

U.S. ARMY COMBAT SYSTEMS TEST ACTIVITY
ABERDEEN PROVING GROUND, MARYLAND 21005-5059
FIRING RECORD

23 June 1987

TECOM Project No. 2-WE-600-004-001,
Special Study; XM4 5.56-MM Carbine
Safety Qualification

Firing Record No.: S-51042
Dates of Test: May 1986 to May 1987
Authority: Letter, TECOM, AMSTE-TE-F,
17 December 1985

W.O. No. 330-32740-30

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ITEMS UNDER TEST

Carbine, Caliber 5.56-mm, XM4:

<u>SN</u>	<u>Test No.</u>	<u>SN</u>	<u>Test No.</u>
6153601	1	6153622	9
6153603	2	6153625	10
6153605	3	6153627	11
6153609	4	6153631	12
6153611	5	6153635	13
6153613	6	6153637	14
6153615	7	6153639	15
6153619	8	6153641	16

SUPPORTING FACILITIES AND MATERIALS

Ammunition:

Cartridge, 5.56-mm ball, M855, lot No. WCC85L030-039.
Cartridge, 5.56-mm tracer, M856, lot No. FNB84E003-011.
Cartridge, 5.56-mm ball, M193, lot No. LC83K002-212.
Cartridge, 5.56-mm, tracer, M196, lot No. LC81M010G-001.
Cartridge, 5.56-mm, blank, M200, lot No. LC81F021052.

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TABLE 2.11A. TARGET DATA BEFORE INTERCHANGE

TARGET STATISTICS IN CENTIMETERS

TARGET	HSD	VSD	EHS	EVS	ES	N
XM4#11T1	3.4	2.9	11.9	9.9	12.3	10
XM4#11T2	2.9	3.6	8.9	9.1	11.6	10
XM4#11T3	3.4	3.9	11.4	10.4	15.1	10
XM4#11T4	4.0	3.9	11.7	12.2	14.2	10
XM4#11T5	4.0	2.4	15.2	7.9	15.6	10
MEAN	3.5	3.3	11.8	9.9	13.8	

TARGET	MHD	MVD	MR	RSD	COV*	N
XM4#11T1	2.7	2.2	3.8	4.5	-0.7	10
XM4#11T2	2.4	3.2	4.2	4.6	-6.5	10
XM4#11T3	2.4	3.2	4.4	5.1	9.2	10
XM4#11T4	3.5	3.1	5.1	5.6	7.2	10
XM4#11T5	2.7	1.9	3.8	4.7	2.1	10
MEAN	2.8	2.7	4.3	4.9	2.3	

* Covariance in square cm.

TARGET STATISTICS IN INCHES

TARGET	HSD	VSD	EHS	EVS	ES	N
XM4#11T1	1.33	1.16	4.70	3.90	4.83	10
XM4#11T2	1.15	1.41	3.50	3.60	4.56	10
XM4#11T3	1.33	1.52	4.50	4.10	5.95	10
XM4#11T4	1.58	1.54	4.60	4.80	5.61	10
XM4#11T5	1.58	0.96	6.00	3.10	6.16	10
MEAN	1.39	1.32	4.66	3.90	5.42	

TARGET	MHD	MVD	MR	RSD	COV*	N
XM4#11T1	1.05	0.85	1.48	1.76	-0.11	10
XM4#11T2	0.94	1.25	1.67	1.82	-1.00	10
XM4#11T3	0.96	1.25	1.73	2.02	1.43	10
XM4#11T4	1.39	1.23	2.00	2.21	1.12	10
XM4#11T5	1.08	0.76	1.50	1.85	0.32	10
MEAN	1.09	1.07	1.68	1.93	0.35	

* Covariance in square in.

TABLE 2.11B. VELOCITY DATA BEFORE INTERCHANGE

Rd No.	Weapon Target Numbers				
	XM4 11-T1	XM4 11-T2	XM4 11-T3	XM4 11-T4	XM4 11-T5
	Instrumental Velocity, fps				
1	2769	2738	2795	2778	2790
2	2774	2763	2802	2788	2775
3	2813	2734	2785	2779	2793
4	2757	2739	2781	2792	2803
5	2743	2762	2744	2681	2783
6	2755	2800	2742	2771	2781
7	2721	2789	2726	2773	2745
8	2721	2733	2785	2760	2795
9	2778	2776	2746	2734	2856
10	2723	2771	2700	2732	2789
Avg	2755	2760	2760	2759	2791

TABLE 2.12A. TARGET DATA BEFORE INTERCHANGE

TARGET STATISTICS IN CENTIMETERS						
TARGET	HSD	VSD	EHS	EVS	ES	N
XM4#12T1	3.3	3.0	11.9	8.1	12.0	10
XM4#12T2	3.4	1.9	10.9	6.4	11.0	10
XM4#12T3	2.1	3.4	6.4	12.2	12.4	10
XM4#12T4	3.2	2.5	9.1	7.9	9.4	10
XM4#12T5	3.1	2.4	10.4	8.4	11.3	10
MEAN	3.0	2.6	9.8	8.6	11.2	

TARGET	MHD	MVD	MR	RSD	COV*	N
XM4#12T1	2.4	2.5	3.7	4.4	0.9	10
XM4#12T2	2.7	1.4	3.2	3.9	-1.3	10
XM4#12T3	1.8	2.6	3.5	4.1	4.0	10
XM4#12T4	2.7	1.9	3.7	4.1	2.1	10
XM4#12T5	2.4	1.8	3.3	3.9	2.7	10
MEAN	2.4	2.0	3.5	4.1	1.7	

* Covariance in square cm.

TARGET STATISTICS IN INCHES						
TARGET	HSD	VSD	EHS	EVS	ES	N
XM4#12T1	1.29	1.17	4.70	3.20	4.72	10
XM4#12T2	1.33	0.75	4.30	2.50	4.32	10
XM4#12T3	0.84	1.36	2.50	4.80	4.87	10
XM4#12T4	1.27	0.98	3.60	3.10	3.69	10
XM4#12T5	1.22	0.95	4.10	3.30	4.44	10
MEAN	1.19	1.04	3.84	3.38	4.41	

TARGET	MHD	MVD	MR	RSD	COV*	N
XM4#12T1	0.93	0.97	1.47	1.74	0.14	10
XM4#12T2	1.06	0.55	1.26	1.53	-0.21	10
XM4#12T3	0.71	1.01	1.36	1.60	0.61	10
XM4#12T4	1.05	0.73	1.45	1.60	0.33	10
XM4#12T5	0.94	0.71	1.28	1.55	0.41	10
MEAN	0.94	0.79	1.37	1.60	0.26	

* Covariance in square in.

TABLE 2.12B. VELOCITY DATA BEFORE INTERCHANGE

Rd No.	Weapon Target Numbers				
	<u>XM4 12-T1</u>	<u>XM4 12-T2</u>	<u>XM4 12-T3</u>	<u>XM4 12-T4</u>	<u>XM4 12-T5</u>
	Instrumental Velocity, fps				
1	2829	2827	2706	2803	2828
2	2772	2771	2815	2809	2821
3	2759	2804	2793	2772	2785
4	2717	2776	2736	2782	2814
5	2800	2749	2729	2775	2740
6	2684	2813	2774	2724	2790
7	2828	2813	2770	2781	2790
8	2806	2810	2775	2834	2773
9	2782	2815	2815	2795	2775
10	2806	2809	2756	2802	2801
Avg	2778	2799	2767	2788	2792

TABLE 2.13A. TARGET DATA BEFORE INTERCHANGE

TARGET STATISTICS IN CENTIMETERS						
TARGET	HSD	VSD	EHS	EVS	ES	N
XM4#13T1	2.7	3.2	8.6	9.4	12.0	10
XM4#13T2	4.3	2.5	13.2	6.9	13.7	10
XM4#13T3	3.6	1.3	11.4	4.3	11.5	10
XM4#13T4	2.6	2.6	6.6	6.6	8.4	10
XM4#13T5	2.7	3.2	9.9	11.9	13.7	10
MEAN	3.2	2.6	10.0	7.8	11.9	

TARGET	MHD	MVD	MR	RSD	COV*	N
XM4#13T1	2.5	2.6	3.7	4.3	-6.0	10
XM4#13T2	3.6	2.0	4.3	5.0	-1.1	10
XM4#13T3	2.7	1.1	3.1	3.8	-0.4	10
XM4#13T4	2.3	2.2	3.4	3.7	-5.3	10
XM4#13T5	1.9	1.9	3.0	4.2	5.9	10
MEAN	2.6	2.0	3.5	4.2	-1.4	

* Covariance in square cm.

TARGET STATISTICS IN INCHES

TARGET	HSD	VSD	EHS	EVS	ES	N
XM4#13T1	1.14	1.28	3.40	3.70	4.74	10
XM4#13T2	1.69	0.97	5.20	2.70	5.39	10
XM4#13T3	1.40	0.52	4.50	1.70	4.53	10
XM4#13T4	1.00	1.03	2.60	2.60	3.32	10
XM4#13T5	1.05	1.27	3.90	4.70	5.38	10
MEAN	1.26	1.02	3.92	3.08	4.67	

TARGET	MHD	MVD	MR	RSD	COV*	N
XM4#13T1	0.98	1.03	1.46	1.71	-0.92	10
XM4#13T2	1.41	0.78	1.71	1.95	-0.17	10
XM4#13T3	1.07	0.43	1.21	1.50	-0.07	10
XM4#13T4	0.89	0.86	1.33	1.44	-0.82	10
XM4#13T5	0.74	0.76	1.16	1.65	0.92	10
MEAN	1.02	0.77	1.37	1.65	-0.21	

* Covariance in square in.

TABLE 2.13B. VELOCITY DATA BEFORE INTERCHANGE

Rd No.	Weapon Target Numbers				
	XM4 13-T1	XM4 13-T2	XM4 13-T3	XM4 13-T4	XM4 13-T5
	Instrumental Velocity, fps				
1	2761		2673	2781	
2	2754		2714	2776	
3	2748		2728	2739	
4	2753		2794	2701	
5	2785		2757	2734	
6	2721		2760	2727	
7	2735		2759	2743	
8	2769		2739	2750	
9	2734		2761	2775	
10	2729		2752	2740	
Avg	2749	-	2744	2747	-

TABLE 2.14A. TARGET DATA BEFORE INTERCHANGE

TARGET STATISTICS IN CENTIMETERS

TARGET	HSD	VSD	EHS	EVS	ES	N
XM4#14T1	3.0	2.8	9.9	8.4	11.2	10
XM4#14T2	2.3	3.0	6.9	10.9	11.4	10
XM4#14T3	2.7	3.6	7.6	12.2	12.3	10
XM4#14T4	2.5	3.7	8.1	9.7	11.2	10
XM4#14T5	3.7	3.9	9.9	11.9	13.7	10
MEAN	2.8	3.4	8.5	10.6	11.9	

TARGET	MHD	MVD	MR	RSD	COV*	N
XM4#14T1	2.4	2.2	3.6	4.1	-0.3	10
XM4#14T2	2.0	2.2	3.2	3.8	1.9	10
XM4#14T3	2.1	2.9	3.8	4.5	1.1	10
XM4#14T4	1.9	3.1	4.0	4.5	-4.4	10
XM4#14T5	3.1	3.3	4.8	5.4	5.5	10
MEAN	2.3	2.8	3.9	4.5	0.7	

* Covariance in square cm.

TARGET STATISTICS IN INCHES

TARGET	HSD	VSD	EHS	EVS	ES	N
XM4#14T1	1.19	1.12	3.90	3.30	4.41	10
XM4#14T2	0.91	1.20	2.70	4.30	4.49	10
XM4#14T3	1.04	1.42	3.00	4.80	4.83	10
XM4#14T4	0.99	1.46	3.20	3.80	4.39	10
XM4#14T5	1.47	1.52	3.90	4.70	5.38	10
MEAN	1.12	1.34	3.34	4.18	4.70	

TARGET	MHD	MVD	MR	RSD	COV*	N
XM4#14T1	0.96	0.87	1.41	1.63	-0.05	10
XM4#14T2	0.80	0.85	1.27	1.51	0.29	10
XM4#14T3	0.83	1.15	1.50	1.77	0.17	10
XM4#14T4	0.75	1.24	1.58	1.76	-0.67	10
XM4#14T5	1.24	1.30	1.88	2.11	0.85	10
MEAN	0.92	1.08	1.53	1.76	0.12	

* Covariance in square in.

TABLE 2.14B. VELOCITY DATA BEFORE INTERCHANGE

Rd No.	Weapon Target Numbers				
	XM4 14-T1	XM4 14-T2	XM4 14-T3	XM4 14-T4	XM4 14-T5
	Instrumental Velocity, fps				
1	2774	2742	2772	2822	2791
2	2763	2746	2781	2772	2775
3	-	2760	2752	2778	2793
4	2790	2698	2794	2764	2804
5	2724	2772	2760	2768	2808
6	2739	2790	2768	2774	2784
7	2775	2746	2764	2769	2794
8	2803	2777	2827	2757	2740
9	2776	2750	2802	2763	2776
10	-	2788	2770	2760	2794
Avg	2768	2757	2779	2773	2786

TABLE 2.15A. TARGET DATA BEFORE INTERCHANGE

TARGET STATISTICS IN CENTIMETERS

TARGET	HSD	VSD	EHS	EVS	ES	N
XM4#15T1	3.3	1.9	10.7	5.8	11.6	10
XM4#15T2	3.5	2.1	11.2	6.9	13.1	10
XM4#15T3	3.6	2.6	13.2	8.1	13.5	10
XM4#15T4	5.0	3.1	17.0	9.1	17.0	10
XM4#15T5	2.9	3.2	8.9	10.7	10.7	10
MEAN	3.7	2.6	12.2	8.1	13.2	

TARGET	MHD	MVD	MR	RSD	COV*	N
XM4#15T1	2.6	1.5	3.2	3.8	1.4	10
XM4#15T2	2.7	1.6	3.3	4.0	4.6	10
XM4#15T3	2.4	2.1	3.5	4.4	0.9	10
XM4#15T4	3.8	2.4	5.0	5.9	-3.0	10
XM4#15T5	2.2	2.4	3.7	4.4	-0.2	10
MEAN	2.7	2.0	3.7	4.5	0.7	

* Covariance in square cm.

TARGET STATISTICS IN INCHES

TARGET	HSD	VSD	EHS	EVS	ES	N
XM4#15T1	1.31	0.74	4.20	2.30	4.57	10
XM4#15T2	1.36	0.83	4.40	2.70	5.16	10
XM4#15T3	1.42	1.01	5.20	3.20	5.32	10
XM4#15T4	1.98	1.21	6.70	3.60	6.70	10
XM4#15T5	1.15	1.28	3.50	4.20	4.22	10
MEAN	1.44	1.01	4.80	3.20	5.19	

TARGET	MHD	MVD	MR	RSD	COV*	N
XM4#15T1	1.02	0.60	1.25	1.51	0.22	10
XM4#15T2	1.07	0.62	1.28	1.59	0.71	10
XM4#15T3	0.93	0.81	1.37	1.74	0.13	10
XM4#15T4	1.50	0.94	1.98	2.32	-0.47	10
XM4#15T5	0.86	0.95	1.47	1.72	-0.04	10
MEAN	1.08	0.78	1.47	1.78	0.11	

* Covariance in square in.

TABLE 2.15B. VELOCITY DATA BEFORE INTERCHANGE

Rd No.	Weapon Target Numbers				
	XM4 15-T1	XM4 15-T2	XM4 15-T3	XM4 15-T4	XM4 15-T5
	Instrumental Velocity, fps				
1	2839	2821	2805	2820	2820
2	2749	2810	2833	2774	2774
3	2747	2784	2804	2791	2791
4	2802	2776	2764	2827	2827
5	2772	2815	2775	2785	2785
6	2799	2793	2798	2776	2776
7	2768	2784	2757	2830	2830
8	2782	2776	2755	2798	2798
9	2741	2723	2762	2831	2831
10	2776	2745	2811	2780	2780
Avg	-	2778	2782	2786	2801

TABLE 2.16A. TARGET DATA BEFORE INTERCHANGE

TARGET STATISTICS IN CENTIMETERS						
TARGET	HSD	VSD	EHS	EVS	ES	N
XM4#16T1	3.9	2.2	14.2	6.6	14.2	10
XM4#16T2	4.2	3.7	15.5	11.4	16.8	10
XM4#16T3	3.7	4.2	10.4	11.2	12.8	10
XM4#16T4	3.9	3.4	11.7	12.2	12.4	10
XM4#16T5	5.0	4.1	13.7	11.2	15.3	10
MEAN	4.1	3.5	13.1	10.5	14.3	

TARGET	MHD	MVD	MR	RSD	COV*	N
XM4#16T1	2.8	1.8	3.6	4.5	1.5	10
XM4#16T2	2.7	3.0	4.7	5.6	-7.3	10
XM4#16T3	3.1	3.7	5.1	5.6	-3.2	10
XM4#16T4	3.2	2.4	4.4	5.2	-2.4	10
XM4#16T5	4.2	3.5	5.8	6.4	4.5	10
MEAN	3.2	2.9	4.7	5.5	-1.4	

* Covariance in square cm.

TARGET STATISTICS IN INCHES						
TARGET	HSD	VSD	EHS	EVS	ES	N
XM4#16T1	1.55	0.88	5.60	2.60	5.60	10
XM4#16T2	1.65	1.45	6.10	4.50	6.63	10
XM4#16T3	1.44	1.66	4.10	4.40	5.03	10
XM4#16T4	1.55	1.32	4.60	4.80	4.88	10
XM4#16T5	1.96	1.61	5.40	4.40	6.01	10
MEAN	1.63	1.38	5.16	4.14	5.63	

TARGET	MHD	MVD	MR	RSD	COV*	N
XM4#16T1	1.10	0.72	1.43	1.78	0.23	10
XM4#16T2	1.07	1.19	1.87	2.20	-1.14	10
XM4#16T3	1.20	1.44	2.01	2.20	-0.50	10
XM4#16T4	1.25	0.96	1.74	2.04	-0.37	10
XM4#16T5	1.64	1.38	2.27	2.53	0.70	10
MEAN	1.25	1.14	1.86	2.15	-0.22	

* Covariance in square in.

TABLE 2.16B. VELOCITY DATA BEFORE INTERCHANGE

Rd No.	Weapon Target Numbers					TARGET
	XM4 16-T1	XM4 16-T2	XM4 16-T3	XM4 16-T4	XM4 16-T5	
	Instrumental Velocity, fps					
1	2812	2820	2833	2766	2819	MEMPHIS
2	2770	2777	2774	2794	2801	MEMPHIS
3	2771	2788	2779	2830	2798	MEMPHIS
4	2795	2816	2760	2757	2777	MEMPHIS
5	2777	2762	2714	2826	2804	MEMPHIS
6	2794	2847	2767	2801	2798	MEMPHIS
7	2751	2771	2746	2783	2816	MEMPHIS
8	2774	2816	2802	2783	2834	MEMPHIS
9	2757	2752	2770	2752	2771	MEMPHIS
10	2780	2787	2798	2790	2788	MEMPHIS
Avg	2778	2794	2774	2788	2801	MEMPHIS

TARGET STATISTICS IN INCHES

Rd	TARGET STATISTICS IN INCHES					TARGET
	MEMPHIS	MEMPHIS	MEMPHIS	MEMPHIS	MEMPHIS	
1	1.00	1.00	1.00	1.00	1.00	MEMPHIS
2	1.00	1.00	1.00	1.00	1.00	MEMPHIS
3	1.00	1.00	1.00	1.00	1.00	MEMPHIS
4	1.00	1.00	1.00	1.00	1.00	MEMPHIS
5	1.00	1.00	1.00	1.00	1.00	MEMPHIS
6	1.00	1.00	1.00	1.00	1.00	MEMPHIS
7	1.00	1.00	1.00	1.00	1.00	MEMPHIS
8	1.00	1.00	1.00	1.00	1.00	MEMPHIS
9	1.00	1.00	1.00	1.00	1.00	MEMPHIS
10	1.00	1.00	1.00	1.00	1.00	MEMPHIS
Avg	1.00	1.00	1.00	1.00	1.00	MEMPHIS

TABLE 2.17. XM4 CARBINE SERIAL NUMBER 6153601
(TEST NO. 1) FIRED FOR MOUNT TEST^a

Test Mounting Condition	Target No.	Measurements Given In Inches					
		EH	EV	ES	HSD	VSD	MR
Machine rest with handguards and barrel support	1	4.10	4.50	4.81	1.41	1.37	1.80
	2	4.00	7.80	8.63	1.43	2.25	2.05
	3	7.10	10.60	12.35	2.13	3.05	2.68
	4	4.90	7.00	7.50	1.75	1.89	2.10
	5	4.60	3.30	5.19	1.52	0.99	1.58
Average		4.94	6.64	7.70	1.65	1.91	2.04
Machine rest with handguards, but without barrel support	1	7.10	3.10	7.32	2.52	0.98	2.19
	2	4.30	3.30	4.33	1.44	1.03	1.59
	3	3.50	3.60	4.39	1.25	1.28	1.59
	4	4.40	6.30	6.78	1.41	1.82	1.89
	5	5.50	4.30	5.76	2.12	1.24	2.20
Average		4.96	4.12	5.71	1.75	1.27	1.89
Benchrest, shoulder fired with handguard supported ^b	1	2.20	5.70	5.71	0.63	1.75	1.55
	2	3.10	4.10	4.11	1.09	1.27	1.49
	3	5.20	8.70	10.14	1.47	2.55	2.30
	4	3.70	6.40	7.31	1.06	1.83	1.59
	5	3.70	5.60	6.40	1.12	1.78	1.71
Average		3.58	6.10	6.73	1.07	1.83	1.73
Machine rest without handguards, or barrel support	1	4.80	2.80	4.90	1.49	1.07	1.58
	2	4.70	4.10	4.85	1.41	1.20	1.58
	3	6.80	4.20	6.82	1.67	1.06	1.47
	4	5.90	6.50	7.64	1.91	1.85	2.12
	5	5.70	3.10	5.98	2.19	0.92	2.04
Average		5.58	4.14	6.04	1.73	1.22	1.76

^aType B handguard used (round configuration with single heat shield).

^bShortrange (large) rear aperture used.

- EH = Extreme horizontal spread.
- EV = Extreme vertical spread.
- ES = Extreme spread.
- HSD = Horizontal standard deviation.
- MR = Mean radius.
- VSD = Vertical standard deviation.

Notes: M855 ball cartridge lot No. WCC84L030-039. All firing at 100 yards range. Target measurements are given in inches.

TABLE 2.18. DISPERSION DATA FOR XM4 CARBINES FIRED DURING INITIAL ACCEPTANCE TEST BY WEAPON MANUFACTURER

Weapon Identification			Extreme Spread, In. ^c			Extreme Spread
Serial No.	Test No. ^a	Test No. ^b	M193	M855	Ang	Diff, In. ^d
6153601	1	2	5.4	5.0	5.2	-0.4
6153603	2	1	4.7	e4.0	4.4	-0.7
6153605	3	10	4.9	e3.5	4.2	-1.2
6153608	4	9	5.4	4.7	5.0	-0.7
6153611	5	f 8	4.7	5.1	4.9	+0.4
6153613	6	f 7	e4.1	e4.3	4.2	+0.2
6153615	7	f 6	5.2	e4.0	4.6	-1.2
6153619	8	5	e4.0	6.1	5.0	+2.1
6153622	9	4	e4.1	4.7	4.4	+0.6
6153625	10	3	e2.5	5.3	3.9	+2.8
6153627	11	g -	e4.5	e4.1	4.3	-0.4
6153631	12	g -	e3.9	e4.1	4.0	+0.2
6153635	13	g -	e4.0	4.7	4.4	+0.7
6153637	14	g -	5.4	5.3	5.4	-0.1
6153639	15	g -	e3.5	4.6	4.0	+1.1
6153641	16	g -	e3.9	5.0	4.4	+1.1
Max			5.4	6.1	5.4	+2.8
Min			2.5	3.5	3.9	-1.2
ES			2.9	2.6	1.5	1.6
Ang			4.4	4.7	4.5	+0.3

Note: Bold face numbers indicate dispersion meeting 4.5 inch extreme spread criterion.

^aBefore interchange test at APG. Number assigned by test agency.

^bAfter interchange test at APG. Number assigned by test agency.

^cFired before start of testing at APG. One 10-round target per ammunition type, using "Colt" machine rest (DWG No. UNIV-162).

^dChange in M855 dispersion relative to M193 dispersion.

^eMet 4.5 inch extreme spread at 100 yd range criterion.

^fThese carbines tried for accuracy/sight calibration.

^gNo change.

TABLE 2.19. DISPERSION TEST PROCEDURES

a. Initial dispersion was determined for all weapons at a range of 91.4 meters. Each weapon was fired from a machine rest, in the semiautomatic mode, a minimum of 53 rounds of M855 ball ammunition (three fouling rounds, followed by five 10-round targets).

b. Following the interchange test (para 4), the ten XM4 carbines used for that test were refired for dispersion (ref para 2a).

c. Endurance test weapons were fired for dispersion at 1200-round intervals using paragraph 2a as the procedure.

d. Analysis (ref criterion Id). The dispersion data for each weapon were summarized and compared against the criterion on a pass/fail basis.

TEST DATA, INITIAL FUNCTION CHECK

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TABLE 3-1. FUNCTION TEST PROCEDURES

a. After completion of the initial inspection (which included dispersion firing), each carbine was function fired to check operation. The function firing schedule for the weapons is shown in the following table.

INITIAL FUNCTION FIRING SCHEDULE^a

Mode of Fire by Magazine				Rd Fired
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>Per Weapon</u>
CB	CB	SA	SA	120

^aFull 30-round magazines are used. Firing is done with M855 ball ammunition. Cyclic rate of fire is recorded for all controlled bursts fired.

CB = Three-round controlled burst.
SA = Semiautomatic.

b. Analysis (ref criterion Ia, Ib, Ie, and II). The functioning data were compared against each criterion. Computations were made where applicable and an objective assessment for criterion Ia (for only M855 ball ammunition) was made. The remaining criteria were judged in a pass/fail basis with mean rounds between stoppages (MRBS) and mean rounds before operational mission failure (MRBOMF) values being prorated for the number of rounds fired.

INTERCHANGEABILITY

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TABLE 4.1A. DISPERSION AFTER INTERCHANGE, MEASURED IN INCHES

Firing Record No. S-51042

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
601A	0.95	1.90	0.97	1.22	3.40	3.45	4.38	1.27	1.56	-0.65	10
601B	2.21	2.42	0.88	0.94	3.15	3.35	3.50	0.98	1.29	-0.03	10
601C	3.27	2.33	1.78	1.14	6.20	4.45	6.44	1.74	2.05	-0.59	10
601D	2.22	1.56	1.66	1.19	5.35	3.90	6.09	1.69	2.04	-0.90	10
601E	2.20	1.17	1.61	1.25	4.60	4.15	5.80	1.69	2.04	-0.82	10
MEAN	2.17	1.88	1.38	1.15	4.54	3.86	5.24	1.48	1.81	-0.04	10
603A	2.57	1.88	1.71	1.25	4.40	4.35	4.83	1.93	2.12	0.51	10
603B	3.14	1.75	1.60	1.50	5.10	4.25	5.49	1.84	2.19	0.90	10
603C	2.58	2.83	1.86	1.47	5.75	5.05	6.13	2.04	2.37	1.20	10
603D	2.87	1.58	2.03	0.95	5.50	3.20	5.81	1.96	2.24	-1.26	10
603E	2.84	1.91	1.96	1.09	5.40	3.35	5.76	2.02	2.24	0.96	10
MEAN	2.80	1.99	1.83	1.25	5.23	4.04	5.60	1.96	2.23	0.46	10
605A	1.66	0.75	1.31	0.39	3.85	1.15	3.94	1.17	1.36	-0.16	10
605B	1.65	0.66	1.24	0.44	3.60	1.30	3.60	1.16	1.31	0.10	10
605C	2.03	1.15	1.32	0.79	3.80	2.25	4.00	1.27	1.53	-0.39	10
605D	3.28	1.08	1.96	0.91	5.45	2.35	5.69	1.91	2.16	-0.55	10
605E	1.88	0.86	1.18	0.68	3.70	2.40	4.05	1.13	1.36	0.29	10
MEAN	2.10	0.90	1.40	0.64	4.08	1.89	4.26	1.33	1.55	0.01	10
608A	3.14	1.53	1.65	1.39	5.75	4.50	6.11	1.81	2.16	1.43	10
608B	2.18	1.52	1.53	0.91	4.85	3.20	5.01	1.54	1.78	0.38	10
608C	2.18	2.22	1.37	1.26	4.70	4.15	6.24	1.42	1.86	-0.92	10
608D	2.80	1.46	1.73	1.62	5.00	5.50	5.65	2.07	2.38	0.43	10
608E	2.52	1.39	1.35	1.05	3.80	3.25	4.53	1.54	1.71	0.35	10
MEAN	2.57	1.63	1.53	1.25	4.82	4.12	5.51	1.68	1.98	0.33	10
611A	1.76	0.96	1.45	1.17	4.05	4.05	5.30	1.53	1.87	-0.67	10
611B	1.81	2.26	1.57	1.26	5.75	4.15	6.00	1.66	2.01	-0.68	10
611C	2.61	1.11	1.40	1.09	4.45	3.45	4.46	1.53	1.77	-0.04	10
611D	2.18	1.20	1.10	0.79	3.45	2.30	3.50	1.17	1.35	-0.24	10
611E	2.40	3.29	1.49	1.61	4.90	5.45	6.52	1.88	2.20	1.24	10
MEAN	2.15	1.77	1.40	1.18	4.52	3.88	5.16	1.55	1.84	0.29	10
613A	1.41	2.84	0.66	1.50	2.30	5.70	5.71	1.29	1.64	0.31	10
613B	1.42	0.93	1.32	0.77	4.00	2.20	4.22	1.29	1.53	0.75	10
613C	1.22	1.08	0.65	0.74	2.20	2.15	2.48	0.85	0.98	-0.20	10
613D	1.08	1.16	0.74	0.62	2.20	2.40	2.68	0.82	0.96	0.17	10
613E	1.01	2.98	0.62	1.25	1.80	4.20	4.26	1.08	1.39	-0.15	10
MEAN	1.43	1.80	0.80	0.97	2.50	3.33	3.87	1.07	1.30	0.18	10
615A	1.59	1.08	1.11	0.92	4.20	2.30	4.20	1.19	1.44	-0.03	10
615B	1.19	2.32	0.70	1.78	2.40	5.15	5.30	1.63	1.91	0.05	10
615C	1.84	1.69	1.25	1.48	3.70	4.80	5.56	1.63	1.94	0.81	10
615D	1.84	0.98	1.11	0.57	3.05	1.80	3.06	1.11	1.25	0.21	10
615E	2.03	1.37	1.16	0.76	3.85	2.05	3.85	1.17	1.39	-0.29	10
MEAN	1.70	1.49	1.07	1.10	3.44	3.22	4.39	1.34	1.59	0.15	10
619A	1.44	1.29	0.79	0.99	2.60	3.25	3.34	1.07	1.27	0.04	10
619B	1.86	2.80	1.29	2.21	4.55	7.50	8.45	2.06	2.56	2.05	10

TABLE 4.1A (CONT'D)

619C	1.68	1.76	0.93	1.08	2.95	2.75	3.96	1.24	1.43	0.29	10
619D	1.76	1.20	1.49	0.77	4.70	2.30	5.07	1.40	1.68	0.60	10
619E	1.62	1.23	1.20	1.00	4.10	3.10	4.12	1.38	1.56	-0.16	10
MEAN	1.67	1.66	1.14	1.21	3.78	3.78	4.99	1.43	1.70	0.57	
622A	3.18	2.48	2.00	1.71	6.10	5.70	6.59	2.25	2.63	-2.63	10
622B	3.03	1.02	2.13	0.79	6.05	2.45	6.06	1.99	2.27	0.05	10
622C	2.68	2.94	1.34	2.01	4.95	6.95	6.95	2.04	2.41	0.53	10
622D	3.42	2.98	2.34	1.99	7.25	7.30	7.30	2.66	3.07	0.53	10
622E	3.52	3.73	2.10	1.88	6.65	5.69	8.69	2.32	2.82	-2.61	10
MEAN	3.17	2.63	1.98	1.68	5.99	5.59	7.12	2.25	2.64	-0.82	
625A	1.33	1.07	0.74	0.70	2.50	1.85	2.82	0.90	1.01	-0.14	10
625B	1.18	1.40	0.81	0.86	2.30	2.30	2.83	1.07	1.18	0.14	10
625C	3.16	1.36	1.47	0.88	5.00	2.65	5.00	1.46	1.71	-0.11	10
625D	2.14	1.14	1.40	0.78	4.80	2.65	4.87	1.26	1.60	-0.29	10
625E	1.70	1.87	1.21	1.11	3.35	3.45	4.19	1.44	1.64	-0.37	10
MEAN	1.90	1.37	1.12	0.86	3.59	2.58	3.94	1.23	1.43	-0.16	

HCI = Horizontal center of impact.

VCI = Vertical center of impact.

HSD = Horizontal standard deviation (dispersion).

VSD = Vertical standard deviation (dispersion).

EHS = Extreme horizontal spread (maximum horizontal distance).

EVS = Extreme vertical spread (maximum vertical distance).

ES = Extreme spread (maximum distance between all possible pairs of impacts).

MR = Mean radius (average radial distance from CI to impact point).

RSD = Radial standard deviation = square root (HSD**2+VSD**2).

COV = Covariance of the horizontal and vertical components of the impacts.

TABLE 4.1B. DISPERSION AFTER INTERCHANGE, MEASURED IN CENTIMETERS

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
601A	2.41	4.84	2.45	3.10	8.64	8.76	11.13	3.21	3.95	-4.22	10
601B	5.63	6.15	2.24	2.38	8.00	8.51	8.90	2.50	3.26	-0.22	10
601C	8.31	5.91	4.51	2.89	15.75	11.30	16.36	4.36	5.20	3.81	10
601D	5.64	3.97	4.22	3.03	13.59	9.91	15.46	4.41	5.18	-5.80	10
601E	5.59	2.97	4.08	3.18	11.68	10.54	14.73	4.28	5.18	5.26	10
MEAN	5.51	4.77	3.50	2.91	11.53	9.80	13.32	3.75	4.59	-0.23	
603A	6.54	4.78	4.34	3.18	11.18	11.05	12.27	4.90	5.38	3.30	10
603B	7.98	4.44	4.06	3.80	12.95	10.80	13.93	4.68	5.56	5.80	10
603C	6.57	7.19	4.73	3.72	14.61	8.13	15.58	5.17	6.02	7.72	10
603D	7.30	4.03	5.16	2.41	13.97	8.13	14.77	4.97	5.69	-8.15	10
603E	7.23	4.85	4.98	2.77	13.72	8.51	14.63	5.12	5.70	6.18	10
MEAN	7.12	5.06	4.65	3.18	13.28	10.26	14.24	4.97	5.67	2.97	
605A	4.23	1.90	3.32	0.98	9.78	2.92	10.01	2.97	3.47	-1.05	10
605B	4.19	1.69	3.14	1.11	9.14	3.30	9.15	2.94	3.33	0.62	10
605C	5.17	2.93	3.34	2.00	9.65	5.72	10.15	3.22	3.90	-3.54	10
605D	8.34	2.76	4.98	2.31	13.84	5.97	14.46	4.85	5.49	-3.53	10
605E	4.78	2.20	3.00	1.72	9.40	6.10	10.29	2.88	3.46	1.85	10
MEAN	5.34	2.30	3.56	1.63	10.36	4.80	10.81	3.37	3.93	0.08	
608A	7.98	3.90	4.19	3.54	14.61	11.43	15.52	4.60	5.48	9.20	10
608B	5.55	3.87	3.88	2.31	12.32	8.13	12.72	3.91	4.52	2.46	10
608C	5.55	5.65	3.47	3.20	11.94	10.54	15.84	3.61	4.72	-5.97	10
608D	7.11	3.71	4.40	4.12	12.70	13.97	14.35	5.27	6.03	2.77	10
608E	6.41	3.53	3.43	2.67	9.65	8.26	11.52	3.92	4.35	2.25	10
MEAN	6.52	4.13	3.88	3.17	12.24	10.46	13.99	4.26	5.02	2.14	
611A	4.47	2.44	3.70	2.98	10.29	10.29	13.47	3.88	4.75	-4.35	10
611B	4.61	5.74	3.99	3.20	14.61	10.54	15.23	4.22	5.12	4.38	10
611C	6.63	2.83	3.56	2.76	11.30	8.76	11.33	3.88	4.51	-0.25	10
611D	5.54	3.06	2.79	2.00	8.76	5.84	8.89	2.97	3.43	1.52	10
611E	6.11	8.37	3.79	4.10	12.45	13.84	16.56	4.77	5.58	7.97	10
MEAN	5.47	4.49	3.57	3.01	11.48	9.86	13.10	3.95	4.68	1.86	
613A	3.58	7.21	1.68	3.80	5.84	14.48	14.51	3.28	4.16	2.03	10
613B	6.16	2.36	3.36	1.95	10.16	5.59	10.72	3.29	3.88	4.85	10
613C	3.10	2.76	1.88	1.87	5.59	5.46	6.31	2.17	2.49	-1.28	10
613D	2.76	2.96	1.65	1.57	5.59	6.10	6.82	2.07	2.45	1.09	10
613E	2.58	7.57	1.57	3.18	4.57	10.67	10.82	2.75	3.54	-0.94	10
MEAN	3.63	4.57	2.03	2.47	6.35	8.46	9.83	2.71	3.30	1.15	
615A	4.04	2.76	2.83	2.33	10.67	5.84	10.67	3.02	3.66	-0.21	10
615B	3.04	5.91	1.77	4.53	6.10	13.08	13.46	4.15	4.86	0.30	10
615C	4.67	4.31	3.76	3.76	9.40	12.19	14.11	4.13	4.92	5.22	10
615D	4.67	2.49	2.83	1.45	7.75	4.57	7.78	2.81	3.18	1.37	10
615E	5.17	3.48	2.95	1.93	9.78	5.21	9.78	2.96	3.53	-1.87	10
MEAN	4.32	3.79	2.71	2.80	8.74	8.18	11.16	3.41	4.03	-0.96	
619A	3.67	3.28	2.01	2.52	6.60	8.26	8.49	2.73	3.23	0.28	10
619B	4.72	7.11	3.28	5.61	11.56	19.05	21.47	5.23	6.50	13.24	10

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TABLE 4.1B (CONT'D)

	4.28	4.48	2.37	2.74	7.49	6.99	10.06	3.18	3.62	1.90	10
619C	4.47	3.05	3.78	1.97	11.94	5.84	12.88	3.56	4.26	3.88	10
619D	4.11	3.14	3.04	2.53	10.41	7.87	10.46	3.50	3.96	-1.03	10
619E	4.25	4.21	2.90	3.08	9.60	9.60	12.67	3.64	4.31	3.66	10
MEAN											
622A	8.09	6.31	5.08	4.34	15.49	14.48	16.73	5.70	6.68	-16.95	10
622B	7.71	2.60	3.41	2.01	15.37	6.22	15.39	5.05	5.77	0.35	10
622C	6.82	7.47	3.40	5.10	12.57	17.65	17.66	5.19	6.13	3.42	10
622D	8.70	7.58	5.94	5.06	18.41	18.41	18.55	6.75	7.80	3.41	10
622E	8.95	9.47	5.32	4.78	16.89	14.22	22.08	5.89	7.15	-16.85	10
MEAN	8.05	6.69	5.03	4.26	15.21	14.20	18.08	5.72	6.71	-5.32	10
625A	3.38	2.73	1.87	1.77	6.35	4.70	7.16	2.28	2.57	-0.93	10
625B	3.00	3.57	2.06	2.19	5.84	5.84	7.19	2.71	3.01	0.91	10
625C	5.44	2.91	3.74	2.23	12.70	6.73	12.70	3.71	4.36	-0.72	10
625D	4.32	4.75	3.55	1.98	12.19	6.73	12.37	3.20	4.06	-1.88	10
625E	4.83	3.48	2.86	2.83	8.51	8.76	10.63	3.66	4.17	-2.42	10
MEAN					9.12	6.55	10.01	3.11	3.63	-1.01	10

TABLE 4.1C. DISPERSION AFTER INTERCHANGE, MEASURED IN MILS

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
601A	0.26	0.53	0.27	0.34	0.94	0.96	1.22	0.35	0.43	-0.05	10
601B	0.62	0.67	0.24	0.26	0.87	0.93	0.97	0.27	0.36	-0.00	10
601C	0.91	0.65	0.49	0.32	1.72	1.24	1.79	0.48	0.59	-0.05	10
601D	0.62	0.43	0.46	0.33	1.49	1.08	1.69	0.48	0.57	-0.07	10
601E	0.61	0.32	0.45	0.35	1.28	1.15	1.61	0.47	0.57	-0.06	10
MEAN	0.60	0.52	0.38	0.32	1.26	1.07	1.46	0.41	0.50	-0.00	
603A	0.72	0.52	0.47	0.35	1.22	1.21	1.34	0.54	0.59	0.04	10
603B	0.87	0.49	0.44	0.42	1.42	1.18	1.52	0.51	0.61	0.07	10
603C	0.79	0.72	0.52	0.41	1.60	1.40	1.70	0.57	0.66	0.09	10
603D	0.80	0.44	0.56	0.26	1.53	0.89	1.61	0.54	0.62	-0.10	10
603E	0.79	0.53	0.54	0.30	1.50	0.93	1.60	0.56	0.62	0.07	10
MEAN	0.78	0.55	0.51	0.35	1.45	1.12	1.56	0.54	0.62	0.04	
605A	0.46	0.21	0.36	0.11	1.07	0.32	1.09	0.32	0.38	-0.01	10
605B	0.46	0.18	0.34	0.12	1.00	0.36	1.00	0.32	0.36	0.01	10
605C	0.57	0.32	0.37	0.22	1.06	0.62	1.11	0.35	0.43	0.03	10
605D	0.91	0.30	0.54	0.25	1.51	0.65	1.58	0.53	0.60	-0.04	10
605E	0.52	0.24	0.33	0.19	1.03	0.67	1.13	0.31	0.38	0.02	10
MEAN	0.58	0.25	0.39	0.18	1.13	0.52	1.18	0.37	0.43	0.00	
608A	0.87	0.43	0.46	0.39	1.60	1.25	1.70	0.50	0.60	0.11	10
608B	0.61	0.42	0.42	0.25	1.35	0.89	1.39	0.43	0.49	0.03	10
608C	0.61	0.62	0.38	0.35	1.31	1.15	1.73	0.39	0.52	-0.07	10
608D	0.78	0.41	0.48	0.45	1.39	1.53	1.57	0.58	0.66	0.03	10
608E	0.70	0.39	0.37	0.29	1.06	0.90	1.26	0.43	0.48	0.03	10
MEAN	0.71	0.45	0.42	0.35	1.34	1.14	1.53	0.47	0.55	0.03	
611A	0.49	0.27	0.40	0.33	1.12	1.12	1.47	0.42	0.52	-0.05	10
611B	0.50	0.63	0.44	0.35	1.60	1.15	1.67	0.46	0.56	0.05	10
611C	0.72	0.31	0.39	0.30	1.24	0.96	1.24	0.42	0.49	-0.00	10
611D	0.61	0.33	0.30	0.22	0.96	0.64	0.97	0.33	0.38	0.02	10
611E	0.67	0.92	0.41	0.45	1.36	1.51	1.81	0.52	0.61	0.10	10
MEAN	0.60	0.49	0.39	0.33	1.26	1.08	1.43	0.43	0.51	0.02	
613A	0.39	0.79	0.18	0.42	0.64	1.58	1.59	0.36	0.45	0.02	10
613B	0.67	0.26	0.37	0.21	1.11	0.61	1.17	0.36	0.42	0.06	10
613C	0.34	0.30	0.18	0.20	0.61	0.60	0.69	0.24	0.27	-0.02	10
613D	0.30	0.32	0.21	0.17	0.61	0.67	0.75	0.23	0.27	0.01	10
613E	0.28	0.83	0.17	0.35	0.50	1.17	1.18	0.30	0.39	-0.01	10
MEAN	0.40	0.50	0.22	0.27	0.69	0.92	1.08	0.30	0.36	0.01	
615A	0.44	0.30	0.31	0.25	1.17	0.64	1.17	0.33	0.40	-0.00	10
615B	0.33	0.65	0.19	0.50	0.67	1.43	1.47	0.45	0.53	0.00	10
615C	0.51	0.47	0.35	0.41	1.03	1.33	1.54	0.45	0.54	0.06	10
615D	0.51	0.27	0.31	0.16	0.85	0.50	0.85	0.31	0.35	0.02	10
615E	0.57	0.38	0.32	0.21	1.07	0.57	1.07	0.32	0.39	-0.02	10
MEAN	0.47	0.41	0.30	0.31	0.96	0.89	1.22	0.37	0.44	0.01	
619A	0.40	0.36	0.22	0.28	0.72	0.90	0.93	0.30	0.35	0.00	10
619B	0.52	0.78	0.36	0.61	1.26	2.08	2.35	0.57	0.71	0.16	10

TABLE 4.1C (CONT'D)

619C	0.47	0.49	0.26	0.30	0.82	0.76	1.10	0.34	0.40	0.02	10
619D	0.49	0.33	0.41	0.22	1.31	0.64	1.41	0.39	0.47	0.05	10
619E	0.45	0.34	0.33	0.28	1.14	0.86	1.14	0.38	0.43	-0.01	10
MEAN	0.46	0.46	0.32	0.34	1.05	1.05	1.39	0.40	0.47	0.04	
622A	0.88	0.69	0.55	0.47	1.69	1.58	1.83	0.62	0.73	-0.20	10
622B	0.84	0.28	0.59	0.22	1.68	0.68	1.68	0.55	0.63	0.00	10
622C	0.75	0.82	0.37	0.56	1.37	1.93	1.93	0.57	0.67	0.04	10
622D	0.95	0.83	0.65	0.55	1.72	2.01	2.03	0.74	0.85	0.04	10
622E	0.98	1.04	0.58	0.52	1.85	1.56	2.41	0.64	0.78	-0.20	10
MEAN	0.88	0.73	0.55	0.47	1.66	1.55	1.98	0.62	0.73	-0.06	
625A	0.37	0.30	0.20	0.19	0.69	0.51	0.78	0.25	0.28	-0.01	10
625B	0.33	0.39	0.23	0.24	0.64	0.64	0.79	0.30	0.33	-0.01	10
625C	0.88	0.38	0.41	0.24	1.39	0.74	1.39	0.41	0.48	-0.01	10
625D	0.50	0.32	0.39	0.22	1.33	0.74	1.35	0.35	0.44	-0.02	10
625E	0.47	0.52	0.33	0.31	0.93	0.96	1.16	0.40	0.46	-0.03	10
MEAN	0.53	0.38	0.31	0.24	1.00	0.72	1.09	0.34	0.40	-0.01	

TABLE 4-2. INTERCHANGE TEST PROCEDURES

a. After completion of the function check, ten XM4 carbines were subjected to component interchangeability testing. The schedule shown in Table 4-1 was made to reflect the difference in buttstocks between the rifle and carbine. Interchange of parts was accomplished by placing the parts of each rifle into ten groups of nonmating parts shown in the table. These groups were distributed into ten different trays until each tray contained a complete rifle. The gun/group matrix is shown in Table 2.4-2. The ten interchanged weapons were then reassembled, and the following inspections made (ref initial inspection para 2.1a(6) through 2.1a(9), 2.1a(11), and 2.1a(12). The inspections were followed by the function check previously fired in paragraph 2.3.

b. Analysis (ref criterion Ia, Ib, Ie, and II). The data pertaining to these criterion were summarized and reviewed for compliance on a pass/fail basis, except for the data for criterion Ia which was objectively assessed.

TEST DATA, ACCURACY/SIGHT CALIBRATION TEST

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ACCURACY/SIGHT CALIBRATION

TABLE 5.1. FUNCTIONING PERFORMANCE DATA FOR ACCURACY/SIGHT CALIBRATION TEST OF XM4 CARBINE SN 6152611 (8)

Test Cycle	Magazine ID			Total Rd	Malfunctions, by Type							Chg to Wpn	Remarks
	No.	Seq	Rd		FFD	FTC	FFR	FEX	FEJ	FBR	OTH		
25M	-	-	-	15									
300M	-	-	-	65									
200M	-	-	-	95									
100M	-	-	-	125									
25M	-	-	-	155									
400M	-	-	-	185									
500M	-	-	-	215									
600M	-	-	-	245									
700M	-	-	-	275									
800M	-	-	-	305									
800M	-	-	-	355									
Total				355	0	0	0	0	0	0	0	0	

TABLE 5.2. FUNCTIONING PERFORMANCE DATA FOR ACCURACY/SIGHT CALIBRATION TEST OF XM4 CARBINE SN 6153613 (7)

Test Cycle	Magazine ID			Total Rd	Malfunctions, by Type							Chg to Wpn	Remarks
	No.	Seq	Rd		FFD	FTC	FFR	FEX	FEJ	FBR	OTH		
25M	-	-	-	15									
300M	100	2	2	27					0°			1	
	-	-	-	55									
200M	-	-	-	85									
100M	-	-	-	115									
25M	-	-	-	145									
400M	-	-	-	175									
500M	100	1	1	176					0°			1	
	-	-	-	205									
600M	-	-	-	235									
700M	-	-	-	265									
800M	-	-	-	295									
800M	-	-	-	345									
Total				345	0	0	0	0	2	0	0	2	

0° = fired case orientation (case mouth forward).

TABLE 5.3. FUNCTIONING PERFORMANCE DATA FOR ACCURACY/SIGHT CALIBRATION TEST OF XM4 CARBINE SN 6153615 (6)

Test Cycle	Magazine ID			Total Rd	Malfunctions, by Type							Chg to Wpn	Remarks
	No.	Seq	Rd		FFD	FTC	FFR	FEX	FEJ	FBR	OTH		
25M	-	-	-	12									
300M	-	-	-	72									
200M	-	-	-	102									
100M	-	-	-	132									
25M	-	-	-	162									
400M	-	-	-	192									
500M	-	-	-	222									
600M	-	-	-	252									
700M	-	-	-	292									
800M	-	-	-	332									
800M	-	-	-	372									
Total				372	0	0	0	0	0	0	0	0	

TABLE 5.4A.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO.RDS.
6025N10	-2.91	0.02	0.35	0.61	1.18	1.77	1.86	0.63	0.70	-0.06	10
6025N11	-1.59	-1.02	0.29	0.55	0.98	1.61	1.76	0.53	0.62	0.10	10
6025N12	-1.95	0.49	0.43	0.36	1.46	1.10	1.83	0.46	0.56	0.09	10
MEAN	-2.15	-0.17	0.36	0.51	1.21	1.50	1.81	0.54	0.63	0.04	
7025N10	-1.79	-0.93	0.50	0.57	1.61	2.13	2.24	0.62	0.76	0.11	10
7025N11	-2.32	-0.72	0.43	0.48	1.18	1.57	1.69	0.56	0.64	0.05	10
7025N12	-1.56	-1.28	0.25	0.31	0.83	0.98	0.99	0.35	0.39	-0.02	10
MEAN	-1.89	-0.98	0.39	0.45	1.21	1.56	1.64	0.51	0.60	0.05	
8025N10	-1.45	-0.33	0.57	0.54	1.69	1.57	1.94	0.71	0.79	-0.09	10
8025N11	-2.10	0.10	0.54	0.36	1.57	1.10	1.70	0.57	0.65	-0.03	10
8025N12	-1.70	-0.60	0.43	0.37	1.26	1.22	1.40	0.49	0.57	0.02	10
MEAN	-1.75	-0.28	0.52	0.42	1.51	1.30	1.68	0.59	0.67	-0.03	
AVÉR.	-1.93	-0.47	0.42	0.46	1.31	1.45	1.71	0.55	0.63	0.02	

Note: Measurements are in inches.

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Firing Record No. 9-51042

TABLE 5.4B.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
6025N10	-7.38	0.06	0.90	1.54	3.00	4.50	4.71	1.61	1.78	-0.37	10
6025N11	-4.03	-2.58	0.73	1.40	2.50	4.10	4.47	1.36	1.58	0.62	10
6025N12	-4.96	1.25	1.09	0.93	3.70	2.80	4.64	1.18	1.43	0.58	10
MEAN	-5.46	-0.42	0.90	1.29	3.07	3.80	4.61	1.38	1.60	0.28	
7025N10	-4.54	-2.36	1.27	1.44	4.10	5.40	5.69	1.57	1.92	0.74	10
7025N11	-5.90	-1.84	1.09	1.22	3.00	4.00	4.30	1.43	1.64	0.34	10
7025N12	-3.96	-3.26	0.63	0.77	2.10	2.50	2.51	0.88	1.00	-0.16	10
MEAN	-4.80	-2.49	1.00	1.15	3.07	3.97	4.17	1.29	1.52	0.31	
8025N10	-3.69	-0.85	1.46	1.38	4.30	4.00	4.92	1.80	2.01	-0.61	10
8025N11	-5.33	0.25	1.38	0.90	4.00	2.80	4.33	1.44	1.65	-0.19	10
8025N12	-4.31	-1.52	1.09	0.93	3.20	3.10	3.55	1.25	1.44	0.14	10
MEAN	-4.44	-0.71	1.31	1.07	3.83	3.30	4.27	1.50	1.70	-0.22	
AVER.	-4.90	-1.21	1.07	1.17	3.32	3.69	4.35	1.39	1.60	0.12	

Note: Measurements are in centimeters.

TABLE 5.4C.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
6025N10	-2.95	0.02	0.36	0.62	1.20	1.80	1.89	0.64	0.71	-0.06	10
6025N11	-1.61	-1.03	0.29	0.56	1.00	1.64	1.79	0.54	0.63	0.10	10
6025N12	-1.98	0.50	0.44	0.37	1.48	1.12	1.86	0.47	0.57	0.09	10
MEAN	-2.18	-0.17	0.36	0.52	1.23	1.52	1.84	0.55	0.64	0.04	
7025N10	-1.82	-0.94	0.51	0.58	1.64	2.16	2.28	0.63	0.77	0.12	10
7025N11	-2.36	-0.74	0.44	0.49	1.20	1.60	1.72	0.57	0.66	0.06	10
7025N12	-1.58	-1.30	0.25	0.31	0.84	1.00	1.00	0.35	0.40	-0.02	10
MEAN	-1.92	-0.99	0.40	0.46	1.23	1.59	1.67	0.52	0.61	0.05	
8025N10	-1.48	-0.34	0.58	0.55	1.72	1.60	1.97	0.72	0.80	-0.10	10
8025N11	-2.13	0.10	0.55	0.36	1.60	1.12	1.73	0.58	0.66	-0.03	10
8025N12	-1.72	-0.61	0.44	0.37	1.28	1.24	1.42	0.50	0.57	0.02	10
MEAN	-1.78	-0.28	0.52	0.43	1.53	1.32	1.71	0.60	0.68	-0.04	
AVER.	-1.96	-0.48	0.43	0.47	1.33	1.48	1.74	0.56	0.64	0.02	

Note: Measurements are in mils.

Firing Record No. S-51042

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TABLE 5.5A.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

6100B07

6100Y08

6100R09

MEAN

7100N07

7100N08

7100N09

MEAN

8100N07

8100N08

8100N09

MEAN

AVER.

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Firing Record No. S-51042

TABLE 5.5B.

TGT NO. HCI VCI HSD VSD EHS EVS ES MR RSD COV NO.RDS.

6100807	-10.45	17.37	4.94	4.94	15.60	14.90	17.27	6.28	6.98	13.94	10
6100Y08	-13.29	14.89	1.86	4.75	6.00	15.60	15.70	4.19	5.10	4.27	10
6100R09	-16.90	15.02	2.81	3.97	8.40	12.80	14.09	3.96	4.86	2.96	10
MEAN	-13.55	15.76	3.21	4.55	10.00	14.43	15.69	4.81	5.65	7.06	
7100N07	-13.06	15.51	4.43	5.27	13.00	17.30	17.54	6.14	6.88	1.43	10
7100N08	-16.42	20.46	5.57	6.38	18.90	19.80	24.66	7.09	8.47	-11.26	10
7100N09	-14.85	21.28	4.30	5.62	15.20	17.90	23.48	5.87	7.08	-18.17	10
MEAN	-14.78	19.08	4.77	5.76	15.70	18.33	21.89	6.36	7.48	-9.33	
8100N07	-14.43	20.98	4.68	4.49	14.30	12.60	16.19	5.75	6.49	-6.26	10
8100N08	-17.59	23.94	4.30	6.24	10.30	19.60	20.79	6.23	7.58	-14.49	10
8100N09	-19.34	18.12	5.42	3.73	16.10	10.80	17.89	5.58	6.58	-11.54	10
MEAN	-17.12	21.01	4.80	4.82	13.57	14.33	18.29	5.86	6.88	-10.76	
AVER.	-15.15	18.62	4.26	5.04	13.09	15.70	18.62	5.68	6.67	-4.35	

TABLE 5.5C.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
6100B07	-1.04	1.74	0.49	0.49	1.56	1.49	1.73	0.63	0.70	0.14	10
6100Y08	-1.33	1.49	0.19	0.48	0.60	1.56	1.57	0.42	0.51	0.04	10
6100R09	-1.69	1.50	0.28	0.40	0.84	1.28	1.41	0.40	0.49	0.03	10
MEAN	-1.35	1.58	0.32	0.46	1.00	1.44	1.57	0.48	0.57	0.07	
7100N07	-1.31	1.55	0.44	0.53	1.30	1.73	1.75	0.61	0.69	0.01	10
7100N08	-1.64	2.05	0.56	0.64	1.89	1.98	2.47	0.71	0.85	-0.11	10
7100N09	-1.48	2.13	0.43	0.56	1.52	1.79	2.35	0.59	0.71	-0.18	10
MEAN	-1.48	1.91	0.48	0.58	1.57	1.83	2.19	0.64	0.75	-0.09	
8100N07	-1.44	2.10	0.47	0.45	1.43	1.26	1.62	0.58	0.65	-0.06	10
8100N08	-1.76	2.39	0.43	0.62	1.03	1.96	2.08	0.62	0.76	-0.14	10
8100N09	-1.93	1.81	0.54	0.37	1.61	1.08	1.79	0.56	0.66	-0.12	10
MEAN	-1.71	2.10	0.48	0.48	1.36	1.43	1.83	0.59	0.69	-0.11	
AVER.	-1.51	1.86	0.43	0.50	1.31	1.57	1.86	0.57	0.67	-0.04	

Firing Record No. S-51042

TABLE 5.6A.

TGT NO. HCI VCI HSD VSD EHS EVS ES MR RSD COV NO. RDS.

6200B04	-15.92	5.35	1.43	4.90	4.09	14.57	14.86	4.41	5.11	4.11	10
6200Y05	-11.09	11.31	1.74	4.17	5.28	12.17	12.17	3.82	4.51	2.56	10
6200R06	-13.89	9.25	2.02	4.35	6.73	12.76	12.77	4.16	4.80	0.22	10
MEAN	-13.63	8.64	1.73	4.47	5.37	13.16	13.27	4.13	4.81	2.30	
7200N04	-8.13	14.22	2.75	2.02	10.75	6.42	10.75	2.85	3.41	-0.19	10
7200N05	-11.21	13.00	2.29	3.10	5.98	8.19	9.50	3.49	3.85	-2.71	10
7200N06	-12.22	10.65	1.80	3.22	5.24	11.97	11.97	3.10	3.69	1.56	10
MEAN	-10.52	12.63	2.28	2.78	7.32	8.86	10.74	3.15	3.65	-0.45	
8200N04	-14.08	13.59	3.76	1.91	11.06	6.26	11.26	3.67	4.21	-1.36	10
8200N05	-11.04	19.68	3.02	5.07	10.12	18.27	19.68	4.75	5.90	-8.96	10
8200N06	-13.19	15.25	1.99	4.35	6.42	14.76	14.94	3.72	4.78	-1.84	10
MEAN	-12.77	16.17	2.92	3.78	9.20	13.10	15.29	4.05	4.97	-4.05	
AVER.	-12.31	12.48	2.31	3.68	7.30	11.71	13.10	3.78	4.47	-0.73	

Firing Record No. S-51042

TABLE 5.6B.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

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RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.

HSD

VSD

EHS

EVS

ES

MR

RSD

COV

NO. RDS.

Firing Record No. S-51042

TABLE 5.6C.

TGT NO. HCI VCI HSD VSD EHS EVS ES MR RSD COV NO.RDS.

1	6200B04	-2.02	0.68	0.18	0.62	0.52	1.85	1.89	0.56	0.65	0.07	10
2	6200Y05	-1.41	1.44	0.22	0.53	0.67	1.54	1.55	0.49	0.57	0.04	10
3	6200R06	-1.76	1.17	0.26	0.55	0.85	1.62	1.62	0.53	0.61	0.00	10
4	MEAN	-1.73	1.10	0.22	0.57	0.68	1.67	1.68	0.52	0.61	0.04	
5												
6	7200N04	-1.03	1.81	0.35	0.26	1.36	0.81	1.37	0.36	0.43	-0.00	10
7	7200N05	-1.42	1.65	0.29	0.39	0.76	1.04	1.21	0.44	0.49	-0.04	10
8	7200N06	-1.55	1.35	0.23	0.41	0.67	1.52	1.52	0.39	0.47	0.03	10
9	MEAN	-1.34	1.60	0.29	0.35	0.93	1.12	1.36	0.40	0.46	-0.01	
10												
11												
12	8200N04	-1.79	1.73	0.48	0.24	1.41	0.80	1.43	0.47	0.53	-0.02	10
13	8200N05	-1.40	2.50	0.38	0.64	1.28	2.32	2.50	0.60	0.75	-0.14	10
14	8200N06	-1.67	1.94	0.25	0.55	0.81	1.87	1.90	0.47	0.61	-0.03	10
15	MEAN	-1.62	2.05	0.37	0.48	1.17	1.66	1.94	0.51	0.63	-0.07	
16												
17												
18	AVER.	-1.56	1.58	0.29	0.47	0.93	1.49	1.66	0.48	0.57	-0.01	
19												
20												
21												
22												
23												
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43												
44												
45												
46												
47												

Firing Record No. S-51042

TABLE 5.7C.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

TABLE 5.8A.

TGT NU.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
6400B13	4.11	2.31	4.59	5.20	14.02	16.02	16.14	6.36	6.94	-12.60	10
6400R14	1.05	1.59	3.61	3.99	10.87	12.36	12.97	4.97	5.38	1.20	10
6400Y15	2.19	1.53	5.84	4.15	18.07	14.41	22.14	6.00	7.16	-10.23	10
MEAN	2.45	1.81	4.68	4.45	14.32	14.27	17.08	5.77	6.49	-7.21	
7400B13	2.32	5.33	2.41	5.25	7.44	18.23	19.39	4.17	5.78	-10.89	10
7400Y14	-3.52	-2.15	3.85	4.69	11.26	17.80	18.93	5.20	6.07	-4.34	10
7400R15	2.85	-0.30	4.28	3.24	12.40	9.65	14.77	4.66	5.37	7.95	10
MEAN	0.55	0.96	3.51	4.39	10.37	15.22	17.70	4.68	5.74	-2.43	
8400V13	-5.40	6.23	4.16	3.17	11.77	9.88	13.45	4.44	5.23	5.90	10
8400R14	1.57	7.04	6.79	5.18	24.68	16.77	25.76	7.04	8.54	13.81	10
8400N15	-5.76	4.37	5.18	2.69	15.12	9.37	15.16	5.09	5.84	6.57	10
MEAN	-3.19	5.88	5.38	3.68	17.19	12.01	18.12	5.52	6.54	8.76	
AVER.	-0.07	2.88	4.53	4.17	13.96	13.83	17.63	5.32	6.26	-0.29	

Firing Record No. 8-51042

TABLE 5.8B.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

6400B13 10.43 5.87 11.67 13.20 35.60 40.70 40.99 16.15 17.62 -81.31 10
 6400R14 2.67 4.05 9.18 10.14 27.60 31.40 32.95 12.61 13.68 7.74 10
 6400Y15 5.56 3.88 14.83 10.53 45.90 36.60 56.24 15.24 18.19 -65.99 10
 MEAN 6.22 4.60 11.89 11.29 36.37 36.23 43.39 14.67 16.50 -46.52

7400B13 5.89 13.53 6.13 13.34 18.90 46.30 49.25 10.59 14.68 -70.23 10
 7400Y14 -8.94 -5.45 9.78 11.92 28.60 45.20 48.08 13.21 15.42 -28.00 10
 7400R15 7.24 -0.75 10.88 8.22 31.50 24.50 37.51 11.84 13.63 51.27 10
 MEAN 1.40 2.44 8.93 11.16 26.33 38.67 44.95 11.88 14.58 -15.65

8400Y13 -13.72 15.83 10.57 8.05 29.90 25.10 34.15 11.27 13.29 38.09 10
 8400R14 4.00 17.88 17.26 13.16 62.70 42.60 65.43 17.87 21.70 89.12 10
 8400N15 -14.62 11.10 13.16 6.84 38.40 23.80 38.51 12.93 14.83 142.37 10
 MEAN -8.11 14.94 13.66 9.35 43.67 30.50 46.03 14.02 16.61 56.53

AVER. -0.17 7.33 11.49 10.60 35.46 35.13 44.79 13.52 15.89 -1.88

Firing Record No. S-51042

TABLE 5.8C.

NO. RDS.

TGT NO. HCI VCI HSD VSD EHS EVS ES MR RSD COV

6400B13	0.26	0.15	0.29	0.33	0.89	1.02	1.02	0.40	0.44	-0.05	10
6400R14	0.07	0.10	0.23	0.25	0.69	0.78	0.82	0.32	0.34	0.00	10
6400Y15	0.14	0.10	0.37	0.26	1.15	0.91	1.41	0.38	0.45	-0.04	10
MEAN	0.16	0.11	0.30	0.28	0.91	0.91	1.08	0.37	0.41	-0.03	
7400B13	0.15	0.34	0.15	0.33	0.47	1.16	1.23	0.26	0.37	-0.04	10
7400Y14	-0.22	-0.14	0.24	0.30	0.71	1.13	1.20	0.33	0.39	-0.02	10
7400R15	0.18	-0.02	0.27	0.21	0.79	0.61	0.94	0.30	0.34	0.03	10
MEAN	0.03	0.06	0.22	0.28	0.66	0.97	1.12	0.30	0.36	-0.01	
8400Y13	-0.34	0.40	0.26	0.20	0.75	0.63	0.85	0.28	0.33	0.02	10
8400R14	0.10	0.45	0.43	0.33	1.57	1.06	1.64	0.45	0.54	0.06	10
8400N15	-0.37	0.28	0.33	0.17	0.96	0.60	0.96	0.32	0.37	0.03	10
MEAN	-0.20	0.37	0.34	0.23	1.09	0.76	1.15	0.35	0.42	0.04	
AVER.	-0.00	0.18	0.29	0.27	0.89	0.88	1.12	0.34	0.40	-0.00	

Firing Record No. S-51042

TABLE 5.9A.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

VCI

HCI

TGT NO.

HSD

VSD

EVS

ES

MR

RSD

COV

NO. RDS.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
6500B16	8.46	3.96	4.56	6.34	14.80	21.65	23.12	6.41	7.81	4.44	10
6500R17	0.56	-0.65	6.63	5.40	18.27	17.36	21.54	7.48	8.55	-8.67	10
6500Y18	-0.41	0.63	6.06	4.63	18.03	15.51	20.81	6.73	7.62	9.02	10
MEAN	2.87	1.31	5.75	5.45	17.03	18.18	21.83	6.87	7.99	1.60	
7500R16	6.20	1.45	6.09	7.87	18.27	29.76	31.81	8.32	9.95	-14.93	10
7500Y17	2.96	3.86	5.15	7.28	17.83	24.96	25.17	7.27	8.91	3.72	10
7500B18	0.36	4.04	6.32	6.61	21.69	20.63	21.83	8.06	9.14	-8.69	10
MEAN	3.17	3.12	5.85	7.25	19.27	25.12	26.27	7.89	9.33	-6.63	
8500B16	-1.92	2.08	5.46	6.35	16.65	22.64	23.38	6.95	8.37	11.12	10
8500Y17	2.97	5.37	6.45	5.82	20.12	17.52	21.04	7.63	8.69	-8.33	10
8500R18	1.50	7.45	6.95	5.45	20.59	18.27	26.66	7.22	8.83	13.70	10
MEAN	0.85	4.97	6.29	5.87	19.12	19.48	23.69	7.27	8.63	5.50	
AVER.	2.30	3.13	5.96	6.19	18.47	20.92	23.93	7.34	8.65	0.15	

Firing Record No. S-51042

TABLE 5.9B.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

6500B16	21.50	10.05	11.59	16.09	37.60	55.00	58.73	16.28	19.83	28.66	10
6500R17	1.41	-1.66	16.83	13.71	46.40	44.10	54.72	18.99	21.71	-55.96	10
6500V18	-1.05	1.59	15.39	11.75	45.80	39.40	52.86	17.10	19.36	58.18	10
MEAN	7.29	3.33	14.60	13.85	43.27	46.17	55.44	17.46	20.30	10.29	
7500R16	15.74	3.69	15.46	19.98	46.40	75.60	80.79	21.15	25.26	-96.31	10
7500V17	7.51	9.81	13.07	18.49	45.30	63.40	63.93	18.47	22.64	24.00	10
7500B18	0.92	10.25	16.05	16.78	55.10	52.40	55.45	20.47	23.22	-56.04	10
MEAN	8.06	7.92	14.86	18.42	48.93	63.80	66.72	20.03	23.71	-42.78	
8500B16	-4.87	5.29	13.86	16.13	42.30	57.50	59.37	17.66	21.27	71.73	10
8500V17	7.55	13.63	16.38	14.79	51.10	44.50	53.45	19.37	22.07	-53.72	10
8500R18	3.82	18.92	17.65	13.84	52.30	46.40	67.71	18.34	22.43	88.40	10
MEAN	2.17	12.61	15.97	14.92	48.57	49.47	60.18	18.46	21.92	35.47	
AVER.	5.84	7.95	15.14	15.73	46.92	53.14	60.78	18.65	21.98	0.99	

Firing Record No. S-51042

TABLE 5.9C.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
6500B16	0.43	0.20	0.23	0.32	0.75	1.10	1.17	0.33	0.40	0.01	10
6500R17	0.03	-0.03	0.34	0.27	0.93	0.88	1.09	0.38	0.43	-0.02	10
6500Y18	-0.02	0.03	0.31	0.24	0.92	0.79	1.06	0.34	0.39	0.02	10
MEAN	0.15	0.07	0.29	0.28	0.87	0.92	1.11	0.35	0.41	0.00	
7500R16	0.31	0.07	0.31	0.40	0.93	1.51	1.62	0.42	0.51	-0.04	10
7500Y17	0.15	0.20	0.26	0.37	0.91	1.27	1.28	0.37	0.45	0.01	10
7500B18	0.02	0.34	0.32	0.34	1.10	1.05	1.11	0.41	0.46	-0.02	10
MEAN	0.16	0.16	0.30	0.37	0.98	1.28	1.33	0.40	0.47	-0.02	
8500B16	-0.10	0.11	0.28	0.32	0.85	1.15	1.19	0.35	0.43	0.03	10
8500Y17	0.15	0.27	0.33	0.30	1.02	0.89	1.07	0.39	0.44	-0.02	10
8500R18	0.08	0.38	0.35	0.28	1.05	0.93	1.35	0.37	0.45	0.04	10
MEAN	0.04	0.25	0.32	0.30	0.97	0.99	1.20	0.37	0.44	0.01	
AVER.	0.12	0.16	0.30	0.31	0.94	1.06	1.22	0.37	0.44	0.00	

Firing Record No. S-51042

TABLE 5.10A.

NO. RDS.

TGT NO. HCI VCI HSD VSD EHS EVS ES MR RSD COV

6600B19	13.19	1.06	4.05	5.62	10.51	18.35	19.46	6.03	6.92	2.32	10
6600B20	7.26	2.68	9.66	9.96	31.97	35.63	39.00	11.72	13.88	39.98	10
6600B21	9.45	1.43	5.41	4.94	17.87	16.93	18.00	6.50	7.33	-4.32	10
MEAN	9.97	1.72	6.37	6.84	20.12	23.64	25.49	8.09	9.38	12.66	

7600Y19	5.13	-1.55	4.16	4.10	12.40	14.25	15.66	5.00	5.84	-2.62	10
7600B20	4.69	-2.02	7.87	3.03	23.46	9.76	23.74	7.21	8.43	0.50	10
7600R21	-5.37	8.24	8.11	6.13	30.08	20.04	31.91	8.61	10.17	26.51	10
MEAN	1.48	1.56	6.71	4.42	21.98	14.69	23.77	6.94	8.14	8.13	

8600Y19	-4.32	9.66	6.26	11.40	17.60	35.63	35.63	11.31	13.00	-10.42	10
8600B20	1.24	9.63	7.72	8.09	24.72	19.96	25.72	10.13	11.18	5.30	10
8600R21	-3.96	12.89	6.31	11.69	20.87	36.22	37.00	11.01	13.29	2.68	10
MEAN	-2.35	10.73	6.76	10.39	21.06	30.60	32.78	10.81	12.49	-0.82	

AVER.	3.03	4.67	6.62	7.22	21.05	22.97	27.35	8.61	10.00	6.66	
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Firing Record No. S-51042

TABLE 5.10B.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
6600B19	33.49	2.68	10.28	14.27	26.70	46.60	49.43	15.32	17.58	14.94	10
6600Y20	18.44	6.80	24.54	25.31	81.20	90.50	99.07	29.77	35.25	257.97	10
6600R21	24.01	3.62	13.75	12.55	45.40	43.00	45.71	16.52	18.61	-27.87	10
MEAN	25.31	4.37	16.19	17.37	51.10	60.03	64.74	20.54	23.82	81.68	
7600Y19	13.04	-3.93	10.56	10.40	31.50	36.20	39.78	12.70	14.82	-16.90	10
7600B20	11.90	-5.13	19.98	7.70	59.60	24.80	60.29	18.31	21.41	3.26	10
7600R21	-13.65	20.94	20.60	15.56	76.40	50.90	81.06	21.88	25.82	171.05	10
MEAN	3.76	3.96	17.05	11.22	55.83	37.30	60.38	17.63	20.68	52.47	
8600Y19	-10.97	24.53	15.89	28.96	44.70	90.50	90.50	28.72	33.03	-67.24	10
8600B20	3.15	24.45	19.61	20.55	62.80	50.70	65.33	25.72	28.40	34.18	10
8600R21	-10.07	32.75	16.03	29.70	53.00	92.00	93.98	27.96	33.75	17.27	10
MEAN	-5.96	27.24	17.18	26.40	53.50	77.73	83.27	27.47	31.73	-5.26	
AVER.	7.70	11.86	16.80	18.33	53.48	58.36	69.46	21.88	25.41	42.96	

Firing Record No. S-51042

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TABLE 5.10C.

NO. RDS.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
6600B19	0.56	0.04	0.17	0.24	0.45	0.78	0.82	0.26	0.29	0.00	10
6600Y20	0.31	0.11	0.41	0.42	1.35	1.51	1.65	0.50	0.59	0.07	10
6600R21	0.40	0.06	0.23	0.21	0.76	0.72	0.76	0.28	0.31	-0.01	10
MEAN	0.42	0.07	0.27	0.29	0.85	1.00	1.08	0.34	0.40	0.02	
7600Y19	0.22	-0.07	0.18	0.17	0.53	0.60	0.66	0.21	0.25	-0.00	10
7600B20	0.20	-0.09	0.33	0.13	0.99	0.41	1.01	0.31	0.36	0.00	10
7600R21	-0.23	0.35	0.34	0.26	1.27	0.85	1.35	0.36	0.43	0.05	10
MEAN	0.06	0.07	0.28	0.19	0.93	0.62	1.01	0.29	0.34	0.01	
8600Y19	-0.18	0.41	0.26	0.48	0.75	1.51	1.51	0.48	0.55	-0.02	10
8600B20	0.05	0.41	0.33	0.34	1.05	0.85	1.09	0.43	0.47	0.01	10
8600R21	-0.17	0.55	0.27	0.50	0.88	1.53	1.57	0.47	0.56	0.00	10
MEAN	-0.10	0.45	0.29	0.44	0.89	1.30	1.39	0.46	0.53	-0.00	
AVER.	0.13	0.20	0.28	0.31	0.89	0.97	1.16	0.36	0.42	0.01	

Firing Record No. S-51042

TABLE 5.11A.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
6700Y22	-5.33	3.91	10.06	8.98	31.10	32.44	37.33	10.96	13.49	10.84	10
6700R23	-5.22	-1.63	7.95	10.42	22.17	34.37	40.62	10.81	13.10	-52.44	10
6700B24	-3.51	7.71	11.73	13.29	41.30	47.44	52.70	13.74	17.73	-5.12	10
MEAN	-4.69	3.33	9.91	10.90	31.52	38.08	43.55	11.83	14.77	-15.57	
7700Y22	-5.27	6.76	8.08	17.30	27.95	47.83	50.79	16.26	19.09	23.87	10
7700R23	-11.17	-5.36	10.04	10.02	35.79	24.96	35.82	12.49	14.18	-23.28	10
7700B24	-10.55	4.98	5.70	10.70	18.15	32.76	32.81	10.65	12.13	2.44	10
MEAN	-9.00	2.13	7.94	12.67	27.30	35.18	39.81	13.13	15.13	1.01	
8700B22	-18.02	8.57	9.31	13.13	24.29	40.67	40.82	14.30	16.09	-55.72	10
8700R23	-12.12	10.61	9.35	8.74	30.63	27.17	30.63	11.23	12.80	-22.48	10
8700Y24	-10.04	-14.20	9.39	12.70	28.98	39.45	43.13	13.33	15.79	-12.72	10
MEAN	-13.39	1.66	9.35	11.52	27.97	35.76	38.19	12.95	14.89	-30.31	
AVER.	-9.03	2.37	9.07	11.70	28.93	36.34	40.52	12.64	14.93	-14.96	

Firing Record No. S-51042

TABLE 5.11B.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO.RDS.
6700Y22	-13.54	9.93	25.55	22.81	79.00	82.40	94.81	27.83	34.25	69.94	10
6700R23	-13.26	-4.15	20.19	26.46	56.30	87.30	103.18	27.45	33.28	-338.31	10
6700B24	-8.92	19.59	29.79	33.76	104.90	120.50	133.86	34.90	45.03	-33.04	10
MEAN	-11.91	8.46	25.18	27.68	80.07	96.73	110.62	30.06	37.52	-100.47	
7700Y22	-13.38	17.18	20.53	43.94	71.00	121.50	129.02	41.30	48.50	153.97	10
7700R23	-28.37	-13.62	25.49	25.45	90.90	63.40	90.98	31.72	36.02	-150.20	10
7700B24	-26.80	12.65	14.48	27.19	46.10	83.20	83.35	27.04	30.80	15.75	10
MEAN	-22.85	5.40	20.17	32.19	69.33	89.37	101.12	33.35	38.44	6.50	
8700B22	-45.76	21.78	23.66	33.34	61.70	103.30	103.67	36.32	40.88	-359.45	10
8700R23	-30.79	26.94	23.74	22.20	77.80	69.00	77.80	28.52	32.51	-145.04	10
8700Y24	-25.51	-36.07	23.84	32.26	73.60	100.20	109.56	33.86	40.11	-82.09	10
MEAN	-34.02	4.22	23.75	29.27	71.03	90.83	97.01	32.90	37.83	-195.53	
AVER.	-22.93	6.03	23.03	29.71	73.48	92.31	102.92	32.10	37.93	-96.50	

Firing Record No. S-51042

TABLE 5.11C.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47																																																																																																													
6700Y22	-0.19	0.14	0.37	0.33	1.13	1.18	1.35	0.40	0.49	0.01	10	6700R23	-0.19	-0.06	0.29	0.38	0.80	1.25	1.47	0.39	0.48	-0.07	10	6700B24	-0.13	0.28	0.43	0.48	1.50	1.72	1.91	0.50	0.64	-0.01	10	MEAN	-0.17	0.12	0.36	0.40	1.14	1.38	1.58	0.43	0.54	-0.02		7700Y22	-0.19	0.25	0.29	0.63	1.01	1.74	1.84	0.59	0.69	0.03	10	7700R23	-0.41	-0.19	0.36	0.36	1.30	0.91	1.30	0.45	0.51	-0.03	10	7700B24	-0.38	0.18	0.21	0.39	0.66	1.19	1.19	0.39	0.44	0.00	10	MEAN	-0.33	0.08	0.29	0.46	0.99	1.28	1.44	0.48	0.55	0.00		8700B22	-0.65	0.31	0.34	0.48	0.88	1.48	1.48	0.52	0.58	-0.07	10	8700R23	-0.44	0.38	0.34	0.32	1.11	0.99	1.11	0.41	0.46	-0.03	10	8700Y24	-0.36	-0.52	0.34	0.46	1.05	1.43	1.57	0.48	0.57	-0.02	10	MEAN	-0.49	0.06	0.34	0.42	1.02	1.30	1.39	0.47	0.54	-0.04		AVER.	-0.33	0.09	0.33	0.42	1.05	1.32	1.47	0.46	0.54	-0.02	
6700B24	-0.13	0.28	0.43	0.48	1.50	1.72	1.91	0.50	0.64	-0.01	10	MEAN	-0.17	0.12	0.36	0.40	1.14	1.38	1.58	0.43	0.54	-0.02		7700Y22	-0.19	0.25	0.29	0.63	1.01	1.74	1.84	0.59	0.69	0.03	10	7700R23	-0.41	-0.19	0.36	0.36	1.30	0.91	1.30	0.45	0.51	-0.03	10	7700B24	-0.38	0.18	0.21	0.39	0.66	1.19	1.19	0.39	0.44	0.00	10	MEAN	-0.33	0.08	0.29	0.46	0.99	1.28	1.44	0.48	0.55	0.00		8700B22	-0.65	0.31	0.34	0.48	0.88	1.48	1.48	0.52	0.58	-0.07	10	8700R23	-0.44	0.38	0.34	0.32	1.11	0.99	1.11	0.41	0.46	-0.03	10	8700Y24	-0.36	-0.52	0.34	0.46	1.05	1.43	1.57	0.48	0.57	-0.02	10	MEAN	-0.49	0.06	0.34	0.42	1.02	1.30	1.39	0.47	0.54	-0.04		AVER.	-0.33	0.09	0.33	0.42	1.05	1.32	1.47	0.46	0.54	-0.02																									
MEAN	-0.17	0.12	0.36	0.40	1.14	1.38	1.58	0.43	0.54	-0.02		7700Y22	-0.19	0.25	0.29	0.63	1.01	1.74	1.84	0.59	0.69	0.03	10	7700R23	-0.41	-0.19	0.36	0.36	1.30	0.91	1.30	0.45	0.51	-0.03	10	7700B24	-0.38	0.18	0.21	0.39	0.66	1.19	1.19	0.39	0.44	0.00	10	MEAN	-0.33	0.08	0.29	0.46	0.99	1.28	1.44	0.48	0.55	0.00		8700B22	-0.65	0.31	0.34	0.48	0.88	1.48	1.48	0.52	0.58	-0.07	10	8700R23	-0.44	0.38	0.34	0.32	1.11	0.99	1.11	0.41	0.46	-0.03	10	8700Y24	-0.36	-0.52	0.34	0.46	1.05	1.43	1.57	0.48	0.57	-0.02	10	MEAN	-0.49	0.06	0.34	0.42	1.02	1.30	1.39	0.47	0.54	-0.04		AVER.	-0.33	0.09	0.33	0.42	1.05	1.32	1.47	0.46	0.54	-0.02																																					
7700Y22	-0.19	0.25	0.29	0.63	1.01	1.74	1.84	0.59	0.69	0.03	10	7700R23	-0.41	-0.19	0.36	0.36	1.30	0.91	1.30	0.45	0.51	-0.03	10	7700B24	-0.38	0.18	0.21	0.39	0.66	1.19	1.19	0.39	0.44	0.00	10	MEAN	-0.33	0.08	0.29	0.46	0.99	1.28	1.44	0.48	0.55	0.00		8700B22	-0.65	0.31	0.34	0.48	0.88	1.48	1.48	0.52	0.58	-0.07	10	8700R23	-0.44	0.38	0.34	0.32	1.11	0.99	1.11	0.41	0.46	-0.03	10	8700Y24	-0.36	-0.52	0.34	0.46	1.05	1.43	1.57	0.48	0.57	-0.02	10	MEAN	-0.49	0.06	0.34	0.42	1.02	1.30	1.39	0.47	0.54	-0.04		AVER.	-0.33	0.09	0.33	0.42	1.05	1.32	1.47	0.46	0.54	-0.02																																																	
7700R23	-0.41	-0.19	0.36	0.36	1.30	0.91	1.30	0.45	0.51	-0.03	10	7700B24	-0.38	0.18	0.21	0.39	0.66	1.19	1.19	0.39	0.44	0.00	10	MEAN	-0.33	0.08	0.29	0.46	0.99	1.28	1.44	0.48	0.55	0.00		8700B22	-0.65	0.31	0.34	0.48	0.88	1.48	1.48	0.52	0.58	-0.07	10	8700R23	-0.44	0.38	0.34	0.32	1.11	0.99	1.11	0.41	0.46	-0.03	10	8700Y24	-0.36	-0.52	0.34	0.46	1.05	1.43	1.57	0.48	0.57	-0.02	10	MEAN	-0.49	0.06	0.34	0.42	1.02	1.30	1.39	0.47	0.54	-0.04		AVER.	-0.33	0.09	0.33	0.42	1.05	1.32	1.47	0.46	0.54	-0.02																																																													
7700B24	-0.38	0.18	0.21	0.39	0.66	1.19	1.19	0.39	0.44	0.00	10	MEAN	-0.33	0.08	0.29	0.46	0.99	1.28	1.44	0.48	0.55	0.00		8700B22	-0.65	0.31	0.34	0.48	0.88	1.48	1.48	0.52	0.58	-0.07	10	8700R23	-0.44	0.38	0.34	0.32	1.11	0.99	1.11	0.41	0.46	-0.03	10	8700Y24	-0.36	-0.52	0.34	0.46	1.05	1.43	1.57	0.48	0.57	-0.02	10	MEAN	-0.49	0.06	0.34	0.42	1.02	1.30	1.39	0.47	0.54	-0.04		AVER.	-0.33	0.09	0.33	0.42	1.05	1.32	1.47	0.46	0.54	-0.02																																																																									
MEAN	-0.33	0.08	0.29	0.46	0.99	1.28	1.44	0.48	0.55	0.00		8700B22	-0.65	0.31	0.34	0.48	0.88	1.48	1.48	0.52	0.58	-0.07	10	8700R23	-0.44	0.38	0.34	0.32	1.11	0.99	1.11	0.41	0.46	-0.03	10	8700Y24	-0.36	-0.52	0.34	0.46	1.05	1.43	1.57	0.48	0.57	-0.02	10	MEAN	-0.49	0.06	0.34	0.42	1.02	1.30	1.39	0.47	0.54	-0.04		AVER.	-0.33	0.09	0.33	0.42	1.05	1.32	1.47	0.46	0.54	-0.02																																																																																					
8700B22	-0.65	0.31	0.34	0.48	0.88	1.48	1.48	0.52	0.58	-0.07	10	8700R23	-0.44	0.38	0.34	0.32	1.11	0.99	1.11	0.41	0.46	-0.03	10	8700Y24	-0.36	-0.52	0.34	0.46	1.05	1.43	1.57	0.48	0.57	-0.02	10	MEAN	-0.49	0.06	0.34	0.42	1.02	1.30	1.39	0.47	0.54	-0.04		AVER.	-0.33	0.09	0.33	0.42	1.05	1.32	1.47	0.46	0.54	-0.02																																																																																																	
8700R23	-0.44	0.38	0.34	0.32	1.11	0.99	1.11	0.41	0.46	-0.03	10	8700Y24	-0.36	-0.52	0.34	0.46	1.05	1.43	1.57	0.48	0.57	-0.02	10	MEAN	-0.49	0.06	0.34	0.42	1.02	1.30	1.39	0.47	0.54	-0.04		AVER.	-0.33	0.09	0.33	0.42	1.05	1.32	1.47	0.46	0.54	-0.02																																																																																																													
8700Y24	-0.36	-0.52	0.34	0.46	1.05	1.43	1.57	0.48	0.57	-0.02	10	MEAN	-0.49	0.06	0.34	0.42	1.02	1.30	1.39	0.47	0.54	-0.04		AVER.	-0.33	0.09	0.33	0.42	1.05	1.32	1.47	0.46	0.54	-0.02																																																																																																																									
MEAN	-0.49	0.06	0.34	0.42	1.02	1.30	1.39	0.47	0.54	-0.04		AVER.	-0.33	0.09	0.33	0.42	1.05	1.32	1.47	0.46	0.54	-0.02																																																																																																																																					
AVER.	-0.33	0.09	0.33	0.42	1.05	1.32	1.47	0.46	0.54	-0.02																																																																																																																																																	

Firing Record No. S-51042

TABLE 5.12A.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
6800N28	-10.67	-26.56	10.49	12.07	31.22	39.33	43.60	14.06	16.00	-63.91	10
6800N29	-20.22	-5.81	13.58	12.29	48.70	40.79	60.06	14.53	18.31	-69.01	10
6800N31	-35.35	-14.77	6.26	16.76	21.26	48.03	48.07	15.55	17.89	46.08	10
MEAN	-22.08	-15.71	10.11	13.71	33.73	42.72	50.58	14.71	17.40	-28.95	
7800N28	-33.01	-22.59	7.36	9.33	20.79	28.62	33.79	10.15	11.88	48.01	10
7800N29	-12.26	-22.91	11.98	17.17	40.35	42.17	54.84	18.43	20.94	-50.51	10
7800N32	-27.57	-33.88	13.78	14.44	40.71	47.24	54.90	16.62	19.96	-9.51	10
MEAN	-24.28	-26.46	11.04	13.65	33.95	39.34	47.84	15.06	17.59	-4.01	
8800N29	-3.82	2.50	17.34	11.61	53.62	41.65	60.95	17.61	20.87	-107.27	10
8800N30	-3.23	-3.94	12.14	21.66	31.38	72.80	76.42	21.38	24.83	-105.77	10
8800N32	-13.82	-9.86	9.74	14.72	30.51	47.91	47.94	15.33	17.66	-22.61	10
MEAN	-6.96	-3.77	13.07	16.00	38.50	54.12	61.77	18.11	21.12	-78.55	
AVER.	-17.77	-15.31	11.41	14.45	35.39	45.39	53.40	15.96	18.70	-37.17	

Firing Record No. S-51042

TABLE 5.12B.

NO. RDS.

COV

RSD

MR

ES

EVS

EHS

VSD

HSD

VCI

HCI

TGT NO.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
6800N28	-27.09	-67.46	26.66	30.66	79.30	99.90	110.74	35.72	40.63	-412.32	10
6800N29	-51.36	-14.76	34.48	31.22	123.70	103.60	152.57	36.90	46.51	-445.25	10
6800N31	-89.78	-37.51	15.89	42.58	54.00	122.00	122.09	39.50	45.45	297.29	10
MEAN	-56.08	-39.91	25.68	34.82	85.67	108.50	128.47	37.37	44.20	-186.76	
7800N28	-83.85	-57.38	18.68	23.70	52.80	72.70	85.82	25.77	30.18	309.73	10
7800N29	-31.14	-58.18	30.43	43.61	102.50	107.10	139.28	46.81	53.18	-325.88	10
7800N32	-70.02	-86.05	34.99	36.67	103.40	120.00	139.45	42.22	50.69	-61.38	10
MEAN	-61.67	-67.20	28.04	34.66	86.23	99.93	121.52	38.27	44.68	-25.84	
8800N29	-9.71	6.34	44.04	29.49	136.20	105.80	154.81	44.72	53.00	-692.08	10
8800N30	-8.21	-10.01	30.83	55.02	79.70	184.90	194.12	54.31	63.07	-682.39	10
8800N32	-35.10	-25.05	24.75	37.40	77.50	121.70	121.76	38.94	44.85	-145.88	10
MEAN	-17.67	-9.57	33.21	40.63	97.80	137.47	156.90	45.99	53.64	-506.78	
AVER.	-45.14	-38.90	28.97	36.70	89.90	115.30	135.63	40.54	47.51	-239.79	

Firing Record No. S-51042

18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

TABLE 5.12C.

TGT NO. HCI VCI HSD VSD EHS EVS ES MR RSD COV NO.RDS.

6800N28	-0.34	-0.84	0.33	0.38	0.99	1.25	1.38	0.45	0.51	-0.06	10
6800N29	-0.64	-0.18	0.43	0.39	1.55	1.29	1.91	0.46	0.58	-0.07	10
6800N31	-1.12	-0.47	0.20	0.53	0.67	1.52	1.53	0.49	0.57	0.05	10
MEAN	-0.70	-0.50	0.32	0.44	1.07	1.36	1.61	0.47	0.55	-0.03	
7800N28	-1.05	-0.72	0.23	0.30	0.66	0.91	1.07	0.32	0.38	0.05	10
7800N29	-0.39	-0.73	0.38	0.55	1.28	1.34	1.74	0.59	0.66	-0.05	10
7800N32	-0.88	-1.08	0.44	0.46	1.29	1.50	1.74	0.53	0.63	-0.01	10
MEAN	-0.77	-0.84	0.35	0.43	1.08	1.25	1.52	0.48	0.56	-0.00	
8800N29	-0.12	0.08	0.55	0.37	1.70	1.32	1.94	0.56	0.66	-0.11	10
8800N30	-0.10	-0.13	0.39	0.69	1.00	2.31	2.43	0.68	0.79	-0.11	10
8800N32	-0.44	-0.31	0.31	0.47	0.97	1.52	1.52	0.49	0.56	-0.02	10
MEAN	-0.22	-0.12	0.42	0.51	1.22	1.72	1.96	0.57	0.67	-0.08	
AVER.	-0.56	-0.49	0.36	0.46	1.12	1.44	1.70	0.51	0.59	-0.04	

Firing Record No. S-51042

TABLE 5.13A.

TGT NU.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO. RDS.
6800B25	-52.59	1.62	18.92	17.39	47.64	47.48	53.52	24.08	25.69	-18.91	10
6800N26	-43.44	-4.76	10.77	15.22	28.74	48.15	48.99	16.39	18.64	42.31	10
6800N27	-41.30	-0.34	15.68	13.11	42.91	41.54	56.72	17.78	20.44	73.80	10
MEAN	-45.78	-1.16	15.12	15.24	39.76	45.72	53.08	19.41	21.59	32.40	
7800R25	-35.21	-2.04	6.16	17.49	17.32	49.68	49.94	15.70	18.54	10.72	10
7800N26	-55.03	-16.56	11.21	13.73	36.81	37.76	48.84	14.81	17.72	-115.59	10
7800N27	-37.81	-16.94	10.91	21.42	36.69	62.83	67.62	18.91	24.04	-92.20	10
MEAN	-42.68	-11.85	9.43	17.55	30.28	50.09	55.46	16.47	20.10	-65.69	
8800Y25	-48.28	12.16	11.66	12.31	35.98	41.34	42.01	14.07	16.95	12.43	10
8800N26	-46.26	-3.32	12.39	11.42	28.66	43.15	43.28	15.16	16.85	-16.90	10
8800N27	-65.25	9.35	15.46	13.01	50.04	45.12	56.53	17.43	20.21	-59.24	10
MEAN	-53.26	6.06	13.17	12.25	38.23	43.20	47.27	15.55	18.00	-21.24	
AVER.	-47.24	-2.32	12.57	15.01	36.09	46.34	51.94	17.15	19.90	-18.18	

Firing Record No. S-51042

TABLE 5.13B.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO.RDS.
6800B25	-133.59	4.11	48.05	44.16	121.00	120.60	135.94	61.16	65.26	-122.00	10
6800N26	-110.34	-12.10	27.34	38.65	73.00	122.30	124.43	41.63	47.35	272.99	10
6800N27	-104.90	-0.87	39.83	33.30	109.00	105.50	144.06	45.15	51.91	476.11	10
MEAN	-116.28	-2.95	38.41	38.70	101.00	116.13	134.81	49.31	54.84	209.04	
7800R25	-89.44	-5.19	15.64	44.41	44.00	126.20	126.84	39.87	47.09	69.17	10
7800N26	-139.78	-42.06	28.47	34.87	93.50	95.90	124.05	37.62	45.02	-745.77	10
7800N27	-96.04	-43.03	27.71	54.42	93.20	159.60	171.75	48.03	61.07	-594.86	10
MEAN	-108.42	-30.09	23.94	44.57	76.90	127.23	140.88	41.84	51.06	-423.82	
8800Y25	-122.63	30.88	29.62	31.26	91.40	105.00	106.71	35.74	43.06	80.20	10
8800N26	-117.50	-8.43	31.47	29.00	72.80	109.60	109.93	38.52	42.79	-109.04	10
8800N27	-165.74	23.74	39.27	33.06	127.10	114.60	143.58	44.27	51.34	-382.18	10
MEAN	-135.29	15.40	33.45	31.10	97.10	109.73	120.07	39.51	45.73	-137.01	
AVER.	-120.00	-5.88	31.93	38.13	91.67	117.70	131.92	43.55	50.54	-117.26	

TABLE 5.13C.

TGT NO.	HCI	VCI	HSD	VSD	EHS	EVS	ES	MR	RSD	COV	NO.RDS.
6800825	-1.67	0.05	0.60	0.55	1.51	1.51	1.70	0.76	0.82	-0.02	10
6800N26	-1.38	-0.15	0.34	0.48	0.91	1.53	1.56	0.52	0.59	0.04	10
6800N27	-1.31	-0.01	0.50	0.42	1.36	1.32	1.80	0.56	0.65	0.07	10
MEAN	-1.45	-0.04	0.48	0.48	1.26	1.45	1.69	0.62	0.69	0.03	
7800R25	-1.12	-0.06	0.20	0.56	0.55	1.58	1.59	0.50	0.59	0.01	10
7800N26	-1.75	-0.53	0.36	0.44	1.17	1.20	1.55	0.47	0.56	-0.12	10
7800N27	-1.20	-0.54	0.35	0.68	1.16	1.99	2.15	0.60	0.76	-0.09	10
MEAN	-1.36	-0.38	0.30	0.56	0.96	1.59	1.76	0.52	0.64	-0.07	
8800Y25	-1.53	0.39	0.37	0.39	1.14	1.31	1.33	0.45	0.54	0.01	10
8800N26	-1.47	-0.11	0.39	0.36	0.91	1.37	1.37	0.48	0.53	-0.02	10
8800N27	-2.07	0.30	0.49	0.41	1.59	1.43	1.79	0.55	0.64	-0.06	10
MEAN	-1.69	0.19	0.42	0.39	1.21	1.37	1.50	0.49	0.57	-0.02	
AVER.	-1.50	-0.07	0.40	0.48	1.15	1.47	1.65	0.54	0.63	-0.02	

APPENDIX 2-13B

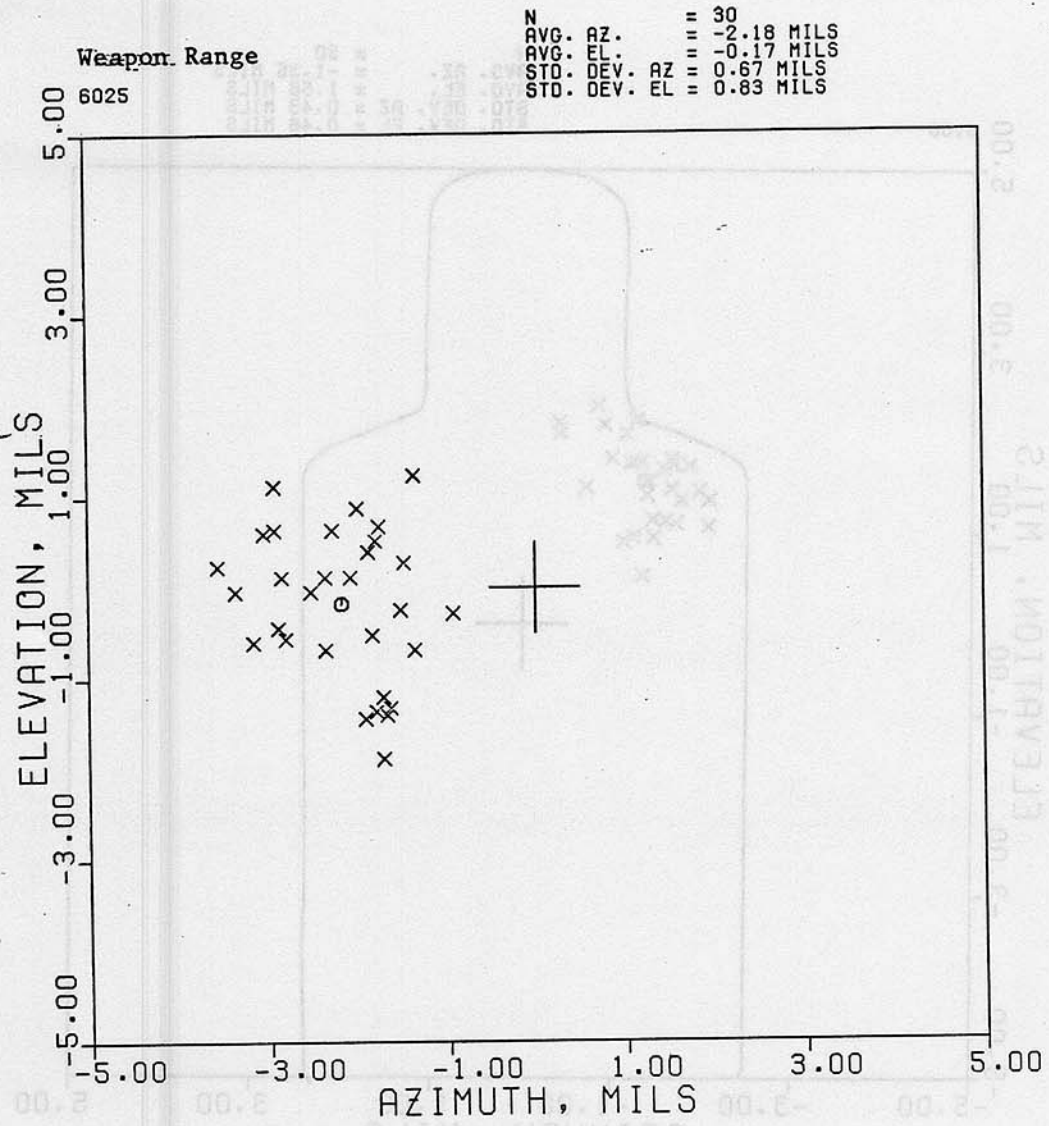


Figure 5.1.

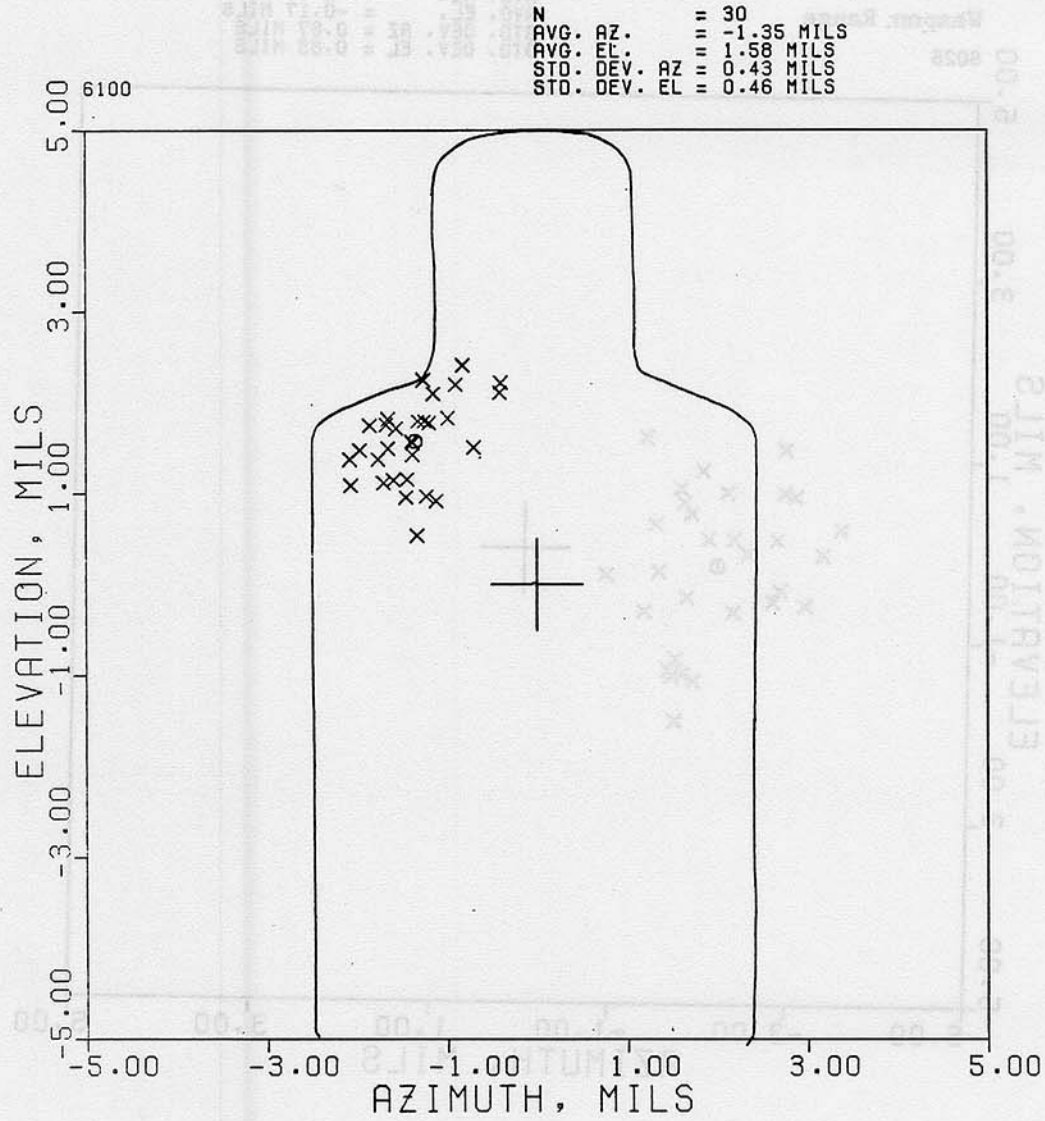


Figure 5.2.

Firing Record No. S-51042

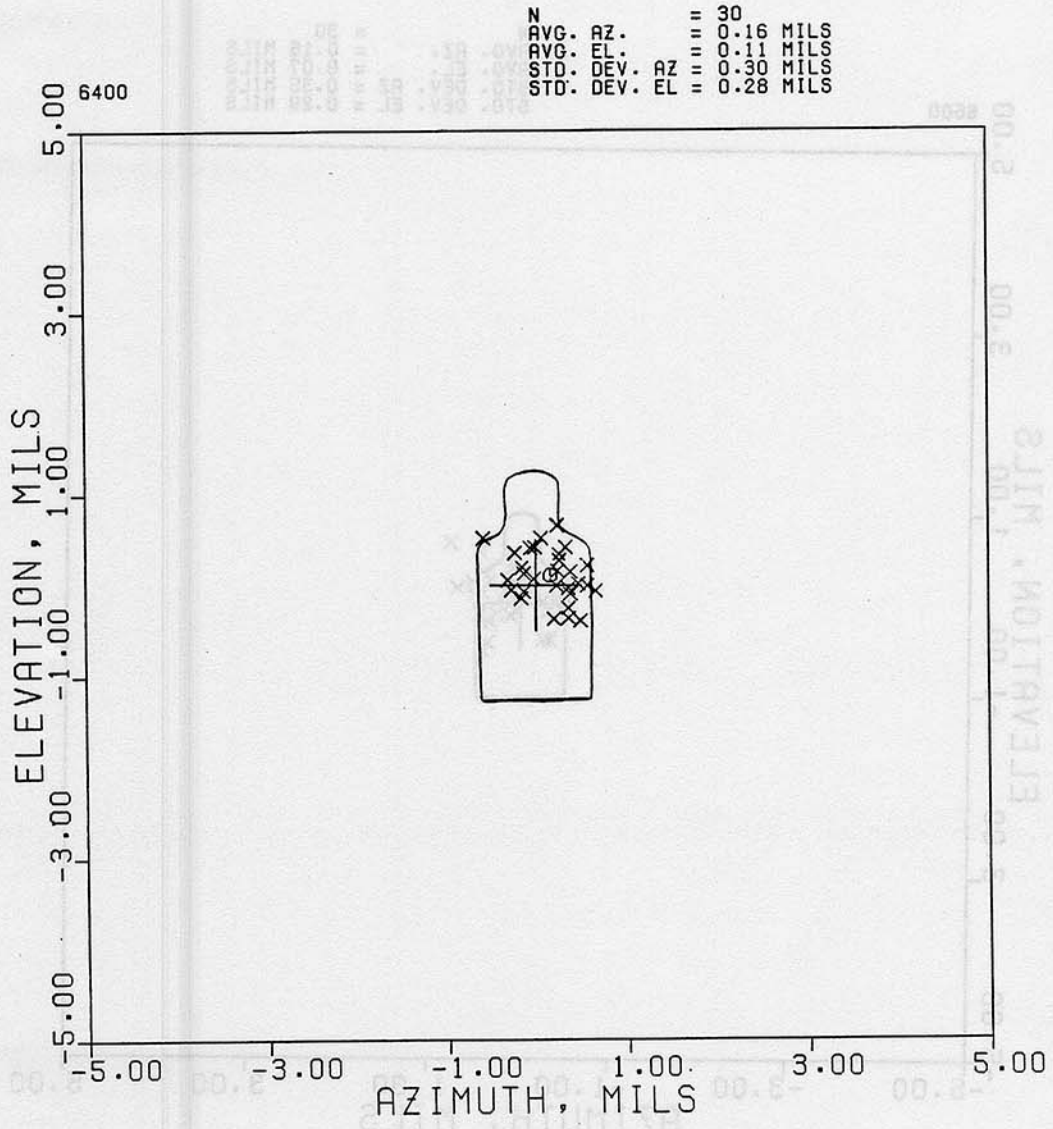


Figure 5.5.

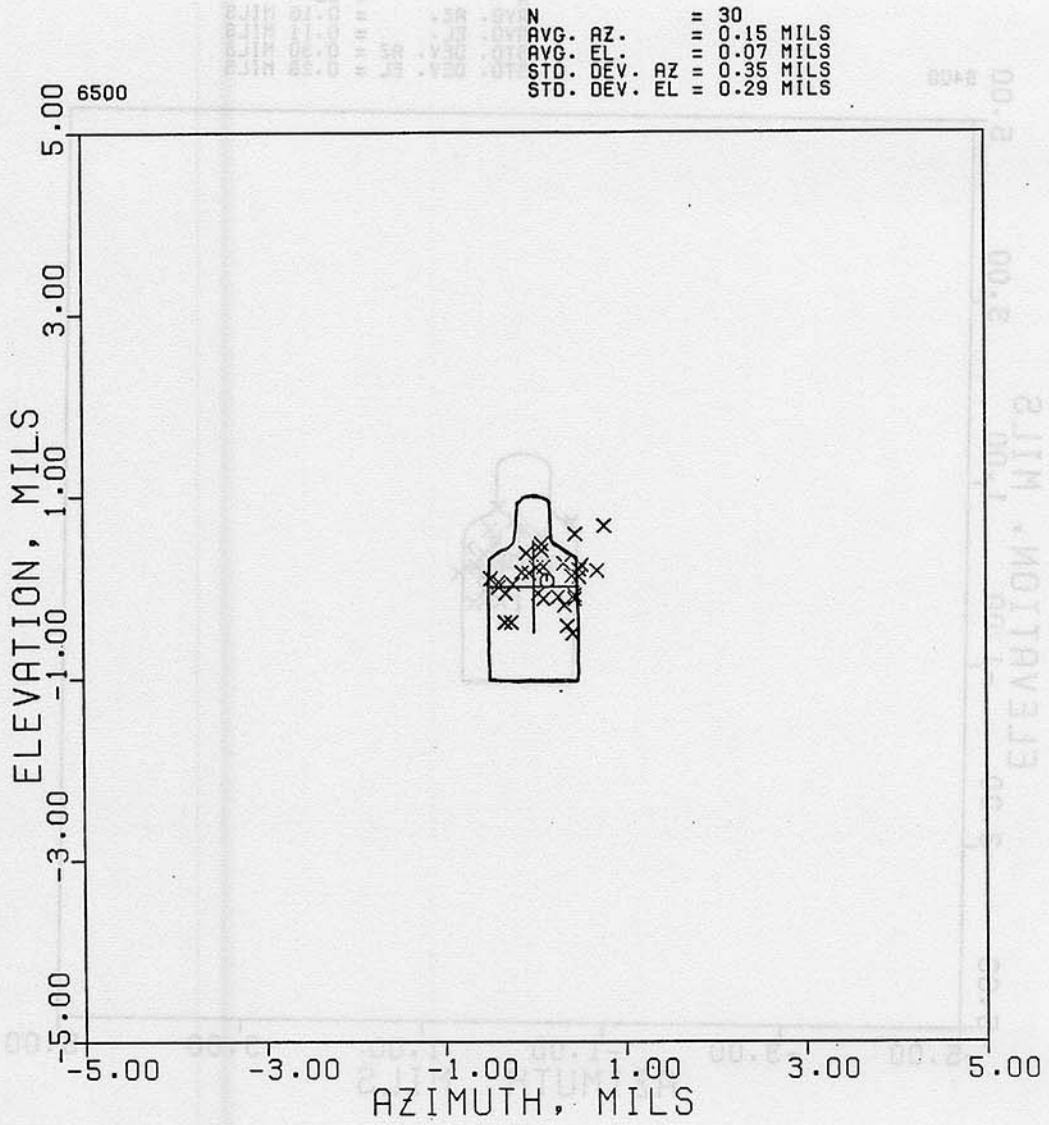


Figure 5.6.

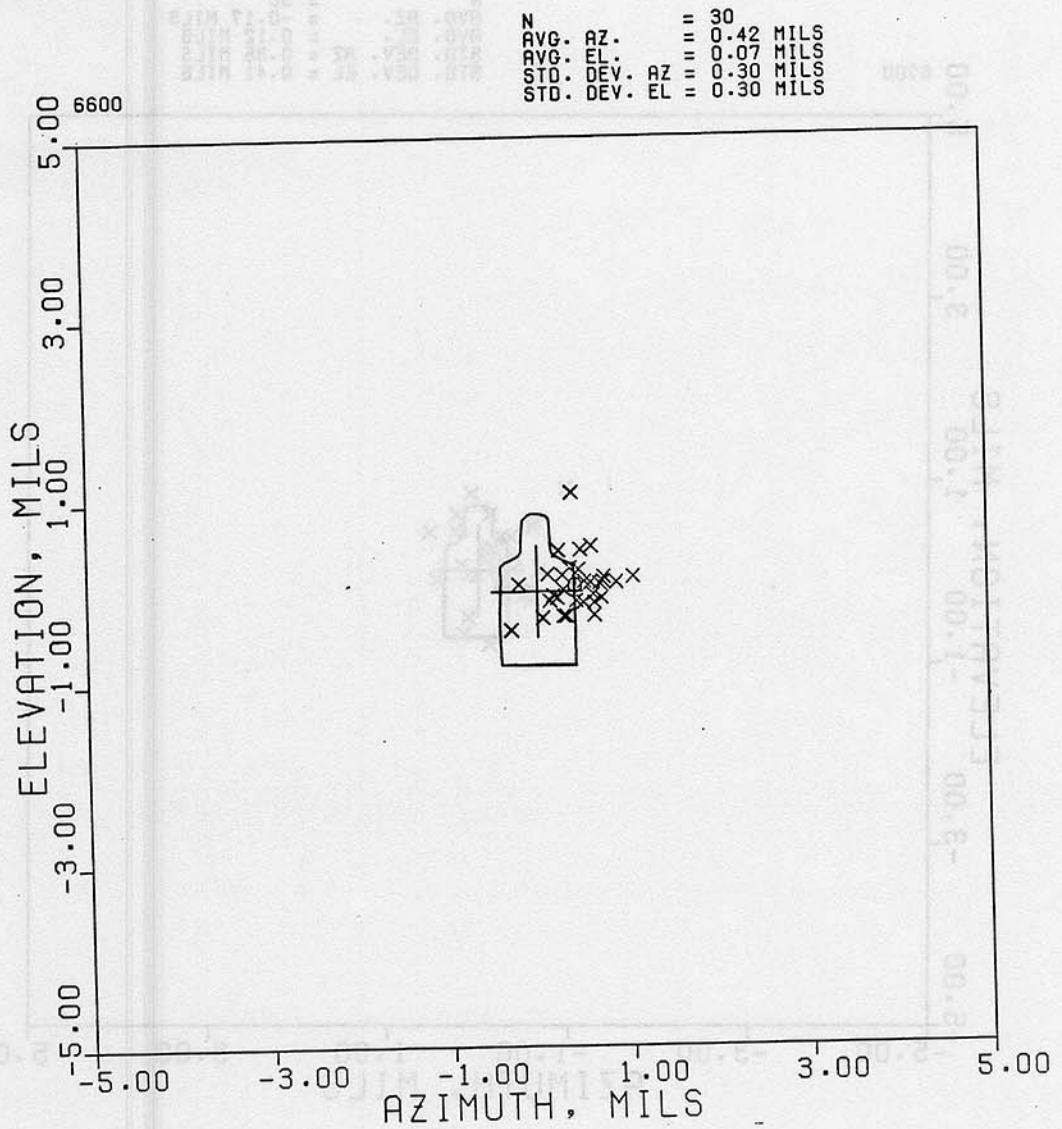


Figure 5.7.

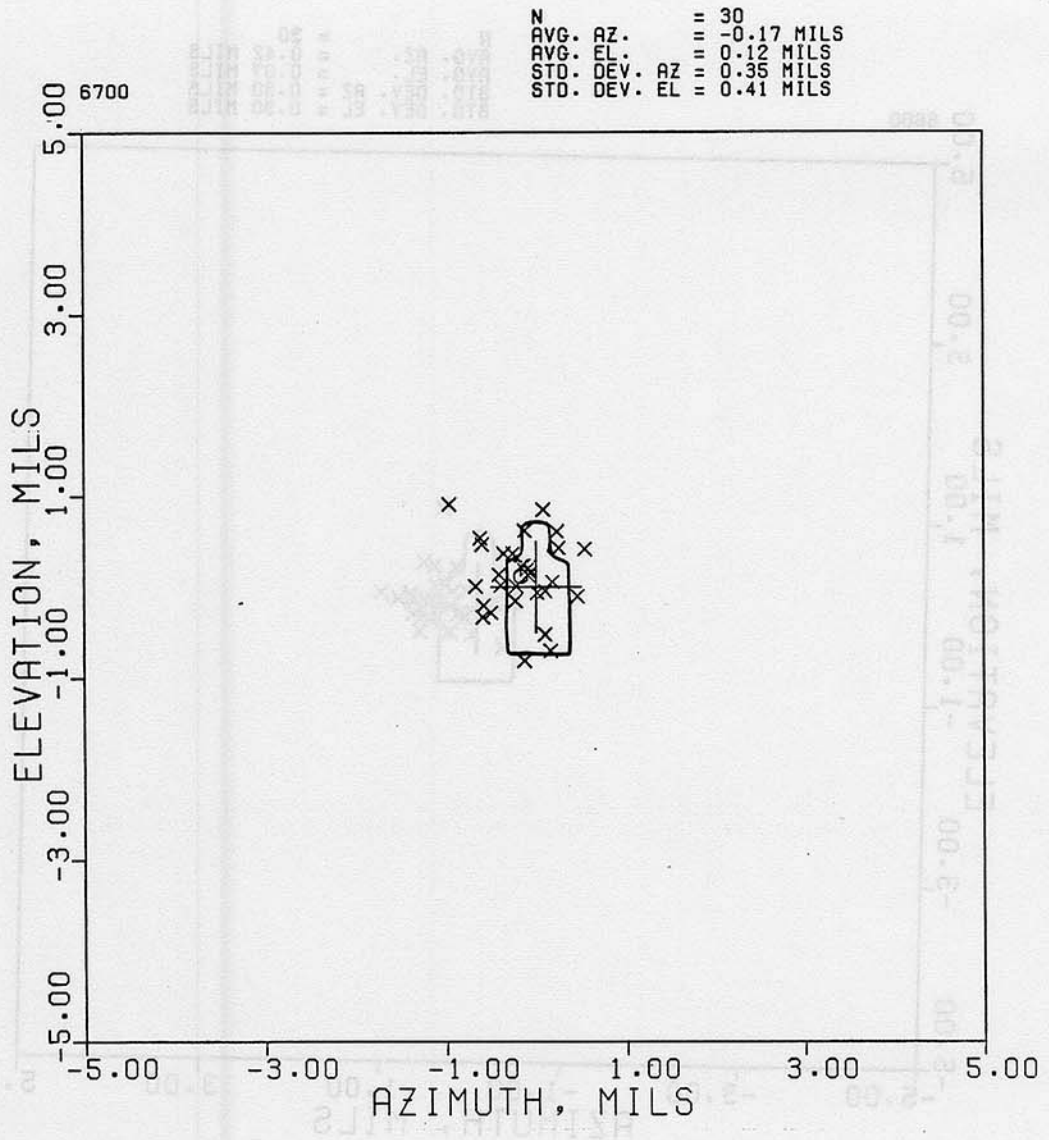


Figure 5.8.

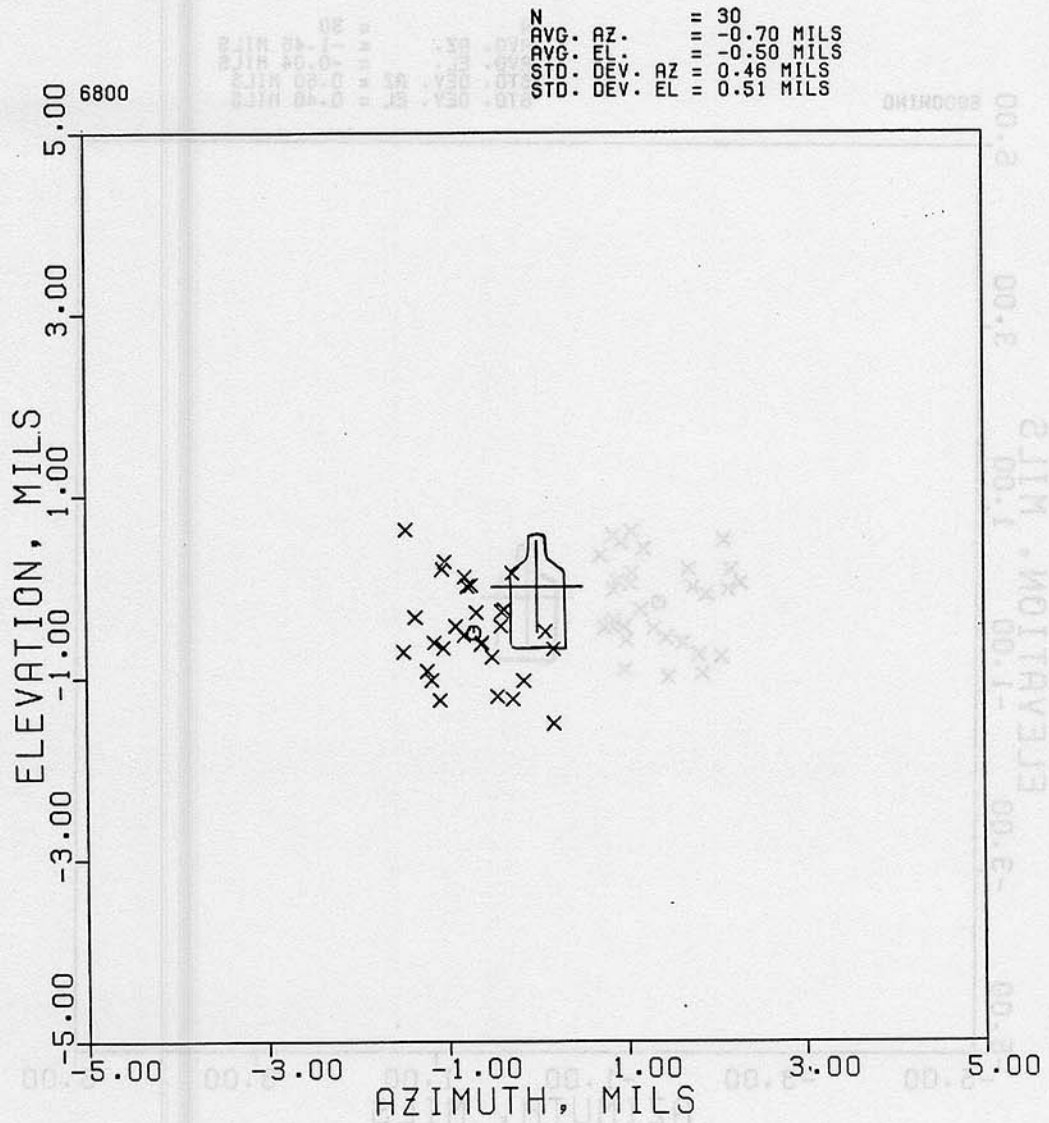


Figure 5.9.

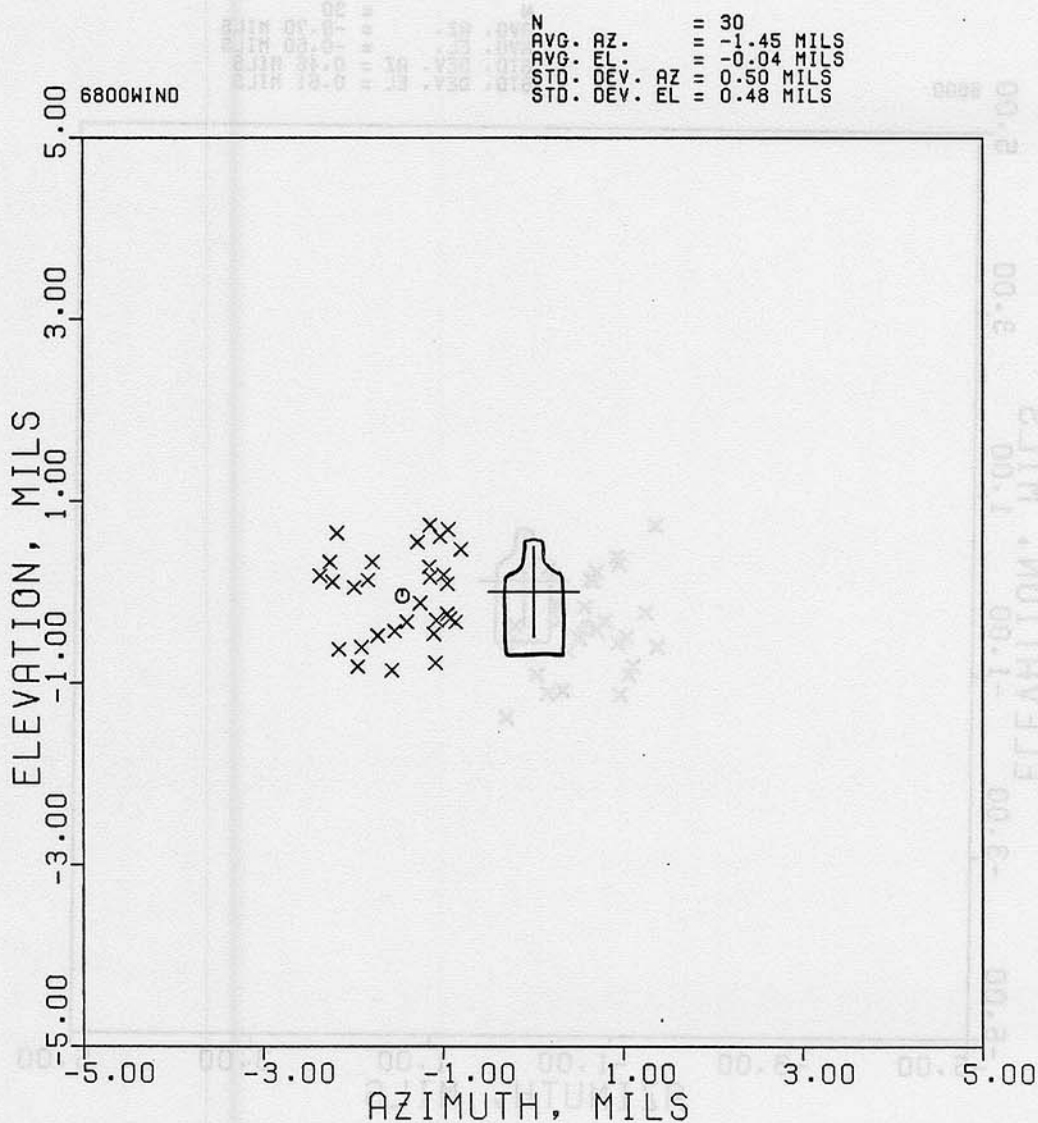


Figure 5.10.

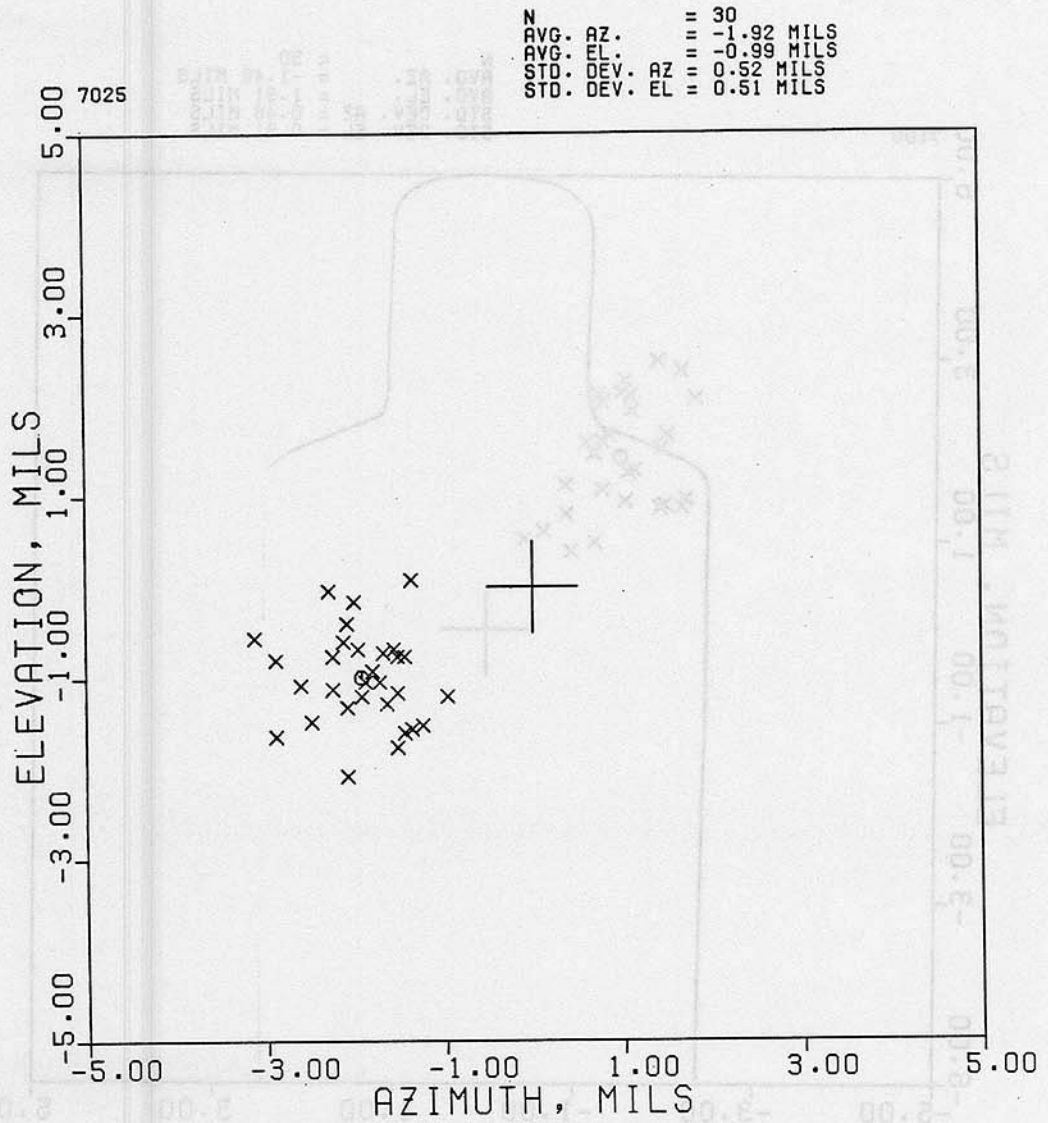


Figure 5.11.

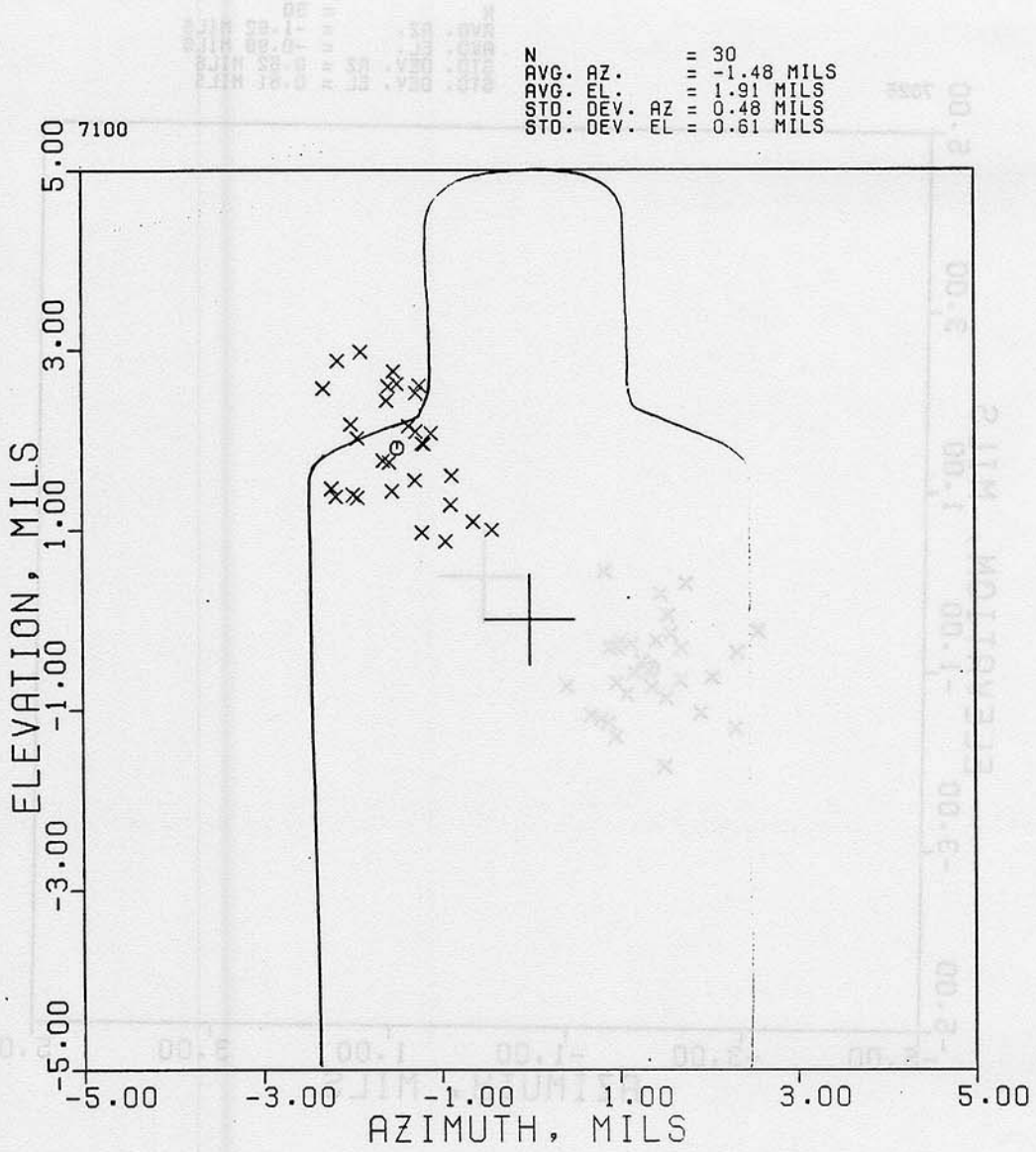


Figure 5.12.

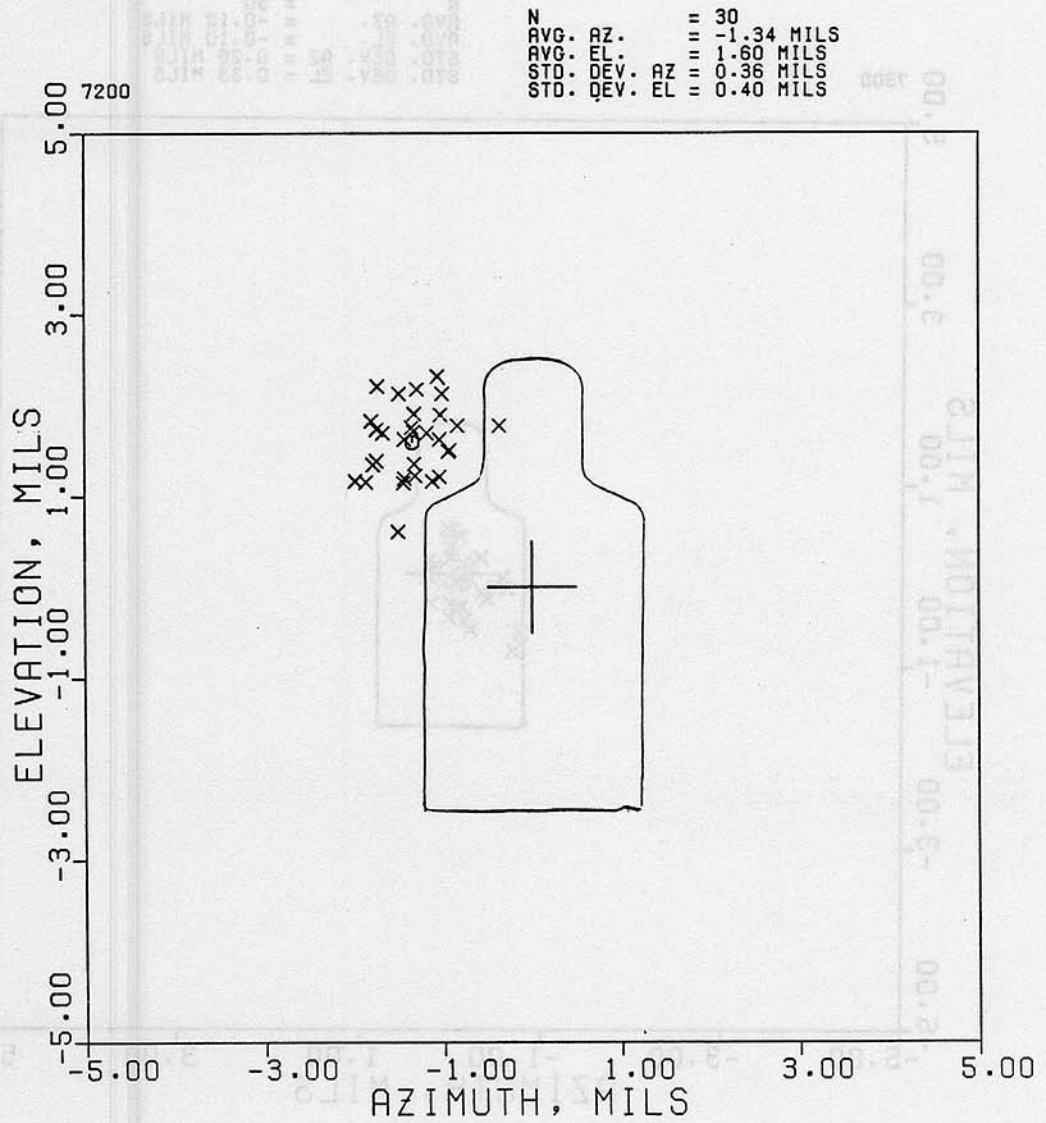


Figure 5.13:

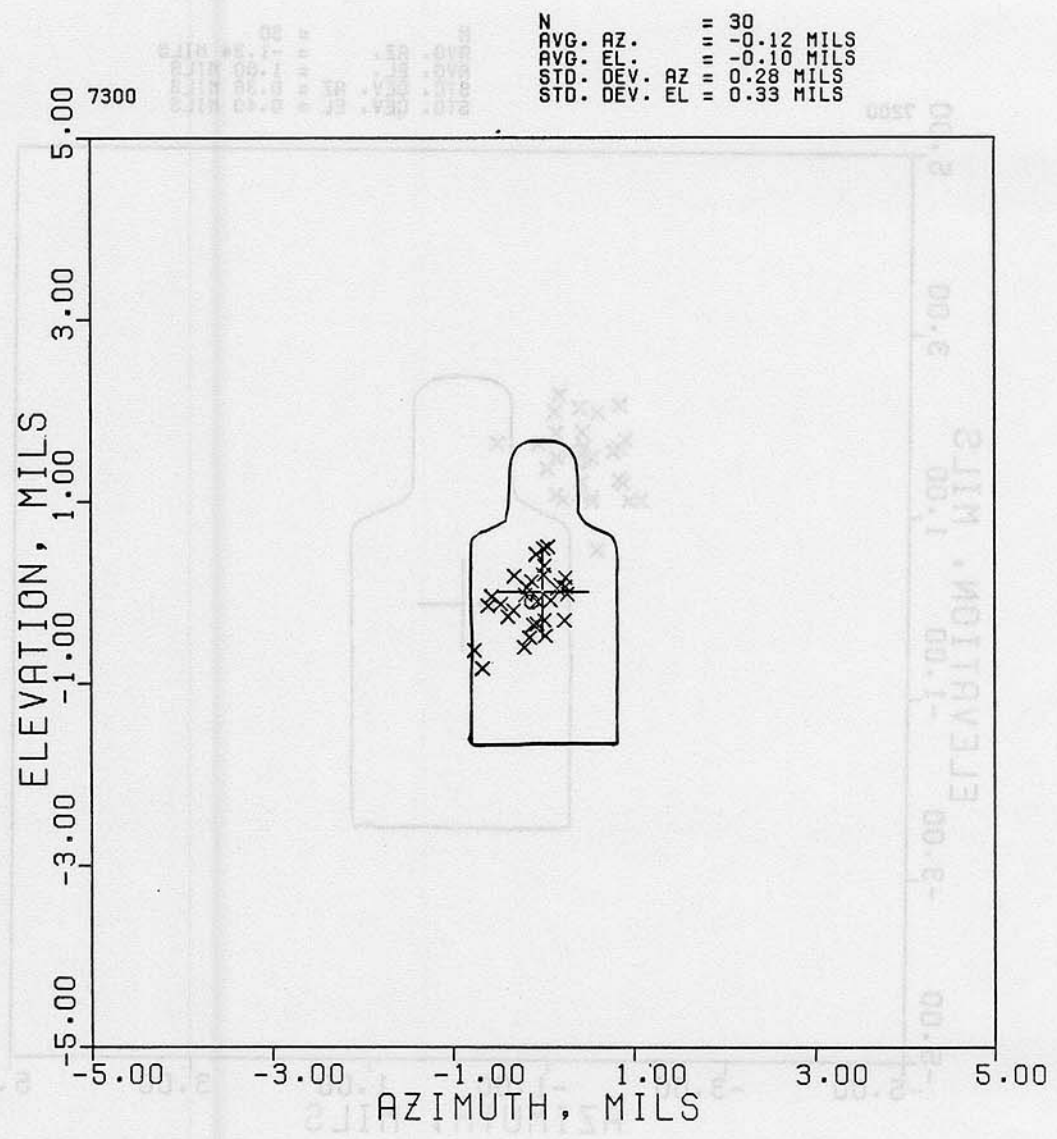


Figure 5.14.

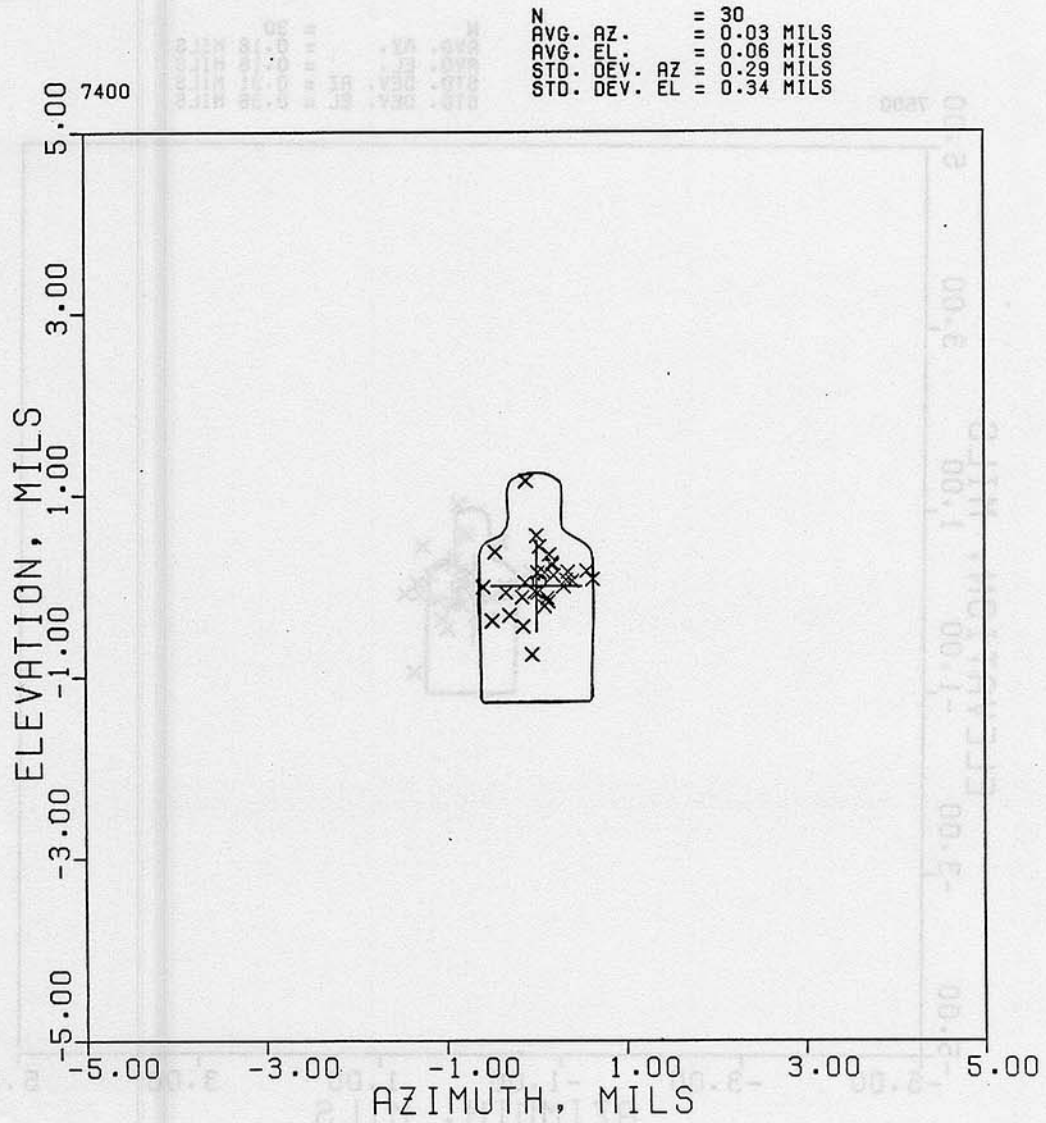


Figure 5.15.

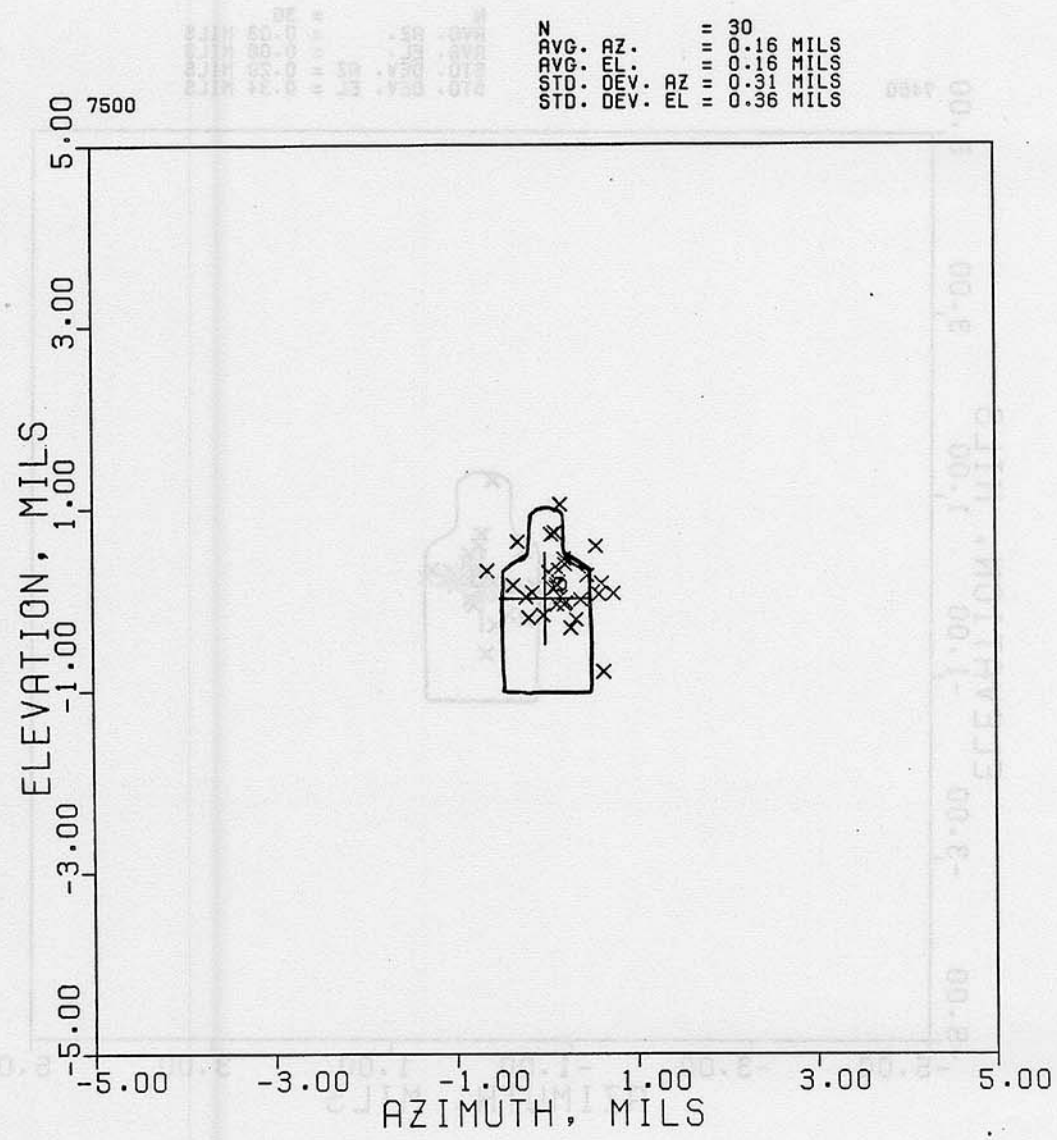


Figure 5.16.

N = 30
AVG. AZ. = 0.06 MILS
AVG. EL. = 0.07 MILS
STD. DEV. AZ = 0.35 MILS
STD. DEV. EL = 0.28 MILS

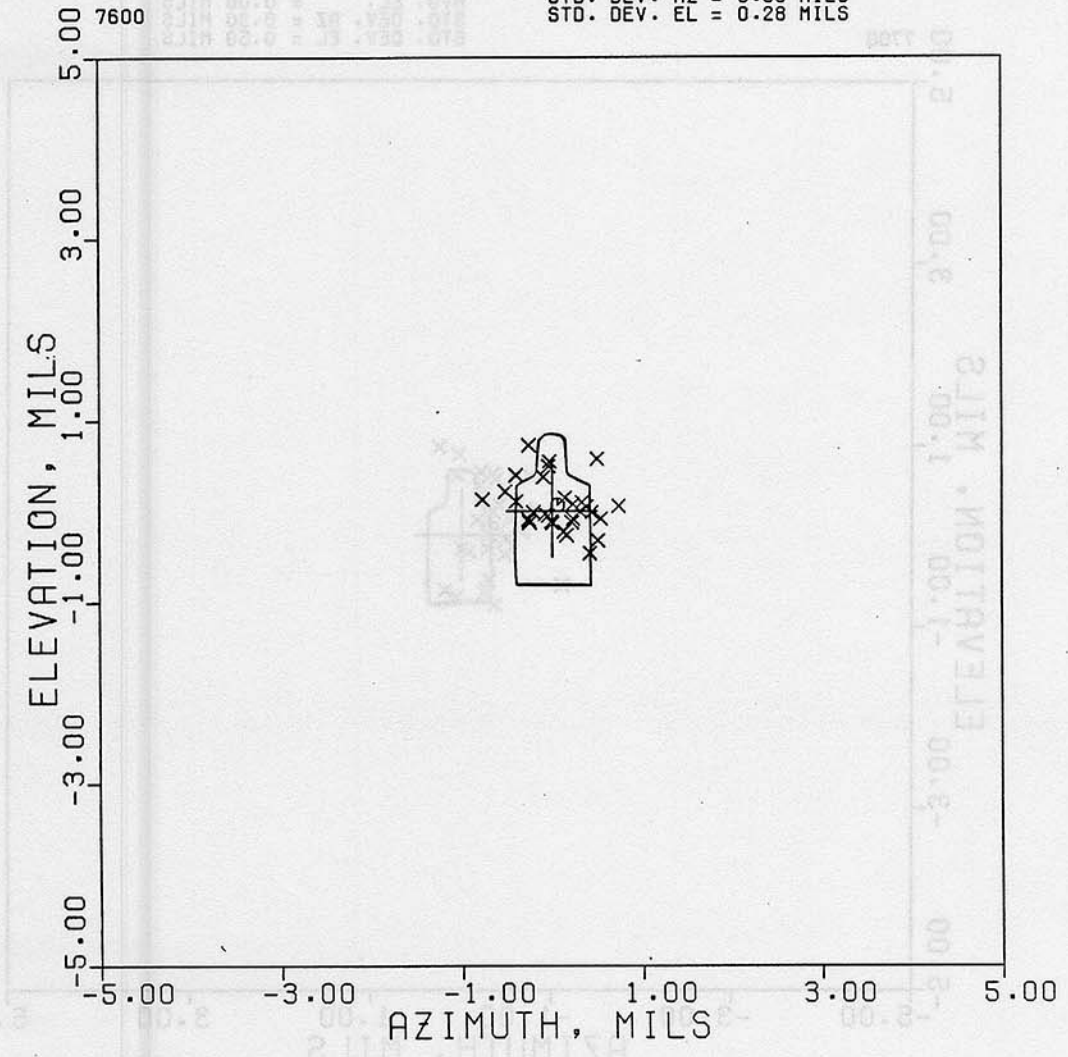


Figure 5.17.

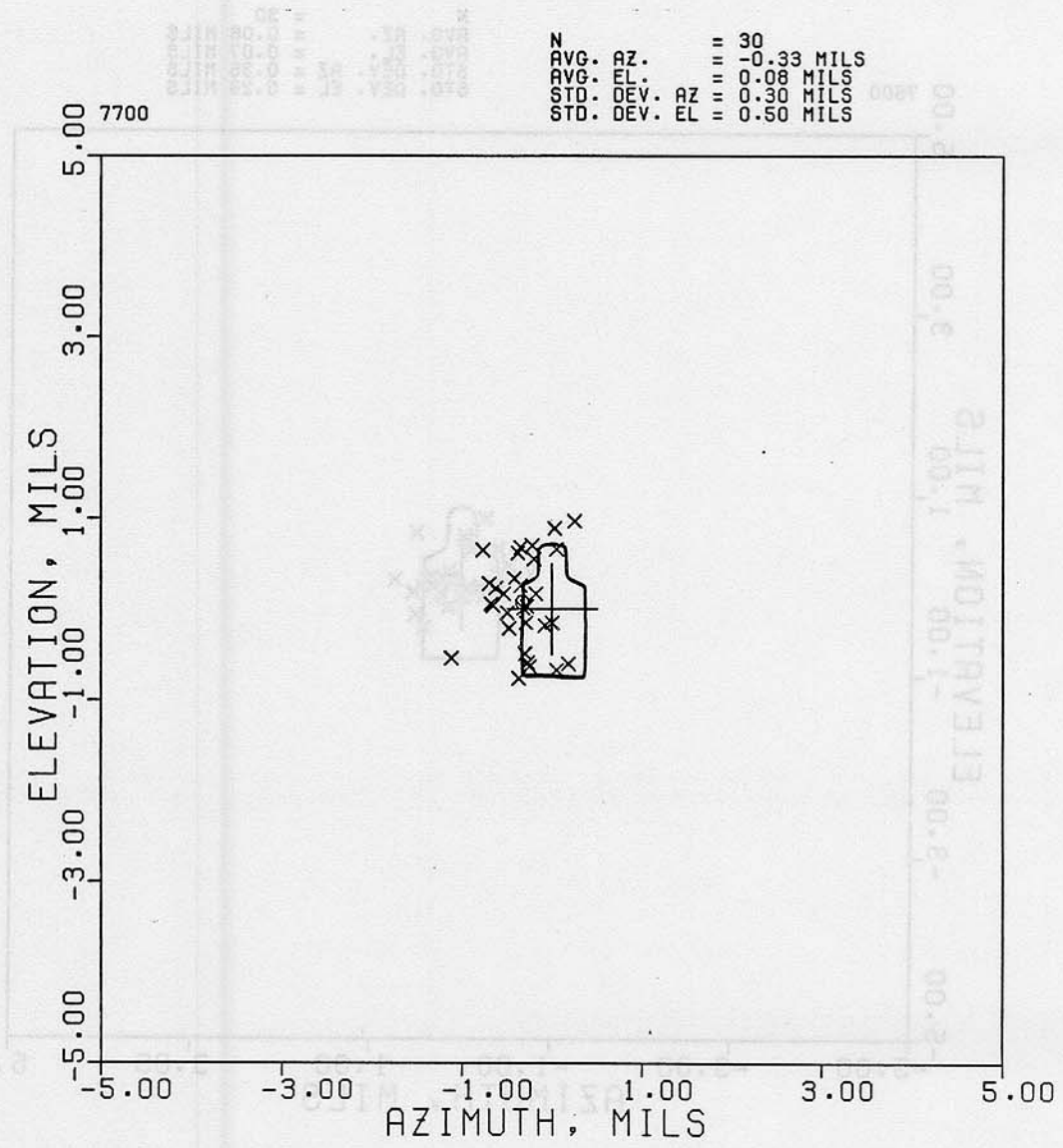


Figure 5.18.

N = 30
AVG. AZ. = -0.77 MILS
AVG. EL. = -0.84 MILS
STD. DEV. AZ = 0.45 MILS
STD. DEV. EL = 0.46 MILS

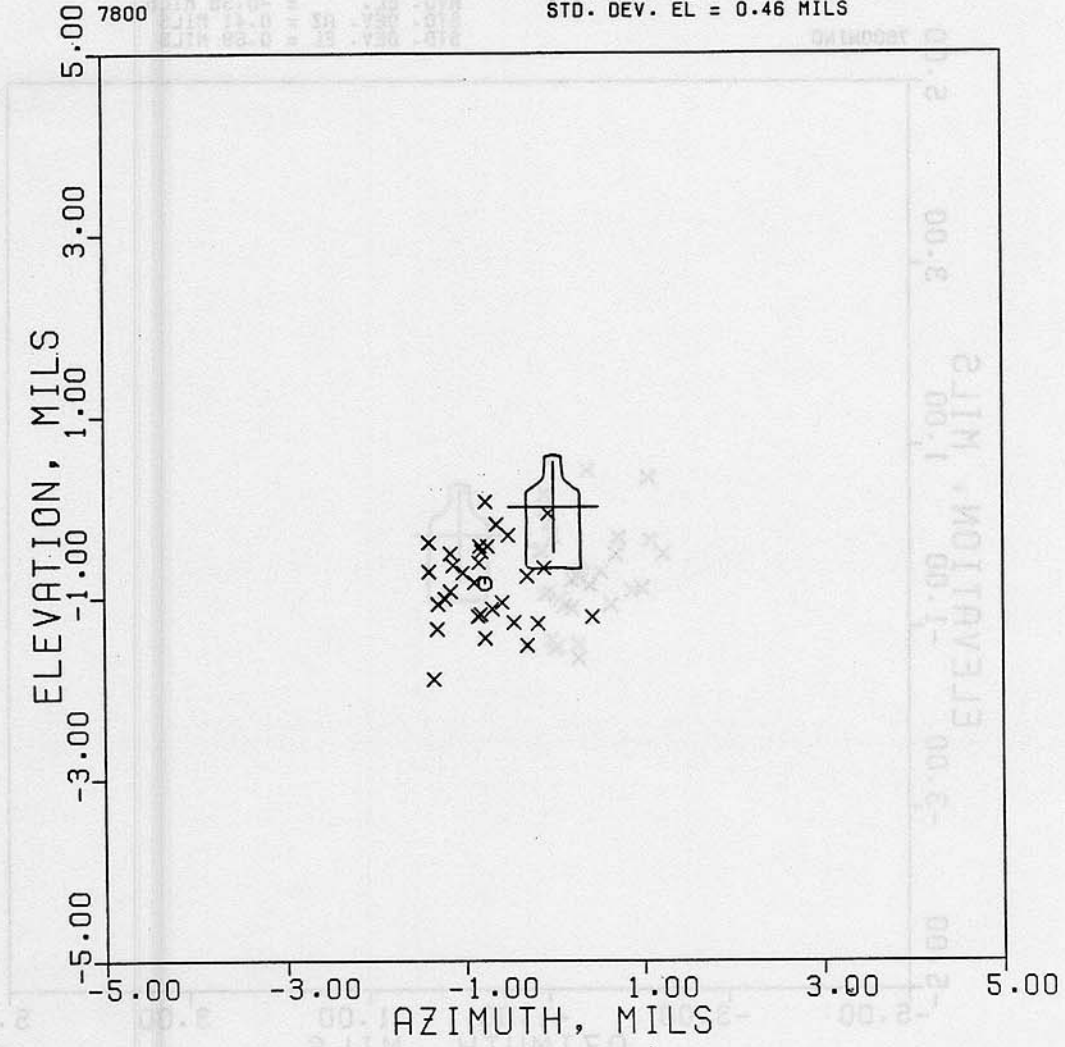


Figure 5.19.

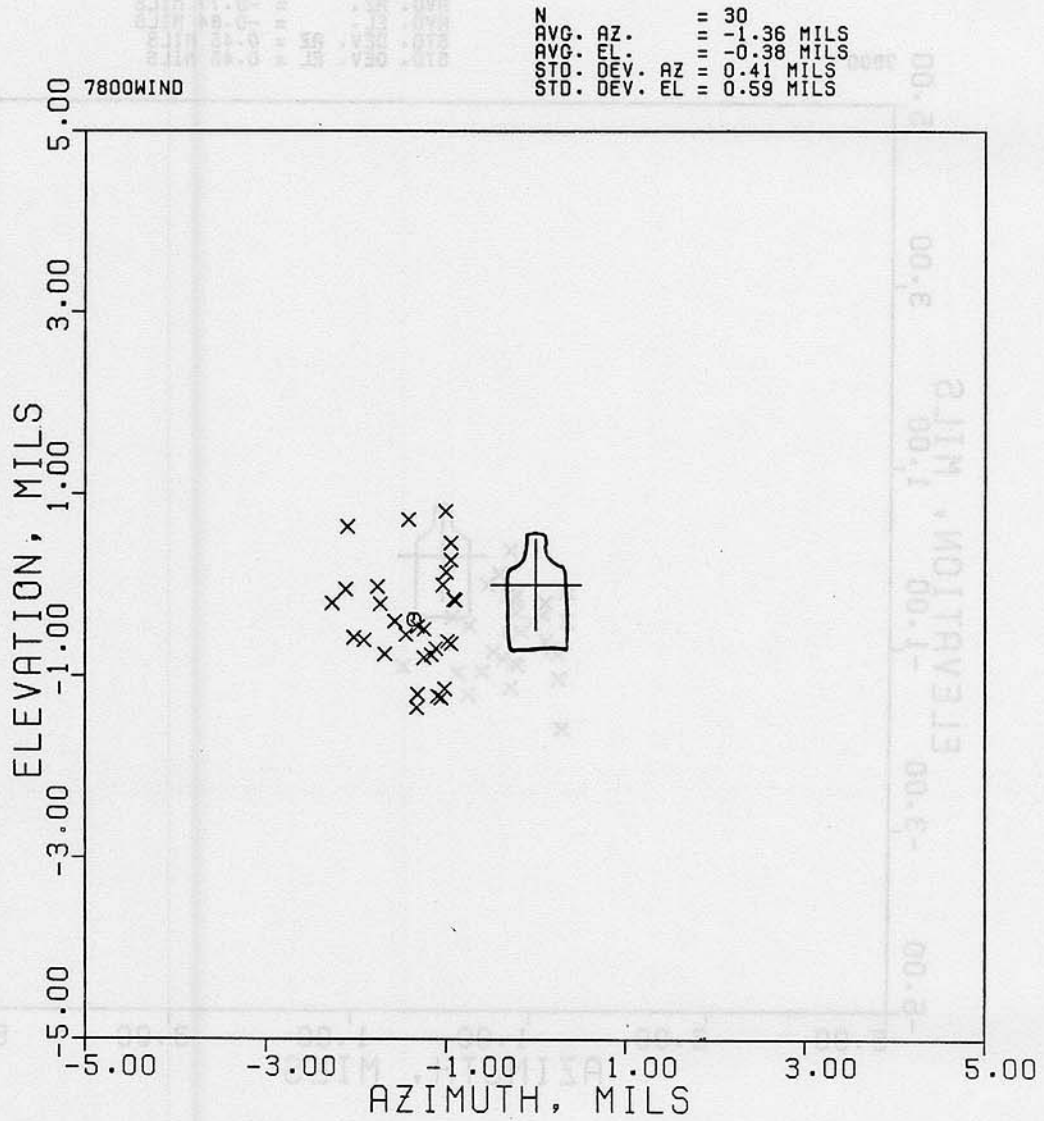


Figure 5.20.

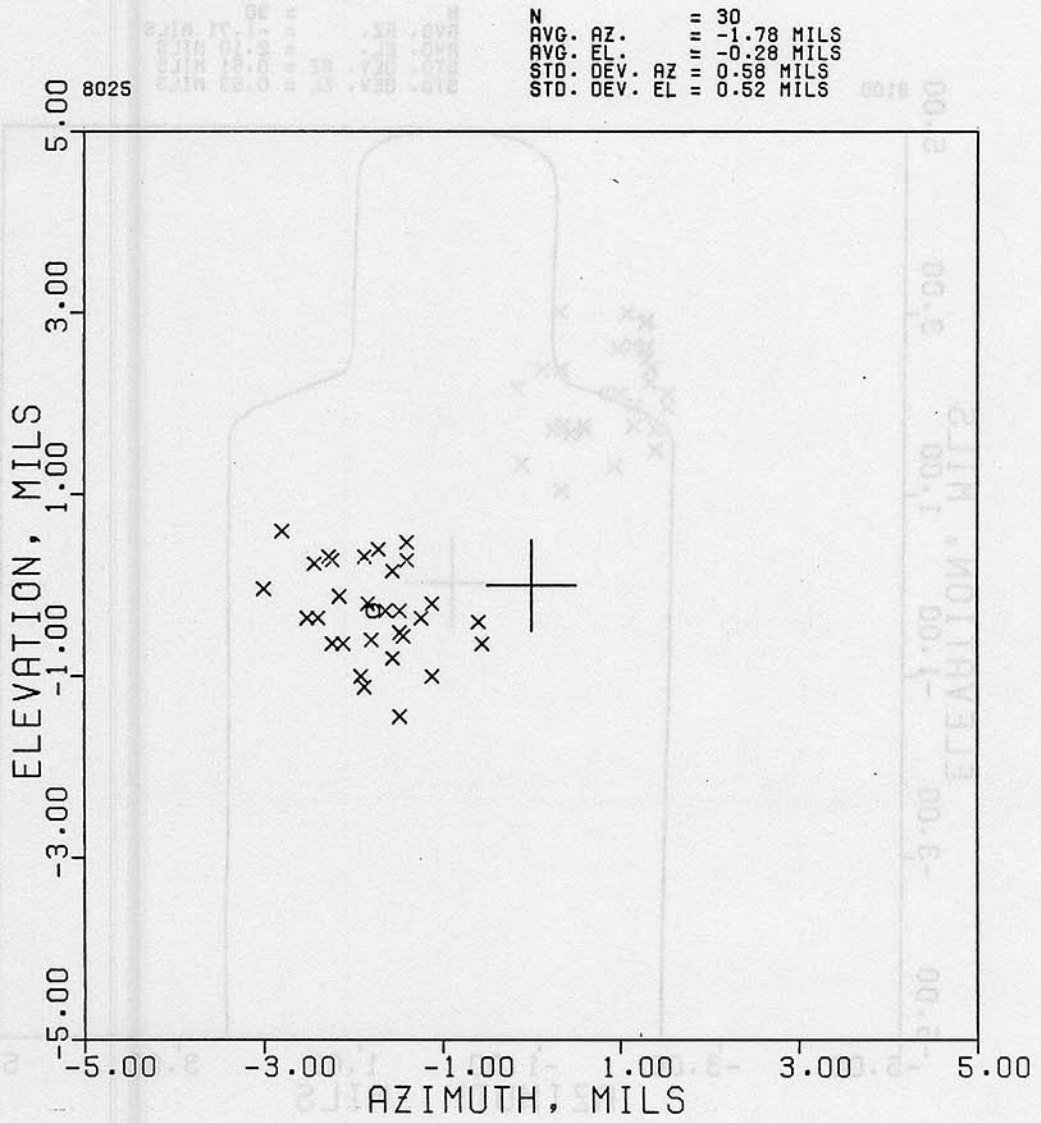


Figure 5.21.