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For a long time the Infantry has needed a better way to obtain firing data for its 60mm and 81mm mortar FDC computers. Field Artillery units and 4.2-inch mortar sections have used the graphic firing fan (GFF) for many years, and the Infantry also needs the benefits of this technique. These benefits are, clearly, to save time and, by saving time, also lives.

Over the past several years, members of the 82d Airborne Division have adapted the GFF and developed it into what they call the graphic firing table (GFT), a portion of which is shown here. The figures and techniques used in adapting the GFF into the GFT came from accepted doctrine and used minimum charge and elevation.

Initially, 300 copies of the GFT were printed and distributed to mortar units in the division for testing. After experimenting with the GFT, they found that by attaching the GFT to the organic M16 plotting board's range arm, they could make the firing table's information — elevation, time of flight, and maximum ordinate — immediately available to the computers to help them do their jobs better and faster.

The old system called for the charge to be determined, the elevation to be used, and the time of flight and maximum ordinate to be checked for observer knowledge and safety purposes. And all of this had to be checked with the plotting board and the firing table, which often had to be used simultaneously.

With an experimental model of the GFT, the mortar platoons found they were saving as many as fifteen seconds on every plot. Later, when a printed model of the GFT had been

produced, each 81mm mortar platoon in one brigade tested the GFT during a brigade mortar competition/ARTEP in the field.

The brigade's fire direction centers had been criticized in previous years for their lack of speed, but during that competition the GFT enabled most platoons to meet all the time requirements. The GFT had actually

saved from five to twenty seconds per plot. When the competition ended, it was found that the top three platoons had used the GFT, although a few of the units had used the mortar fire control calculator. The units that had used the GFT had seen the electronic calculator in action and agreed that it was good, but they thought the plotting board with the GFT was even faster. Members of these units almost unanimously agreed that the GFT had made the difference for them, especially on the coordinated illumination mission.

A device such as the GFT should be mass produced and distributed throughout the Army, together with a description of adapting the GFF for use with the table. The GFT will not, and probably should not, replace the mortar fire control calculator, but it has proved its worth in an ARTEP situation, which is second only to combat in realism. By conservative estimates, this device could save 58.5 manhours per day per company, not to mention the number of lives it might save in actual combat.

By adapting the graphic firing fan used by the Field Artillery and heavy mortars to Infantry use — the graphic firing table plus our knowledge of mortars — our Infantry mortar units can be brought to much higher standards.

	RO	ELEV	CHG	TF	MAX ORD
46	4595	0800	9	33.3	1353
	4575	0825	9	34.0	1416
	4550	0847	9	34.7	1471
	4525	0865	9	35.2	1514
45	4500	0880	9	35.6	1551
	4475	0897	9	36.0	1584
	4450	0906	9	36.3	1614
	4425	0917	9	36.6	1641
44	4400	0928	9	36.9	1666
	4375	0937	9	37.2	1690
	4350	0947	9	37.5	1712
	4325	0956	9	37.7	1733
43	4300	0964	9	37.9	1753
	4275	0971	9	38.1	1773
	4250	0978	9	38.3	1791
	4225	0980	9	38.5	1809
42	4200	0982	9	38.7	1826
	4175	0983	9	38.9	1843
	4150	0984	9	39.0	1859
	4125	0985	9	39.2	1877
41	4100	0985	9	39.3	1894
	4075	0985	9	39.4	1904
	4050	0985	9	39.5	1913
	4025	0985	9	39.6	1922
40	4000	0984	9	39.6	1930
	3975	0983	9	39.6	1937
	3950	0981	9	39.6	1943
	3925	0979	9	39.6	1949
39	3900	0977	9	39.6	1954
	3875	0974	9	39.6	1959
	3850	0971	9	39.6	1963
	3825	0968	9	39.6	1967
38	3800	0964	9	39.6	1970
	3775	0960	9	39.6	1973
	3750	0956	9	39.6	1975
	3725	0952	9	39.6	1977
37	3700	0949	9	39.6	1978
	3675	0945	9	39.6	1979
	3650	0941	9	39.6	1979
	3625	0936	9	39.6	1978
36	3600	0932	9	39.6	1977
	3575	0928	9	39.6	1975
	3550	0923	9	39.6	1973
	3525	0918	9	39.6	1970
35	3500	0913	9	39.6	1967
	3475	0908	9	39.6	1963
	3450	0903	9	39.6	1959
	3425	0898	9	39.6	1954
34	3400	0893	9	39.6	1949
	3375	0888	9	39.6	1944
	3350	0883	9	39.6	1939
	3325	0878	9	39.6	1934
33	3300	0873	9	39.6	1929
	3275	0868	9	39.6	1924
	3250	0863	9	39.6	1919
	3225	0858	9	39.6	1914
32	3200	0853	9	39.6	1909
	3175	0848	9	39.6	1904
	3150	0843	9	39.6	1899
	3125	0838	9	39.6	1894
31	3100	0833	9	39.6	1889
	3075	0828	9	39.6	1884
	3050	0823	9	39.6	1879
	3025	0818	9	39.6	1874
30	3000	0813	9	39.6	1869
	2975	0808	9	39.6	1864
	2950	0803	9	39.6	1859
	2925	0798	9	39.6	1854
29	2900	0793	9	39.6	1849



LIEUTENANT STEPHEN P. PERKINS, now assigned to the 3d Battalion (Airborne), 325th Infantry, previously served as a forward observer with an Oklahoma National Guard field artillery battalion. He is a 1978 ROTC graduate of Cameron University.