever for the

second thrower. Rotation of throwers and retrievers continues until all have thrown. Form the examinees (both groups) into seven files with an equal number of examinees in each file. Assign a scorer to each file and have him lead to the file to his lane.

h. Signal Technique. The event supervisor positions himself about 10 to 15 yards behind and in the center of the target area. When scorers are in position to score, the flag is raised. A visual check is made to see that all seven throwers are ready, and then the flag is brought down sharply as the signal to throw. This procedure is repeated until all grenades are thrown. When ready for a new throwing order, the command NEXT ORDER ON THE THROWING LINE is given.

i. Scorer's Duties. After leading your examinees to the throwing lane, step up and gather the cards from your men. Keep the cards in the same order in which the men will throw. When you have all the scorecards, move to a scoring position five yards behind the target. Take the last man in your file with you to retrieve the grenades thrown by the first man. Watch the grenade as it hits the ground. The grenade is scored where it initially hits the ground. Announce the value of each throw as the grenade strikes the ground to keep the thrower abreast of his score. (Value of hits previously indicated.) If the grenade strikes a line, score the hit as the next higher value. Record the value of each grenade and then total the score in the space provided on the scorecard.

402. The 150-Yard Man-Carry—Test Event No. 4A

a. This event is used in place of the grenade throw for BCT, AIT, and combat support training in USATC'S.

b. Purpose. The 150-yard man-carry tests a man's speed and leg strength while carrying a load equal to his weight (fig. 110).

c. Equipment. One stopwatch and one flag, to start the event, are required.

d. Facilities. Level ground with starting and finish lines 150 yards apart. Four lanes 6 feet wide are marked to guide men in a straight line: Two ready lines are marked 10 yards beyond the end lines at each end of the 150-yard course (fig. 110).

e. Personnel. One starter and one timer for the event, and one scorer for each lane.

f. Organization. The group is formed to the rear of the starting line with a front of four men and a depth as required by the size of the unit being tested. The men are then sized according to height, with short men in the front rank and tall men toward the rear. The ranks are designated by number and the odd number ranks are directed to face about. A careful check is made to see that everyone is paired with a man of his approximate weight. Partners are changed as necessary to equalize weight. The odd numbered ranks are then faced to the front and the event supervisor reads the instructions and provides a demonstration of the event and various methods of carry to include the fireman's carry (I, fig. 16), single shoulder carry (J, fig. 16), and saddle-back carry (J, fig. 17).

g. Instructions. The event supervisor reads the following: YOU ARE NOW PAIRED WITH A MAN OF APPROXIMATELY YOUR OWN WEIGHT. DO NOT CHANGE RANKS OR PARTNERS. THE STARTING COMMANDS ARE: MOUNT, GET SET, AND GO. ON THE COMMAND TO MOUNT, YOU ARE TO LIFT YOUR PARTNER USING THE CARRY POSITION OF YOUR CHOICE. WHEN READY, YOU MAY PLACE YOUR LEAD FOOT ON THE STARTING LINE. AT THE COMMAND "GO" MOVE TO THE FINISH LINE AT THE FAR END OF THE COURSE AS FAST AS POSSIBLE. IF YOU FALL, DROP YOUR PARTNER, OR HE BECOMES UNBALANCED, YOU MAY PICK HIM UP OR REBALANCE YOUR LOAD AND CONTINUE THE EVENT. IF THIS ACTION IS NECESSARY, MOVE RAPIDLY AS YOU ARE BEING TIMED. WHEN YOU FINISH THE EVENT, LOWER YOUR PARTNER TO THE GROUND AND BOTH MOVE BEHIND THE READY LINE AND REASSEMBLE IN RANK ORDER. THE ODD NUMBER RANKS WILL CARRY THEIR PARTNERS DOWN THE COURSE, AND AFTER ALL ODD NUMBERED MEN HAVE COMPLETED THE EVENT, THEN EVEN NUMBERED MEN WILL CARRY THEIR PARTNERS BACK UP THE



Figure 109. The grenade throw event.

COURSE. WATCH THIS DEMONSTRATION. Demonstrate. ARE THERE ANY QUESTIONS?

h. Administration. After reading the instructions, answer any questions and direct the scorers to collect the scorecards of the men in the odd numbered ranks by lane and move to the finish line. The timer also moves to finish line and assures his watch is ready. The starter stands to one side of the starting line. When the runners are ready, he gives the commands to start and lowers the flag on the word GO. All odd numbered ranks are run and then the starter and timer exchange places and scorers collect the scorecards of the even numbered ranks and move to the opposite end of

the course. The event is again administered until all even numbered orders have completed the course.

i. Score Duties. Collect the scorecards in the order the men are to run. Move to the opposite end of the course. When the event starts watch the runner and when he crosses the line note the time; record it on the scorecard, and return the card to the examinee. Record the runner's time in seconds and half-seconds. A full second counted by the timer as the runner reaches the finish line is recorded as such; crossing the finish line on the word "hut" is recorded to the half-second.

j. Timing Technique. The event supervisor serves as the starter. The timer starts the



Figure 110. The 150-yard man-carry event.

stopwatch when the flag goes down. When the first runner of each heat is approximately 30 yards from the finish line, the timer begins to count the seconds and half-seconds aloud. For example, 42-hut, 43-hut, 44-hut. He counts until the last runner completes the course.

403. One-Mile Run—Test Event No. 5

a. Purpose. The 1-mile run event tests the ability to make a prolonged run. The endurance of both the circulo-respiratory and muscular systems is measured.

b. Equipment. Two stopwatches, one flag, and two sets of identification numbers are required. Each set is to be numbered from 1 through 72 and each set must consist of a dif-

ferent color background. The size of the background material is 8 by 8 inches. Numbers must be provided with a means of holding the number to the runner's jacket or shirt. Heavy cord or tape attached as a neck loop with waist ties is satisfactory.

c. Facilities. A quarter-mile track is designated by a series of wooden stakes to mark the inside edge of the track. A field or area 90 yards wide by 185 yards long is required.

d. Personnel. Two scoring teams are required to administer this event. Each team consists of one event supervisor, six scorers, and two organizers. The assistant to the chief examiner serves as the starter.

e. Organization. Groups I and II are on one



Figure 111. One-mile run event.

side of the track and groups III and IV are on the opposite side. The event supervisor on each side of the track orients his group by reading the test event instructions.

f. Instructions. The event supervisor reads the following: THE ONE-MILE RUN TESTS YOUR ENDURANCE AND YOUR ABILITY TO MAKE A PROLONGED RUN. YOU WILL RUN IN A GROUP OF 36 MEN. ANOTHER GROUP OF 36 MEN WILL START AT THE SAME TIME ON THE OPPOSITE SIDE OF THE TRACK. AT THE START, ALL RUNNERS WILL BE TO THE REAR OF THE STARTING LINE. AT THE COMMAND "GO" EACH MAN WILL START RUNNING AROUND THE ONE-QUARTER

MILE TRACK; EACH MAN SETTING HIS OWN PACE AND RUNNING TO THE RIGHT OF THE STAKES MARKING THE TRACK. FOUR LAPS AROUND THE TRACK EQUAL ONE MILE. YOU WILL START AT THIS LINE, AND AFTER RUNNING FOUR LAPS AROUND THE TRACK, YOU WILL FINISH AT THIS SAME LINE. AS YOU COMPLETE EACH LAP, AN OFFICIAL WILL ANNOUNCE THE NUMBER OF LAPS REMAINING TO BE RUN. TRY TO PACE YOURSELF AND DO NOT RUN ALL-OUT ON THE FIRST LAP. YOU WILL BE SCORED ON YOUR ABILITY TO RUN THE MILE IN THE SHORTEST POSSIBLE TIME. THE NUMBER ON YOUR CHEST IS

TO AID THE SCORER TO IDENTIFY YOU. MAKE CERTAIN YOUR NUMBER IS VISIBLE EACH TIME YOU COMPLETE A LAP AND ALSO WHEN YOU FINISH. WHEN YOU COMPLETE THE FINAL LAP, TURN IN YOUR NUMBER AND STAY IN THIS IMMEDIATE VICINITY DURING THE COOLING OFF PERIOD. REMAIN ALERT FOR THE SIGNAL TO FALL IN AND MOVE FROM THE AREA. ANY QUESTIONS?

g. Administration. After reading the instructions, answer any questions and then have the two organizers prepare the examinees for running. The organizers will form the examinees into 36-man groups. Numbers from 1 through 36 are issued to the first 36 men to run on each side of the track. Contrasting colored numbers are used, for example red on one side of the track and blue on the opposite side. These men are assembled on the track in six files of six men each. The first man in each file should be just in rear of starting line. When assembling men on the track, consecutive numbers should be placed in the same file. For example, in the first order to run, the first file should contain numbers 1, 2, 3, 4, 5, and 6. The event supervisors direct scorers to collect the cards from the men in their lane. When all scorers and runners are ready, the event supervisor signals to the assistant chief examiner that he is ready by raising his arm above his head (assistant chief examiner is in the center of the field). When the assistant chief examiner gets ready signals from both sides of the track, he raises his flag. That is the signal for both event supervisors to give the warning command READY. When the flag goes down, the command GO is given, and at the same time the watch is started. As soon as the first group of runners has started, the organizers get the next 36 men ready. Numbers from 37 to 72 are issued to this group. If there are more than two orders to run, the numbers are collected from the first order and used for the third order. As soon as first-order men finish their run, the numbers are collected by the organizers and distributed to the men in the third order. If there is a fourth order, numbers from the second order are utilized.

h. Timing Technique. The event supervisor

serves as starter-timer. He calls the time as the men in his group pass at each lap and as they finish the mile. Time is called in minutes and seconds. For example: 7:29, 7:30, 7:31, 7:32.

i. Scorer's Duties. When the examinees are assembled on the track ready to run, step up to your lane at the starting line and gather the cards from the men in your lane. As you take each man's card, record his number on the upper right-hand corner of the card. When you have all the cards, copy these numbers in a column on a separate piece of paper. As the men complete each lap, make a mark opposite their number and tell them the remaining laps to be run. As your men finish the fourth lap, note the time in which each man completes the run and record this time. Record the time in minutes and seconds opposite the number. For example, your recording on the separate piece of paper will look something like this—

Numbers	Laps			Time
7	x	x	x	7:20
8	x	x	x	8:10
9	x	x	x	6:55
10	x	x	x	7:01
11	x	x	x	9:00
12	x	x	x	7:06

When all your men have finished, transfer their times from the piece of paper to the proper column on the scorecards and return the cards.

404. Facilities and Equipment

The test area should be a level training field (fig. 112), preferably with a grassed surface, large enough to permit the layout of a one-quarter mile oval track. The 40-yard low crawl and grenade throw or the 150-yard man-carry require no permanent-type construction and can be placed on the inside area of the track. The horizontal ladder and dodge, run, and jump events require construction of immovable facilities and should be placed to the side or near the field to prevent interference with other activities. There is no preferred order for these areas and facilities. The only criterion is that the facilities for the test be on or near the same training area. Specifications for each event are as follows:

a. Forty-yard Low Crawl (fig. 113). Sixteen lanes, six feet wide by 20 yards long, are re-

quired. Overall dimensions to include the above area and additional space needed for test administration requires an area 32 yards wide by 40 yards long. Some permanent means of marking the ends of the lanes used as the starting and finishing points must be provided as constant use will soon erase a temporary line. A strip of canvas may be used in each lane to provide a uniform crawling surface. This material must be securely fastened to the ground, if used.

b. *Horizontal Ladder* (fig. 114). A four-lane ladder is required and should be constructed to the specifications as indicated. Ladder dimensions are: height, nine feet; length, 20 feet; and width, 16 feet. The area needed for the construction of the ladder and for test administration should be 10 yards wide by 25 yards long.

(1) The following construction details should be carefully applied in the building of the ladder facility. There are 14 rungs in each lane. The rungs are made of pipe with an outside diameter of one and one-quarter inches. The spacing between rungs is 18 inches, center to center. To counter excessive friction and heat resulting in skin damage to the palms of the hands, the bars or rungs are individually seated in each lane to allow turning of the bar rather than the examinees' hands turning on the bar.

(2) To prevent heating of the bars from sunlight, a roof over the entire facility is provided. This roof will also prevent the bars from becoming wet due to rain. The roof should be constructed in the manner which allows proper drainage and meets local climatic conditions. For safety purposes in absorbing shock during the act of dropping or falling from the bars, a heavy layer of sawdust or similar shock absorbing material, to a minimum depth of 12 inches, should be provided under the entire ladder.

c. *Dodge, Run, and Jump* (fig. 115). This course contains four lanes consisting of four wooden obstacles per lane and a shallow ditch across the center of all lanes. The overall size of the area required for construction and test administration is 18 yards wide by 26 yards long. The ditch is six feet in width and one foot in depth. Sandbags may be used to shore up the sides of the ditch and to establish uni-

form width. The wooden obstacles are constructed to specification with directional arrows painted on both sides of the obstacles.

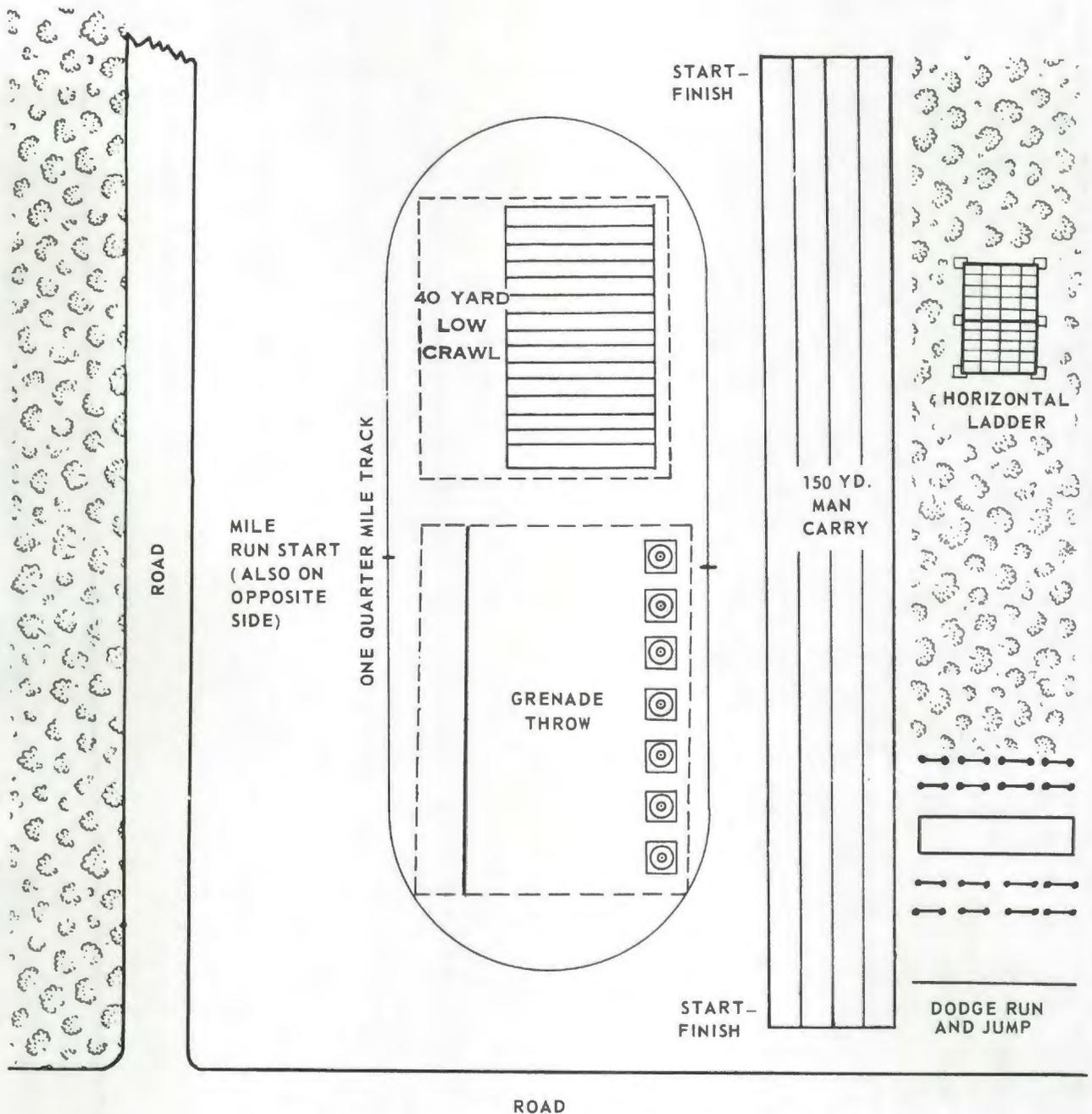
d. *Grenade Throw* (fig. 116). The grenade throw area contains seven lanes, each lane to consist of a throwing line and a target area 90 feet from the throwing line. The overall area for construction and test administration should be 75 yards wide by 60 yards long. The circles may be identified by one of several methods. The preferred method is to paint the rings on salvage canvas or target cloth. The material is cut to cover the target square. At the completion of testing, the targets can be folded and stored until the next test. The target area should be laid out as follows:

(1) Mark off the target squares and determine the center of the square. Fasten one end of a length of rope to the center of the target. Measure the desired radius along the rope and tie a marking instrument to the rope at that point. Mark the circle by swinging in an arc.

(2) Other methods in which local materials are used may also be employed. Lime may be used to mark the lines; heavy rope or salvage rubber one-inch water hose may be formed into circles. Flat rings such as painted or limed lines should not exceed two inches in width and raised rings such as rope or water hose should not exceed one inch in diameter.

e. *150-yard Man Carry* (fig. 117). Level ground, with starting and finish lines 150 yards apart. Grass is preferred to hard ground or a cinder track as men fall occasionally. Such surfaces greatly increase the chance of injury when the man is heavily loaded. Four lanes 6 feet wide are marked to guide men in a straight line. Two ready lines are marked 10 yards beyond the end lines at each end of the 150-yard course. One stopwatch to time the event and one flag to start the event are required.

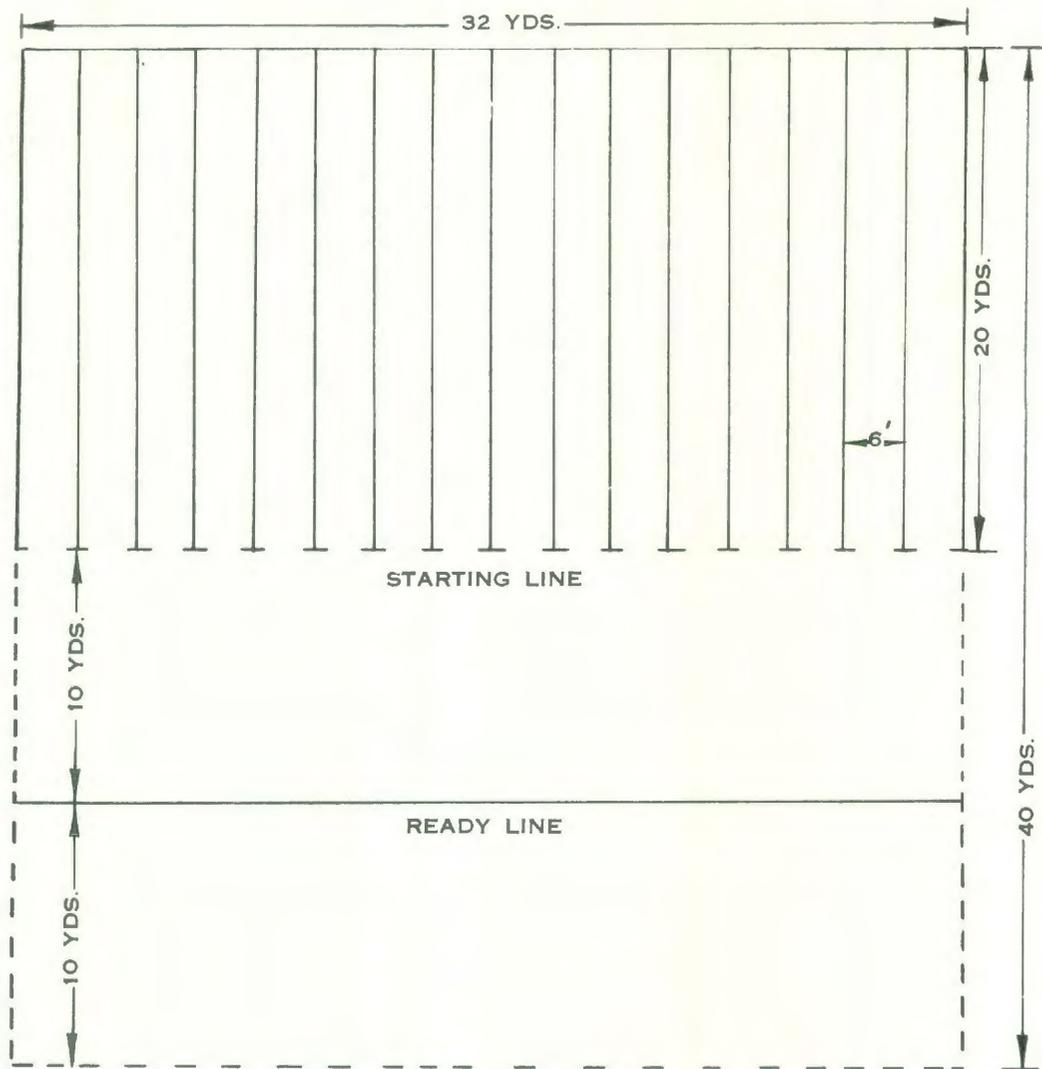
f. *One-mile Run* (fig. 118). A quarter-mile track is designated by a series of wooden stakes to mark the inside edge of the track. A field or area 90 yards wide by 185 yards long is required. To lay out the track, locate a horizontal midline in the center of the area. This line is 279 feet. $9\frac{3}{4}$ inches in length. Mark a circle with a radius of 120 feet at both ends of this



Notes On Layout Of Test Area

1. The horizontal ladder and dodge run and jump areas are placed off the field due to their immovable nature.
2. There is no preferred order of areas. The only criteria is that the facilities for the events should be on or near the same training area.

Figure 112. Typical physical combat proficiency area.



Notes On Layout Of Crawl Area

1. Dotted lines indicate minimum size of area.
2. Short lines at the end of each lane boundary are preferred over a solid starting line as a solid line is erased in crawling.

Figure 113. 40-yard low crawl area.

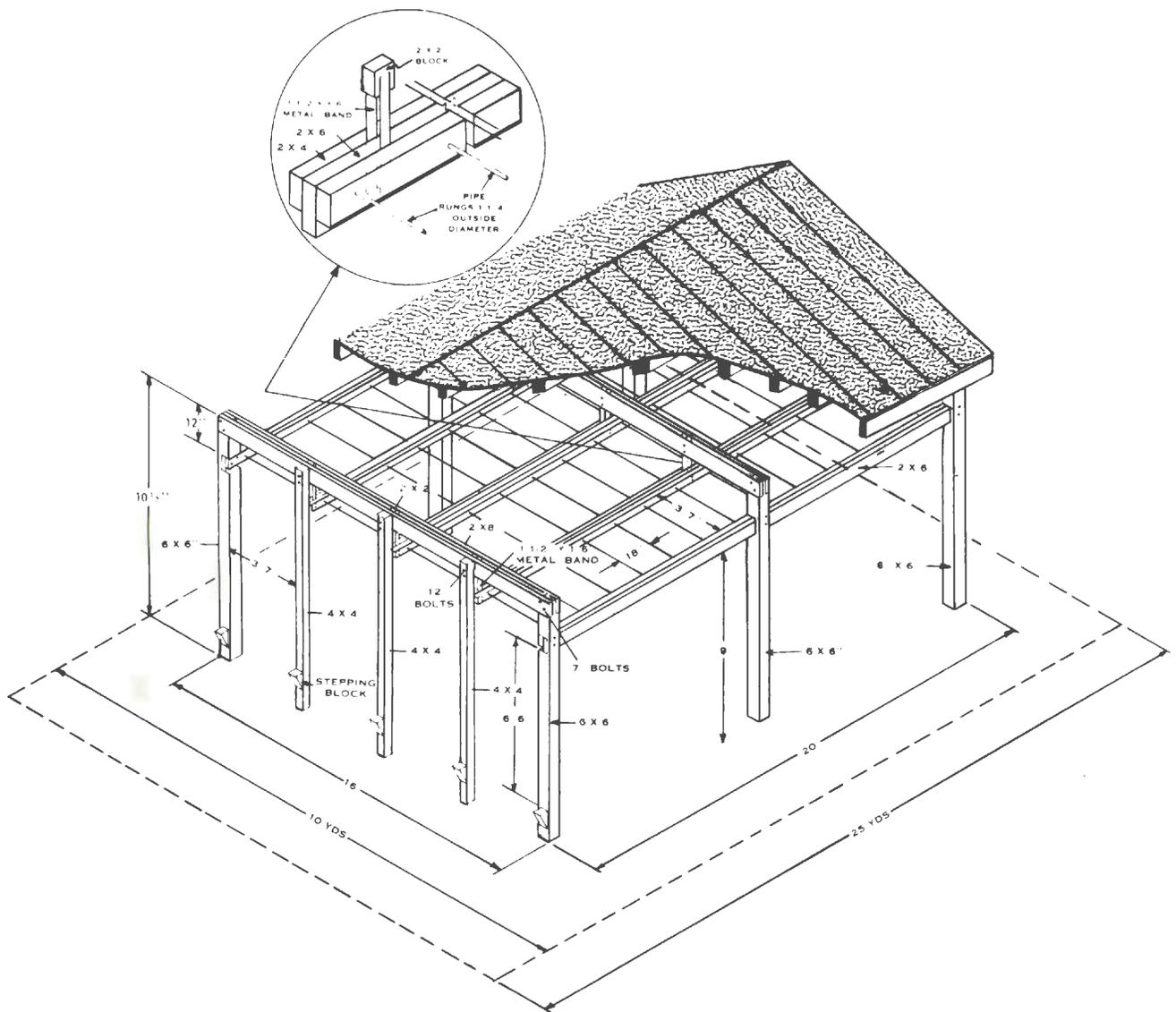
line. To form the track, connect the outermost points of the two circles with tangent lines.

g. Equipment. The equipment needed to administer the test is divided as to the function of the equipment.

(1) *Layout equipment.* If some of the events are laid out on a temporary basis and

must be reconstructed with each administration of the test, equipment such as a reel-type steel tape, stakes, lime, lime marker, and similar equipment must be provided.

(2) *Event equipment.* Certain equipment is required during the administration of the test to include two stopwatches, one signal flag,



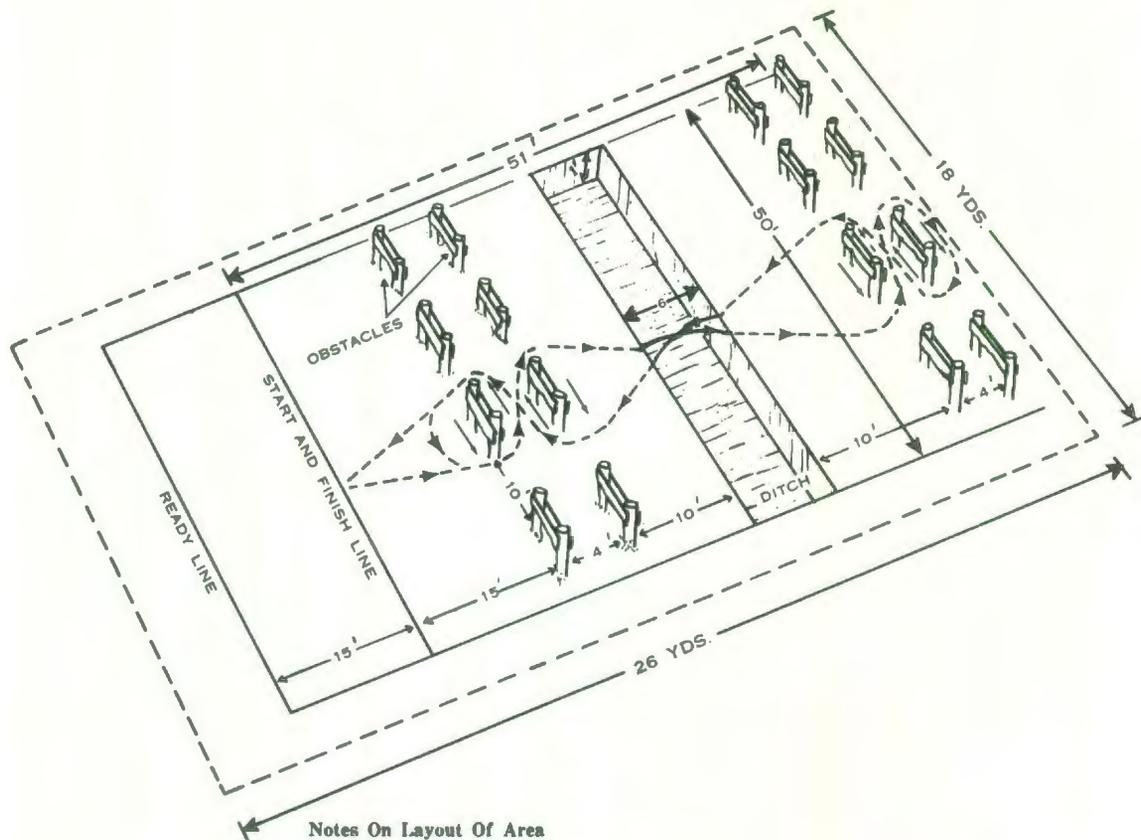
NOTES ON LAYOUT OF AREA

1. Dotted lines indicate minimum size of area.
2. There are 14 rungs in each lane. The rungs are made of pipe with an outside diameter of 1 1/4 inches.
3. The spacing between rungs is 18 inches, center to center.
4. The bars or rungs are individually seated to allow turning of the bar in it's seat rather than the examinee's hand turning on the bar. (See insert for detail)
5. The 6 x 6 inch support post should extend at least 4 feet underground.
6. Roof to extend 6 inches on each side and 12 inches on each end

Figure 114. Horizontal Ladder Facility.

and 144 identification numbers. Any standard stopwatch may be used, either a so-called 1/5- or 1/10-second watch. The watch must be of the type which will retain the minute count in addition to timing whole seconds. A cloth flag is required. A red flag about 12 inches square,

on a short handle, is suggested. Two sets of numbers are required. Each set to be numbered from 1 to 72. The background of each set must be a different color. Numbers must be provided with a means of holding the number to the runner. Heavy cord or tape attached to each of



Notes On Layout Of Area

1. Dotted lines indicate minimum size of area.
2. Sand bags can be used to shore up sides of ditch and to establish uniform width of the ditch.
3. Obstacles are constructed as follows:

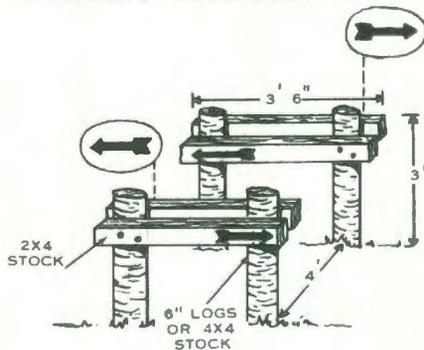
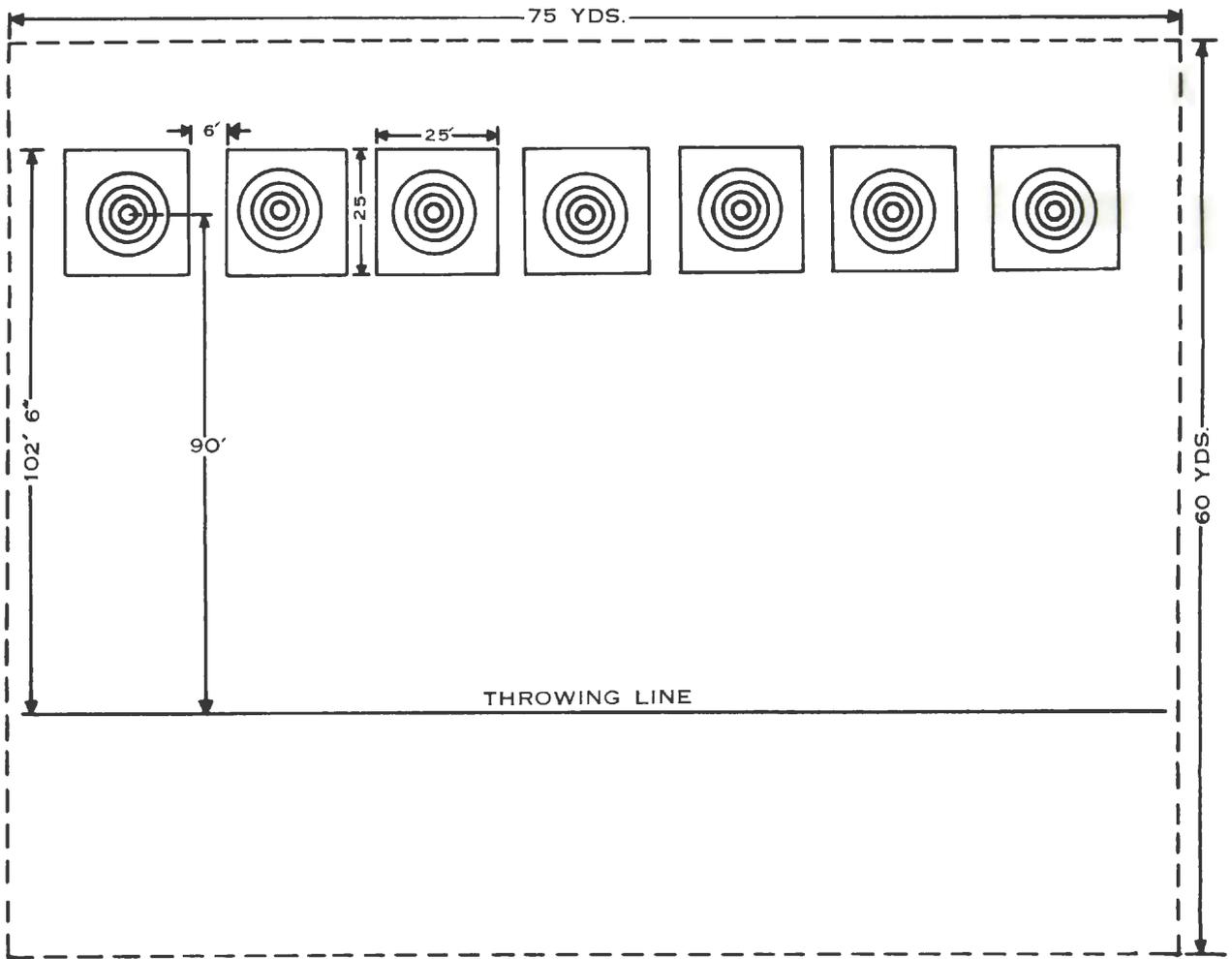


Figure 115. Dodge, Run, and Jump Area.

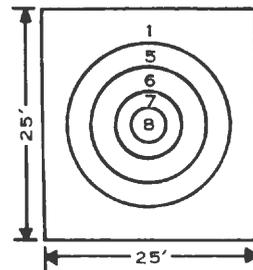
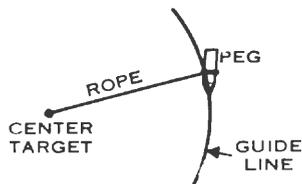
the top corners in the form of a neck loop and two side cords attached to the bottom corners if the number are most satisfactory. The side cords are each 20 inches long and are secured around the runner's waist, tied in the rear. The neck cord is made from material 24 inches in length.

(3) *Scorer equipment.* Scorers require items of equipment to enable them to carry out their duties. A test event description must be available to each of the five event supervisors for instruction of the examinees being tested. There should be 18 colored pencils for recording of scores and 18 clip-boards for the use of



Notes On Layout Of Area

1. Dotted lines indicate minimum size of area.
2. Mark off squares and determine the center of the square.
3. Fasten one end of a length of rope to the center of the target.
4. Measure the desired radius and tie a pointed peg to the rope at that point.
5. Mark off the circle on the ground.
6. Mark the circle with lime.



RADIUS OF CIRCLES
 8 POINT - 2 FEET
 7 POINT - 4 FEET
 6 POINT - 6 FEET
 5 POINT - 8 FEET
 DISTANCE FROM CENTER
 TO EDGE OF SQUARE IS
 12' 6"

Figure 116. Grenade throw area.

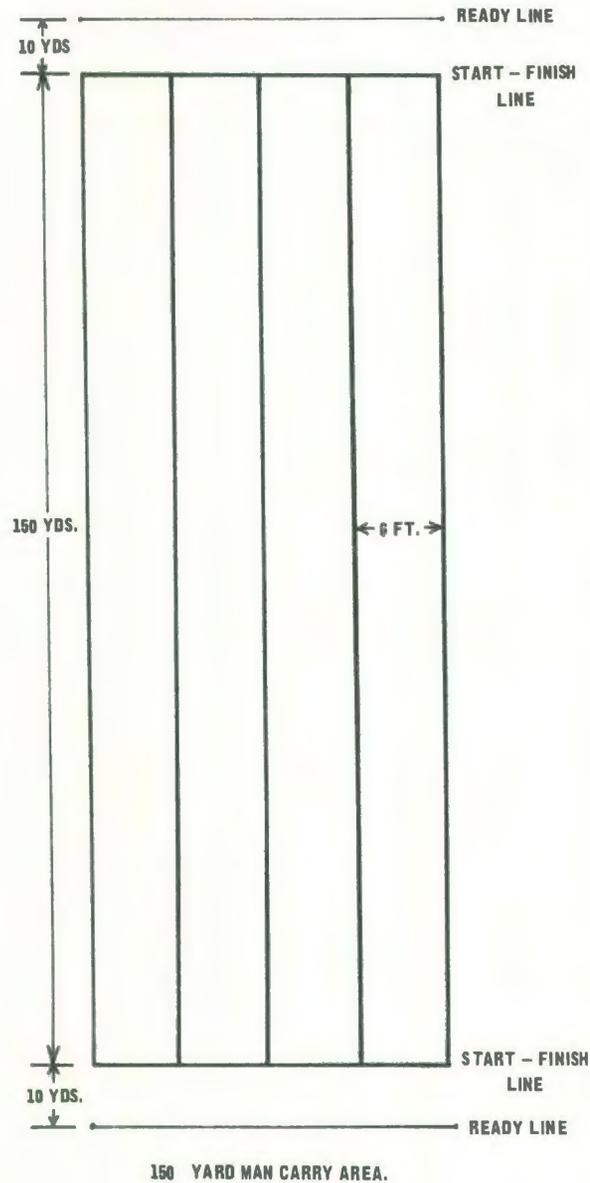
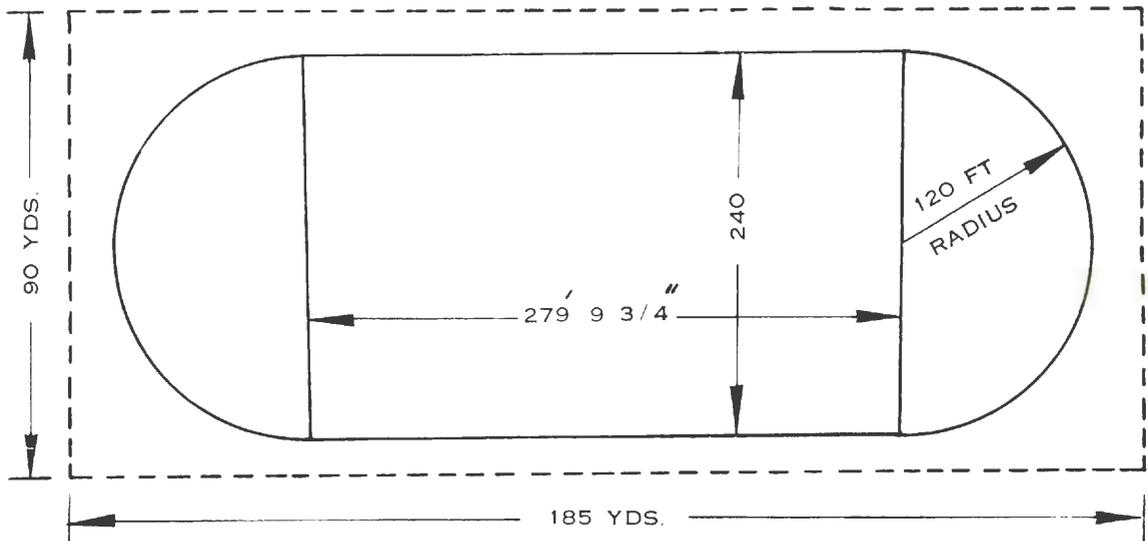


Figure 117. 150-yard man-carry area.

scorers to facilitate recording the results on the scorecards.

(4) *Examinee equipment.* Each examinee

must have a scorecard, DA Form 705 (fig. 103), and a lead pencil. Examinees usually provide their own pencils.



Notes On Layout Of Track

1. Dotted lines indicate minimum size of area.
2. The track is one-quarter mile at the inside edge of track.
3. To layout track locate a horizontal mid-line in the center of the area. This line is 279 feet, 9³/₄ inches long.
4. From the end points of this line mark circles with a radius of 120 feet.
5. To form the track connect the outermost points of the two circles with tangent lines.

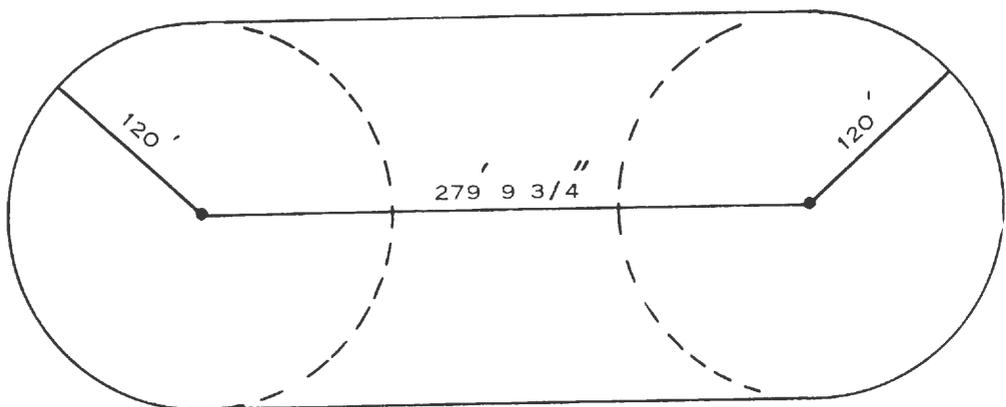


Figure 118. Quarter-mile track.

CHAPTER 26

THE ARMY MINIMUM PHYSICAL FITNESS TEST—MALE

Section I. INTRODUCTION

405. Use and Composition of the Test

a. Use. The Army Minimum Physical Fitness Test is to be used in determining the minimum physical ability of those active Army personnel who are assigned to duties which preclude participation in a physical fitness program that will prepare them for the Physical Combat Proficiency Test. The AMPFT-M is also for personnel who cannot be tested on the Physical Combat Proficiency Test due to lack of facilities.

b. Test Events. The test battery consists of six events. The examinee has a choice of a primary or an alternate selection in each of the six events categories. The first category is a test of flexibility; the second is a test of the shoulder girdle area; the third is a test of the abdomen; the fourth is a test of the back; the

fifth is a test of the legs; and the sixth is a test of circulo-respiratory development.

406. Method of Scoring and Standards

a. Scoring. A trained scorer who is familiar with the required form of each test event should score the examinee. The examinee will be scored on a pass or fail basis. His performance on each event will be recorded in the space provided on DA Form 705 (Physical Fitness Testing Record).

b. Standards. To successfully pass the test, the examinee must attain or exceed the standard in each event of the six events he selects to form his test battery. One event is to be selected from each category. The categories, events, and standards follow:

<i>Events</i>	<i>Standards by Age Groups</i>	
	<i>17-29</i>	<i>30-39</i>
(1) A-Squat bender, or B-Squat stretch	10 repetitions	9 repetitions
(2) A-Pushup, or B-8-count pushup	10 repetitions	9 repetitions
(3) A-Situp, or B-Body twist	19 repetitions	17 repetitions
(4) A-Legs over, or B-Leg spreader	7 repetitions	6 repetitions
(5) A-Squat thrust, or B-Mountain climber	19 repetitions	17 repetitions
(6) A-Stationary run, or B-One-half mile run	10 repetitions	9 repetitions
	21 repetitions	20 repetitions
	10 repetitions	9 repetitions
	21 repetitions	20 repetitions
	350 repetitions	275 repetitions
	4:00 minutes	4:00 minutes

407. Uniform for Testing

a. Examinees. The prescribed uniform for test participation is the work uniform for the season. No headdress is worn, and when cli-

matic conditions permit, jackets or outer shirts may be removed.

b. Officials. Scorers and other test officials should be uniformly and distinctly dressed for contrast with men being tested.

CHAPTER 26

THE ARMY MINIMUM PHYSICAL FITNESS TEST—MALE

Section I. INTRODUCTION

405. Use and Composition of the Test

a. Use. The Army Minimum Physical Fitness Test is to be used in determining the minimum physical ability of those active Army personnel who are assigned to duties which preclude participation in a physical fitness program that will prepare them for the Physical Combat Proficiency Test. The AMPFT-M is also for personnel who cannot be tested on the Physical Combat Proficiency Test due to lack of facilities.

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fifth is a test of the legs; and the sixth is a test of circulo-respiratory development.

406. Method of Scoring and Standards

a. Scoring. A trained scorer who is familiar with the required form of each test event should score the examinee. The examinee will be scored on a pass or fail basis. His performance on each event will be recorded in the space provided on DA Form 705 (Physical Fitness Testing Record).

b. Standards. To successfully pass the test, the examinee must attain or exceed the standard in each event of the six events he selects to form his test battery. One event is to be selected from each category. The categories, events, and standards follow:

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	<i>17-29</i>	<i>30-39</i>
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(2) A-Pushup, or B-8-count pushup	10 repetitions	9 repetitions
(3) A-Situp, or B-Body twist	19 repetitions	17 repetitions
(4) A-Legs over, or B-Leg spreader	7 repetitions	6 repetitions
(5) A-Squat thrust, or B-Mountain climber	19 repetitions	17 repetitions
(6) A-Stationary run, or B-One-half mile run	10 repetitions	9 repetitions
	16 repetitions	14 repetitions
	21 repetitions	20 repetitions
	10 repetitions	9 repetitions
	21 repetitions	20 repetitions
	350 repetitions	275 repetitions
	4:00 minutes	4:00 minutes

407. Uniform for Testing

a. Examinees. The prescribed uniform for test participation is the work uniform for the season. No headdress is worn, and when cli-

matic conditions permit, jackets or outer shirts may be removed.

b. Officials. Scorers and other test officials should be uniformly and distinctly dressed for contrast with men being tested.

Section II. TEST ADMINISTRATION PROCEDURES

408. Preparations for Test

a. Area and Facilities. The test may be administered indoors or outdoors. No special facilities are required. If the one-half mile run is selected, a one-quarter mile track will simplify test administration.

b. Marking the Scorecard. The scorer will indicate the event selected in each option category, and also the degree of performance by entering his initials in the appropriate block opposite the test event on the scorecard.

c. Equipment. With the exception of scorecards and pencils, no equipment is needed for the first 11 events. For the half-mile run event a stopwatch and identifying numbers are required.

d. Standardization of Conditions. The administration of the test to a large group of men makes it mandatory that the test effort be organized and efficiently operated. All testing of examinees is not completed with large test groups; on occasion, individuals and small groups of several men are tested. Care must be exercised to administer the test uniformly and to standardize the conduct of all elements of the test. Regardless of the size of the test group, the following elements of sound test administration should be completed:

- (1) An orientation to include the purpose, method of administration, scoring of the test, preparation of the scorecard, and required standards.

- (2) A correct demonstration of each event to insure that there is no misunderstanding of the proper form and required standards.

- (3) Completion of all six selected test events in one test period with all men taking their selected event from each category in the same order of sequence.

- (4) Adequate rest periods between the test events to allow for recovery prior to the administration of the next event.

e. Method of Administration with a Large Group. Using a minimum of 12 lanes per test event, 14 officials can administer the test battery to 150 to 200 men in 2 hours. The officials are designated as follows: one officer in charge, one demonstrator, and 12 scorers. If more or fewer men are to be tested, a greater or lesser number of officials will be required as indicated

by the number of men. The following procedure is recommended:

- (1) Conduct an orientation and insure the examinees have a properly completed scorecard.

- (2) Assign men to lanes and caution them to remain in the same lane order throughout the test.

- (3) Explain and demonstrate the events from the flexibility test category; administer and score these events; proceed to the events of the shoulder girdle test category and the abdominal test category; and repeat the testing process in the same manner.

- (4) Grant a 5- to 10-minute rest period after the third category. Advise against excessive consumption of water during the break period.

- (5) Explain and demonstrate the events from the back test category; administer and score these events; proceed to the events of the leg test category and the circulo-respiratory category; and repeat the testing process.

f. Testing Procedure. After all explanations and demonstrations are completed and the examinees have been assigned lanes, they maintain a file formation within each lane and stay in the same numerical order throughout the test. When the scorer is ready he calls the first man forward, takes his scorecard and administers the test event. As the examinee executes the event the scorer counts out loud the number of satisfactory repetitions until the minimum number are completed. If a repetition is incorrectly executed, the number of the last satisfactory repetition will be repeated. At the completion of the event the performance will be indicated on the scorecard and the card returned to the examinee. The scorer then calls the next examinee forward and repeats the process. This procedure is followed in all events except the one-half mile run. At the conclusion of the final event the scorer retains the scorecards.

409. Method of Administration with a Small Group

A similar procedure, as recommended in 408e and f, is followed for the testing of individuals and small groups. The informality usually as-

sociated with small groups must not conflict with sound test administration. With fewer ex-

aminees, a smaller number of officials will be required.

Section III. DESCRIPTION AND EXPLANATION OF TEST EVENTS

410. Flexibility Events

Squat Bender (primary) or Squat Stretch (alternate).

a. Purpose. These events measure the presence of a full range of flexibility in the major joints.

b. Squat bender (fig. 119).

(1) *Starting position.* Feet spread less than shoulder width apart, hands on hips, elbows back.

(2) *Movement.* Do a full knee bend, trunk erect and thrust the arms forward. Recover to the starting position, and with knees locked, bend forward at the waist and touch the toes and recover to the starting position.

(3) *One repetition.* Down into the full knee bend, recover, touch toes, and recover is one repetition.

(4) *Instructions.* Explain and demonstrate the correct starting position. Be certain examinees understand that they are to do a full knee bend, that they must touch the toes and assume a fully erect position at the start and at the end of each repetition.

(5) *Position of scorer.* The scorer stands to one side so he can see that the knees are fully bent, that the hands touch the toes, and the erect position is assumed.

c. Squat stretch (fig. 119).

(1) *Starting position.* Erect position, hands at sides, feet spread slightly.

(2) *Movement.* Bend knees, incline trunk forward, and place arms between knees with hands flat on ground beneath shoulders. Straighten knees, keeping feet in place and fingers touching ground. Again bend knees and resume the first position. Recover to the erect position.

(3) *One repetition.* The above sequence is one repetition.

(4) *Instructions.* Explain and demonstrate the correct starting position. Be certain examinees understand they are to do a full squat initially, that on the stretch the knees and arms are straight, and in execution of the upright position the body is to be fully erect.

(5) *Position of scorer.* The scorer stands to one side where he can see the full range of movement.

411. Shoulder Girdle Area Events

Pushups (primary), or 8-count pushups (alternate).

a. Purpose. These events measure the strength of the shoulder girdle.

b. Pushup (fig. 120).

(1) *Starting position.* Front leaning rest position with body straight from head to heels.

(2) *Movement.* Lower the body until the chest touches the ground, keep body straight. Recover by straightening the arms and raising the body.

(3) *One repetition.* Down and touch the ground and recovery to the front leaning rest position is one repetition.

(4) *Instructions.* Explain and demonstrate the correct starting position. Be certain examinees understand the body is to be straight from head to heels throughout the event. The chest is to touch the scorer's hand, the elbows are to straighten completely in the UP position, and no resting will be permitted during the event.

(5) *Position of scorer.* It is recommended that the men assume a prone position while placing their feet and hands in the proper positions. This permits them to rest while the scorer gets into position and, at the same time, provides a feel of the body in a straight plane from head to heels. The scorer lies on his right hip and side on the examinee's right. This gives him a clear view of the examinee's body and he can see any errors. The palm of his right hand rests flat on the ground underneath the lowest part of the examinee's chest. By keeping the right forearm flat on the ground and angling it from in front of the examinee's right arm, the scorer's position will not prevent the examinee from lowering his body completely. The scorer's left hand is free to test the straightening of the elbow at the completion of the movements and to point out body segments being lowered or raised separately. When in position



ONE



TWO



THREE



FOUR

SQUAT BENDER (PRIMARY)



SQUAT STRETCH (ALTERNATE)

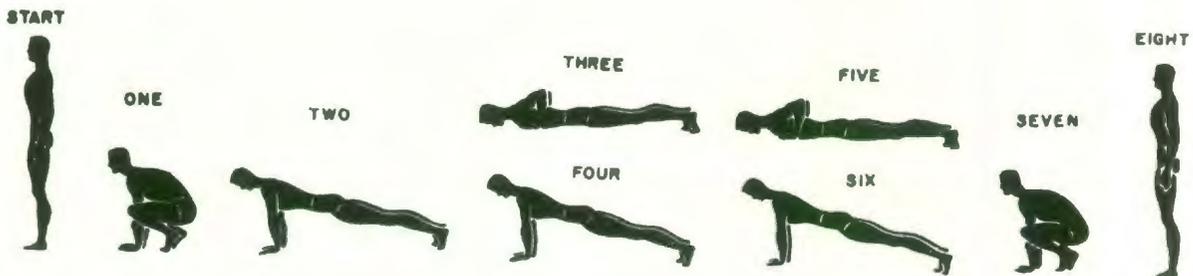
Figure 119. Flexibility test events.

and ready, the scorer has the examinee assume the starting position and begin his pushups. There is no penalty if the contour of the exam-

inee's body causes the hips to protrude slightly out of line, provided that the whole body is raised and lowered simultaneously.



PUSH UP (PRIMARY)



EIGHT-COUNT PUSHUP (ALTERNATE)

Figure 120. Shoulder girdle test events.

c. *Eight-count pushup* (fig. 120).

(1) *Starting position.* Erect position, hands at sides, feet together.

(2) *Movement.* Bend knees, place hands on ground between legs. Thrust legs to the rear. Execute two complete pushups and then thrust the legs forward bending the knees with arms between the knees. Recover to the erect position.

(3) *One repetition.* The completion of all eight counts is one repetition.

(4) *Instructions.* Explain and demonstrate the correct starting position. Be certain examinees understand the initial movement is

a full squat, that the body is straight from head to heels and the chest is to touch the ground during the pushup movement, and a full squat position is assumed with the knees outside of the elbows prior to returning to the starting position.

(5) *Administration and scoring.* The scorer kneels on one knee in a position which is to the side of the examinee. From this position the scorer has a good view of the squat and of the extension of the body, and from this height he can see if the chest touches the ground during the pushup part of the event.

412. Abdominal Area Events

Situps (primary), or body twist (alternate).

a. *Purpose.* These events measure the strength of the abdominal muscles.

b. *Situps* (fig. 121).

(1) *Starting position.* Supine (back) position, arms overhead, palms facing.

(2) *Movement.* With a sharp movement sit up, thrust the arms forward and touch the toes. (Keep the legs straight and the heels in contact with the ground.)

(3) *One repetition.* Sit up, touch toes, and resume the supine position is one repetition.

(4) *Instructions.* Explain and demonstrate the correct starting position. Assure examinees understand that in sitting up the hands are to come forward and touch the toes, that in returning to the supine position the arms are to remain straight and contact the ground, and that throughout the movement the legs are to remain straight and in contact with the ground.



SITUP (PRIMARY)



BODY TWIST (ALTERNATE)

Figure 121. Abdominal test events.

(5) *Administration and scoring.* The scorer stands to one side of the examinee in a position that allows him to view the examinee and determine if the hands touch the toes, the legs maintain contact with the ground, and the arms fully contact the ground when the return is made to the supine position.

c. Body twist (fig. 121).

(1) *Starting position.* Back position with arms out to sides and legs raised to the vertical.

(2) *Movement.* Lower legs to the left, raise legs to the vertical, lower to the right, again raise to the vertical. (Keep legs together and the head and hands in contact with the ground throughout the exercise.)

(3) *One repetition.* The above sequence is one repetition.

(4) *Instructions.* Explain and demonstrate the correct starting position. Be certain examinees understand the following sequence: the event starts with the legs straight and raised to a vertical position; the legs are lowered to the ground under muscular control and are not allowed to fall to the ground; in raising the legs from the ground to the vertical there is to be a slight pause at the vertical, before lowering to the opposite side.

(5) *Administration and scoring.* The scorer stands to the right or left front of the examinee to insure a view of the head, hands, and legs through the entire range of movement.

413. Back Area Events

Legs over (primary), or leg spreader (alternate).

a. Purpose. These events measure the minimum strength of the back muscles.

b. Legs over (fig. 122).

(1) *Starting position.* Supine position, arms overhead, palms upward.

(2) *Movement.* Raise the legs and swing them backward over the head until toes touch the ground. Recover by returning legs to the starting position.

(3) *One repetition.* Touch toes overhead and recover to supine position is one repetition.

(4) *Instruction.* Explain and demonstrate the correct starting position. Be certain examinees understand the toes are to touch the ground as the legs are passed over the head,

and that the arms and trunk remain on the ground as the legs are returned to the starting position.

(5) *Position of scorer.* The scorer stands to either side of the examinee.

c. Leg spreader (fig. 122).

(1) *Starting position.* From back position, raise legs with heels 10 to 12 inches from the ground.

(2) *Movement.* Spread legs as far as possible; close them together. Continue to open and close legs until required repetitions have been completed.

(3) *One repetition.* Opening and closing legs is one repetition.

(4) *Instructions.* Explain and demonstrate the correct starting position. Be certain examinees understand the head and shoulders must remain on the ground throughout the event, that the feet cannot be raised more than 12 inches from the ground, and that resting is not permitted once the event starts.

(5) *Position of scorer.* The scorer stands to the right or left front of the examinee.

414. Leg Area Events

Squat thrust (primary), or mountain climber (alternate).

a. Purpose. These events measure the minimum strength and endurance of the leg muscles.

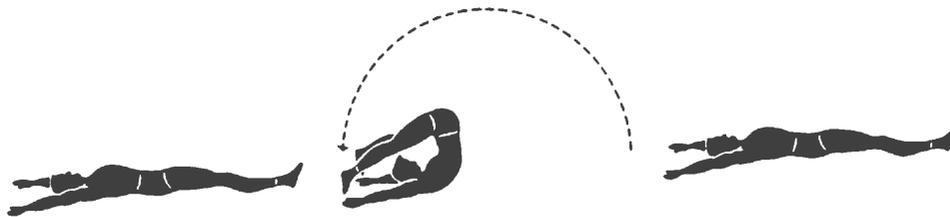
b. Squat thrust (fig. 123).

(1) *Starting position.* Erect position, feet together.

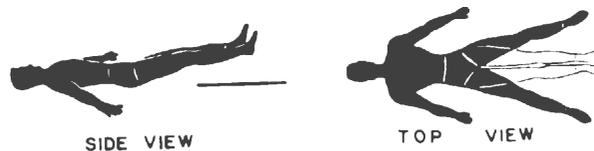
(2) *Movement.* Bend knees and place hands on ground shoulder width apart. Thrust legs to the rear, body straight from head to heels. Move legs forward assuming squat position, elbows inside of knees. Assume erect position.

(3) *One repetition.* Down into full squat, legs to the rear, back to full squat and return to the erect position is one repetition.

(4) *Instructions.* Explain and demonstrate the correct starting position. Be certain examinees understand a full squat is necessary, that the knees are spread and the arms are between the knees, the body is straight from head to heels during the thrust, the full squat is again assumed on the return from the thrust, and the full position is assumed at the end of the movement.



LEGS OVER (PRIMARY)



LEGS SPREADER (ALTERNATE)

Figure 122. Back test events.

(5) *Position of scorer.* The scorer stands to the right or left front of the examinee.

c. Mountain climber (fig. 123).

(1) *Starting position.* Front leaning rest position, body straight from head to heels.

(2) *Movement.* Bend the knee and bring the left foot as far forward as possible, return left leg to original position. Repeat movement with the right leg. Continue exercise alternating left and right legs in quick time cadence.

(3) *One repetition.* A leg thrust forward and return to the rear is one repetition.

(4) *Instructions.* Explain and demonstrate the correct starting position. Be certain examinees understand the body is to be straight from head to heels through the event, that the foot is to come forward as far as possible, and the alternation of legs is to be made in quick time cadence.

(5) *Position of scorer.* The scorer stands to either side of the examinee.

415. Circulo-Respiratory Area Events

Stationary run (primary), or one-half mile run (alternate).

a. Purpose. These events measure the minimum circulo-respiratory endurance.

b. Stationary run (fig. 124).

(1) *Movement.* Run in place, lift feet 4 to 6 inches off ground. At the completion of every 50 steps do 10 "knee touches." Repeat sequence until the required number of steps is completed.

(2) *One repetition.* Count a step each time left foot touches the ground.

(3) *Knee touches.* From a stride position, bend the knees and touch the knee of the rear leg to the ground, straighten legs, jump upward, and change position of the feet. Again bend knees and touch the opposite knee. Continue alternately touching each knee.

(4) *Instructions.* Explain and demonstrate the correct running cadence and the



SQUAT THRUST (PRIMARY)



MOUNTAIN CLIMBER (ALTERNATE)

Figure 123. Leg test events.

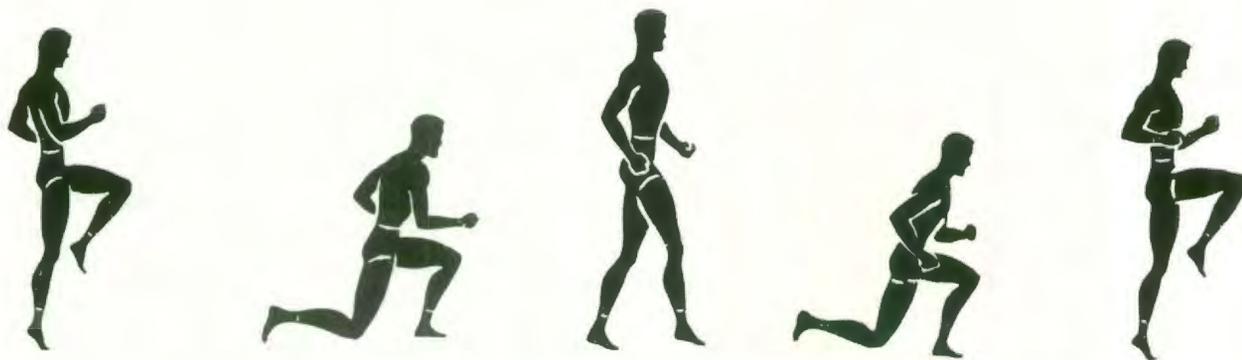


Figure 124. Stationary run and knee touch (primary).

method used in the "knee touches." Be certain examinees understand they are to do 10 "knee touches" after each 50 running steps. The "knee touches" are not counted as steps.

(5) *Position of scorer.* The scorer stands to the right or left front of the examinee.

c. One-half mile run.

(1) The run may be made around a mea-

sured track or along a level road which has been measured.

(2) Examinees are to run at their own individual pace.

(3) The administration of the one-half mile run will be conducted in the same manner as the one-mile run (para 403).

CHAPTER 27

THE AIRBORNE TRAINEE PHYSICAL FITNESS TEST

Section I. INTRODUCTION

416. Use and Composition of the Test

a. Use. The airborne trainee physical fitness test is to be used as a means of determining the physical ability of the applicant for acceptance to and retention in the airborne course of instruction.

b. Test Events. The test battery consists of five events as follows: chinups, knee bender, pushups, situps, and an endurance run.

417. Method of Scoring and Standards

a. Scoring. The applicant will be scored by a trained scorer who is thoroughly familiar with the required form and the minimum standards for the test events. The applicant will be scored on a pass or fail basis. His performance on each event will be recorded on the reverse side of DA Form 705 (Physical Fitness Testing Record). The applicant will record the personal identifying information on the face of the card as specified on the first, second, and third lines. The face of the card will be identified by writing diagonally across the lower half of the card "Airborne Trainee PFT—See reverse side." Using line 7 on the reverse side

of the scorecard, the scorer will enter the test title in the block entitled "(Other (Specify))" and he will complete the required information on the remainder of that line. The "Remarks" section will be used to record the test event titles and the applicant's performance on each test event.

b. Standards. To successfully pass the test, the applicant must reach the standard in each test event. The standards follow:

- (1) Chinups—six.
- (2) Knee bender—80 (2-minute period).
- (3) Pushups—22.
- (4) Situps—20.
- (5) Endurance run—one mile in 8½ minutes or less.

418. Uniform for Testing

a. Examinees. The prescribed uniform for test participation is boots and the work uniform of the season. No headdress is worn; and, when climatic conditions permit, jackets or outer shirts may be removed.

b. Officials. Scorers and other test officials should be uniformly and distinctively dressed for contrast with men being tested.

Section II. TEST ADMINISTRATION PROCEDURE

419. Preparation for Test

The administration of the test to a large group of men makes it mandatory that the test effort be organized and efficiently operated. All testing of applicants is not completed with large test groups; on certain occasions individuals and small groups of several men are tested. Care must be exercised to administer the test uniformly and to standardize the conduct of all elements of the test. Regardless of the size of

the test group, the following elements of sound test administration should be completed:

a. An orientation to include the purpose, method of administration, scoring of the test, preparation of the scorecard, and required standards.

b. A correct demonstration of each event to insure that there is no misunderstanding of the proper form and required standards.

c. Completion of all five test events in one

test period with all men taking the events in the same order of sequence.

d. Adequate rest periods between the test events to allow for recovery prior to the administration of the next event.

420. Method of Administration with a Large Group

Using a minimum of 12 lanes per test event, 14 officials can administer the test battery to 150 or 200 men in 2 hours. The officials are designated as follows: one officer in charge, one demonstrator, and 12 scorers. If more or fewer men are to be tested, a greater or lesser number of officials will be required as indicated by the number of men. The following procedure is recommended:

a. Conduct an orientation and insure the examinees have properly completed their scorecards.

b. Assign men to lanes and caution them to remain in the same lane order throughout the test.

c. Explain and demonstrate the chinup event, administer and score it, then proceed to the knee bender and pushup events, and administer them in the same manner.

d. Grant a 5- to 10-minute rest period after the pushup event. Advise against excessive consumption of water during the break period.

e. Explain and demonstrate the situp event and administer and score it as prescribed; then move to the run area, explain the running event, and have the men complete it.

f. Retain the scorecards at the completion of the running event.

421. Method of Administration with a Small Group

A similar procedure, as recommended in paragraph 420, is followed for the testing of individuals and small groups. The informality usually associated with small groups must not conflict with sound test administration. With fewer examinees, a smaller number of officials will be required.

Section III. DESCRIPTION AND EXPLANATION OF TEST EVENTS

422. Chinups—Test Event 1

a. *Purpose.* This event is devised to test arm and shoulder flexor strength (fig. 125).

b. *Equipment.* There is one horizontal bar per lane, made of plumber's pipe or a gymnasium horizontal bar 1½ inches in outside diameter. The bar must be rigidly supported at a height of 8 feet above the ground and the upright supports must be 5 feet apart. There must be a movable stand at each bar for short men to stand on to reach the bar.

c. *Officials.* There is one scorer per lane.

d. *Organization.* The men stand in order behind the restraining line in their respective lanes. The scorers take each man's scorecard when he is called forward for the test.

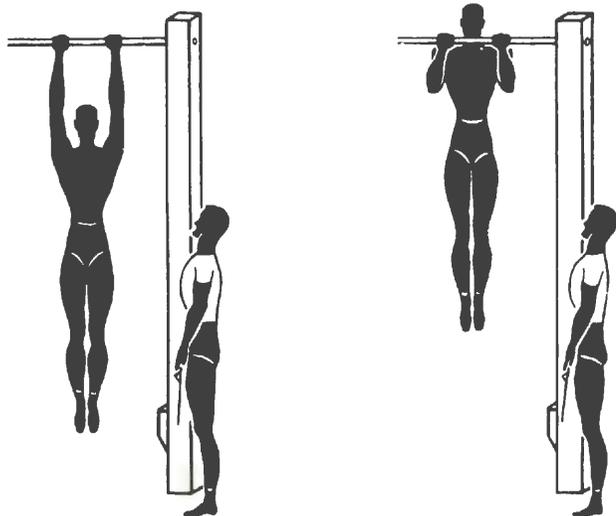
e. *Starting position.* The bar is grasped with the palms turned toward the face, the thumbs underneath the bar. The body is fully extended in a "dead" hanging position with the arms straight and the feet above the ground.

f. *Movement.* Pull the body directly upward until the chin is placed over the bar. Lower the body until the elbows are completely straight and the body is again in the "dead" hanging position. Repeat as many times as required.

g. *Instructions.* Explain and demonstrate the fully extended "dead" hanging position with the proper grasp. Show that the chin is placed over the bar at the top of the movement and that the arms are fully extended, the elbows completely straight, at the bottom of the movement (the hanging position). Explain that the body must be kept from swinging and that it is permissible to raise the legs and flex the hips when pulling up, but that any kicking, bicycling, or jerking motion with the trunk or legs is not acceptable. Inform the men that no penalty is exacted for hanging on the bar to rest in the bottom position but that this is not to their advantage. Tell them that half-completed chinups are not counted, and that the scorer will repeat the number of the last correct chinup when incorrect execution is detected.

h. *Administration and scoring.* Caution the men to assume the "dead" hanging position and wait for the scorer's command to begin. The scorer is at the examinee's left in such a position that he has a clear view of the bar. If the examinee begins to swing widely, the scorer should stop the swinging by extending his left arm across the front of the examinee's body, being sure not to hinder the execution of

the chinups. He counts aloud the number of chinups correctly executed. When a chinup is not correctly executed, the scorer repeats the number of the last correct one. The scorer records the number of correct chinups on the scorecard and returns the card to the examinee.



STARTING
POSITION

Figure 125. Chinups.

423. Knee Bender—Test Event 2

a. Purpose. This event measures the strength and endurance of the leg muscles (fig. 126).

b. Equipment. None.

c. Officials. There is one scorer per lane.

d. Organization. The men stand in numerical order behind the restraining line in their respective lanes. The scorer takes each man's scorecard when he is called forward for the test.

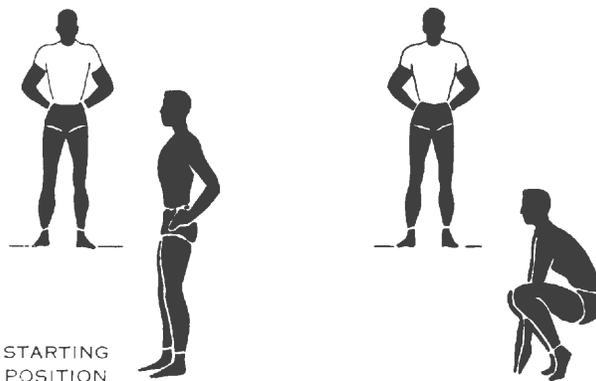
e. Starting position. The feet are spread less than shoulder width apart, hands on hips, thumbs in the small of the back, elbows back.

f. Movement. Do a knee bend and at the same time bend slightly forward at the waist and thrust the arms between the legs until the extended fingers touch the ground. The hands are about 6 inches apart. The bend is approximately a three-quarters bend. From this knee bend position, recover to the starting position by moving the body upward, straightening the

knees, and returning the hands to the hips. Repeat as many times as required.

g. Instructions. Explain and demonstrate the correct starting position. Be certain examinees understand the correct knee bend and that only the tips of the fingers touch the ground. Tell them the scorer will repeat the number of the last correct knee bender when incorrect execution is detected. Some of the common errors are failure to correctly bend the knees, failure to touch the ground, and failure to assume the completely erect position after the bend has been executed.

h. Administration and scoring. The scorer stands to one side so he can see that the knees are properly bent and the fingers touch the ground as prescribed. From this position he can view the examinee to see that a properly erect position is assumed after each knee bend. The scorer counts aloud the number of correctly executed knee bends. When a knee bend is done incorrectly, he repeats the number of the last correct one. The scorer records the number of correct knee bends on the scorecard and returns it to the examinee.



STARTING
POSITION

Figure 126. Knee bender.

424. Pushups—Test Event 3

a. Purpose. Pushups measure arm and shoulder extensor strength (fig. 127).

b. Equipment. None.

c. Officials. There is one scorer per lane.

d. Organization. The men stand behind the restraining line in their respective lanes until the scorer calls on them to perform. The scorer takes each man's scorecard when he comes forward.

e. Starting position. The front leaning rest

position is the starting position. The body is straight from head to heels, the palms are flat on the ground directly underneath the shoulders, and the elbows are straight and locked. The body weight is supported on the hands and toes throughout the event.

f. Movement. Bending only the elbows, lower the body in one straight plane until the chest touches the scorer's hand. Straightening and locking the elbows, raise the body in one straight plane, returning to the original front leaning rest position. Repeat as many times as required, keeping the body in a straight line from head to heels.

g. Instructions. Explain and demonstrate that the arms are straight with elbows at the beginning and completion of the movement, and that the chest must touch the scorer's hand, but the stomach and thighs must not touch the ground. Also explain that the whole body must be maintained in a straight line as it is lowered and raised; that is, there is to be no breaking at the hips or shoulders so that either body part is lowered or raised in advance of the other or as a separate segment. Likewise, dipping or rolling through the shoulders is illegal, as is lowering or raising the body with one arm or shoulder at any time. Resting is not permitted during the repetitions. Instruct the men that the scorer will repeat the number of the last correct pushup when incorrect execution is detected.

h. Administration and scoring. It is recommended that the men assume a prone position while placing their feet and hands in the proper positions. This permits them to rest while the scorer gets into position and, at the same time, provides a feel of the body in a straight plane from head to heels. The scorer lies on his right hip and side to the right of the examinee. This gives him a clear view of the examinee's body and he can see any errors. The palm of

his right hand rests flat on the ground underneath the lowest part of the examinee's chest. By keeping the right forearm flat on the ground and angling it from in front of the examinee's right arm, the scorer's position will not prevent the examinee from lowering his body completely. The scorer's left hand is free to test the straightening of the elbow at the completion of the movements and to point out body segments being lowered or raised separately. When in position and ready, the scorer has the performer assume the starting position and begin his pushups. He counts aloud the repetitions done correctly and repeats the number of the last correct pushup for all incorrect ones. There is no penalty if the contour of the examinee's body causes the hips to protrude slightly out of line, provided that the whole body is raised and lowered simultaneously. The scorer enters the number of repetitions on the scorecard and returns it to the examinee.

425. Situps—Test Event 4

a. Purpose. This event primarily measures abdominal strength (fig. 128).

b. Equipment. None.

c. Officials. There is one scorer per lane.

d. Organization. The men stand behind the restraining line in their respective lanes until the scorer calls on them to perform. The scorer takes each man's scorecard when he comes forward.

e. Starting position. The examinee lies flat on his back with his knees flexed, both feet flat on the ground. The correct angle of the thighs to the ground beneath them is 45° . If the heels are too near the buttocks, the applicant will not be able to sit up. His legs are spread shoulder width apart. He interlaces his fingers and places them behind his head in contact with the ground. The feet are *not* held by another person.



STARTING
POSITION



Figure 127. Pushups.

f. Movement. Bend forward at the waist and raise the upper body until the head is directly over the knees. Heels are not to leave the ground. Elbows remain in the same plane to the head and body throughout the event. The upper body is slowly lowered to the starting position until the head touches the ground. Repetitions are done at a slow cadence, with no rest periods.

g. Instructions. Explain and demonstrate the correct starting position and the proper execution of the situps to be sure that the men understand the movement. Warn them that their knees must remain flexed during each situp, the heels cannot leave the ground at any time, and they may not roll up on one side and push up with one elbow. Tell them they must do the repetitions at a slow cadence, with no rest periods. Instruct the men that the scorer will repeat the number of the last correct situp when incorrect execution is detected.

h. Administration and scoring. When the performer is in position and ready, the scorer has the performer assume the starting position and begin his situps. He counts aloud the correct executions. When a situp is improperly

done, he repeats the number of the last correct one. No situp is credited if the hands are unclasped from behind the head, if the back is used to bounce up from the ground (which means the shoulders would not touch the ground), or if one shoulder or elbow is used to push up. The examinee is not penalized if his heels slide forward slightly, as long as the knees remain flexed and the heels maintain contact with the ground. The scorer enters the number of repetitions on the scorecard and returns it to the examinee.

426. Endurance Run—Test Event 5

a. Purpose. This event measures circulo-respiratory endurance.

b. Equipment. One stopwatch or watch with a sweep second hand.

c. Area. A large training field on which a one-quarter mile track has been staked out, or a level road over flat terrain, may be used as a running surface. A 1-mile route is designated with wooden stakes marking the start point, finish point, and one-quarter mile intervals.

d. Officials. For large groups there is a scorer who times the event and controls the

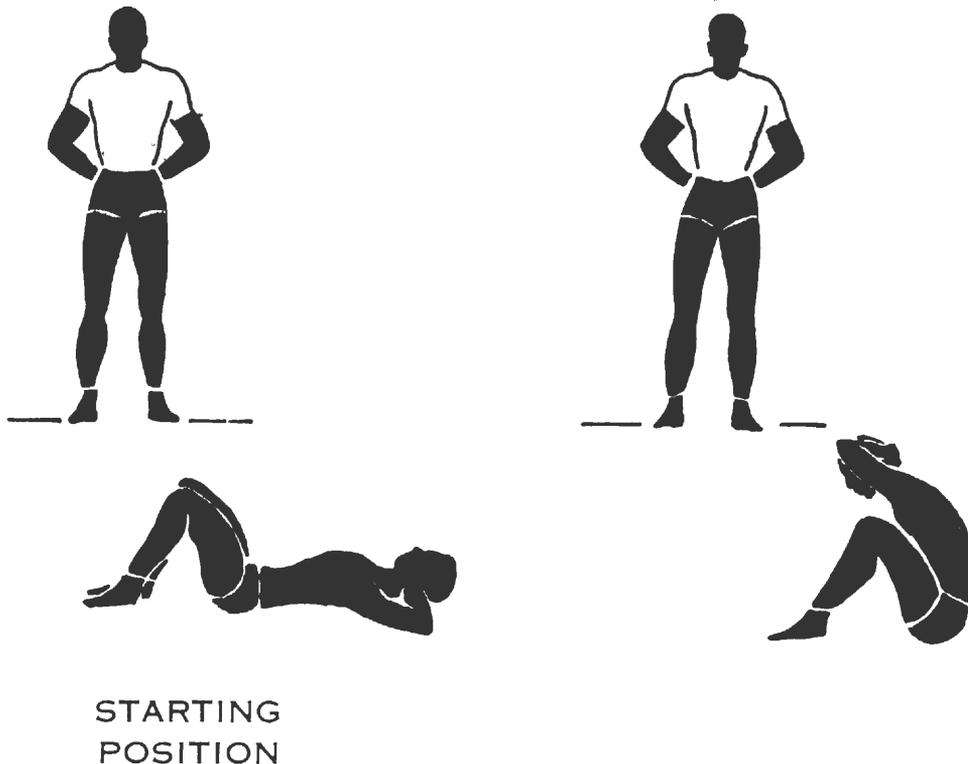


Figure 128. Situps.

conduct of the run, and a guide who runs with the group and sets the pace.

e. Organization. The run is conducted with groups of men formed in a column formation. Company-size units may run at the same time with the platoons serving as running groups. The scorer issues the command to assume the double time.

f. Starting position. The men are assembled in the proper column formation (column of 2's, 3's, or 4's, as appropriate to the size of the group), with short men to the front. When all is ready, the column is moved forward a short distance before the running period is started.

g. Movement. At the command DOUBLE TIME, MARCH, the examinees retain their places in the column formation and execute the command. The double time is executed as prescribed in paragraph 165. Length of steps is about 40 inches. The scorer has the group execute the run. The formation is maintained during the run.

h. Instructions. The men are instructed to maintain formation while running, and are informed that the guide will set the proper pace. They will be instructed in the commands to be used to control the column in the execution of the test. The scorer should announce the 4-minute, 2-minute, 1-minute, and $\frac{1}{2}$ -minute time intervals remaining.

i. Administration and scoring. The event may be administered to a large group, to several men, or to an individual as previously prescribed. An individual examinee usually does not require a guide or pacer, and if the event is administered on a training field, the scorer may stand in the center of the field and control the group or individual examinee from this central location as the runner(s) circles about the field. This method of administration relieves the scorer of running with each group to be tested. Scoring is based upon successful completion of the run as prescribed. The scorer should announce the remaining times as prescribed in *h* above.

PART SIX
THE HUMAN BODY
CHAPTER 28
THE BODY AND PHYSICAL FITNESS

427. Physical Fitness

a. Physical fitness is a product of anatomical and physiological fitness. Anatomical fitness requires the possession of all parts and organs of the body which are essential to the soldier. The Medical Corps is responsible for seeing that men who take physical training are anatomically fit. This is usually done before the men are inducted. Therefore, in the physical training program, we are concerned principally with physiological fitness. Physiological fitness is the capacity for skillful performance and rapid recovery.

b. Every man who undergoes physical conditioning and, particularly, leaders who have a part in conducting conditioning exercises, should possess a practical understanding of the nature of physical fitness.

c. To intelligently direct the conditioning of the human body, the instructor must understand the way exercise affects the several organs and systems in the body and know the difference between fit and unfit men.

428. Knowledge of the Human Body

a. The human body, like weapons and machines, must be understood before proper techniques and care can be employed in conditioning it. If the personnel directing the physical training program do not understand the structure and functioning of the human body, they may fail to condition their troops properly for vigorous physical action. This chapter and the following chapters provide information concerning the machine with which we work—the human body.

b. With an understanding of the basic physiological processes of the body, commanders

and physical training supervisors can develop an effective program of physical training. A program with such a solid foundation eliminates certain fads which are at times projected as short cuts to physical conditioning and are usually without sound basis.

c. Leaders, to be effective, must understand the relationship of good physical fitness to mental fitness. Physical health cannot be separated from mental health. Poor physical health is as often due to the condition of the mind and emotions as to purely physical causes. A healthy state of mind is characterized by cheerfulness, confidence, and interest. An unhealthy state of mind is characterized by indifference, discouragement, worry, and a feeling of inferiority. The physical training program can help correct this unhealthy state of mind.

429. Body Functioning During the Toughening Stage

Attaining physical fitness is not an overnight process; the body must go through two stages. The first is the toughening stage. It lasts for about 2 weeks while the body goes through a soreness and recovery period. When a muscle with an inadequate or poor blood supply (such as a little used muscle) is exercised to any degree, the waste products of muscle activity collect more rapidly than the blood can remove them. This acid waste builds up in the muscle tissue and irritates the nerves in the muscle fiber. As the exercise continues, more blood is carried through the muscle. The additional quantities of blood remove the waste materials more rapidly, causing the soreness to disappear.

430. Body Functioning During the Slow Improvement Stage

The second stage in attaining physical fitness is the slow improvement stage. After the body has passed the toughening stage, the blood circulation in the muscles increases and the body as a whole becomes a more efficient machine. The improvement is rapid in the first few weeks, but as a higher level of skill and conditioning is reached, the improvement becomes less noticeable. The body reaches its maximum level of performance between 6 and 10 weeks, and should then be maintained at this peak.

431. Sustaining Stage

A third stage in which physical fitness is maintained is called the sustaining stage.

a. Prior to this stage the body has reached a level of physical conditioning established by exercises in the first two stages. This may be a peak condition or a somewhat lesser state. In some cases it may be a plateau beyond which the individual could progress only through a very rigorous training program. Regardless of degree, the individual who passes through the slow improvement stage enters the sustaining stage.

b. It is necessary to continue exercising at approximately the same dosage to retain the condition developed. A soldier who has been trained until he is in excellent condition will lose this high state of fitness on a 20-day furlough if he does nothing to maintain this state of physical development. Troops could also lose the edge of condition on a long journey on a transport where nothing is done to provide exercise.

c. To retain the human mechanism in a well-conditioned state, a maintenance program should be instituted. This program can be of relatively short duration. For example, it is possible to maintain this state of conditioning through 15 to 20 minutes of exercise a day, but the exercise must be quite strenuous.

432. Crest Load

When the individual reaches the highest level at which he can continue for some time, he is then at his "crest load." If he increases the amount of exercise, he quickly runs into an excess of what is called "oxygen debt," that is, he develops more lactic acid than he can resyn-

thesize back into glycogen; thus he is forced to stop his exercise. Continued training raises the level of this crest load. This is an important consideration in military physical training.

433. The Overload Principle

a. Muscular use strengthens and improves body functioning; disuse promotes atrophy. Stated another way, the amount of muscular development obtained through exercise is comparable to the demand made on the system. With a normal amount of exercise, muscles develop only enough to perform that amount of work with ease. Only the number of muscle fibers needed to move a given load are brought into play. If there is no further increase in the amount of exercise demand, there is no improvement in the function or increase of strength or endurance. If, however, one wishes to improve the function, this demand must be increased. For example, it is assumed that an individual is able to lift a weight of 40 pounds with his right arm. If this individual were to exercise with a weight of only 3 or 4 pounds, he could exercise until the muscle was practically exhausted, and still such exercise would not markedly increase the strength of the muscle, as he already has more than enough strength to handle that much weight. On the other hand, if this individual were to exercise with a 40-pound weight, he would tire rapidly, perhaps in five or six movements. If he were to continue to exercise with this load until he could raise it 15 or 20 times, and then increase the weight to 45 pounds, then to 50 pounds, adding additional weight as the strength increased, the muscle would develop in strength and size very rapidly.

b. Another example may be found in circulo-respiratory endurance. If an individual wished to train to the point of being able to run a mile in 4 minutes and 20 seconds, he would have to run faster and faster, relative to his present ability, until this point was reached. If, on the other hand, he were to run a mile in 10 minutes every day, he could do this for many, many years, and still not be able to run a mile at the rate of 6 or 7 minutes. The overload principle then, means that the individual develops in proportion to the demand and that he must increase the demand as his ability increases if he is to continue to improve. Conversely, if the individual does less

exercise than he has been accustomed to doing, he rapidly "deconditions." Hence officers and men assigned to sedentary-type jobs with opportunity for only very mild exercise rapidly lose their strength and endurance.

c. The overload principle does not mean that the individual should be "overloaded" to the point of undue strain. It means that the requirements must be over his usual load. In the use of conditioning exercises, the instructor can increase the dosage either by increasing the cadence or by adding to the load carried. In running, for example, the speed (cadence) can be increased, and in conditioning drills, graduation from Drill One to log exercises will increase the load by adding the weight of the log. The theory of overload is one of the most important principles for the physical training supervisor and instructor to remember and practice.

434. Exercise and Diet

a. Regular exercise has a tendency to increase the appetite. If this desire for greater amounts of food is satisfied with a balanced diet, the body benefits.

b. There are two main types of foods: body building and energy producing. Body building foods consists of proteins, which build up tissue and replace wear and tear. Energy producing foods are of two types: carbohydrates and fats. Carbohydrates provide a quick source of energy, while fats act as a reserve store of energy. In addition, food contains vitamins, mineral salts, and water. During hot weather and strenuous training periods, the fluid intake should be replenished promptly. Proper diet must be supplemented with proper rest to provide the digestive system time to break down the food substances into their constituents and feed them back into the system in the form of energy.

c. Occasionally, during early periods of conditioning or later when men are well conditioned, violent exercise may cause vomiting. Should this happen instruct them to spit it out.

They should not hold the vomitus in their mouth or swallow it since their rapid breathing could cause it to be inhaled. Although vomiting is not a frequent occurrence it is a natural occurrence and should not be cause for embarrassment.

435. Effect of Exercise on Body Growth

a. Continuous exercise results in an increase in size and structural development of the essential vital organs, such as digestive organs, liver, and pancreas. This means that the individual develops enough visceral structure to care for the increased demand being made upon these structures.

b. Body size tends to increase and it is possible to put several inches on the circumference of the chest. This increase in girth of the chest is partly due to an increase in the mass of muscles on the back and chest. The increase of shoulder width is partly due to development of muscle on the shoulders, particularly the deltoid muscles.

c. There tends to be an increase in bony growth and development with such strenuous exercise. It is not uncommon for a young soldier to grow half an inch in height and there is considerable increase in the length of bones beyond that experienced by inactive workers of the same age.

436. Systems of the Body

The systems of the body include the skeletal, muscular, circulatory, respiratory, endocrine, digestive, genitourinary, and nervous systems. All the systems must work in cooperation with one another to insure a sound body. For physical training purposes, however, it is not necessary to consider all systems. The first five systems are those most affected by exercise and therefore are the systems which are emphasized in the chapters concerning "Body Structure" (chap 29), "Body Functioning" (chap 30), and "Posture Training" (chap 31). The effects of exercise on these systems is included in chapter 30.

CHAPTER 29

BODY STRUCTURE

Section I. INTRODUCTION

437. Body Composition

a. The various parts of the five body systems most affected by exercise are identified in this chapter by name, location, and main characteristics.

b. This chapter also provides sufficient information concerning body structure to support the discussion of body functioning in chapter 30, and posture training in chapter 31.

438. Terminology

A thorough understanding of the following terms should precede the study of body structure and functioning.

a. *Anatomy*. Anatomy is the study of body structure. Such study concerns the size, shape, location, and composition of bones, muscles, and organs.

b. *Anatomical Position*. In the study of body structure the body is always assumed to be in

an upright position with the arms at the sides, palms forward.

c. *Median Plane*. An imaginary plane running through the body from the front to the rear, dividing the body into equal right and left halves.

d. *Medial*. When this term is used in reference to a body part, it indicates that the part is nearer the median plane than some other body part.

e. *Lateral*. Lateral means toward the side and farther from the median plane.

f. *Superior*. Superior is used in the definition of a body part that is higher or nearer the head.

g. *Inferior*. This term indicates that the body part is lower or farther from the head of the body.

h. *Anterior*. Anterior refers to the front.

i. *Posterior*. Posterior is the word used to denote behind or toward the rear.

Section II. THE SKELETON

439. General

The skeleton is composed of about 206 bones. Bones are of four types: flat bones, as the breast bone; long bones, as in the legs; short bones, as found across the arch of the foot; and irregular bones, as in the spinal column. Bones manufacture, in the marrow, red blood cells for the body. They also furnish support for the attachment of muscles and protection for the vital organs, such as the brain, lungs, and heart. In general, bones may be classified according to their location.

440. Bones of the Skeleton

Both sides of the skeleton must be examined to

view all the major bones. The front and rear views are shown in figure 129.

a. *Head*. The skull is composed of 22 separate bones. These bones are fused together, or attached, and provide protection for the brain and give shape to the face.

b. *Shoulder Girdle*. The following bones form the shoulders and provide a place of attachment for the arms:

(1) *Clavicle (collar bone)*. A long bone, one on each side, connecting the shoulder and breast bone.

(2) *Scapula (shoulder blade)*. A broad, flat bone with a raised ridge extending laterally across the superior part of the bone.

c. *Arm Bones.* The following are the major bones of the arm:

- (1) *Humerus.* Upper arm bone.
- (2) *Radius.* A long bone in the forearm on the thumb side.
- (3) *Ulna.* A long bone in the forearm on the little finger side.

d. *Rib Cage.* The rib cage protects the spinal cord, lungs, and heart and is formed by the following bones:

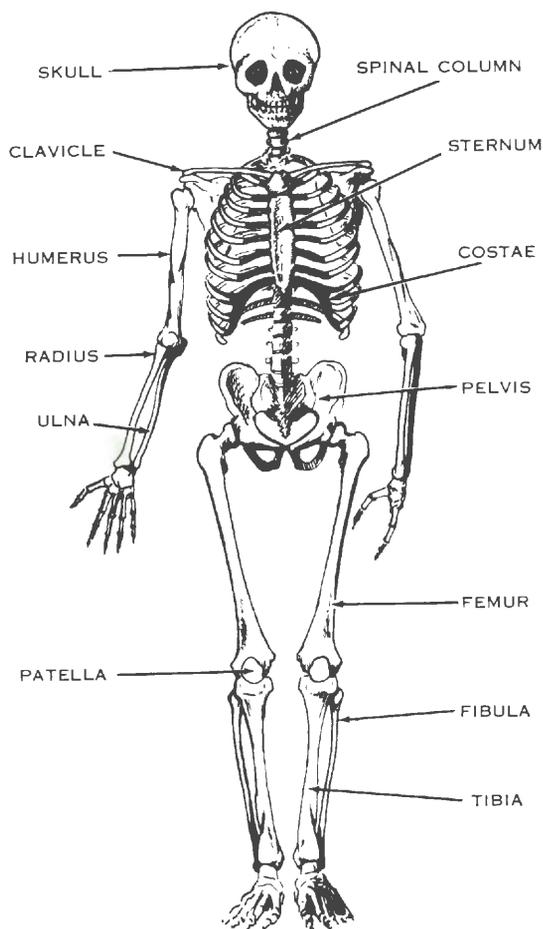
- (1) *Spinal column.* About 29 to 32 irregular bones divided into cervical, thoracic, lumbar, and sacral regions.
- (2) *Sternum (breast bone).* A flat bone forming the center portion of the rib cage.
- (3) *Costae (ribs).* Twenty-four long bones joining the spinal column and sternum.

e. *Hips.* The hips protect the organs of the lower abdomen and provide a place of attach-

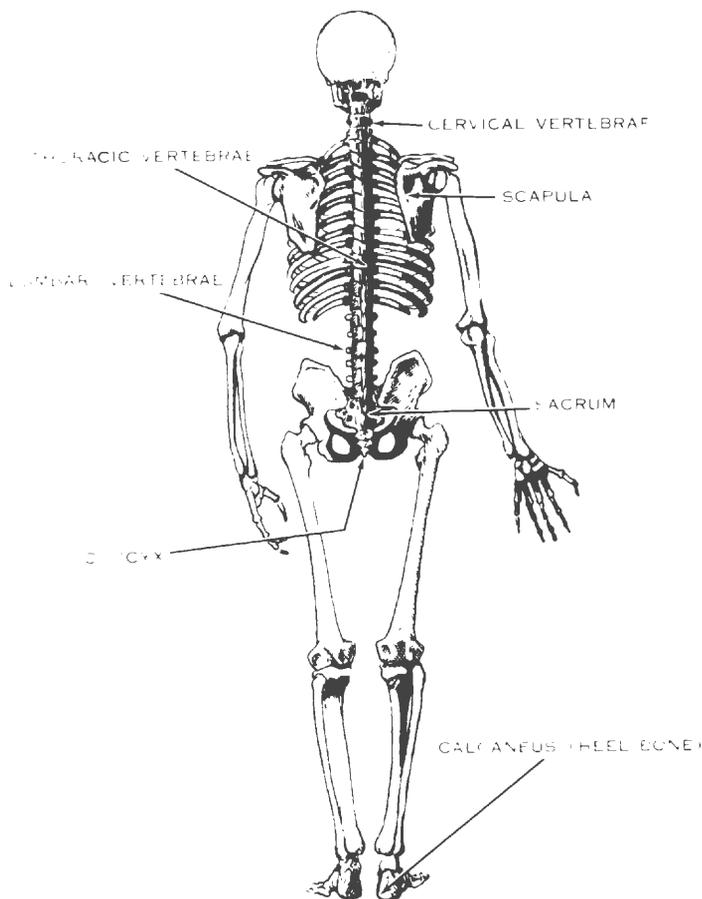
ment for the legs. They are formed by the lower portion of the spinal column and the bones of the pelvis. The pelvis is a bony structure consisting of 11 bones, all fused together to form the complete unit. These bones are the pelvic girdle (hip bones), one on either side, each consisting of three bones which fuse together during early life into one bone, and the sacrum composed of five bones.

f. *The Leg Bones.* The following are the major bones of the leg:

- (1) *Femur.* A long bone in the thigh, attaching the leg to the pelvis.
- (2) *Patella.* A flat bone forming the knee cap.
- (3) *Fibula.* A long bone on the lateral side of the leg.
- (4) *Tibia.* A long bone on the medial side of the leg.



A FRONT VIEW OF SKELETON



B REAR VIEW OF SKELETON

Figure 129. Front and rear views of skeleton.

g. Spinal Column. The spinal column is divided into five areas and the vertebrae are named according to area. References to these areas are frequent in posture training.

(1) *Cervical vertebrae.* Seven vertebrae that form the neck.

(2) *Thoracic vertebrae.* Twelve vertebrae to which the ribs attach, forming the rear of the rib cage.

(3) *Lumbar vertebrae.* Five vertebrae in the area between the rib cage and the hips.

(4) *Sacrum.* Five vertebrae fused together, forming the rear portion of the pelvis.

(5) *Coccyx.* Small vertebrae on the end of the sacrum, usually fused together. The number of these bones varies depending upon the individual.

h. Heel Bone. The calcaneus (heel bone) is a short bone that forms the heel. It serves as a place of attachment for the muscle in the calf of the lower leg.

441. Characteristics of Bones

Bones of the skeleton have definite characteristics, with ridges, projections or depressions appearing on most of them. These areas have the primary purpose of providing a place for the attachment of muscles.

442. Cartilage and Ligaments

The joints in the body are connected and supported by cartilage and ligaments.

a. Cartilage is a tough, elastic, translucent tissue that acts as a shock absorber or buffer between bones. Examples are the discs between the vertebrae, the connector tissue attaching the ribs to the sternum, the buffers in the knee

joints, and the cartilage around certain joints to deepen sockets.

b. Ligaments are connective tissue that bind bones together; they are extensible but not elastic. Because of this characteristic major sprains are serious; while healing does occur, the stretched ligaments never quite return to their former position.

443. Joints

A joint is a place of union, usually more or less movable, between two or more bones. Joints, because of their movement (or lack of movement in some cases), are divided into three classes: immovable, slightly movable, and freely movable.

a. The immovable joint has no joint cavity. Examples of this type of joint are the bones of the head and face.

b. The slightly movable joint provides very limited movement. Examples of this type of joint are the vertebrae and sternum.

c. The freely movable joint permits maximum movement. The bones forming a joint of this type are held in place by ligaments. Freely movable joints are of greater importance in physical training because they are affected by exercise. The main effect is to increase their mobility and stability with a combined increase of muscle power and control. Types and examples of movable joints are—

(1) Rotary (radius and ulna in rotation of the forearm).

(2) Hinge (ankle and elbow joints).

(3) Ball and socket (hip and shoulder joints).

Section III. THE MUSCLES

444. General

Muscles are of three classifications: involuntary, voluntary, and cardiac. Involuntary muscles are those over which we have no control. Voluntary muscles are the larger skeletal muscles which are under control of the individual. Cardiac muscle is found only in the heart and for all practical purposes is an involuntary muscle. For physical training purposes, with the exception of the heart, voluntary muscles are the most important group.

445. Muscle Structure

a. The unit of structure of the muscle is the cell. These microscopic bodies are grouped in small bundles of fibers, which in turn are grouped into larger bundles until finally the entire muscle is formed. These bundles of fibers are held in place by sarcolemma, a thin, sheath-like material that surrounds the muscle bundles and secretes a fluid that lubricates the muscle tissue. The fused ends of the sarcolemma form the tendons which attach the muscles to the bones.

b. Muscles are formed in layers to do particular jobs; some are flat, some are round, some are large, and others small. Some are superficial, lying just under the skin, while others are located under the superficial muscles and are known as deep muscles.

446. Attachment of Muscles

The arrangement of muscles on the skeleton provides the proper angle of pull to make movement possible. Voluntary muscles are usually attached to the skeleton in two places. One end of the muscle is known as the origin to indicate the starting point; and the other end as the insertion, to indicate the place where the muscle ends or inserts on the bone.

447. Action of Muscles

a. To produce motion and to do work a muscle usually shortens its fibers. The movement may be flexion such as bending the arm at the elbow, or flexion of the trunk in attempting to touch the floor with the hands while keeping the legs straight. The movement of body parts may also take the form of extension. An example of extension is the act of straightening the arm or the movement of the leg in kicking a football. Some muscles raise the arms or legs, others depress or pull the raised limb down. Some muscles have the primary function of rotating the trunk from side to side, and still others cause the trunk to bend forward (flexion). Muscles act as stabilizers as well as prime movers.

b. In this section, the muscles are grouped according to the action they produce and by their location. The discussion is limited to the major muscle groups; no attempt is made to consider many smaller muscles. In the following explanation of muscles the name, general location, origin, insertion, and action is described.

448. Muscles of the Trunk

Muscles which control action of the head, arms, shoulders, and bending of the trunk are located on both the anterior and posterior sides of the trunk (fig. 130).

a. *Muscles Causing Neck and Shoulder Action.* Muscles attached to the trunk area control neck and shoulder action. (fig. 130).

(1) Sterno-mastoid—the important muscle on the front portion of the neck. This mus-

cle runs from the sternum upward to the mastoid process behind the ear. The action of a single sterno-mastoid muscle turns the head toward the opposite side and elevates the chin. Both sterno-mastoid muscles, acting together, move the head forward.

(2) Trapezius—a large triangular shaped muscle on the upper back and neck. It originates on the base of the skull, the ligaments of the neck, and all 12 thoracic vertebrae. It inserts along the ridge of the scapula and over the shoulder on the clavicle. This muscle pulls the head back, holds the shoulders back, and supports weight when carried on the shoulders.

(3) Levator scapulae—a deep muscle lying beneath the trapezius that helps to form the rear portion of the neck. Its origin is the top four vertebrae of the neck and it inserts on the upper angle of the scapula. Its primary function is to lift the shoulder.

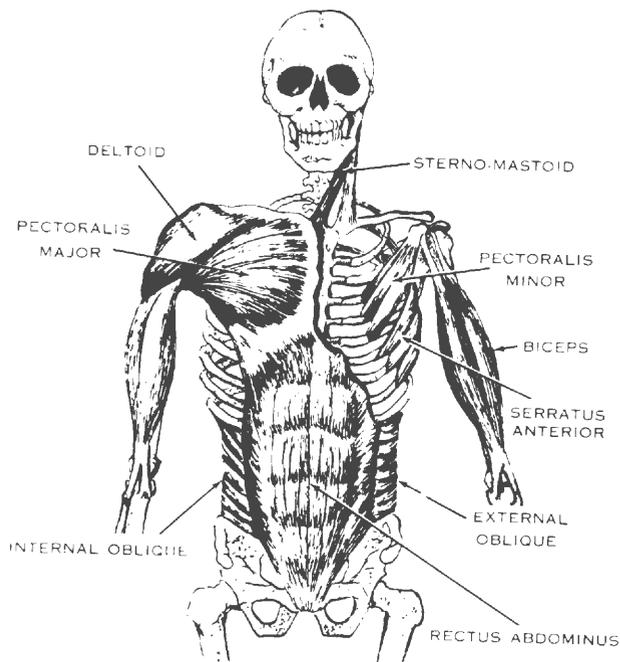
(4) Pectoralis minor—a flat, triangular shaped deep muscle of the chest region. Its origin is on the 2d, 3d, 4th, and 5th ribs. The muscle reaches up to the point of the shoulder where it inserts on a projection of the scapula. The action of this muscle pulls the shoulder downward and forward.

(5) Serratus anterior—a flat, deep muscle reaching from the chest around under the armpit and under the scapula. It originates on the top nine ribs and inserts on the medial, or inner border of the entire scapula. This muscle pulls the shoulders forward in such movements as pushups.

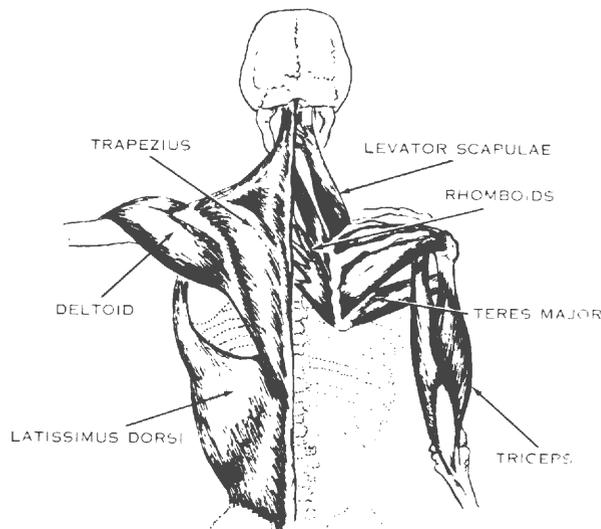
(6) The rhomboids—two deep muscles (minor and major) located on the upper back. They originate on the last cervical (neck) and first five thoracic vertebrae. They insert on the medial border of the scapula. These muscles hold the scapula in position and pull the shoulders upward and back.

b. *Muscles Responsible for Arm Action* (fig. 130). Several muscles located on the shoulders, trunk, and arms cause movement of the arms.

(1) Deltoid—a triangular shaped muscle located on the shoulder and upper arm. The front portion of the deltoid originates on the clavicle and the rear portion on the scapula. It inserts on the outer surface of the humerus just above its middle. This muscle lifts the arm forward, sideward, and to the rear.



A ANTERIOR MUSCLES OF THE TRUNK



B POSTERIOR MUSCLES OF THE TRUNK

Figure 130. Anterior and posterior muscles of the trunk.

(2) *Teres major*—a deep muscle on the back stretching from the scapula to the humerus. It originates on the lower portion of the scapula and inserts on the humerus at a spot about one-third of the distance from the top. This muscle depresses or pulls the arm downward.

(3) *Pectoralis major*—a superficial muscle of the chest region. It is fan shaped, originating on the medial end of the clavical and the top six ribs and inserting on the humerus. The muscle pulls the arm across the chest and is used forcibly in pushups. It is commonly referred to as the hugging muscle.

(4) *Biceps*—a muscle located on the front portion of the upper arm and having two separate origins (two tendons that fuse together to form the body of the muscle). These two heads originate on the scapula and the muscle covers the upper arm to insert on the radius in the lower arm. The action of this muscle is to flex the arm. It is used forcibly in such movements as pullups.

(5) *Triceps*—a muscle located on the rear portion of the upper arm and having three separate origins (three tendons that fuse together to form the body of the muscle). Two of the

heads originate on the upper part of the humerus and the other on the scapula just below the socket where the humerus joins the scapula. It inserts on the upper part of the ulna. The action of this muscle is to extend the arm at the elbow. It is used in such movements as push-ups, throwing, shot putting and other similar movements.

(6) *Latissimus dorsi*—a flat, triangular shaped muscle located on the lower back. It originates on the lower six thoracic vertebrae, all lumbar vertebrae, and back of the sacrum, and the rear portion of the top of the hip bone. From this broad base the muscle tapers to a point that inserts on the upper part of the humerus. This muscle is used in doing pullups, rope climbing, and in striking movements. It is commonly referred to as the striking muscle.

c. Muscles Responsible for Trunk Action (fig. 130). Three of the major muscles of the trunk that produce movement just above the hips are of interest in the physical training program.

(1) *Rectus abdominis*. This large muscle is located on the front portion of the belly wall. It originates on the pubic arch at the bottom of the pelvis, runs upward over the ab-

dominal area and inserts on the sternum and the 5th, 6th, 7th, and 8th ribs. This muscle retracts the belly wall and tilts the pelvis upward in front. It also aids in flexing the trunk. The rectus abdominis is one of the most important muscles from a postural standpoint.

(2) *External oblique*. This big muscle makes up the side and external portion of the abdominal region. It originates on the lower eight ribs and runs diagonally downward to insert on the crest and front part of the hip bone and into the linea alba (a tendinous line running down the front of the abdomen between the right and left recti abdominis). This muscle flexes and rotates the trunk.

(3) *Internal oblique*. This muscle is a deep muscle that lies beneath the external oblique. It originates at the pelvis on the front two-thirds of the crest of the hip bone. It runs diagonally upward and inserts on the 8th, 9th, and 10th ribs. The internal oblique muscles flex the trunk and rotate it to the right and left.

449. Muscles of the Pelvic Region

Two muscles of the pelvic region are concerned with flexing the legs at the hip (fig. 131).

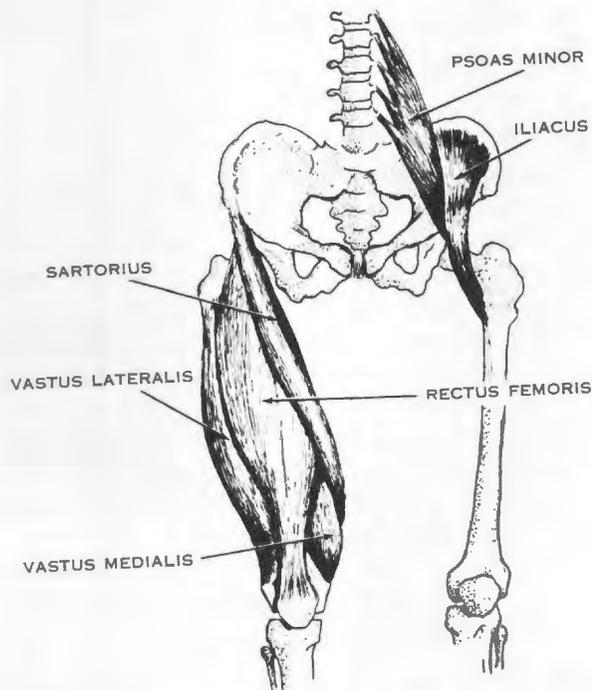
a. *Iliacus*. The iliacus originates from the inner surface of the hip bone. It inserts on the inside of the femur just below the ball and socket joint. Its primary function is to flex the thigh through the hip joint.

b. *The Psoas Major*. The psoas major is a muscle attaching the spine and leg. It originates on the last thoracic and all lumbar vertebrae. It inserts on the inside of the femur just below the ball and socket joint. The psoas works with the iliacus in flexing the thigh through the hip joint. It is used in exercises such as kicking, running, and situps.

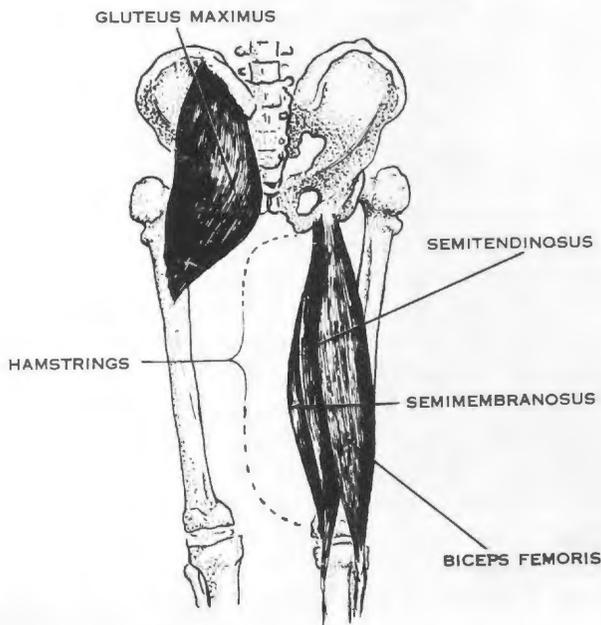
450. Anterior Muscles of the Thigh

The muscles located on the front and rear of the thigh (fig. 131) cross two joints, the thigh and the knee. In general, when they contract, they extend one joint and flex the other. For example, in a kicking movement the leg must bend (flex) at the hip and straighten (extend) at the knee. Muscles located on the front of the thigh region are the—

a. *Sartorius*. The sartorius is a long, rope-like muscle that stretches across the thigh from the outside of the hip to the inside of the knee. It originates on the forward part of the



A ANTERIOR MUSCLES OF THE PELVIS AND THIGH



B POSTERIOR MUSCLES OF THE PELVIS AND THIGH

Figure 131. Anterior and posterior muscles of the pelvis and thigh.

hip bone and inserts on the medial side of the tibia. This muscle assists in keeping the knee in the median plane while running, and in flexing the knee.

b. *Quadriceps Femoris*. The quadriceps femoris is a four-headed group of muscles located on the front of the thigh region. The tendons of these four muscles fuse, continue over the patella, and insert on the tuberosity of the tibia. These muscles extend the leg at the knee, and, as a secondary mission, flex the hip. They are used in walking, jumping, running, kicking, and climbing. The four muscles are the—

(1) *Vastus lateralis*. This muscle is on the outside of the thigh and originates on the upper part of the femur (thigh bone) and inserts on the patella (knee cap).

(2) *Rectus femoris*. The rectus femoris is the center muscle of this group. It originates on the front lower part of the ilium (top bone of the pelvis). It inserts on the upper part of the patella.

(3) *Vastus medialis*. The vastus medialis is a muscle lying on the inside of the thigh. It is partly hidden by the rectus femoris. It originates on the whole medial side of the femur. It inserts on the inner top part of the patella.

(4) *Vastus intermedius*. The vastus intermedius is a deep muscle lying directly beneath the rectus femoris and due to this position is completely covered, therefore it is not illustrated in figure 131. It originates on the whole front aspect of the femur and inserts on the top back portion of the patella.

451. Posterior Muscles of the Thigh

The muscles responsible for flexing the knee and extending the hip are located on the rear of the thigh (fig. 131). They are the—

a. *Gluteus Maximus*. This muscle originates on the rear crest of the hip bone and rear surface of the sacrum. It inserts on a rough ridge along the rear of the femur, just below the joint. The gluteus maximus is used in all extensions of the upper leg from the trunk. It is used most forcibly in such exercises as jumping, sprinting, climbing, and lifting.

b. *Hamstrings*. The hamstring group consists of three muscles located on the rear of the

thigh region which attach the tibia and fibula bones of the lower leg to the femur and pelvis. The primary action of this muscle group is to flex the knee. Its secondary mission is to extend the hip. The hamstrings are used in such exercises as walking, running, jumping, and rowing. The three muscles of this group are the—

(1) *Semitendinosus*. This muscle originates on the ischium (center) bone of the pelvic girdle and inserts on the front of the tibia. Its primary function is to flex the leg on the thigh. It also acts to extend the thigh at the hip.

(2) *Semimembranosus*. This muscle also originates on the ischium and inserts on the rear inner surface of the tibia. While its primary function is to flex the leg and rotate it inward, it also extends the thigh at the hip upon contraction.

(3) *Biceps femoris*. The biceps femoris is the most important hamstring muscle from a physical training standpoint. It originates on the ischium and the surface of the femur and inserts in the head of the fibula. The primary function of this muscle is to flex the knee and rotate it outward. It also extends the thigh at the hip if the leg is kept stiff.

452. Muscles of the Lower Leg

These muscles are located on the front and rear of the lower leg (fig. 132), and their action is to flex and extend the foot at the ankle.

a. *Anterior Tibialis*. The anterior tibialis is responsible for flexing the foot. It originates on the upper two-thirds of the outer surface of the tibia and inserts on the first metatarsal bone in the foot.

b. *Gastrocnemius and Soleus*. The gastrocnemius is commonly referred to as the calf muscle and with the soleus, is responsible for extending the foot at the ankle. It originates on the lower end of the femur and inserts on the heel bone. It is used forcibly in running, starting, jumping, and charging as in football. The soleus originates on the upper two-thirds of the tibia and inserts on the heel bone. It works with the gastrocnemius in extending the foot at the ankle.

Section IV. THE STRUCTURE OF THE CIRCULATORY AND RESPIRATORY SYSTEMS

453. The Circulatory System

The functions of the circulatory system are to transport blood to all parts of the body, to remove waste products for disposal, and to deliver protecting and repairing substances where needed. The heart, veins, arteries, and capillaries form this system.

a. The Heart. This is a "force pump" divided into a right half and a left half (fig. 133). The right half pumps blood to the lungs, and the left half supplies the systems. The four chambers of the heart are the right auricle, right ventricle, left auricle, and left ventricle. The heart is a little larger than the fist and is located in the left center of the thoracic region between the two lungs.

b. Blood Vessels. The vessels carrying blood away from the heart are the arteries, which eventually divide into capillaries, the very small vessels through which diffusion and osmosis takes place. The capillaries gradually increase in size until the veins are formed. Veins carry blood back to the heart. See chapter 30

for a detailed discussion of the functioning of the circulatory system.

454. The Respiratory System

The respiratory system consists of the mouth, nose, trachea, lungs, and diaphragm.

a. Trachea. The trachea, or "windpipe," is a hollow, tube-like structure that carries air from the mouth to the lungs (fig. 134).

b. Lungs. The lungs are elastic bags that contain sections of the windpipe which divide first into the bronchus, then into smaller tubes known as the bronchiole, and finally into small alveoli or air sacs. The exchange of oxygen and carbon dioxide takes place in these air sacs.

c. Diaphragm. The diaphragm is a thin, sheetlike muscle stretching across the thoracic cavity just below the lungs. During inspiration, the diaphragm flattens out and lowers, allowing the lungs to expand and fill with air. During expiration, the diaphragm raises into a dome shape, helping to reduce the space inside the thoracic cavity. Functioning of the respiratory system is outlined in chapter 30.

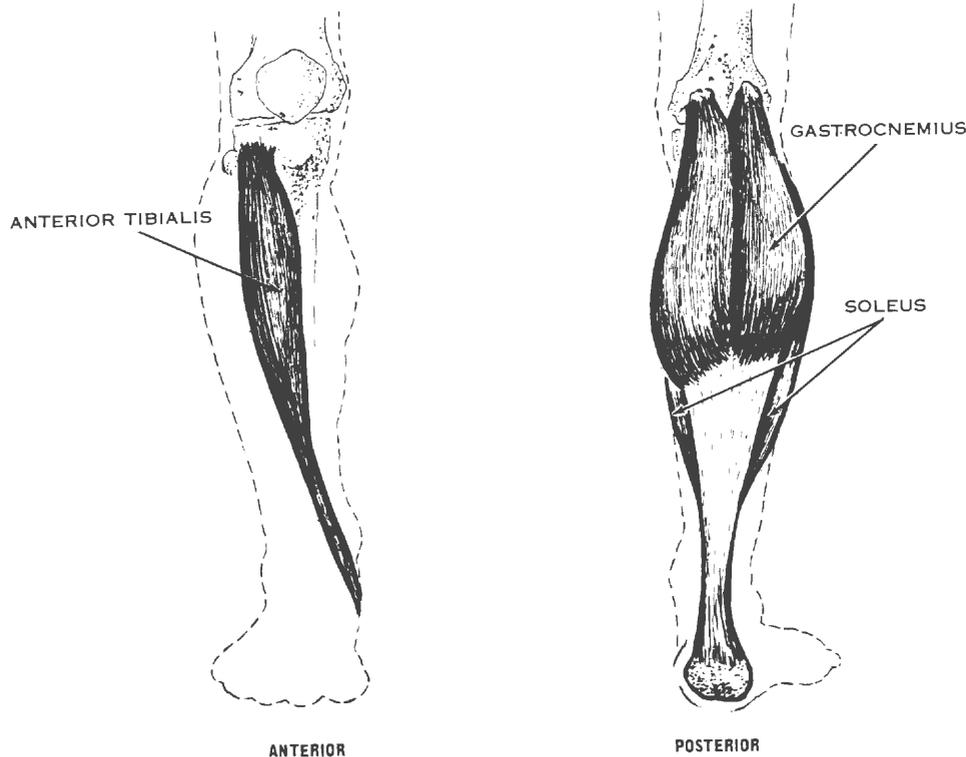


Figure 132. Anterior and posterior muscles of the leg.

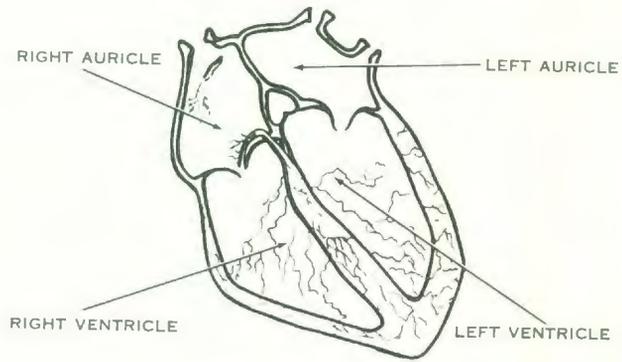


Figure 133. The heart.

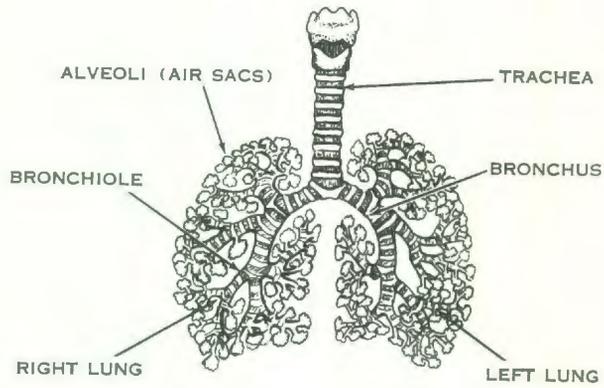


Figure 134. The trachea and lungs.

CHAPTER 30

BODY FUNCTIONING

Section I. FUNCTIONING OF THE SKELETAL AND MUSCULAR SYSTEMS

455. General

The functioning of the skeleton and muscles are not the same, yet these systems are closely related. The body could not move without the actions of muscles, and without a frame work or skeleton from which to suspend these prime movers there could be no movement.

456. Functioning of the Skeleton

The skeleton has three main functions as follows:

- a. To provide a framework for the body and a place of attachment for muscles.
- b. To provide protection for vital organs such as the brain and other vital organs such as the heart, stomach, and liver.
- c. The bones of the skeleton serve as a place to manufacture red blood cells. This action takes place in the inner part, or marrow of the bone.

457. Effect of Exercise on Bones

a. Continuous exercise, particularly among younger people, usually brings about certain beneficial changes to the viscera and bones. For example, regular exercise causes the cancellous plates of the bones to become strengthened and to be rearranged so they can stand up under great stress and strain.

b. Bones which are not used lose a large part of their minerals. This should be considered when individuals are returned to the conditioning program after a prolonged period of inactivity. Individuals in this category should be restrained from activities which might result in bone breakage before the stimulus of use has brought the bone back to normal condition. The condition known as "march fracture" is usually a result of this condition.

458. Muscular Strength

a. When a muscle is exercised vigorously enough to strengthen it, the muscle itself grows in size. Hence, the larger the muscle (other things being equal), the stronger the muscle. It is apparent, however, that trained muscles function more smoothly and more efficiently than untrained ones. They are able to contract somewhat more vigorously and with apparently less effort. To insure that muscles are developed to the point of hypertrophy, it is necessary that the overload be carried well beyond the present state of development.

b. Regular and strenuous exercise of the muscle also toughens it. The muscle tissue becomes firmer and can stand much more strain. This is due partly to a toughening of the sarcolemma, and also to the development of more connective tissue within the muscle bundles. Whether this so-called toughening effect is temporary or permanent is not known.

459. Muscular Endurance

Muscular endurance enables an individual to continue a relatively heavy load of exercise over a long period of time. For example, many men can shovel dirt for 5 minutes without experiencing undue fatigue; however, continued digging at the same rate for an hour causes them to become exhausted. We experience the muscular exhaustion brought about in local muscle groups by pullups, situps, and other tests of endurance. Here the local muscle groups fatigue rapidly, but the man is not exhausted. There is considerable evidence that this type of endurance is almost entirely a combination of strength plus improved local

circulation in the muscle. To improve this type of muscular endurance, the length of workouts should be increased.

460. Speed and Agility

Both speed and agility are qualities related to strength and, to a certain extent, to muscular and circulo-respiratory endurance. They are developed through specific skills that should be taught and practiced. A properly planned program will provide opportunity for the development of these physiological qualities.

461. Increase in Muscular Coordination

As an individual develops his physical abilities, he increases his strength and endurance. This is due partly to the fact that he has developed better coordination and more skill and is now using only the muscles that are relevant to his task. An unskilled performer, on the other hand, may use many irrelevant muscles, thus increasing the amount of physiological work without increasing the general output of mechanical work. This increase in skill is a highly desirable development, but it should be offset by greater dosage to compensate for the loss in overload due to increased skill.

462. Muscular Fatigue

a. When the rate (speed) of work is increased, the energy required is proportionately much greater than the increase in rate. For example, if an individual doubles his speed of running, the amount of power demanded to do this is increased eight times. The instructor should be careful when he increases the ca-

dence of the exercise to guard against a tendency to make too great a demand in the length of time the exercise is performed.

b. Fatigue, when brought on by hard, rapid exercise, may be thought of as "intoxication fatigue," as contrasted to "depletion fatigue" brought on by continued, not too strenuous exercise such as very long marches. As an effect of training, the complex chemical processes in the muscles become more effective in combatting fatigue.

463. Circulation in Muscles

When exercise of a strenuous nature is pursued over a prolonged period of time and is engaged in regularly, the blood vessels within the muscular tissue itself increase in number. This increase is due partly to the number of new capillaries, which increase as much as 50 percent in the same volume of muscle. It is also due to the opening of the latent, inactive capillaries which, when combined with new capillaries, may increase the capillary circulation as much as 400 percent. This gives a much greater supply of food materials and oxygen to the muscle, thereby increasing its endurance. It takes about 8 to 12 weeks for this increase to take place in young men. A longer period is required as age advances. To be effective, the exercise must be regular. Professional athletes who desire to condition themselves rapidly, may train twice a day. After a period of 8 to 12 weeks of inactivity, or very light activity, these extra new capillaries are again absorbed and disappear.

Section II. FUNCTIONING OF THE CIRCULATORY AND RESPIRATORY SYSTEMS

464. General

The development and functioning of the circulatory and respiratory systems is very closely interwoven. The chief organs of these systems, the heart and lungs, function together to provide a supply of oxygen vital to the body.

465. Heart Action

a. The heart is the chief organ of circulo-respiratory endurance. The lungs transmit the oxygen from the air to the blood, but it is the heart that propels this blood to the tissues through the blood vessels. If the heart lacks

the capacity or slows down so much that the blood does not get around to the muscles, the individual quickly becomes exhausted (fig. 135).

b. The heart itself is a muscular organ and is developed by exercise just as is any other muscle. Obviously, however, the heart cannot be singled out and exercised alone. In other words, an individual working vigorously enough to make the heart beat hard and fast exercises the heart along with the other muscles that are brought into play. This means that in every conditioning program there



Figure 135. Circulation of blood from heart to the body.

should be some exercises of the type which will develop "wind," namely exercise of speed, carried out over a fairly long period of time. This type of exercise develops the heart rapidly.

c. One of the results of a speed exercise is that the rate of the heartbeat tends to become slower in rest and each heartbeat pumps out a greater amount of blood. This is known as an increase in "stroke volume," a desirable condition because it enables the heart to pump more blood with a slower contraction rate. The con-

traction of the heart is a vigorous one, but when the heart is expanding, or is in "diastole," there is a momentary rest. Other things being equal, the greater the time for this rest, the longer the heart will be able to beat under the same exercise demand without undue fatigue.

466. Circulation of the Blood

a. The circulation of blood may be divided into two parts: the general circulation to the body as a whole and pulmonary circulation, which is the circulation to the lungs.

b. When an individual is in good physical condition, the pressure of the blood in his veins tends to be higher than in a man out of condition. This increase in venous pressure is important. A pump can move only the amount of fluid that is available to it. In like manner, the heart can pump out into the arteries only the blood that comes to it through the veins. If the pressure in the vein leading into the heart is too low, then the auricle will not fill on the right side and there is not enough blood reaching the ventricle to be pumped forward into the system.

467. Circulation in Conditioned Men

a. When an individual is in poor condition, the sympathetic nerves controlling circulation relax and the individual tends to have an excess of blood in the vessels and internal organs. If this poorly conditioned individual engages in strenuous activity or is subject to emotional pressure, he may experience temporary brain anemia. This may be to the degree that the individual faints, or it may only cause him to feel dizzy or weak. Exercise will stimulate the movement of blood to the heart and counter this relaxation and force the blood out into the general circulation.

b. In strenuous exercise where there is a great deal of forced breathing, return of the blood to the heart is facilitated. The blood vessels tend to constrict and relax rhythmically in connection with the increased rate of the heart beat. During return of the blood to the heart the valves in the peripheral veins and the increased pressure prevent the blood from running back and away from the heart. Under such forced breathing, and speed up of the heart action, more blood is available to the heart.

468. Red Blood Cells

Red blood corpuscles or cells are very small circular plate shaped discs (fig. 129). One hundred of these cells in single file would reach across the head of a common pin. The principal purpose of the red cells is to carry oxygen. In order to meet varied conditions, the body provides a temporary increase in the number of red cells (para 469).

469. Lymphatic Circulation

In addition to the arteries, capillaries, and veins, we have lymph vessels. The plasma from the blood seeps out through the walls of the capillaries and surrounds all of the cells of the body. The blood which carries the red blood cells does not come in direct contact with these body cells, so that the oxygen, carbon dioxide, and all of the food products have to filter through this lymph to get to the cells of the body. When individuals are engaged in sedentary activity, this lymph tends to move very slowly. The carbon dioxide and the oxygen are still transmitted without difficulty, but this lymph becomes what we might speak of as "stale" and needs to be moved on into the general circulatory mechanism. Exercise causes the lymph to be milked away from the cells of the body and to be replaced by fresher lymph. This moving of the lymph is accomplished by milking the lymph along into the lymph vessels and up these vessels by active physical exercise. It is important that active exercise be provided regularly and constantly.

470. Relationship of Heart and Lungs

In tracing the circulation of the blood, the cycle is started at the point where the carbon dioxide-laden blood is returning to the heart. A large vein, the vena cava, carries the blood to the right auricle (upper chamber) of the heart. This blood then passes through the valve into the right ventricle (lower chamber). At this point, the blood leaves the heart by way of the pulmonary artery for processing in the lungs. In the lungs the carbon dioxide is exchanged for oxygen and the purified blood is returned to the heart by way of the pulmonary vein. The blood then re-enters the heart at the left auricle (upper chamber) and passes through the valve into the left ventricle (lower chamber). Here it is pumped into a large ar-

tery (aorta) for passage to the body. As the blood moves into the muscles, it gives off oxygen and takes on carbon dioxide. Moving through the capillaries into the veins, the blood is ready for the return trip to the heart.

471. Functions of the Lungs

a. When there is a demand upon the heart brought about by strenuous and continued exercise, the efficiency with which the lungs transmit oxygen to the blood is increased as much as 25 percent. This increase is attributed to a number of factors. There is some evidence that in long continued programs of exercise, the little alveoli (air sacs) within the lungs, which are the terminal parts of the lungs at the end of the bronchioles or air tubes (fig. 137), actually put in some new partitions.

b. A more acceptable explanation of the increased efficiency of the lungs of the conditioned individual is based on the expansion of the air sacs. In the poorly conditioned individual, some of the air sacs are closed or collapsed. As this individual participates in vigorous exercise, thus placing a greater demand for oxygen upon the body, the forced breathing causes the air sacs to be slowly expanded. This process occurs over a period of several weeks.

c. Once a large number of these air sacs have been forced open, the lungs have greater absorption surface as each open air sac can contain more oxygen. The small capillaries surrounding each air sac are also extended and a greater number of red corpuscles can circulate around the air sacs to be in a favorable position to pick up oxygen (fig. 138).

d. In regular exercise the individual learns to breathe more deeply, and there is apparently an improvement in the way in which the fresh air from the outside gets to the walls of the alveoli. This increase in the amount of air breathed into the lungs is partly because of an increase in the flexibility of the chest brought on by increased deeper breathing and partly because of a strengthening of the respiratory muscles.

472. Circulo-Respiratory Function in High Altitude

a. If troops are to be employed in areas of high altitude, they should be acclimatized by movement to a similar area for a period of 10



Figure 136. Red corpuscles.

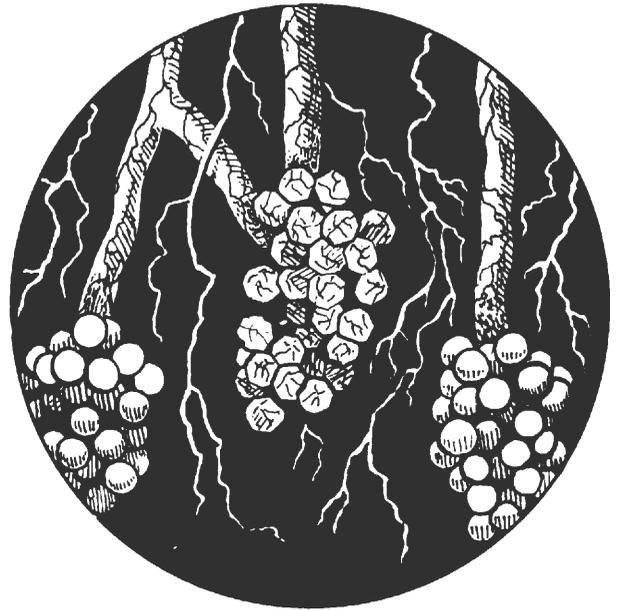


Figure 137. Air sacs in the lungs.

to 14 days prior to their employment. At areas of high altitude the components of the atmosphere are the same as at sea level, but the air is much less dense. As a result, a soldier can take in—no matter how hard he gasps for air—only about 80 percent of the oxygen he is accustomed to at sea level. Personnel who are accustomed to sea level or moderate altitude simply do not have enough red corpuscles in the blood to fulfill their needs at high altitudes. Since there is no immediate increase in red blood cells, the individual undergoing exertion gasps for breath and his heart beat increases to force as much blood as possible to oxygen-starved muscles. Personnel not accustomed to the rarefied atmosphere of higher altitudes tire more quickly and may collapse after rapid physical exertion.

b. The brain is the first organ to react to a lack of oxygen. When the brain is denied a sufficient quantity of oxygen, unconsciousness results. Such “blacking out” is actually a defense mechanism to enable the body to remain alive. When unconscious, the body requires a minimum of oxygen, hence when in a prone position, a maximum supply of blood is permitted to stimulate the brain to a conscious state.

c. Men who are accustomed to high altitude have about one-third more red corpuscles than

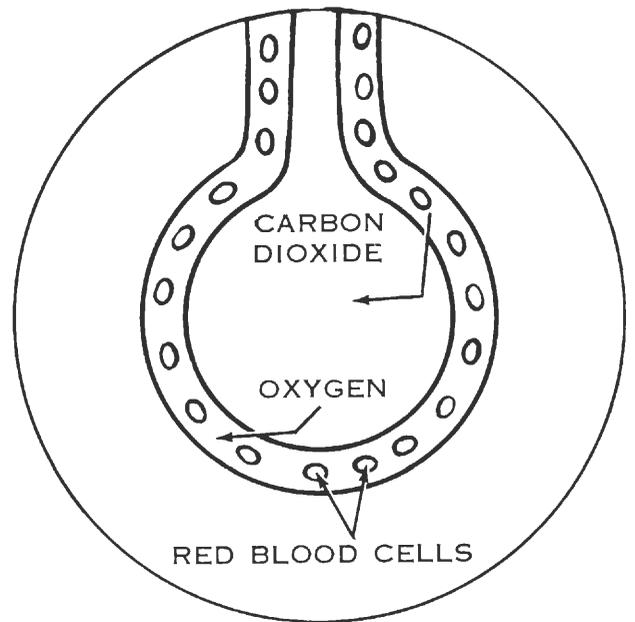


Figure 138. View of a single air sac.

men from lower areas. These men can exercise strenuously without ill effects or loss of efficiency. After a few weeks at higher altitude, a body accustomed to areas of low altitude increases its production of red cells and the body becomes acclimatized to the higher altitude.

473. Tips for Living at High Altitude

a. Get at least 10 hours of sleep during the first few nights at high altitude.

b. Stand straight and give the lungs every chance to do their job. Breathing will be faster and chest muscles will be working overtime.

c. Tests prove that fit personnel adapt more readily than sedentary persons. Get troops in shape a fortnight ahead of time.

d. Smoking and drinking slow down adaptation.

e. Avoid swimming any distance alone. An easy swim at sea level can become a tragic impossibility at high altitude.

f. During hikes or walks, slow the pace down by about 10 percent. A brisk walker takes 120 steps per minute; this speed should be cut to under 100 steps initially.

g. Exposure to high altitude causes bodily changes that reduce resistance to bacteria and viruses. Avoid people with colds and try not to catch one. Be very certain that food and water are not contaminated.

Section III. FUNCTIONING OF THE GLANDULAR SYSTEM

474. General

The body contains several ductless glands which assist to control and regulate the body processes. One of these glands is affected by exercise and is known as the adrenal gland.

475. Action of the Adrenal Gland

a. The adrenal gland provides two secretions. The secretion that is put out from the medulla, or the interior part, is distributed when there is extreme interest, anxiety, alarm, or danger. It activates almost all of the muscular functions and causes a more efficient muscular action. It enables men to work at a higher level of overload and to feel good while doing it. Competition is frequently one of the best ways of increasing the output of adrenalin.

b. The second output of the adrenal gland is called cortin. This is the secretion that gives one a general sustained level of energy. When there is a pathological change in this gland and the amount of cortin is reduced, the individual has no energy and finds it very difficult

to undertake an activity. Individuals who have a high output in this gland are almost super energetic. Programs of exercise which are strenuous, but not exhausting, increase the output of cortin and cause the individual to feel better and more energetic. Programs of exercise that are so strenuous the man is exhausted for several hours after the exercise, tend to decrease the output of cortin and leave the man feeling spent.

476. Output of Adrenal Gland and Overload

Since individuals differ in their output of these hormone substances this fact should serve as a guide to be very careful in the application of the overload principle. It should be applied with the individual in mind. There will be individuals in every phase of training who will vary greatly in their physical condition. The program should be modified so that individuals in poor condition will not be overworked to exhaustion, even though the overload principle is being applied.

CHAPTER 31

POSTURE TRAINING

477. Posture Training as Part of Physical Training

a. Posture training is an important phase of physical training. Few men enter the Army with a soldierly bearing. Because their appearance, well-being, and efficiency are adversely affected by poor carriage, posture training must be emphasized.

b. While posture training is considered a primary responsibility of the physical training program, it is by no means the sole objective. Good posture cannot be attained by practicing it for only one period a day. It must be stressed in all other phases of training. Good military bearing must be practiced at all times until the men assume it habitually.

478. Motivating Good Posture

a. Good posture must be built upon the desire of the individual to stand correctly. Regardless of the amount of exercise and instruction they get, men habitually assume good posture only if they want to. That is why motivation is so important.

b. The men may be motivated by various means, but in all cases the approach must be centered on cultivating an individual and unit sense of pride in a soldierly appearance. Posture and morale go hand in hand. In fact, military bearing may serve as an indicator of troop morale.

c. Early in their training, the men should be given a well-planned talk on the reasons for cultivating good posture. This talk should be illustrated and accompanied by a demonstration of the salient points. The values of good body mechanics to the soldier should be stressed as follows:

(1) A soldier is often judged by his appearance, therefore the man with good posture looks like a soldier; he commands attention.

(2) It is an accepted psychological fact that good posture is associated with good morale; a man with good posture feels better and is more positive.

(3) Good posture permits the body to function most efficiently because the opposing muscle groups are in balance, thus maintaining the bony structure in a balanced position. The correct body alinement provides for correct positions of the internal organs, and organs in their correct position can function freely.

(4) Good posture relieves the strain and tension placed upon bones, muscles, and ligaments. It is less fatiguing and promotes physical efficiency.

d. The men should also be told the injurious effects of poor posture (fig. 139). The results of poor posture include rounded shoulders, flat chests, sway backs, protruding abdomens, and tilted pelves. Body parts sag because of muscular weakness. They lack stability. Continued sagging results in further weakening of the muscles to the point where they can no longer prevent or correct the sag, and the malformations become permanent. The back and other joints and muscles can be strained under a small load because of faulty carriage.

479. Characteristics of Good Posture

a. There is no *best* posture for all men because of the wide variations in inherited physical structures. This does not preclude, however, a sound standard of good posture based on individual anatomical balance. Anatomical balance is the keynote of good posture and it can be achieved with good alinement of body parts.

b. Good posture is characterized by true vertical alinement, in which certain body segments are alined, one above the other, so that they support each other along the line of the



FAIR
 HEAD FORWARD
 ABDOMEN PROMINENT
 EXAGGERATED CURVE —
 IN UPPER BACK
 SLIGHT HOLLOW BACK



POOR
 RELAXED (FATIGUE) POSTURE
 HEAD FORWARD
 ABDOMEN RELAXED
 SHOULDER BLADES PROMINENT
 HOLLOW BACK



VERY POOR
 HEAD FORWARD BADLY
 VERY EXAGGERATED —
 CURVE UPPER BACK
 ABDOMEN RELAXED
 CHEST FLAT — SLOPING
 HOLLOW BACK

Figure 139. Examples of improper posture.

pull of gravity. With the body in profile the body segment alinement is correct if an imaginary straight line can be drawn through the top of the head, the lobe of the ear, the tip of the shoulder, the middle of the hips, slightly back of the kneecap, and in front of the outer ankle bone (fig. 140). In this position the knees, hips, shoulders, and head are properly balanced over the ankles. When this alinement is disturbed by faulty positions of one or more joints, the entire body is thrown out of line. The muscles must then overwork to counteract the pull of gravity, which produces unnecessary strain and fatigue.

480. Standing and Walking Posture

The following elements of good posture are of



STAND TALL
 CHIN IN
 SHOULDERS RELAXED
 CHEST RAISED
 BUTTOCKS DOWN
 BELT PARALLEL —
 WITH THE FLOOR
 KNEES STRAIGHT
 WEIGHT BALANCED
 BODY PARTS IN LINE
 LOBE OF THE EAR
 TIP OF THE SHOULDER
 MIDDLE OF THE HIP
 MIDDLE OF THE KNEE
 FRONT OF ANKLE BONE

Figure 140. Basic requirements of proper standing posture.

major importance in both standing and walking:

a. The body should be stretched upward as tall as possible. In doing this the head should not be tilted or the shoulders raised. By flattening out the curve of the neck and keeping the eyes level, this tendency is avoided.

b. The head and neck should be centered between the shoulders. The chin should be drawn inward so that its point is carried directly above the notch at the top of the breastbone. Press the neck back against the collar. The chest should be moderately elevated without strain. If the chest is raised properly, the stomach wall will be flattened normally. The stomach should not be drawn in to the extent that normal breathing is restricted.

c. The shoulders should be relaxed and fall evenly. In certain cases the shoulders may be drawn back slightly, but they should never be under any strain.

d. The buttocks should be drawn down and under to flatten the lower back and prevent the pelvis from tilting forward. In the proper position, the plane of the belt is parallel to the ground.

e. The knees should be straight without stiffness.

f. The weight should be evenly distributed between the heels and balls of both feet.



SIT TALL
CHIN IN
SHOULDERS RELAXED
CHEST RAISED
UPPER BACK AND—
HIPS IN LINE
BELT PARALLEL —
WITH THE FLOOR
UPPER LEGS ON CHAIR
LOWER LEGS VERTICAL
FEET FLAT ON FLOOR

Figure 141. Proper sitting posture.

481. Sitting Posture

Proper sitting posture (fig. 141) has most of the same elements described for standing and walking posture. The following differences should be stressed:

a. The upper back and hips should touch the back of a straight chair. The tendency to allow the hips to slide forward must be counteracted. The chair must be of proper height to allow for the correct alinement of body parts.

b. The upper legs should be in contact with the chair and the angle formed by the upper and lower legs is 90°, with the feet flat on the floor.

482. Principles of Posture Training

a. Men cannot be expected to assume a good posture without being taught. Many men have a misconception as to what constitutes good posture. When trying to assume a good stance they tilt their heads, thrust out their chests, retract their shoulders in an exaggerated manner, and spring their knees backward. These faulty positions become habitual unless corrected early, and they may lead to permanent structural defects.

b. To develop the best group as well as individual posture, the following points must be applied intelligently to the group as a whole as well as to each member:

(1) Teach the basic elements or characteristics of good standing, walking, and sitting postures.

(2) Provide ample opportunity to practice good posture until it feels more comfortable than poor posture.

(3) Create a desire in the men for good posture.

(4) Insure that the men receive adequate physical conditioning to strengthen and tone the muscles thus enabling them to hold body parts in proper alinement.

483. Teaching Good Posture

a. The first essential to the establishment and maintenance of good body mechanics is a correct interpretation of proper posture. Every man must have a correct mental image of the ideal position, so that he can recognize and correct any faults in his own posture. Good instruction and concentrated practice at repeated intervals will give him this ability.

b. Posture instruction should only be attempted by an instructor who is fully prepared to give complete explanations, demonstrations, and corrections. The instructor should have a general knowledge of posture, both good and bad, so that he can recognize defects and correct them.

c. The instructor should exemplify good posture. He must be enthusiastic about it and “sell it” to the men. Men with excellent posture should be complimented. Others should be reminded when they exhibit poor posture (fig. 139). The instructor should constantly bear in mind that posture correction is a gradual process, and repeated admonition and corrections are necessary to overcome life-long habits of slouching.

d. It is impractical and uneconomical to attempt the posture training of a unit on an individual basis. It must be done en masse, but individuals are corrected when necessary. It is best to use command techniques accompanied by cues and admonitions to secure uniform results. The most suitable commands and admonitions are—

(1) Stand tall, sit tall, and walk tall, with the toes pointing straight ahead.

(2) Chin in; chest moderately elevated; stretch top of head toward the ceiling.

(3) Buttocks rolled downward until the plane of the belt is parallel to the ground. The hips are level and the buttock muscles are firm.

(4) Knees straight.

(5) Shoulders down and relaxed.

(6) Arms downward and straight.

(7) Maintain good balance.

e. The instructor should explain every command clearly and concisely and demonstrate it so the men can tell what is required of them. For example, when he commands STAND TALL, and the group tries to do so, he explains concisely what "stand tall" calls for and shows the group how it is done. He can add other admonitions as the group strives to stand with a full stretch while keeping good alinement. The

instructor needs assistants to help him make individual corrections of faulty positions.

f. Visual aids should be used in teaching good posture. A life-size enlargement of the posture chart (fig. 140) provides an excellent aid for teaching the basic elements of correct posture. A few pictures of good posture, and signs posted at familiar places, remind the men to emphasize proper posture.

APPENDIX A

REFERENCES

AR 28-1	Special Services.
AR 28-52	Army Sports Program.
AR 320-5	Dictionary of United States Army Terms.
AR 600-7	Weight Control.
AR 600-9	Army Physical Fitness Program.
FM 22-5	Drill and Ceremonies.
FM 21-150	Combatives.
ATP 21-111	Modified Basic Training (1-A-O Personnel).
ATP 21-114	Male Military Personnel Without Prior Service.
ASubjScd 21-37	Physical Training.
ASubjScd 21-150	Physical Contact Confidence Training.
DA Pam 21-1	Physical Fitness Program for Staff and Specialist Personnel.
DA Pam 28-6	Intramural Sports for the Army.
TB Med 175	The Etiology, Prevention, Diagnosis, and Treatment of Adverse Effects of Heat.
TF 7-3856	Physical Fitness—U.S. Army.
GTA 21-5-1	Physical Conditioning.

APPENDIX B

INSTRUCTOR HINTS AND INSTRUCTOR TRAINING

Section I. GENERAL

1. Purpose and Scope

The purpose of this appendix is to provide advice to instructors and leaders who have the responsibility for instruction and conduct of exercise activities. The scope includes general factors for improving administration of exercise periods, commands, the extended rectangular and circle formations, methods for instruction and conduct of exercise activities, explanation of various basic positions associated with the various activities of the program, and instructor training. For a more complete coverage of physical fitness leadership see chapter 4.

2. Conservation of Time

Each exercise has a name. You should require all men to know the exercises by name and movement so they will be easier to conduct. After doing the exercises several times, the men are usually able to complete the entire drill or table with only enough pause between exercises for you to indicate the next one by name. This continuous method of conducting an exercise activity greatly intensifies the workload and conserves time.

3. Provision for Different Levels of Physical Condition

Providing for different levels of physical condition is particularly recommended in the early stages of conditioning: Older men and men in poor physical condition should be expected to attain a group level of fitness, but they should be given more time to do it.

a. One simple method of providing for the difference in levels of physical condition is to group the men for exercise according to their condition. A two-group classification would divide men into highly conditioned and average

groups. A finer classification could be obtained by dividing them into three groups—a highly conditioned, a moderately conditioned, and an unconditioned group.

b. The segregation of men into different exercise groups should be based on their physical fitness test scores or on the level of condition they demonstrate in the conditioning activities. They may also be grouped at first according to their age. A common classification by ages is under 30, 30 to 34, and 35 and above. All groups should be required to eventually attain a level of physical fitness commensurate with their classification as combat or combat support troops.

4. Importance Commands

The importance of commands in conducting the physical training program cannot be overemphasized. When a command is given distinctly, concisely, with energy and snap, and with a proper regard to rhythm, the performance reflects the command. A command that is careless and indifferent results in a lifeless, slovenly, and disorganized performance. For instruction on the use of the voice in giving commands, see FM 22-5.

5. Preparatory Commands and Commands of Execution

The *preparatory command* describes and specifies what is required, and the *command of execution* calls into action what has been prescribed. All preparatory commands are given with a rising inflection. The interval between commands is long enough to permit the average man to understand the first one before the second one is given.

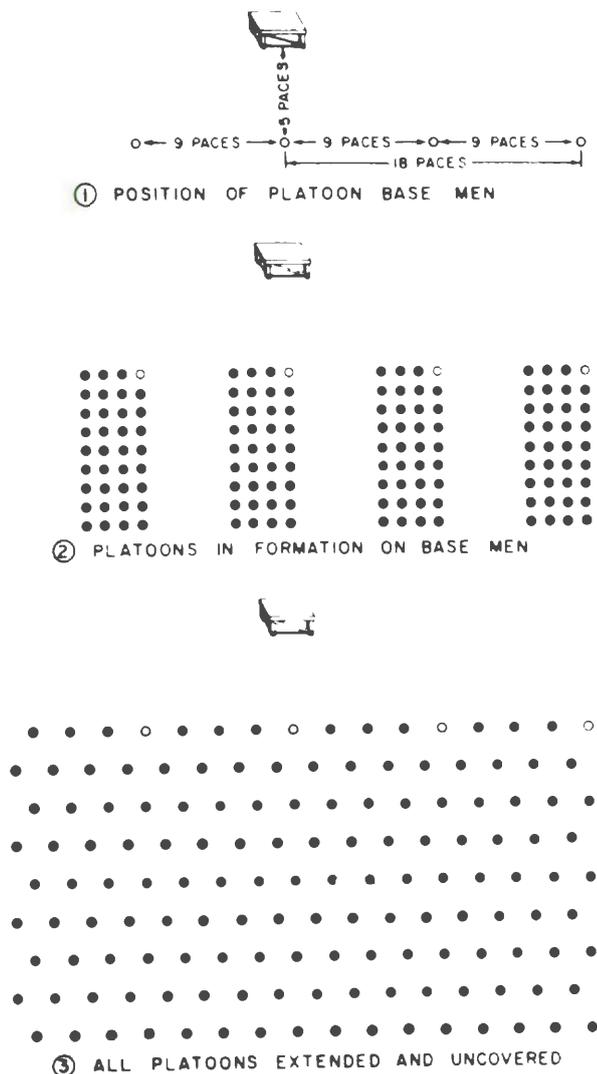


Figure 142. Forming the extended rectangular formation.

6. Extended Rectangular Formation

The traditional formation for carrying on many physical training activities is the extended rectangular formation (fig. 142). This formation is more compact than any other. It is the best type to use for large numbers of men because it is simple and easy to assume.

a. For the formation of one platoon, the base man paces off five paces from the stand, faces left and moves five paces, halts, and again faces left. With the baseman positioned facing the stand, the platoon leader then commands: *FALL OUT AND FALL IN ON THE BASE MAN*. At this command all personnel run to

the designated area and re-form. This procedure is preferred to marching the unit into position. If more control is desired, the unit may march at double time to the vicinity of the baseman and then be directed to fall out and fall in on him. Much valuable time is wasted in the field due to needless maneuvering of troops at quick time in an effort to position the platoon or unit on the exact spot for the exercises.

b. A company size unit assumes the extended rectangular formation from a column of three's or four's at normal intervals between squads. This extension can also be executed from a company mass without interval between platoons. In either extending a platoon- or company-size unit take your place at the head of the column and command—

(1) **EXTEND TO THE LEFT, MARCH.** At this command the men in the right flank file stand fast with arms extended sideward. All other men turn to the left and run forward at double time. After taking a sufficient number of steps, all men face the front with both arms extended sideward. The distance between fingertips is about 12 inches and dress is right.

(2) **ARMS DOWNWARD, MOVE.** At this command the arms are lowered smartly to the sides.

(3) **LEFT, FACE.**

(4) **EXTEND TO THE LEFT, MARCH.** At this command the men in the right flank file stand fast with arms extended sideward. All other men turn to the left and run forward at double time. Spacing is the same as in (1) above and dress is right.

(5) **ARMS DOWNWARD, MOVE.** Same as in (2) above.

(6) **RIGHT, FACE.**

(7) **FROM FRONT TO REAR, COUNT OFF.** At this command the leading man in each column turns his head to the right rear, calls off "one" and faces the front. Successive men in each column call off in turn, "two," "three," "four," "five," in the same manner.

(8) **EVEN NUMBERS TO THE LEFT, UNCOVER.** At this command each even numbered man stride-jumps sideward to the left, squarely in the center of the interval. In doing this, he swings his left leg sideward and jumps from his right foot to his left foot and smartly brings the right into position against the left.

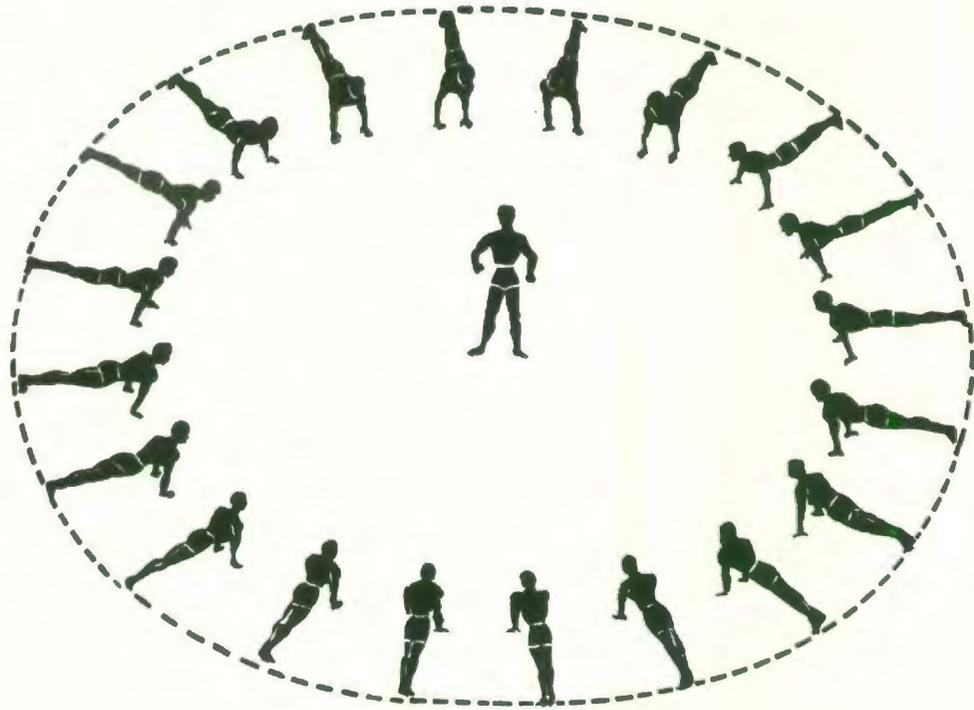


Figure 143. The circle formation.

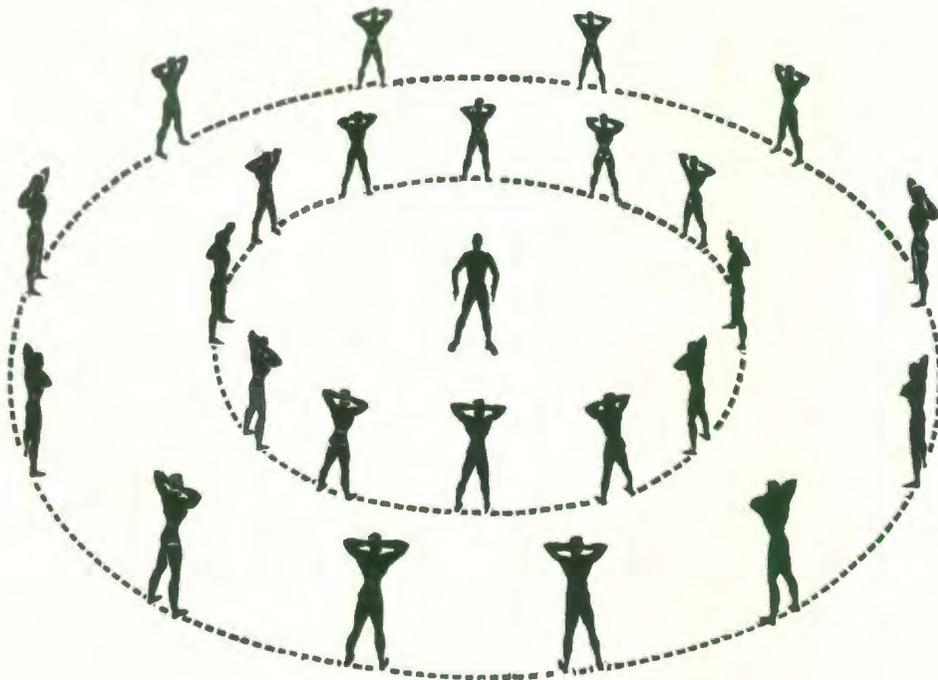


Figure 144. Concentric circle formation.

c. To assemble the unit, you command: ASSEMBLE TO THE RIGHT, MARCH. At this command, all return to their original position in the column at double time and reform on the baseman.

d. It is recommended that the area for grouping equipment and arms be at the edge of, or well away from, the area to be used for exercising. To conserve time and insure proper position of the unit, the baseman or, if the unit is composed of several platoon-size groups, the various basemen may precede the unit and establish their positions in relation to the instructor's stand.

7. Circle Formation

The circle formation is effective for the conduct of various exercise activities (fig. 143). This formation has an advantage in that the supervision of all men is facilitated and a moving formation is available which provides control. Guerrilla exercises, grass drills, and some forms of running, are examples of activities which are more easily conducted in the circle formation than in the extended rectangular formation.

a. It is not advisable to have more than 60 men in a circle. When more men must be accommodated, separate circles should be used. Concentric circles (fig. 144) may be employed to reduce the size of the circle or to accommodate more men. If concentric circles are formed the different circles are made by designating squads for each circle. Each additional circle requires more men than the one inside it. For example, one squad of a platoon may form the inner circle and the remaining three squads the outer circle.

b. When a platoon is to form a circle the commands are CIRCLE FORMATION, MARCH, FOLLOW ME. Upon this command the right flank squad of the column moves forward at double time with the leader of the platoon group gradually forming a circle in a counterclockwise direction. Each succeeding file falls in behind that on the right. After the rough outline of the circle is formed the leader commands, PICK UP A FIVE-YARD INTERVAL. This is to insure the interval between men in uniform.

c. The group may be halted and faced toward the center, or, if instruction is not neces-

sary, the exercise activity may be executed without stopping the platoon.

8. Leadership Techniques

a. Unless you experience all the exercises you cannot appreciate how arduous they are, what movements are most strenuous and difficult, where the errors in performance are likely to occur, and what the proper cadence should be.

b. You must give all the men careful supervision and participate in the exercises to show that you can do them. When you participate your assistant instructors should supervise because it is difficult for you to supervise and exercise at the same time.

c. The men should never be kept too long in one position, especially a constrained one. They should never have to perform an exercise more times than they can do it without losing the proper form. You should insist upon proper form in the execution of all exercise activities. Even slight deviations from the proper form reduce the value of the exercise.

d. Avoid long explanations. As a rule, it should be necessary to give a full explanation of new exercises only. Explain the most essential features of an exercise first; add details later. Too many details at one time are more likely to confuse the men than to assist them. Minor corrections should be made to the entire class while the exercise is in progress (for example, "heads up," "knees straight"). If necessary, follow this direction by the name of the man who is particularly at fault. If a man requires special attention, he should be given separate instruction by an assistant instructor to avoid wasting the time of the group.

e. The heavy demand on your voice can be lightened by training assistant instructors to assume some of the instruction. Using mass cadence is also an effective method of lessening the demand on your voice.

9. Assistant Leaders

a. Even when the size of your group is limited to one platoon, you need assistants to help supervise and to assume charge in your absence. These assistants must be the most capable leaders in the platoon. Each assistant leader assumes responsibility for a segment of from 10 to 15 men. It is important for them to

participate in the exercise at regular intervals to maintain their own physical condition. To do this, they should rotate their duties as assistant leaders.

b. Assistant leaders must carefully supervise the performance of the men when they are learning new exercises. They also watch for errors while an exercise is being performed in cadence, and offer corrective suggestions to individuals at its conclusion.

Section II. CONDUCTING CONDITIONING DRILLS

11. Necessity for Precision and Accuracy

Conditioning exercises lose much of their value unless performed exactly as prescribed. Considerable time and effort must be expended during the early stages to teach the exercises properly to all men. The methods contained in this section apply to Drill One, Two, and Three; Rifle Drill; and Log Drill.

a. *By the Numbers.* When conditioning exercises are introduced to a new group, they should be taught by command. This will give the instructor an opportunity to check the position of every man and insure that everyone acquires the proper form at the outset. The method of teaching new exercises by command is by the numbers. In this method, a number is given to each position which is to be taken. The proper position is assumed when its number is called. The preparatory command is READY, and the command of execution is the number ONE, TWO, and so on.

b. *Commands for Continued Exercises.* After the men have had several days' experience with the exercises, the instructor needs merely to indicate what the exercise is, command the men to assume the starting position, and start them exercising in cadence. Before giving the command STARTING POSITION, MOVE, the instructor must always give the name of the exercise. Here is an example of commands:

"High Jumper."

(1) STARTING POSITION, MOVE (Men move into the prescribed starting position.)

(2) IN CADENCE, EXERCISE—one, two, three, *one*; one, two, three, *two*, until the exercise is completed. (Men start on command EXERCISE.)

10. Instructor's Stand

A movable physical training instructor's stand is recommended to elevate the instructor to a height where all men may observe his demonstration. A recommended stand (fig. 145) is illustrated. A platform of such size and construction may be moved as required to support instruction in many different activities of the program.

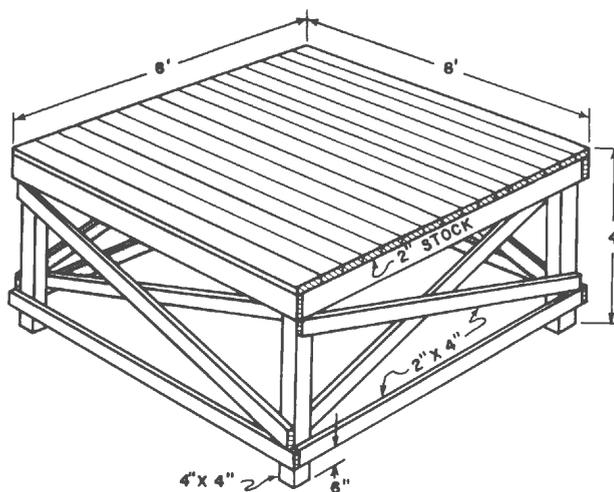


Figure 145. Physical training instructor's stand.

c. Commands of Discontinuation.

(1) To discontinue an exercise performed rhythmically or in cadence, the command HALT is given in place of the numeral (for example: One, two, three, HALT). To prepare the men for this command, all numerals in the final repetition should be spoken with a rising inflection. The rising inflection of the voice can be used at any time the instructor desires to stop the exercise for any reason.

(2) After the men are halted, they are given a posture reminder (for example stand tall, chin in, chest out) and then put at ease. In the early stages of training, they may be given a rest after each exercise or they may be placed at ease to listen to further explanation by the instructor. After a week, however, the rests should be gradually eliminated and the men should remain at ease between exercises only long enough for the instructor to name

the next one, bring the group to attention, and give the command **STARTING POSITION, MOVE.**

(3) To intensify the conditioning exercises in the late stages of training, the practice of having the men assume the "at ease" position momentarily between exercises may be discontinued. By going immediately from the position in which the men have been halted to the starting position of the next exercise, the command **AT EASE** can be eliminated.

12. Introducing Conditioning Exercises

a. When introducing conditioning exercises to a new group, they are taught by a specific procedure as explained below. There are three steps involved in teaching the exercises. These steps are:

(1) *Instructor at normal cadence.* Demonstration of the exercise at normal cadence by the instructor.

(2) *Troops by the numbers.* Participation of the group "by the numbers." On each count the men hold the positions while the instructor and his assistants correct any errors they notice.

(3) *Troops at normal cadence.* Group participation in the exercise at normal cadence.

b. The following is an example of these three steps with the High Jumper, which is the first exercise of Conditioning Drill One.

(1) *First Step.* The troops remain at ease and the instructor demonstrates. "At normal cadence the exercise looks like this: High Jumper. **STARTING POSITION, MOVE.** In cadence, **EXERCISE—One, two, three one; one, two, three, two,**" and so on.

Note. The instructor executes five repetitions of the exercise returning to the position of attention when he finishes them.

(2) *Second Step.* Troops are brought to attention and perform the exercise. **COMPANY, ATTENTION.** High Jumper. The starting position for this exercise consists of the feet spread shoulder width apart, knees flexed, body bent forward at the waist, arms alined with the trunk and hips, elbows locked, fingers extended and joined, head and eyes to the front. **STARTING POSITION MOVE.** By the numbers. On one, take a slight jump into the air, swinging the arms forward and up to shoulder level. *Ready, ONE.* Note that the elbows are locked and the arms are shoulder

width apart. On two, take a slight jump into the air and swing the arms backward, returning to the starting position. *Ready, TWO.* On three, take a vigorous leap into the air, looking skyward and swinging the arms forward to an overhead position. *Ready, THREE.* Upon returning to the ground, knees are flexed again, eyes to the front. On four, take a slight jump, swinging the arms down and back, returning to the starting position. *Ready, FOUR. POSITION OF ATTENTION, MOVE.*

Note. The instructor stands at attention and makes corrections during this step.

(3) *Third Step.* Both instructor and troops participate. "At normal cadence. High Jumper. **STARTING POSITION, MOVE.** In cadence, **EXERCISE—One, two, three, one**" (five repetitions).

c. It should be reemphasized that the above procedure is to be used **ONLY** when the exercises are first introduced to the men. When the exercises have been learned, only the *third* step is used.

13. Counting Cadence

a. When the exercises are carried on in rhythmic cadence, the instructor counts it. Each count coincides with the end of a movement in the exercise. When the men begin exercising in cadence, it is important that they start the first movement of the exercise on the command **EXERCISE** rather than wait for the count *One*.

b. The counting is used not only to indicate rhythm or cadence, but also to indicate the manner in which each movement is performed. Through proper use of these commands, long explanations are avoided and the instructor is able to indicate accurately the tempo and quality of the movements. When a movement needs to be done slowly, the instructor draws out the count. If any particular movement is to be performed with more energy than the others, the numbers corresponding to that movement should be emphasized by a louder and sharper count. The cadence for Drill One, Drill Two, Drill Three, and Rifle and Log Drills is one of the three following types or a combination of two of them:

- (1) Moderate—80 counts per minute.
- (2) Fast—100 counts per minute.

(3) Slow—50 counts per minute.

c. Normal cadence is the cadence prescribed for a particular exercise, whether it be moderate, fast, or slow.

d. The exercises are always given in cadence after the men have learned to execute them properly. Either the instructor or the entire group counts the cadence.

14. Cumulative Count

a. A cumulative count is a method of indicating the number of repetitions of an exercise on the fourth numeral of a 4-count exercise, thus: 1-2-3-1; 1-2-3-2; 1-2-3-3; 1-2-3-4. In the case of an 8-count exercise, the cadence would 1-2-3-4-5-6-7-1; 1-2-3-4-5-6-7-2.

b. The use of the cumulative count is desirable for the following reasons:

(1) It provides the instructor with an excellent method of counting the number of repetitions that have been performed.

(2) It enables the leader to make the exercise progressive from day to day and week to week.

(3) It serves as a self-testing and motivating device. Men like to know how much they are expected to perform. They want to continue to show improvement.

(4) It provides a means of prescribing an exact amount of exercise for any group, even when conducted by untrained personnel.

(5) When large groups exercise together, the cumulative count makes it possible to adapt the amount of exercise to men of different levels of physical fitness.

c. The use of the cumulative count motivates participation in conditioning exercises. When the men know how many repetitions of each exercise they have done, they are challenged to equal or exceed it on succeeding days. The cumulative count thus serves as a self-testing device by which men compete against their own previous performances.

15. Mass Commands

a. The use of mass commands under appropriate circumstances is strongly recommended.

(1) Mass commands assist greatly in overcoming individual modesty and timidity and

in developing confidence, self-reliance, assertiveness, enthusiasm, and proficiency.

(2) Mass commands, in effect, give large groups the benefit of individual instruction since each man becomes virtually his own instructor. The principal advantage is that each man is made to rely upon his own initiative and intelligence. He must learn not only to give commands properly, but also how to correctly perform the movement required by the commands.

(3) Each man is required to give the commands as if he alone were giving them to the entire unit. As a result, the volume of combined voices literally impels each man to extend himself to the limit in performing the movements with snap and precision. Coordination and a sense of cadence are also developed.

(4) Mass commands teach the proper cadence of an exercise, when to emphasize or lengthen a count, and how to convey by proper intonation the way a movement is to be performed.

(5) Mass commands aid in developing the voice.

(6) Mass commands may serve the valuable function of developing group exercise leaders.

b. The following example shows the recommended method of using mass commands for conditioning exercises:

(1) *Instructors:* (1) Call the platoon to the starting position of the squat bender, (2) **COMMAND.**

(2) *Mass:* (1) Starting position, (2) **MOVE.**

(3) *Instructor:* (1) Execute the exercise, at your command, (2) **COMMAND.**

(4) *Mass:* (1) In cadence, (2) **EXERCISE**—One, two, three, one.

c. To discontinue an exercise with mass commands, the mass will count the last repetition with a rising inflection: One, Two, **THREE, HALT.**

d. Mass commands are not recommended until the men have done the exercises an adequate number of times to learn them.

Section III. CONDUCTING NONDRILL TYPE ACTIVITIES

16. Nondrill Type Activities

Many exercise activities are used in the development of physical readiness which are not controlled or executed to a cadence count. Although commands and counting of cadence are not used to the degree employed in a set drill type activity, there is a procedure to be followed by the leader in maintaining control and providing effective instruction. Specific phraseology is used to teach beginning groups in grass drills (chap 12), guerrilla exercises (chap 13), and dual combatives (chap 20).

17. Grass Drills

The commands peculiar to each exercise are identical to the name of the exercise. The instructor uses the phraseology in *a* below to teach the basic positions, and the phraseology in *b* below to teach the exercises. Both are to be taught by combining a demonstration with the explanation. The following are examples:

a. "One of the four basic positions for grass drill is front." (Name the particular basic position being taught.) "At the command, front, (name the particular basic position being taught) you (simultaneous explanation and demonstration showing how the basic position looks when executed normally)."

b. "This grass drill, bicycle (name the particular grass drill being taught), is done from the back position." (Name the basic position or positions from which the drill will be given.) "At the command, bicycle, (name the particular grass drill being taught) you will (simultaneous explanation and demonstration showing how the grass drill looks when executed normally)."

c. To practice this exercise prepare men for practice and command, "GO, BACK, BICYCLE, and UP."

18. Guerrilla Exercises

a. Men are in the circle formation and moving. To teach an exercise use the following phraseology: "The next guerrilla exercise, all fours (name the particular guerrilla being taught), is a ground exercise (name the particular kind of guerrilla), and is done in the following manner (give a simultaneous explanation and demonstration showing how the exercise looks when executed normally)."

b. Men are continuing to move around the circle. To practice the exercise, command: "All Fours (name the particular guerrilla), March (supervise the execution of the exercise, keeping the men moving)." "Quick time, March. 1-2-3-4; 1-2-3-4." (The men assume rapid cadence as they reestablish their intervals.)

19. Dual Combatives

a. Men are in formation and paired with an opponent with all men facing the instructor: "This dual combative, the back-to-back tug (name the particular dual combative activity) is done in the following manner (simultaneous explanation and demonstration, showing how the activity looks when executed normally and explaining all regulations governing it)."

b. To practice the exercise, command: "Take your positions for the back-to-back tug (name the particular dual combative). "READY." (blow the whistle.)

c. To terminate the exercise again blow the whistle and command "REFORM."

Section IV. POSITIONS

20. Basic Positions Used in Activities

This section describes the basic positions prescribed for the various activity packages. These positions should be taught at the time they are needed to perform the activity. See FM 22-5 for detailed descriptions of the position of attention, the various rests, and for the commands used to bring men to these positions.

21. Positions of the Arms

a. There is one hands-on-hips position. (A, fig. 146). At the command of execution, bend the arms at the elbows and place the hands on the hips. The tips of the fingers should rest on the forward part of the hip bone, thumbs pointing to the rear, fingers extended and together, elbows and shoulders drawn back.

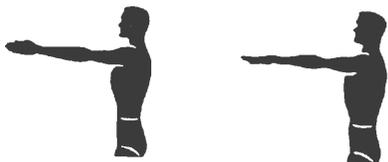
A. HANDS ON HIPS



B. ARMS SIDEWARD



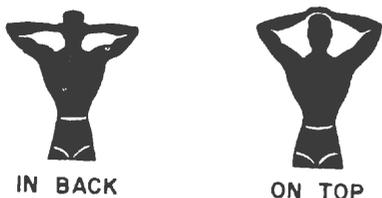
C. ARMS FORWARD



D. ARMS FLEX



E. FINGERS LACED ON HEAD



IN BACK

ON TOP

F. ARMS OVERHEAD

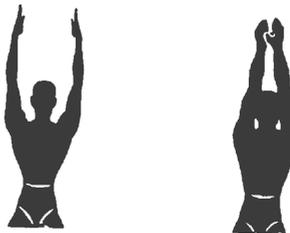


Figure 146. Positions of the arms.

b. There are two sideward arm positions (B, fig. 146). At the command of execution, raise the arms laterally until horizontal. The palms are up or down, elbows straight, fingers extended and together, thumbs along the index finger.

c. There are two forward positions of the arms (C, fig. 146). At the command of execution, raise the arms to the front. Extend them smartly to their full length until the hands are in front of and at the height of the shoulders. Palms may be facing or down, fingers extended and together, and thumbs along the index fingers.

d. There is only one arms flex position, but it has two variations, depending on the height of

the elbows (D, fig. 146). At the command of execution, move the arms forward, bend the elbows and raise the arms until the clenched hands are shoulder height, palms facing the shoulders. The variation differs only in that the arms continue upward until the upper arms are horizontal. This action brings the clenched hands to a position directly over the shoulders.

e. Two positions of lacing the fingers on the head (E, fig. 146) are prescribed. These positions are assumed on the command of execution by raising the arms sideward, and at the same time bending the elbows until the upper arms are horizontal. The fingers are laced behind the lower portion of the head, thumbs

pointing downward, or on top of the head, thumbs on the crown. Keep the elbows pressed well back with the hands held lightly on the head.

f. There are two overhead arm positions (F, fig. 146). To assume the first position, at the command of execution, raise the arms by swinging them forward and extending them vertically overhead, palms facing, fingers extended and together, and thumbs along the index fingers. To return the arms to the starting position, swing them downward in the same arc as used in the upward movement. To assume the second position, at the command of execution, raise the arms in the same manner, turning the wrists to face the palms of the hands forward, bringing the hands together and interlocking the thumbs with the fingers extended and together, and the elbows close to the head. To return the arms to the starting position, swing the arms sideward and downward.

22. Position of the Legs

a. There are three straddle positions called "stances" (A, fig. 147). At the command of execution, to assume the—

(1) *Narrow stance*, keep the base foot (right foot) in place, move the left foot 8 to 12 inches to the left of the right foot. Keep the legs straight so that the weight of the body rests equally on both feet.

(2) *Regular stance*, move the left foot in the same manner as for the narrow stance, but 18 to 24 inches (the feet should be about shoulder width) apart.

(3) *Wide stance*, move the left foot in the same manner as for the narrow and regular stances, so that the feet are 36 to 40 inches apart (wider than shoulder width).

b. There is a staggered stance position (B, fig. 147). At the command of execution, move the left foot forward and slightly sideward so that the heel of the left foot is on line with the toe of the right foot, and separated about 6 to 8 inches from the right foot.

c. A knee bend position is used with three variations (C, fig. 147): At the command of execution (executing the movement from the narrow stance) bend the knees fully and open them outward so that each knee points 45° to the oblique. Keep the trunk erect and back

straight. Heels off the ground. The position is varied by the depth of the knee bend. A quarter or half knee bend may be prescribed in place of the full bend.

d. A squatting position (D, fig. 147) differs from the knee bend position in that the trunk is forward. At the command of execution, from the narrow stance, bend the knees fully and open the legs outward so that each knee points 45° to the oblique and the heels are off the ground. At the same time, place both hands flat on the ground, directly beneath the shoulders. Keep the fingers spread and to the front, arms straight and head up, with the eyes focused on a point about 3 feet in front of the hands.

e. A squat sitting position differs from the squatting position in that the feet are flat on the ground and the trunk is not inclined as far forward. At the command of execution, bend the knees fully and open the legs (E, fig. 147), keeping the heels on the ground, toes pointed outward, and bending forward only far enough to keep your balance.

23. Positions of the Trunk

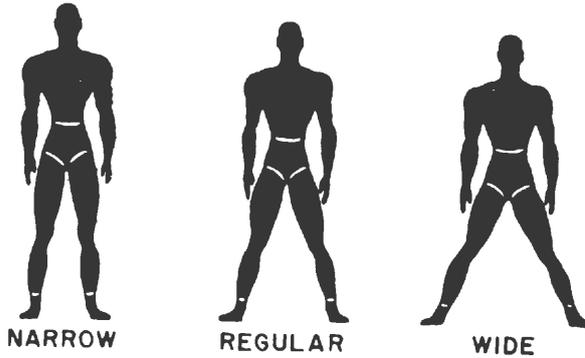
a. There is a forward leaning position (A, fig. 148). At the command of execution, bend the trunk forward at the hips about 45° . The bend is only at the hips. Keep the back straight and the head erect.

b. There are three trunk bending positions (B, fig. 148), and they vary only as to direction of the bend. At the command of execution, bend the whole spine from the hips, not the hips alone. The movement must be forceful, and there is usually a bounce or slight recovery associated with it.

c. The trunk turn position (C, fig. 148) is used in various activities. At the command of execution, twist the trunk to the left (right) above the hips. The hips and head do not turn, but remain to the front. The major twist is in the spine. There is a slight bounce or recovery to this movement.

d. The trunk bend and turn position (D, fig. 148) is used. At the command of execution, given after the regular side straddle position has been assumed, turn the trunk to the left (right), and then bend forward over the left (right) hip. Keep the knees straight and the head down.

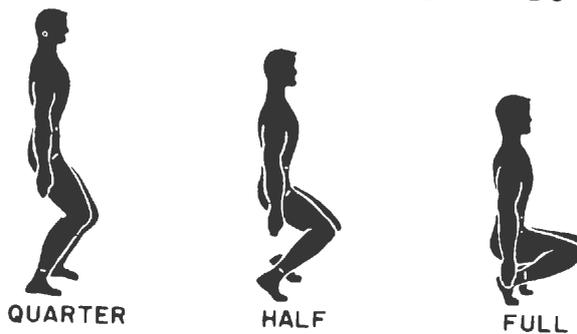
A. SIDE STRADDLE STANCES



B. STAGGERED STANCE



C. QUARTER, HALF, AND FULL KNEE BENDS



D. SQUATTING POSITION



E. SQUAT SITTING POSITION



Figure 147. Positions of the legs.

24. Ground Positions

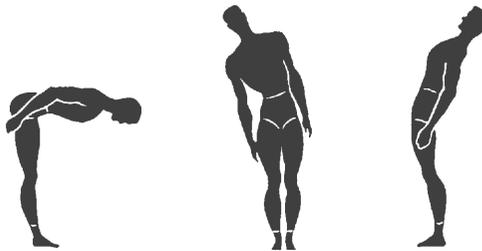
a. The supine (on the back) position (A, fig. 149) is assumed in several activities. At the command of execution, thrust the left leg forward, bend the right knee, and sit down, supporting the weight of the body on the hands which are placed on the ground behind the

hips. The toes and heels come together as the upper body is lowered to the ground. To return to the position of attention, sit up, bend the right knee, and place the right foot on the ground near the buttocks. Arise to an upright position, pushing upward with the hands. A variation of this position is used when an ob-

A. FORWARD LEANING POSITION



B. BEND TRUNK FORWARD, SIDEWARD, AND BACKWARD



C. TRUNK TURN SIDEWARD



D. TURN AND BEND TRUNK SIDEWARD



Figure 148. Positions of the trunk.

ject is held in the hands, such as a rifle or log.

b. To assume the supine position in Rifle and Log Drills, the feet are crossed, left over right, the knees are bent outward, and a sitting position is assumed; then the upper body is lowered to the ground and the legs extended.

c. There is one sitting position (B, fig. 149). At the command of execution, thrust the left leg forward, bend the right knee and sit down, supporting the weight of the body on the hands until seated. Move the hands to a place on the ground beside the buttocks. Straighten the right leg beside the left, toes and heels together. The crosslegged variation (described in *a* above) is used in Rifle Drill.

d. The front leaning rest position (C, fig. 149) is often used. At the command of execution squat down. Thrust the legs backward to the position of rest, the body weight on the hands and toes. The eyes focus on the ground at a point about 18 inches in front of the head, the elbows are locked and the body is straight from head to heels.

e. The prone position (D, fig. 149) is used occasionally. At the command of execution, squat down, thrust the legs back to a front leaning rest position, then lie down to a prone position with the hands beneath the shoulders. The feet are together.

Section V. TRAINING OF LEADERS

25. Purpose of Instructor Training

The release or transfer of personnel leaves an organization or an instruction group with inadequate numbers of instructors to perform the instructional or training mission. To overcome this deficiency a full-time course of instruction or an inservice instructors' course should be established.

26. Establishing a Course of Instruction

a. To determine an organization's need for physical training instructors, unit commanders should be interviewed as to the level of training in progress and the deficiencies existing in the present program. It is desirable that two or three qualified instructors be available in each platoon. Only with an adequate number of in-

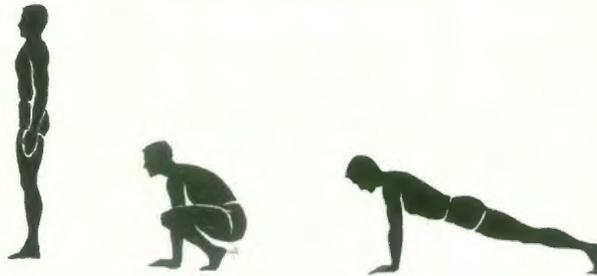
A. SUPINE POSITION



B. SITTING POSITION



C. FRONT LEANING REST POSITION



D. PRONE POSITION



Figure 149. Ground positions.

structors who have a thorough knowledge of Army physical training can the individual soldier receive the training needed to reach the required level of fitness.

b. The effectiveness of the inservice training program is determined, in part, by the instruction time available. A full-time school is preferable so the student may completely devote his time and energy to the program of instruction. Such a school should be conducted periodically to meet the constant need for qualified instructors. In the preliminary planning for the school, instructors must be chosen far enough in advance to be available at the desired time. Time is also required to requisition equipment. The scheduling of areas and classrooms requires careful coordination.

c. To conduct a full-time course in units undergoing a heavy program of training would be extremely difficult. It may be necessary to conduct the school at regular intervals during available duty and off duty time. Careful scheduling can eliminate most interference with the students' regular duty assignments.

d. In either the full-time or part-time course, the classes should be scheduled regularly. The length of the course depends on many factors, but should contain the basic core subjects as listed in paragraph 32. If at all possible, the course should be open to anyone who shows interest. Company commanders should conduct a preliminary screening of students, guided by the qualifications for school attendance.

e. Command support is essential to the organization and conduct of an instructor training program. When the commander has determined the needs of his organization and allocated time to such a program by means of a training directive to implement such training, a definite schedule may be planned and a program of instruction outlined.

27. Authority for Establishing the Course

A directive for setting up the course should contain the following:

- a. The purpose and scope of the program.
- b. The location of the school.
- c. The date and time men should report, and date of course completion.

- d. Unit quotas.
- e. A list of equipment and clothing required.
- f. A list of prerequisites for attendance.

28. Selection of Personnel

Students selected should meet the qualifications listed below:

- a. Be volunteers.
- b. Show interest and enthusiasm in physical training activities.
- c. Possess leadership qualities.
- d. Have good physique and command voice.
- e. Have sufficient time remaining in service to justify training.

29. Instructors

a. The number of instructors needed to conduct the course is determined by the length and scope of the course. They should be chosen by a survey of personnel records supplemented by personal interviews. The instructor should be—

(1) A graduate of an Army physical training course of instruction. This is the best source of instructors as these men will be familiar with army procedures in this area.

(2) A person with civilian training in physical education; however, he must be familiar with the Army physical training program.

(3) An individual who is, or has been, a skilled performer, official, coach, or one who has demonstrated an interest in athletics and physical training.

b. Instructors without previous experience or instruction in Army physical training must be trained before the course is held.

30. Facilities and Equipment

The amount and type of facilities and equipment needed depend on the number of students and the scope of the instruction. Normal requirements include:

- a. Classrooms and outdoor training areas.
- b. Visual aids (charts, slides, films, and blackboards).
- c. Physical training instructor stands.
- d. Obstacle conditioning and confidence courses.
- e. Strength circuit courses.
- f. Swimming pool.
- g. Rifles and logs.
- h. Athletic equipment (balls, nets, gloves, bases, backstops).

i. Physical Combat Proficiency Test facilities.

j. A copy of this manual and related publications (app A) for each student, with a list of references for each class period.

31. Conduct of Classes

To conserve time and to insure the most efficient conduct of classes, the commander should prescribe a standing operating procedure for the course. The SOP should provide for the following:

- a. Student leadership of the class.
- b. Wearing of the uniform.
- c. Marching between classes.
- d. Time for breaks.
- e. Grading and rating of students.
- f. Certificates of completion of the course.
- g. Disposition of incapable students.
- h. Graduation.

32. Core Subjects for the Instructor Course

The basic core subjects of the physical training instructor course are:

a. Noncompetitive conditioning activities: Drill One, Drill Two, Drill Three, Rifle Exercises, Log Exercises, Obstacle Conditioning and Confidence Courses, Running, Grass Drills, Guerrilla Exercises, and Strength Circuits.

b. Combat water survival.

c. Competitive conditioning activities: dual combatives, relays, team contests, and team athletics.

d. Background subjects: fundamentals and nature of physical fitness (chap 2 and 3), structure and functioning (chap 28 through 31), program planning (chap 5 through 9), and leadership of physical activity (chap 4 and app B).

e. Physical fitness testing.

33. Selecting a Program of Instruction

a. A definite program of instruction cannot be prescribed for all courses of instruction. However, each of the core elements should be included in every course. The degree to which each element is emphasized depends on the needs of the students and their respective units. If the troops need a basic program, the bulk of the classes should be conditioning exercises and supplementary activities. If the units are in an advanced stage of training, leadership of mass activities and organized athletics

should be stressed. The background subjects should be included, regardless of unit needs. These subjects give the student a greater knowledge, understanding, and personal justification of the physical training program. The proper administration and evaluation of physical fitness testing is also an essential element.

b. The course selected, regardless of emphasis or length, requires careful scheduling and coordination. The classes should be 2-hour periods, conducted often enough each week to retain student interest. Classes should be scheduled for either the last 2 hours of the morning or afternoon. Only 1 hour of conditioning activities should be included in a 2-hour period. The hours for a common subject block of instruction should be scheduled in sequence. A lesson giving background information for another should always come first. For example, the students should be familiar with the exercises of Drill One before learning the methods of instruction for Drill One. The same principles apply to a full-time school. To keep the school from being too strenuous, the hours of classroom instruction and hours of physical activity should be alternated.

34. Evaluating the Program

a. The physical training instructor must know his subject, employ sound teaching techniques, and have poise. The instructor training course should give him an opportunity to practice and demonstrate these qualities, as well as teach him the fundamentals of physical conditioning. Only by participating can the instructor gain the experience and ability required to simultaneously teach and demonstrate the various activities. Although he may not demonstrate complete proficiency in the desired qualities until he is instructing in his unit, the course may be evaluated initially by determining how much practical training it offers the student. It should emphasize his gaining experience in the practical aspects and application of instructional techniques.

b. Evaluating the program is a continuous process. It involves not only the course in progress, but constant observation of the instructors who have graduated to determine if the course is meeting the need for trained instructors in the unit.

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By Order of the Secretary of the Army:

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