

# TC 3-21.220 (\*FM 3-21.220)/MCWP 3-315.7/ AFMAN 11-420/NAVSEA SS400-AF-MMO-010, C1

Change No. 1

Headquarters  
Department of the Army  
Washington, DC, 12 November 2014

## Static Line Parachuting Techniques and Training

1. Change 1 to TC 3-21.220 (\*FM 3-21.220)/MCWP 3-315.7/AFMAN 11-420/NAVSEA SS400-AF-  
MMO-010, April 2014, amends text as necessary.
2. A plus sign (+) marks new material.
3. TC 3-21.220 (\*FM 3-21.220)/MCWP 3-315.7/AFMAN 11-420/NAVSEA SS400-AF-  
MMO-010, April 2014, is changed as follows:

### Remove Old Pages

### Insert New Pages

---

pages 1-2 through 1-3

pages 1-2 through 1-3

pages 3-5 through 3-10

pages 3-5 through 3-10

pages 3-17 through 3-23

pages 3-17 through 3-23

pages 7-4 through 7-6

pages 7-4 through 7-6

pages F-1 through F-1

pages F-1 through F-1

4. File this transmittal sheet in front of the publication for reference purposes.

**DISTRUBUTION RESTRICTION: Approved for public release; distribution is unlimited.**

TC 3-21.220 (\*FM 3-21.220)/MCWP 3-315.7/  
AFMAN 11-420/NAVSEA SS400-AF-MMO-010, C1  
12 November 2014

By Order of the Secretary of the Army:

**RAYMOND T. ODIERNO**  
*General, United States Army*  
*Chief of Staff*

Official:



**GERALD B. O'KEEFE**  
*Administrative Assistant to the*  
*Secretary of the Army*  
1430101

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS:



**K. J. GLUECK, JR.**  
*Lieutenant General, U.S. Marine Corps*  
*Deputy Commandant for*  
*Combat Development and Integration*

**DISTRIBUTION:**

Active Army, Army National Guard, and U.S. Army Reserve: To be distributed in accordance with the initial distribution number (IDN) 116055 requirements for TC 3-21.220.

**Marine Corps:** PCN 103934-000

**PIN: 103934-001**

### ACTIONS INSIDE THE AIRCRAFT

1-4. To ensure that the maximum number of parachutists can safely exit an aircraft, a means of controlling their actions inside the aircraft just before exiting is necessary. The jumpmaster (JM) maintains control by issuing jump commands. Each command calls for a specific action on the part of each parachutist.

### BODY CONTROL UNTIL OPENING SHOCK

1-5. Due to aircraft speed and air turbulence around the rear of the aircraft, the parachutist must exit properly and maintain the correct body position during and after exiting the aircraft. This action reduces spinning and tumbling in the air and allows for proper parachute deployment.

### PARACHUTE CONTROL DURING DESCENT

1-6. Parachute control is essential to avoid other parachutists in the air and to avoid hitting obstacles on the ground.

### PARACHUTE LANDING FALL EXECUTION

1-7. The parachute landing fall (PLF) is a landing technique that enables the parachutist to distribute the landing shock over his entire body to reduce impact and the possibility of injury.

### PARACHUTE CONTROL ON LANDING

1-8. The parachutist releases one canopy release assembly after landing. Winds on the drop zone (DZ) may cause a parachutist to be injured from being dragged along the ground.

### PHYSICAL READINESS TRAINING

1-9. Volunteers must achieve Army physical fitness test (APFT) standards for the 17- to 21-year-old level prior to reporting for airborne training. (See Table 1-1 and refer to DA Pam 351-4.) Physical readiness training is included in each day of ground training. Students who cannot progress in daily physical readiness training are referred to a board that decides either to recycle them or to return them to their unit. Daily exercises condition the muscle groups that play a significant part in jumping. (See Table 1-1.) Volunteers must execute a flexed arm hang for twenty seconds. The APFT and Flexed arm hang are two separate events executed consecutively with the APFT being administered first and then the Flexed Arm Hang on Day one of Airborne School. Students who pass the APFT and fail the Flexed Arm hang will be offered a retest and reassessment of the Flexed Arm Hang portion only, 24 hours later. Failure to successfully meet the standard of the APFT and or the Flexed Arm Hang will result in the student being dropped from the Basic Airborne Course.

**Table 1-1. APFT standards for the 17- to 21-year-old level**

Event	Repetitions		Time Limit
	Male	Female	
Push-Ups	42	19	2 Minutes
Sit-Ups	53	53	2 Minutes
Two-Mile Run	Male		15.54 Minutes
	Female		18.54 Minutes
Flex Arm Hang	Male/Female		20 Seconds

## JUMP PHASE

1-10. Students who meet training proficiency in the basic jump techniques and the physical fitness requirements during ground and tower week training advance to the jump training phase. During jump phase training, the student makes five qualifying jumps from aircraft at an altitude of 1250 feet above ground level (AGL). (See Table 1-3.)

**Table 1-2. Typical jump week schedule**

Jump Number	Equipment	Type Exit
1	Advance Combat Helmet	ADEPT Option 2
2	Advance Combat Helmet	Mass Exit Hollywood
3	Advance Combat Helmet, Combat Equipment (Talon J and M1950 Weapons Case)	Combat Equipment Mass Exit
4	Advance Combat Helmet	Mass Exit Hollywood
5 (Night)	Advance Combat Helmet, Combat Equipment (Talon J and M1950 Weapons Case)	Combat Equipment Mass Exit

## PREJUMP ORIENTATIONS

1-11. Students are thoroughly briefed before performing their qualification jumps. The topics include—

- A review of the five points of performance, collisions and entanglements, towed parachutist, malfunctions, activation of the reserve, and emergency landings.
- A summary on the maintenance of the T-10/T-11 series or the MC-1/MC-6 series personnel parachute system to include shakeout and storage after landing.
- How to don the parachute “by the numbers” on the first jump. Additional instructors are available for close supervision and jumpmaster personnel inspection (JMPI).
- Aircraft orientation to include enplaning and jump procedures.
- Drop zone and approximate point of impact (PI) information.
- The rigging, donning, and proper lowering procedures of individual combat equipment (CE).

## COLLISIONS AND ENTANGLEMENTS

3-25. A collision is the physical impact or contact, however slight, of one parachutist or parachutist's equipment with that of another parachutist where both parachutists separate prior to making contact with the ground. An entanglement is the entwining or attachment of a parachutist or parachutist's equipment with that of another parachutist during descent, whether or not the entanglement lasts until the parachutists contact the ground.

### Collisions

3-26. Parachutists must be alert in the air and warn each other of impending collisions. If a collision cannot be avoided by slipping or turning, the parachutist attempts to bounce off the other parachutist's suspension lines or canopy by spreading his arms and legs just before making contact.

### Entanglements

3-27. If a jumper becomes entangled with one or more suspension lines of another parachute, the parachutist does one of the following, depending on the type of parachute being used and the incident altitudes:

- High altitude occurs from aircraft exit throughout full canopy deployment (first point of performance [PoP]).
- Mid altitude occurs after full canopy deployment throughout descent to the preparation for landing altitude designated for the jumped parachute (second and third PoP).
- Low altitude occurs from the preparation for landing altitude throughout descent to landing (fourth PoP).

### *T-10 Series*

3-28. If entanglement occurs with the T-10 series parachute, react by taking the following actions:

- The upper parachutist firmly grasps a portion of the lower parachute and moves hand-under-hand down the suspension lines of the lower parachute until each parachutist can grasp and hold the main lift web of the other's parachute, being careful not to grip the canopy release assemblies.
- If neither jumper has a fully inflated canopy, both parachutists push and turn away from one another, creating a clear and unobstructed path between them and then activate their reserves using the pull-drop method.
- When the balls of the feet strike the ground, both parachutists make either a right, left, or rear PLF away from each other. No front PLFs will be made.

3-29. With the T-10 series, both jumpers can ride one good canopy to the ground. If both canopies collapse, both jumpers must activate their reserves using the pull-drop method.

### *MC-1 Series*

3-30. Both jumpers remain where they are and activate their reserves for a partial malfunction. When using the MIRPS, parachutists must have a clear path to their front for the spring assisted deployment device.

## STEALING AIR

3-31. A descending parachute causes an area of partial air compression immediately below the canopy and an area of partial vacuum and descending turbulent air above the canopy. This turbulent air extends about 50 feet above the canopy.

3-32. A parachute falling into an area of partial vacuum (from a parachute below) does not capture enough air to stay fully inflated. The top parachute may partially collapse and drop below the other parachutist's canopy until the force of unaffected air reinflates it. Then this canopy, being lower, "steals" the air from the

## Chapter 3

canopy above; this causes the canopy above to partially collapse and the jumper to drop past the lower canopy. This “leap-frogging” action continues unless corrective action is taken by the parachutist. Depending on the type of parachutes involved, the parachutist does one of the following:

- **T-10 Series.** He slips vigorously to maintain a lateral distance of at least 25 feet between the parachutes.
- **MC-1 Series.** He turns in the opposite direction to provide at least a 50-foot distance between the parachutes. (When facing another parachutist, both parachutists execute a right turn.)

3-33. When jumpers are 250 feet or less above the ground, they must avoid stealing air from another parachute, because a deflated canopy will not be high enough above the ground to reinflate completely. If this situation occurs, the parachutist immediately prepares to land and to execute a PLF.

### POINT 4. PREPARE TO LAND

3-34. A proper landing attitude is necessary to lessen the risk of injury to the parachutist when he hits the ground. (See Figures 3-1 and 3-2.) The preliminary movements of the parachutist vary, depending on the type of parachute used, however, lowering his individual equipment is the same with either parachute. He lowers the equipment on a lowering line when he is between 200 and 100 feet above the ground.

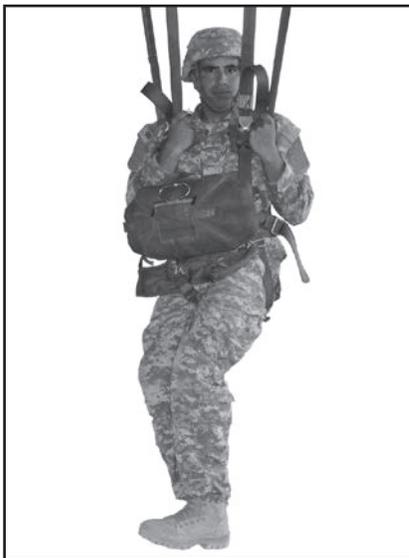


Figure 3-1. Landing attitude

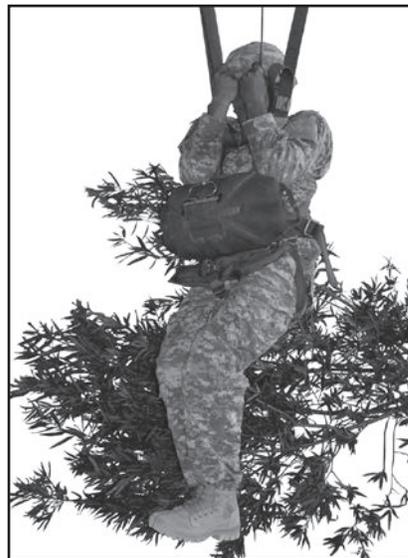


Figure 3-2. Tree landing attitude

### T-10 SERIES

3-35. When he is about 100 feet above the ground, the parachutist checks the direction of drift and pulls a two-riser slip into the wind. He holds the risers firmly against his chest and presses his elbows against his body. He keeps his head erect with his eyes on the horizon. He keeps his legs slightly bent and knees unlocked, and he keeps his feet and knees together with the balls of his feet pointed slightly toward the ground. He maintains moderate muscular tension in his legs, which absorb a significant portion of the landing impact. He avoids becoming stiff or tense; on impact, he executes a PLF.

### MC-1 SERIES

3-36. When he is about 200 feet above the ground, the parachutist turns and holds into the wind as described in paragraph 3-40. When nearing the ground, he holds the control line toggles at eye level. On impact, he holds the toggles and rotates his hands and elbows high in front of his face. He keeps his legs slightly bent with knees unlocked, and he keeps his feet and knees together with the balls of his feet pointed

slightly toward the ground. He maintains moderate muscular tension in the legs, which absorb a significant portion of the landing impact, and he avoids becoming stiff or tense; on impact he executes a PLF.

## OBSTACLES

3-37. The parachutist slips or turns to avoid obstacles. If obstacles (trees, water, or high-tension wires) cannot be avoided, the parachutist takes the following precautions that are described below.

### Tree Landing

3-38. Initial precautions taken depend on the type of parachute worn.

#### *T-10 Series*

3-39. The parachutist continues to execute a diagonal slip to avoid the trees. Once he sees he cannot avoid them, he immediately assumes a normal prepare-to-land attitude and takes the following actions:

- Just before making contact with the trees, he brings his hands up in front of his head and elbows in front of his chest while he continues to grasp the risers. (See Figure 3-2.)
- He keeps his equipment attached and wears his ballistic helmet.
- If he has lowered his equipment before realizing a tree landing is imminent, he looks below prior to jettisoning his equipment, then jettisons the equipment.
- He continues to watch the ground and trees. He keeps his feet and knees together and prepares to make a good PLF should he pass through the trees.

#### *MC-1 Series*

3-40. Parachutists wearing the MC-1 will take the following actions:

- Keeps feet and knees together and toes pointed downward.
- Continues to control the canopy to avoid the trees if possible.
- Keeps equipment attached and wears ballistic helmet. If he has lowered his equipment before realizing a tree landing is imminent, he looks below prior to jettisoning his equipment and then jettisons the equipment.
- Continues to watch the ground and trees.
- Just before impact, he assumes a normal prepare to land attitude, but he rotates his arms inward with his elbows high.
- Upon impact with a tree, he places his hands in front of his face.
- Keeps feet and knees together and prepares to make a good PLF (should he pass through the trees).

3-41. If the parachutist gets hung up in a tree, he takes the following action:

### **WARNING**

**Make sure the reserve reaches the ground, or is close to it, before continuing with the following actions.**

- Reach up high on both sets of risers and tugs on them three or four times to determine if he is securely hung. He prepares to do a good PLF in case he drops.
- Tries to reach the tree trunk or a large limb to allow him to climb down to the ground.
- Pulls the saddle down and over his buttocks and sits well in the saddle, if a tree trunk or large limb cannot be reached.
- Locates the release handle on his combat equipment and ensure it is clear below. Next, pulls on the release handle, then lowers and jettisons his combat equipment.

- Releases his chest strap by pulling outward on the ejector snap activating lever.
- Activates the reserve parachute by pulling the rip cord grip. (When using the MIRPS, the jumper ensures his left hand covers the rip cord protector flap to control the spring loaded deployment assistance device). Helps feed the canopy of the reserve out to ensure that all of the suspension lines are completely out of their retainers.
- Activates the quick release in the waistband and frees it from the metal adjuster.
- Unfastens the left connector snap of the reserve from the left D-ring and pushes the reserve behind his right arm.
- Seats himself well into the saddle.
- Wraps his legs around the suspension lines of the reserve parachute and carefully gets out of the harness.
- With one hand, grasps the main lift web and holds it firmly.
- With the other hand, grasps the activating lever of either the left or right leg strap and pulls outward, releasing the leg strap. The other leg strap is released in the same manner.
- Climbs down the suspension lines and canopy, staying to the outside of the canopy.

### **Water Landing**

3-42. As soon as the parachutist realizes he may land in water, he takes the actions described below.

#### ***Without a Life Preserver***

3-43. When wearing the troop parachute harness without a life preserver and a water landing without a life preserver is imminent, the parachutist does the following, in addition to the actions listed under water landing (See Figure 3-3.):

- Tries to slip or steer away from the water.
- If unable to avoid the water, he looks below to ensure the area is clear of fellow jumpers. If there are no fellow jumpers, he jettisons his helmet.
- Looks below again to ensure there are no fellow jumpers, then lowers but does not jettison any attached equipment.
- Activates the quick release on the waistband.
- Unhooks the left connector snap of the reserve parachute from the D-ring and rotates the reserve parachute to his right side.
- Pulls the saddle well under his buttocks.
- Releases the chest strap by pulling on the activating lever of the ejector snap.
- Regains canopy control.
- Places both hands on the leg strap ejector snaps prior to entering the water.
- When the balls of his feet make contact with the water, he activates the leg strap ejector snaps and throws both hands high in the air in an attempt to slide out of the parachute harness.
- Prepares to execute a PLF in case the water is shallow (two feet or less in depth).
- Swims upstream, upwind, or away from the parachute to avoid becoming entangled with it.
- Makes all possible attempts to remove the pistol belt and all equipment attached to his body that may hinder movement in the water.

#### ***With a Life Preserver***

3-44. When wearing a troop parachute harness and jumping with a life preserver (See Figure 3-4.), the parachutist does the following, in addition to the actions under water landing:

- Activates the life preserver after checking the canopy. If the life preserver fails to inflate, the parachutist inflates the life preserver manually by blowing air into the inflation valve hose. After entering the water, if the life preserver is not inflated, the parachutist ensures inflation of the flotation device.

- Pulls the safety clip out and away from his body (exposing the cable loops) and activates both canopy release assemblies using one of the two methods used in the recovery from the drag as his feet touch the water.
- Does not remove the harness and equipment, since the life preserver will support a fully combat-equipped parachutist.

3-45. For more information on life preservers, refer to Chapter 12, Section II.



Figure 3-3. Landing without a life preserver



Figure 3-4. Landing with a B-7 life preserver

### WARNING

**When wearing the B-5, the parachutist does not inflate the B-5 until the parachute harness is removed. The inflation force may crush his ribs if restricted by the harness.**

### High-Tension Wire Landing

3-46. The parachutist assumes the wire landing attitude if he is unable to avoid high-tension lines when landing by taking the following steps (See Figure 3-5.):

- **Step 1.** Tries to slip away from the wires.
- **Step 2.** Keeps his feet and knees together and toes pointed downward.
- **Step 3.** Looks below and checks for fellow jumpers.
- **Step 4.** Jettisons his combat equipment.
- **Step 5.** Holds his hands high, inside the front set of risers with palms out and thumbs behind the risers, elbows back, with his fingers extended and joined.
- **Step 6.** Keeps his chin on his chest, his body straight, with an exaggerated bend to his knees.
- **Step 7.** Prepares to make a normal parachute landing fall.
- **Step 8.** If he contacts the wires, he begins a rocking motion with his body by pushing forward on the front risers and kicking back with his legs; this may keep him from getting entangled in the wires. He prepares to execute a PLF should he pass through the wires.

*Note.* If the jumper becomes entangled in the wires, he makes no attempt to climb down, but waits to be rescued by a recovery team.

---



**Figure 3-5. Wire landing attitude**

## POINT 5. LAND

3-47. Most jump injuries occur because of improper PLF techniques. To lessen the possibility of injuries, the parachutist is trained to absorb the impact of landing by executing a proper PLF.

3-48. To do this, the following five fleshy portions of the body must contact the ground in sequence: balls of feet, calf, thigh, buttock, and pull-up muscle(s).

3-49. The three basic PLFs are side (right or left), front (right or left), and rear (right or left). The direction of the wind drift dictates the type of fall the jumper will make.

3-50. The parachutist judges the direction of drift by looking at the ground before he assumes the landing attitude. The parachutist prepares to make the appropriate PLF after determining the direction of the wind and the type of fall.

### SIDE PLF

3-51. As the balls of his feet make contact with the ground, the parachutist begins several actions at the same time. As the fall continues, he does the following to complete a left side PLF (the right side PLF is similar to the left side PLF, except the points of contact on the right side of the body are used):

- Lowers his chin firmly to his chest and tenses his neck by taking the following actions:
  - Brings his hands up in front of his head and elbows in front of his chest, continuing to grasp the risers (T-10 series) or the toggles (MC-1 series).
  - Bends and twists his torso sharply to the right. This movement forces the body into an arc.
  - The twisting motion of the hips pushes both knees to the left as the fall continues, and it exposes the second through the fifth points of contact (calf, thigh, buttock, side).
- As the PLF is completed in the direction of drift, the parachutist maintains tension in his neck to prevent his head from striking the ground. This is accomplished by the following:
  - The momentum caused by drift brings his feet around to the right and into the line of drift.
  - After completing the PLF, he activates the canopy release assembly to keep from being dragged.

possible by pulling two risers. However, such slips are not executed as rapidly as the turning action of the parachute's one riser slip. Results in this case will cause the parachute to glide in the direction of the two riser slip, instead of a change in the direction of airflow through the orifice. All manipulations need to consider the following:

- The remaining steering line can also be used to turn (control) the canopy, however, the canopy will turn left or right depending on the distance the steering line is pulled down. At approximately 100 feet above ground level, the jumper must determine the direction of the surface winds prior to his fourth point of performance "Prepare To Land," and turn the canopy into the wind to slow the canopy's ground speed (lateral velocity).

### **WARNING**

**Continuing to utilize one steering line during the fifth point of performance "LAND" will cause the canopy to remain in a turn and NOT slow the jumper's lateral ground speed.**

- To land safely, the jumper must release the toggle and utilize a two-riser slip less than 12 inches into the wind to slow the canopy. Prior to landing, release all risers and be prepared to execute the appropriate PLF.

### **WARNING**

**All riser slips during the last 100 feet should be gentle and smooth enough to adjust direction only as needed. Pulling down on both rear risers smoothly and quickly, 12 inches or more, will reduce forward speed then increase the jumpers rate-of-descent in less than two seconds.**

## **MANEUVERING WITH A TANGLED CONTROL LINE**

3-84. The parachutist uses the same procedure as with a broken control line if the control line becomes tangled in a suspension line.

3-85. If the control line becomes tangled with the L-bar connector link, the parachutist reaches up under the affected riser and attempts to untangle the control line from the L-bar connector link. If the parachutist is unsuccessful in his attempt, the canopy can still be controlled with the unaffected control line.

## **COLLISIONS AND ENTANGLEMENTS**

3-86. A collision is the physical impact or contact, however slight, of one parachutist or parachutist's equipment with that of another parachutist. An entanglement is the entwining or attachment of a parachutist or parachutist's equipment with that of another parachutist during descent, whether or not the entanglement lasts until the parachutists contact the ground.

### **T-11 Parachute**

3-87. In the event of a collision, the following actions should be taken:

- If a parachutist sees another jumper approaching, he immediately attempts to slip away.
- If he cannot slip away, he assumes a spread eagle position and attempts to bounce off the jumper's canopy and or suspension lines and immediately slip away.
- If a jumper passes through the suspension lines and becomes entangled, he must snap into a modified position of attention, with either hand the jumper protects his rip cord handle and with

his opposite hand attempts to weave his way out of the suspension lines the same way he entered. Once clear, the jumper immediately slips away.

### **T-11 Parachute**

3-88. In the event of an entanglement, the following actions should be taken:

- If a parachutist is jumping with the T-11 parachute and becomes entangled, the jumper should stay where he is and be prepared to execute a proper PLF.
- Both jumpers will continue to observe both canopies and take one of the following actions:
  - If one canopy collapses, neither jumper will activate their reserve parachute as one T-11 series parachute can safely deliver two combat equipped jumpers to the ground.
  - If both canopies should collapse, both jumpers will immediately turn away from each other in order to create a clear path, and activate their reserve parachute using the pull-drop method.
- A jumper who finds himself on another jumper's canopy should double-time off and slip away.
- Remember to stay away from the vents located at all four corners of the canopy.
- A jumpers who falls through the vent should stay where he is and be prepared to execute a proper PLF.

### **MC-6 PARACHUTE**

3-89. In the event of a collision, take the following actions:

- If a parachutist is jumping with the MC-6 parachute and sees another jumper approaching, he immediately attempts to turn away.
- If the jumpers are unable to avoid the collision, they should take the following actions:
  - Assume a spread eagle position.
  - Attempt to bounce off the jumper's canopy and suspension lines and immediately turning away if he cannot avoid a collision.
- In the event of an entanglement, both jumpers take the following actions:
  - Remain where they are.
  - Obtain a clear path.
  - Immediately activate their reserve using the pull-drop method for a partial malfunction.

### **STEALING AIR**

3-90. A descending parachute causes an area of partial air compression immediately below the canopy, and an area of partial vacuum and descending turbulent air above the canopy. This turbulent air extends about 50 feet above the canopy.

3-91. A parachute falling into an area of partial vacuum (from a parachute below) does not capture enough air to stay fully inflated. The top parachute may partially collapse and drop below the other parachutist's canopy until the force of unaffected air reinflates it. Then this canopy (being lower) "steals" the air from the canopy above, causing the canopy above to partially collapse and the jumper to drop past the lower canopy. This "leap-frogging" action will continue unless corrective action is taken by the parachutist.

3-92. To move away from the area, he turns in the opposite direction providing at least a 50-foot distance between the parachutes. (Both parachutists execute a right turn when facing another parachutist.) When there is enough distance, the parachutist takes one of the actions below, depending on the parachute he is wearing:

- If jumping with the T-11 parachute, the parachutist slips vigorously to maintain a lateral distance of at least 25 feet between the parachutes.
- If jumping with the MC-6, he turns in the opposite direction to provide at least a 50-foot distance between the parachutes. (When facing another parachutist, both parachutists execute a right turn.)

3-93. When 250 feet or less above the ground, parachutists must exercise care to avoid stealing air from another parachute, because a deflated canopy will not be high enough above the ground to reinflate completely. The parachutist immediately prepares to land and executes a PLF if this situation occurs.

## POINT 4. PREPARE TO LAND

3-94. The fourth point of performance is preparing to land. A proper landing attitude is necessary to lessen the risk of injury to the parachutist when he hits the ground. (See Figure 3-6.) Preparation includes the following:

- When a parachutist commits himself to the final approach, he should plan on doing all of his slipping approximately 200 feet AGL for the T-11, and his turning approximately 250 feet AGL for the MC-6 so the final approach will be smooth and the landing soft. This includes the following:
  - At 200 feet AGL, the parachutist slips with the T-11 directly into the wind.
  - At 250 feet AGL, the parachutist turns with the MC-6 directly into the wind. Exactly where he slips or turns over the landing area will be based on the wind speed above the landing area.
- After slipping or turning into the wind on final approach, the parachutist takes the following actions:

### CAUTION

DO NOT change slips or make any more turns with the parachute unless it is to avoid other jumpers in the air or obstacles on the ground.

- Keeps a sharp lookout during descent for other jumpers.
- All equipment is lowered at 200 feet while facing directly into the wind. The jumper must maintain control of the toggles while lowering equipment when jumping an MC-6.
- Do not let go of the toggles when jumping an MC-6 while lowering equipment. The parachutist jumping an MC-6 will transfer a toggle from one hand to another free hand to release his equipment.
- Regains canopy control with both hands once the equipment is released.

## T-11 PARACHUTE

3-95. When jumping with a T-11 parachute, the jumper takes the following actions:

- At approximately 200 feet AGL, he looks below to ensure there are no fellow jumpers before lowering his equipment.
- Slips into the wind at approximately 200 feet AGL when jumping the T-11 series parachute.
- If the wind is blowing from his left, he must reach up with both hands and grasp the left set of risers and pull them deep into his chest.
- If the wind is blowing from his front, he must reach up with both hands and grasp the front set of risers and pull them deep into his chest.
- If the wind is blowing from his right, he must reach up with both hands and grasp the right set of risers and pull them deep into his chest.
- If the wind is blowing from his rear, he must reach up with both hands and grasp the rear set of risers and pull them deep into his chest.
- After he has slipped into the wind, he assumes a landing attitude by keeping his feet and knees together, his knees slightly bent, his elbows tight into his sides, his chin on his chest, and his eyes open.

### MC-6 PARACHUTE

- 3-96. When jumping with an MC-6 parachute, the jumper takes the following actions:
- Determines the direction of drift at approximately 250 feet AGL.
  - Pulls the left toggle down when jumping the MC-6 parachute and the wind is blowing from the left.
  - Lets up slowly to prevent oscillation when facing into the wind.
  - Pulls the right toggle down if the wind is blowing from the right.
  - Pulls either toggle down if the wind is blowing from the rear.
  - Makes minor corrections to remain facing into the wind, if the wind is blowing from the front.
  - Looks below to ensure there are no fellow jumpers.
  - At approximately 200 feet AGL, transfers control of one toggle to the opposite hand so that one hand is controlling both toggles.
  - Releases all appropriate equipment tie-downs and lower combat equipment with a free hand.
  - Regains canopy control with both hands.
  - Assumes a proper prepare-to-land attitude by pulling the toggles to the appropriate break position.
  - Keeps feet and knees together, knees slightly bent, elbows rotated in toward the sides, and head and eyes on the horizon.

### OBSTACLES

3-97. The parachutist slips or turns to avoid obstacles. The parachutist takes the following precautions if obstacles (trees, water, or high-tension wires) cannot be avoided:

#### TREE LANDING

3-98. Initial precautions must be taken when using the T-11 or MC-6 Personnel Parachute System.

#### T-11 Parachute

- 3-99. When using the T-11, the parachutist takes the following actions (See Figure 3-7.):
- Immediately slips away when he begins drifting towards a tree.
  - If he cannot slip away and he has lowered his equipment, he looks below himself to ensure there are no fellow jumpers below him and jettisons his equipment making a mental note of where it lands.
  - If he has not lowered his equipment, he keeps his equipment on him for extra protection as he passes through the trees.
  - Assumes a good landing attitude at approximately 200 feet AGL.
  - Keeps his feet and knees together, knees slightly bent, chin on his chest, eyes open, and his hands in front of his face with his elbows high.
  - Is prepared to execute a PLF if he passes through the trees.
  - If a jumper gets hung up in the trees and does not feel he can safely lower himself to the ground, he is to stay where he is and wait for assistance.

#### MC-6 Parachute

- 3-100. When using the MC-6, the parachutist takes the following actions:
- If a parachutist finds himself drifting towards the trees, he immediately turns away.
  - If he cannot avoid the trees and has lowered his equipment, he looks below himself to ensure there are no fellow jumpers and jettisons his equipment making a mental note of where it lands.
  - If he has not lowered his equipment, he keeps it on to provide extra protection while passing through the trees.

- At approximately 250 feet AGL, the he assumes a landing attitude by keeping his feet and knees together, knees slightly bent with his head and eyes on the horizon.
- Rotates his hands in front of his face with his elbows high when the balls of his feet make contact with the trees.
- Is prepared to execute a PLF if he passes through the trees.



**Figure 3-6. Landing attitude**



**Figure 3-7. Tree landing attitude**

**WARNING**

**Make sure the reserve reaches the ground or is close to it before continuing with the following actions.**

- 3-101. A jumper takes the following action if he becomes hung up in a tree and decides to climb down:
- Jettisons all unneeded equipment.
  - Ensures that he maintains his ACH or ballistic helmet.
  - Activates the quick release in his waistband.
  - Applies inward pressure to the rip cord assembly with either hand.
  - Removes the top tuck tab with the opposite hand.
  - Maintains steady inward pressure and with the opposite hand inserts it behind the rip cord assembly and applies inward pressure.
  - Grasps the rip cord handle with the opposite hand and pulls and drops it.
  - With both hands, he controls the activation of the reserve parachute toward the ground ensuring that all suspension lines are completely deployed.
  - Disconnects the left connector snap and rotates the reserve parachute down and to the right.
  - Attaches the left connector snap to the triangle link on his right side.
  - Activates the quick release in the chest strap and completely removes the chest strap from the chest strap friction adapter.
  - Grasps the main lift web with either hand below the canopy release assembly and with the other hand activates the leg strap ejector snaps and climbs down the outside of the reserve parachute.

**CAUTION**

Extreme care must be taken when climbing down the T-11 Reserve parachute suspension lines because of the slippery coating applied to the suspension lines. Remember, when in doubt, stay where you are and wait for assistance.

**WATER LANDING**

3-102. As soon as the parachutist realizes he is going to land in water, he takes the following actions:

- Immediately tries to slip or turn away if he is drifting towards a body water.
- If he cannot slip or turn away, he looks below himself to ensure there are no fellow jumpers below him, and lowers his equipment.
- Jettisons his advanced combat helmet/ballistic helmet making a mental note of where it lands.
- Activates the quick release in his waistband, disconnects the left connector snap, and rotates the reserve parachute to the right.
- Seats himself well into the saddle and activates the quick release in the chest strap, completely removing the chest strap from the chest strap friction adapter.
- Regains canopy control.
- Prior to entering the water, he assumes a landing attitude by keeping his feet and knees together, knees slightly bent, and places his hands on the leg strap ejector snaps.
- When the balls of his feet make contact with the water, he activates both ejector snaps for the leg straps, arches his back, throws his arms above his head, and slides out of the parachute harness.
- Swims upwind or upstream away from the canopy.
- Is prepared to execute a PLF if the water is shallow (two feet or less in depth).

**Without a Life Preserver**

3-103. The parachutist does the following (in addition to the actions under water landing) when wearing the T-11 parachute harness and a water landing without a life preserver is imminent (See Figure 3-8.):

- Looks below himself to ensure there are no fellow jumpers and lowers his equipment.
- Jettisons his ACH or ballistic helmet making a mental note of where it lands.
- Activates the quick release in his waistband, disconnects the left connector snap and rotates the reserve parachute to the right.
- Seats himself well into the saddle and activates the quick release in the chest strap, completely removing the chest strap from the chest strap friction adapter.
- Regains canopy control.
- Prior to entering the water he assumes a landing attitude by keeping his feet and knees together, knees slightly bent and places his hands on the ejector snaps for the leg straps.
- When the balls of his feet make contact with the water, he activates both ejector snaps for the leg straps, arches his back, throws his arms above his head and slides out of the parachute harness.
- Swims upwind or upstream away from the canopy.
- Is prepared to execute a PLF if the water is shallow (two feet or less in depth).

**With a Life Preserver**

3-104. When wearing a T-11 parachute harness and jumping with a life preserver (See Figure 3-9.), the parachutist does the following in addition to the actions mentioned under water landing:

- While still in the air, he activates the life preserver prior to assuming a landing attitude.
- If the life preserver fails to inflate, he inflates the life preserver manually by blowing air into the inflation valve hose.

- He does not jettison any of his equipment.
- Looks below to ensure there are no fellow jumpers below him and lowers his equipment.
- Assumes a landing attitude and prepares to do a PLF in the event the water is shallow.
- Once in the water, he activates both canopy release assemblies by using the hand-to-shoulder method or the hand-to-assist method as described previously in the procedures for recovering from the drag.
- He does not remove the harness and equipment, since the life preserver will support a fully combat-equipped parachutist.

*Note.* For more information on life preservers, Refer to Chapter 12, Section II.



Figure 3-8. Landing without a life preserver      Figure 3-9. Landing with a B-7 life preserver

**WARNING**

**When wearing the B-5, the parachutist does not inflate the B-5 until the parachute harness is removed. If restricted by the harness, the inflation force may crush the ribs.**

**HIGH-TENSION WIRE LANDING**

3-105. The parachutist does the following if unable to avoid high tension lines when landing (See Figure 3-10.):

- If he is drifting towards wires, he immediately tries to slip or turn away.
- If he cannot slip or turn away, he looks below to ensure there are no fellow jumpers below him and jettisons his equipment, making a mental note of where it lands.
- Ensures that he maintains his ACH or ballistic helmet.

- U.S. Army Special Operations Command (USASOC) Jumpmaster Course.
- To be ADZSO current, the ADZSO must have performed the duties of a DZSO or assistant DZSO within the preceding 180 days, graduated Jumpmaster school within the last 180 days or completed a Jumpmaster refresher course within the preceding 180 days.

---

*Note.* For combination airdrop operations, the DZSO/ADZSO must follow the procedures for heavy drop operations, but observe the jumpers as they exit the aircraft.

---

## DROP ZONE SUPPORT TEAM LEADER

7-14. Individuals must meet the following prerequisites to be appointed as a DZSTL:

- Be a commissioned officer, warrant officer, or NCO (U.S. Army and U.S. Navy: E5s or above; U.S. Marine Corps and U.S. Air Force: E4s or above).
- Be a current and qualified JM for personnel or heavy equipment.
- Be certified as a DZSTL by having attended one of the following:
  - USAIS Pathfinder Course.
  - USAIS Jumpmaster Course (for CARP DZs only).
  - 82d Airborne Division Advanced Airborne School JM Course (for CARP DZs only).
  - USASOC Jumpmaster Course.
- Have observed and assisted a current and qualified DZSTL performing his duties during an airdrop operation involving personnel or heavy equipment.
- To be DZSTL current, the DZSTL must have performed the duties of a DZSTL or assistant DZSTL within the preceding 180 days.

---

*Note.* DZSTLs/ADZSOs in support of container delivery system (CDS) airdrops are not required to be airborne qualified, on jump status, or JM qualified and current, but they must have attended an authorized pathfinder or DZST course. For combination airdrop operations the DZSO/DZSTL must follow the procedures for heavy drop operations, but observe the jumpers as they exit the aircraft.

---

## MALFUNCTION OFFICER

7-15. Individuals must meet the following prerequisites to be appointed as a MO:

- Be a commissioned officer, warrant officer, or NCO (U.S. Army and U.S. Navy: E5s or above; U.S. Marine Corps and U.S. Air Force: E4s or above)
- The individual must be a qualified parachute rigger from the unit providing the air items used during the operation (in accordance with AR 59-4/OPNAVINST 4630.24D/AFJ 13-210[I]/MCO 13480.1D).
- For the USMC only, the malfunction officer does not have to be from the organization providing the air items.
- For Navy, malfunction officers will meet qualification, training, currency, and equipment familiarity requirements in accordance with AR 59-4/OPNAVINST 4630.24D/AFJ 13-210[I]/MCO 13480.1D. The malfunction officer does not have to be from the organization providing the air items but must be maintenance or operationally qualified on all equipment used during the operation.
- For USAF only, DZC/DCSO will fill the duties as the MO and be designated in writing as an MO. He will have a thorough understanding of the parachute equipment used for the operation. USAF combat control personnel are authorized to perform the duties of an MO during unilateral operations.

## DUTIES PERFORMED IN ACCORDANCE WITH ADDITIONAL SKILL IDENTIFIERS

7-16. Drop zone duties and the personnel whom may perform them based on education are described below.

### Jumpmaster School Only, Current

7-17. Individuals who have graduated from Jumpmaster School only and are current may perform the following drop zone duties:

- DZSO for CARP personnel, heavy equipment drops, CDS.
- DZSTL for CARP personnel, heavy equipment drops, CDS.
- ADZSO for CARP personnel, heavy equipment drops, CDS.

### Pathfinder and Jumpmaster Schools, Current

7-18. Individuals who have graduated from Pathfinder School and Jumpmaster School and are current may perform the following drop zone duties:

- DZSO for CARP personnel, heavy equipment drops, CDS.
- DZSTL for CARP personnel, heavy equipment drops, CDS.
- DZSO for verbally initiated release system personnel, heavy equipment drops, CDS.
- DZSO for ground marking release system (GMRS) personnel, heavy equipment drops, CDS.
- ADZSO for CARP personnel, heavy equipment drops, CDS.

### Jumpmaster School Only, Not Current

7-19. Individuals who have graduated from Jumpmaster School only and are not current—

- May perform drop zone duties after attending JM refresher training.
- Can be a member of the DZSO party and be recertified by a current DZSO for CARP, heavy equipment drops and CDS.

### Pathfinder and Jumpmaster Schools, Not Current

7-20. Individuals who have graduated from Pathfinder School and Jumpmaster School and are not current—

- May perform drop zone duties after attending JM refresher training.
- Can be a member of the DZSO party and be recertified by a current DZSO for CARP, heavy equipment drops and CDS.
- Can be a member of the DZSTL party and be recertified by a current DZSTL.
- Can be a member of the VIRS DZSO party and be recertified by a current VIRS DZSO.
- Can be a member of the GMRS DZSO party and be recertified by a current GMRS DZSO.

## DUTIES PERFORMED IN AIRCRAFT BASED ON EDUCATION

7-21. Duties and the personnel whom may perform them based on education are described below.

### JUMPMASER SCHOOL, CURRENT

7-22. Individuals who have graduated from Jumpmaster School only and are current may perform the following aircraft duties:

- Exit the aircraft as a jumper.
- DZSO/ADZSO CARP personnel drop, heavy drop and CDS.
- PJM duties for CARP personnel drop.
- AJM duties for CARP personnel drop.
- Safety duties for CARP personnel drop.

- PJM duties for VIRS personnel drop.
- AJM duties for VIRS personnel drop.
- Safety duties for VIRS personnel drop.
- PJM duties for GMRS.
- AJM duties for GMRS personnel drop.
- Safety duties for GMRS personnel drop.
- PJM duties for wind streamer vector count (WSVC) personnel drop.
- AJM duties for WSVC personnel drop.
- Safety duties for WSVC personnel drop.
- Navy and USMC only can perform jumpmaster spotted, jumpmaster released (JSJR).

**JUMPMASTER SCHOOL, NOT CURRENT**

7-23. Individuals who have graduated from Jumpmaster School only and are not current—

- Can exit the aircraft as a jumper.
- May perform aircraft duties after attending JM refresher training.
- Can be recertified as a safety/AJM by pulling safety/JM duties with a current JM/safety.
- Must be certified by a current JM to perform duties as PJM/safety on VIRS and GRMS drops.

**PATHFINDER AND JUMPMASTER SCHOOLS, NOT CURRENT**

7-24. Individuals who have graduated from Pathfinder School and Jumpmaster School and are not current—

- Can exit the aircraft as a jumper.
- May perform aircraft duties after attending JM refresher training.
- Can be recertified as a safety/AJM by pulling safety/JM duties with a current JM/safety.
- Must be certified by a current JM to perform duties as PJM/safety on VIRS and GRMS drops.

## Appendix F

### T-11/MC-6 Transition Training

Airborne transition training is required for personnel who have not jumped the T-11/MC-6 parachute system. The length of the transition training depends on the proficiency of the parachutist and number of parachutists to be trained. Table F-1 shows the minimum requirements. Airborne transition training will be instructed and documented by a qualified and current T-11/MC-6 JM. Individual service components may modify these requirements depending on training aids and equipment availability.

**Table F-1. Minimum requirements for airborne transition training**

Period	Hours	Lesson	Training Aids/Equipment
1	1	Sustained Airborne Training (prejump) to include PLFs (front, side, and rear) and methods of recovery.	2-foot PLF platforms, PLF pit, and mock door.
2	1	Fitting and wearing the T-11/MC-6 series parachute and life preservers; demonstration of the correct rigging, attaching, and lowering procedures for approved and tested combat equipment in use by the training unit. Watch the MC-6 video.	TO&E and TDA equipment, T-11/MC-6 series parachute assemblies, life preservers, approved and tested combat equipment in use by the training unit, and the MC-6 video.
3	1	Actions in the aircraft rehearsal, proper exit procedures, sequence of jump commands, and the first two points of performance.	Mock door structures and 5-foot universal static lines with universal static line snap hooks.
4	1	Control of canopy, turns, slips, entanglements, emergency landings, landing attitude, and activation of the reserve.	Suspended harness apparatus (if available) and swing landing trainer apparatus (if available).
5	1	Door exit procedure rehearsal, sequence of first three points of performance, activation of the reserve for a total and partial malfunction; lowering of individual items of equipment.	A 34-foot tower (if available) and troop parachute harness. Individual combat equipment.
6	1	Parachute jump.	Aircraft, parachutes, DZ, unit equipment. (Must be executed within 30 days.)