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REMOTE SYSTEM MONITOR TYPE FA-9852/1

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Harry L. Brown



FEDERAL AVIATION ADMINISTRATION

DATA REPORT

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<p>16. Abstract</p> <p>Data were collected on the performance of the Remote System Monitor (RSM), type FA-9852/1, at the Federal Aviation Administration (FAA) Technical Center. The RSM supports the Radar Beacon Performance Monitor (RBPM) program.</p> <p>The performance was monitored in a real world environment as a subtask of 9550-AAF-501-78-002.</p> <p>The parameters observed were azimuth, range, mode 3A code, altitude, and replies per scan. This data report contains the results of these tests.</p>			
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INTRODUCTION

PURPOSE.

The purpose of this test was to observe the operational characteristics of the Remote System Monitor (RSM), type FA-9852/1, in a real world environment over a period of 30 days.

BACKGROUND.

Under 9550-AAF-501-78-002 the Federal Aviation Administration (FAA) Technical Center is providing technical and analytical support to the Airway Facilities Service (AAF) in the Remote Maintenance Monitoring System (RMMS) program. Task No. 8 provides support to the Radar Beacon Performance Monitor (RBPM) program. One subtask is to monitor the performance of the RSM in a real environment.

The RSM is comprised of dual transponders with automatic switchover capability and antenna system FA-9853. During normal operation, the RSM is installed in a fixed remote position and operates in conjunction with an air traffic control beacon interrogator (ATCBI). The RSM provides the ATCBI with a reference target, which is displayed on controller displays such as the AN/TPX-42, Automated Radar Terminal Systems (ARTS) II, ARTS III, and Bright Radar Indicator Tower Equipment (BRITE). Precise azimuth and range is provided to enable an accurate and comprehensive system check.

The RSM was installed in a laboratory in building 301 at the FAA Technical Center on June 2, 1980, for a 30 day test period.

DISCUSSION

INSTALLATION.

The RSM was installed in room 300, a laboratory in building 301, and connected to its antenna via an existing RG-214 coaxial cable. This cable was approximately 100 feet long. The antenna was mounted on a 10-foot section of 4-inch pipe, which was affixed to a platform on the roof of building 301. The 45° horn antenna was oriented so it could "see" the Airport Surveillance Radar (ASR)-4 and ASR-5 Beacon radar sites, and not "see" the ASR-7. This was done because of the very close proximity of the ASR-7 (see figure 1). The internal attenuator in the RSM was set to 30 decibels (dB) to further reduce the effects of the ASR-7.

The RSM produces a radiofrequency (RF) pulse train in reply to interrogations from an ATCBI. This reply produces a target on a radar display, similar to all the aircraft on that display. For this reason, an assigned code and altitude were obtained from air traffic control (ATC) personnel. The RSM was assigned a mode 3A code of 1275 and a mode C altitude of 100 feet. A delay of 360 microseconds was set into the RSM. This placed the RSM target return on the radar display at a range of approximately 30 miles from the radar, at an altitude of 100 feet, with an azimuth of approximately 108°.

TESTING.

Prior to placing the RSM in operation, sample commissioning data were taken for use in preparing a Sample Performance Acceptance Record. This was

accomplished using an 8925/ATC Transponder Test Set in the Technical Center Avionics Shop. After completion of the sample data measurements, the RSM was reinstalled in the laboratory in an operational configuration (see figure 2) to operate 24 hours a day for 30 days. (Note that figure 2 is the operational configuration, and figure 3 is the power reading configuration.)

During this test period, the performance of the RSM was observed in a real radar environment with on-line RSM channels being alternated on a daily basis. This was accomplished through the use of the commissioned ASR-4 radar/beacon site and the Terminal Automation Test Facility (TATF) in building 250. The beacon at the ASR-4 site is an ATCBI-3, and the TATF is an ARTS III test facility. Using the ARTS III operational program, version AO-15, RSM data were collected and recorded. Particular information about the replies from the RSM, such as number of returns per scan, reply beacon code, range, azimuth, and altitude were recorded to be reduced at a later time using the "Data Reduction and Analysis for Maintenance (DRAM) Program." Sample printouts of target reports (declared targets) are shown in appendix A, and sample printouts of target reply data (individual replies) are shown in appendix B. These data were analyzed to determine the operational characteristics of the RSM. Figures 4A and 4B show a distribution of 100 target reports from the RSM channel A and channel B, using the same beacon interrogator channel. The mean azimuth was 108.34° for channel A and 108.28° for channel B. The range for both channels for the 100 target reports remained a constant 30.13 miles. It was found that the only change in range occurred when the beacon interrogator channels were switched. With the ATCBI-3 system 1 the reported range was 30.13 miles, but with system 2 the reported range was 30.06 miles, a

difference of one range cell or one-sixteenth of a mile. Figures 5A and 5B are plots of the distribution of the number of replies per target report for the same sample of 100 reports.

During the test period, the RSM output power and transmitter supply voltage were measured on the dates shown in table 1. This was accomplished using the configuration shown in figure 3 for power measurements.

During the power checks on June 17 it was noted that the power output of channel B had dropped to less than one watt. Channel B was then powered down. On June 20 it was determined that the 6 dB attenuator in the output of channel B had failed. Since a spare attenuator was not available, channel A's attenuator was placed into channel B. Channel B then stayed continuously on-line until June 25, when a new attenuator was received and installed in channel A, which was then put back in service. Because of the outage due to the attenuator failure, the test period was extended to July 21. On July 21, 1980, the RSM was removed from service. Postservice data were again taken in the Avionics Shop. This marked the termination of the evaluation at the FAA Technical Center.

DISCREPANCIES NOTED.

1. During initial testing on June 2, the mode C code switch (A-4) was found to be bad. A jumper was added on the printed circuit board to temporarily bypass the problem.
2. Upon initiation of power readings (see table 1) a discrepancy of the voltage versus power ratio between channel A and channel B was noted. After the channel B attenuator was replaced, there was closer agreement of the voltage readings between the two channels.

3. On June 17, the 6 dB attenuator in the output of channel B failed.

4. On July 21, during postservice testing in the Avionics Shop, some

waveform irregularities were noted on channel A. These were called to the attention of the contractor and the Washington Program Manager and are to be corrected by the contractor.

TABLE 1. OUTPUT POWER READINGS

<u>Date</u>	<u>Variable Supply A* (Volts)</u>	<u>Power A (Watts)</u>	<u>Variable Supply B* (Volts)</u>	<u>Power B (Watts)</u>
June 13	37	35	45	35
16	37	35	45	35
17	37	35	45	failed
18	37	35	out of service (see text)	
19	37	35	out of service (see text)	
20	out of service (see text)		40.5	35
23	out of service (see text)		40.5	35
24	out of service (see text)		40.5	35
25	37	35	40.5	35
26	37	35	40.5	35
27	37	35	40.5	35
30	37	34.5	40.5	35
July 1	37	34.5	40.5	35
2	37	34.5	40.5	35
3	37	34.5	40.5	35
8	37	34.5	40.5	35
15	37	34.5	40.5	35
21	37	34.5	40.5	35

* Readings obtained from front panel meter.

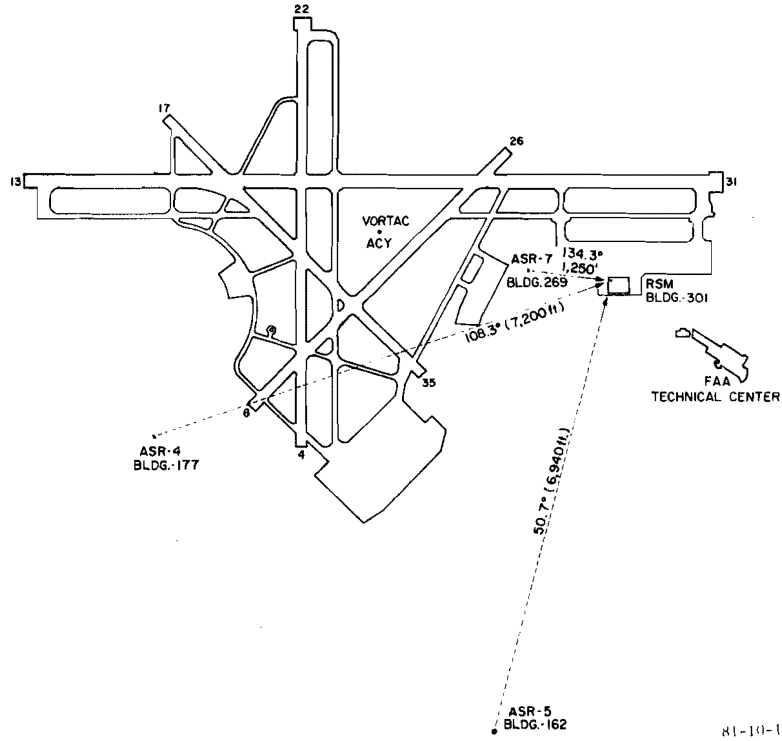


FIGURE 1. RSM INSTALLATION LOCATION

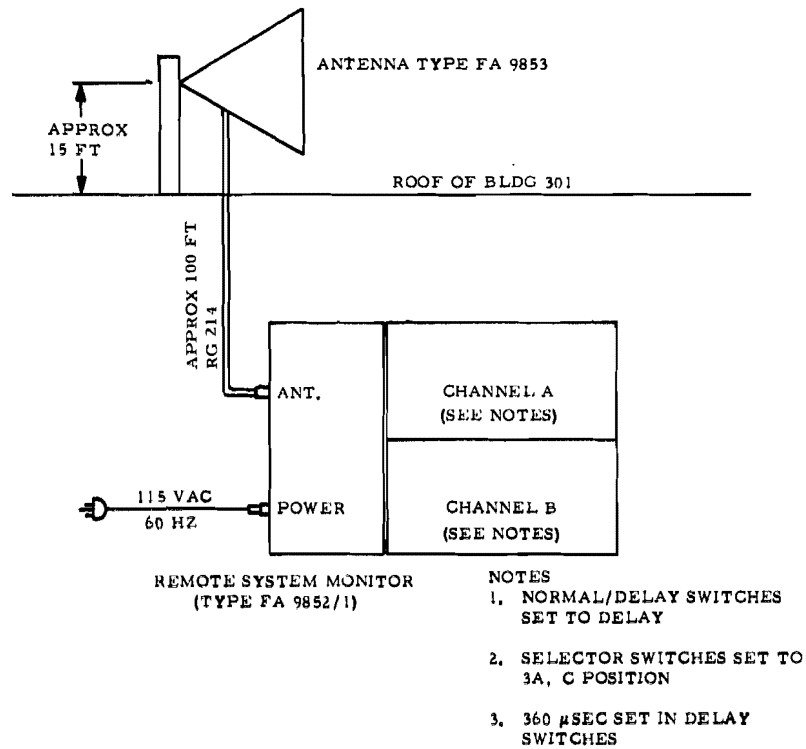
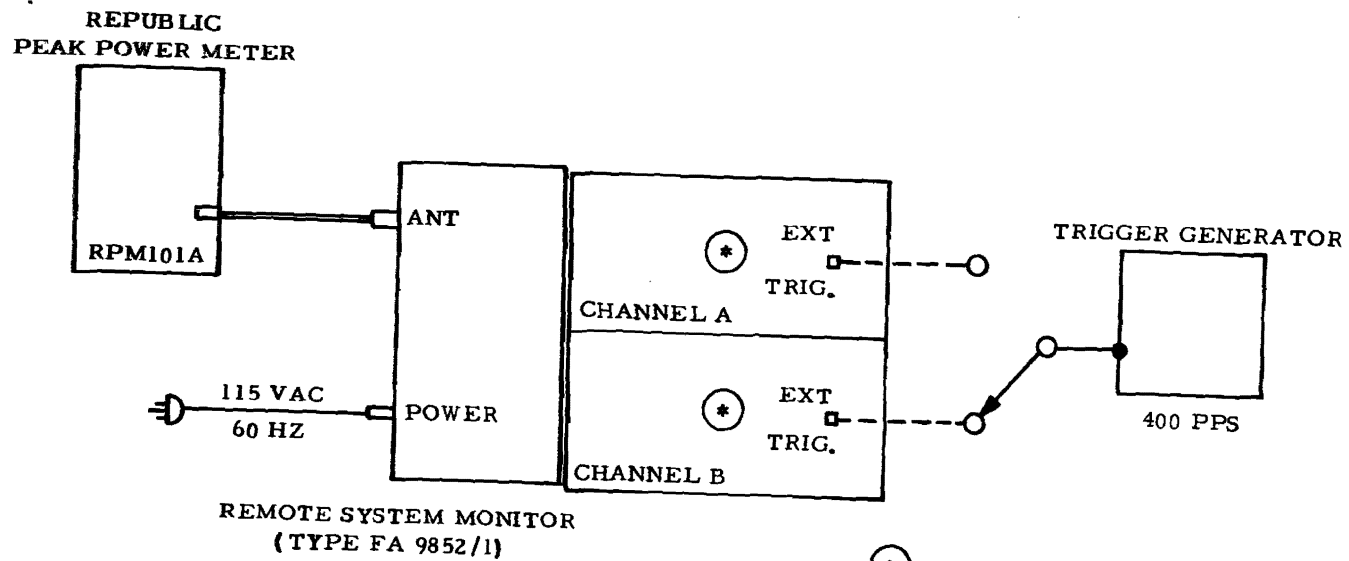


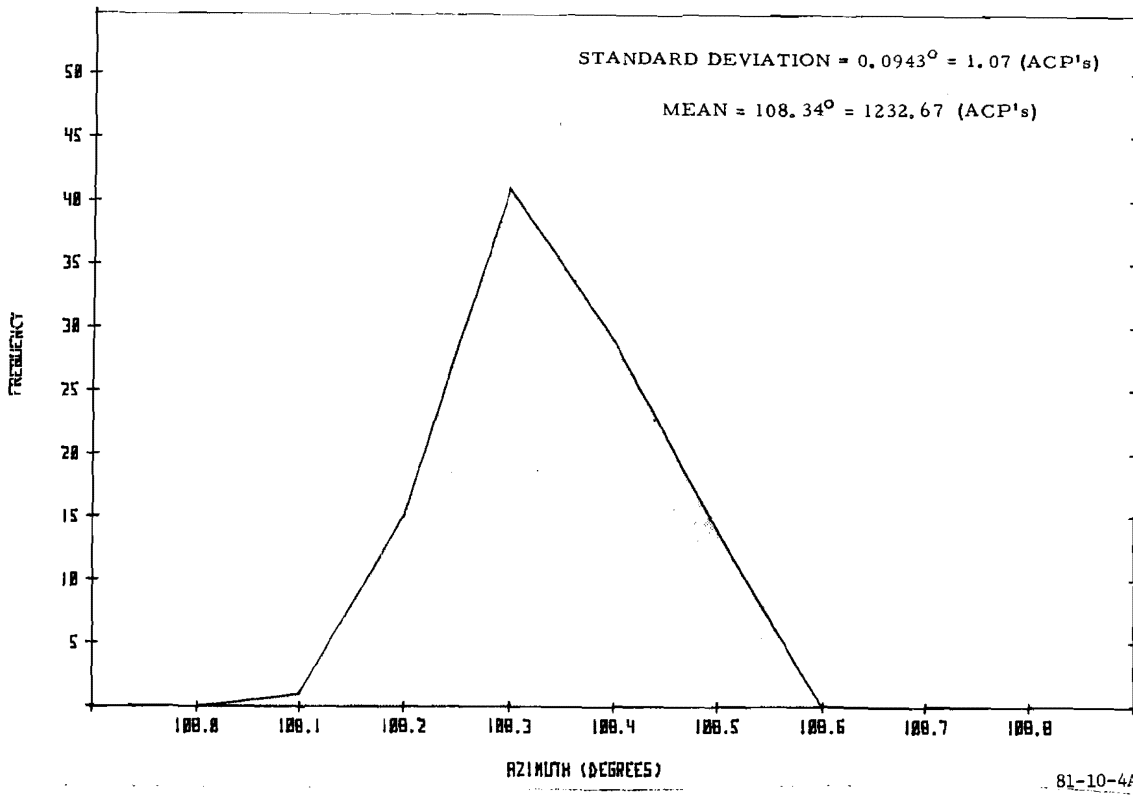
FIGURE 2. OPERATIONAL CONFIGURATION



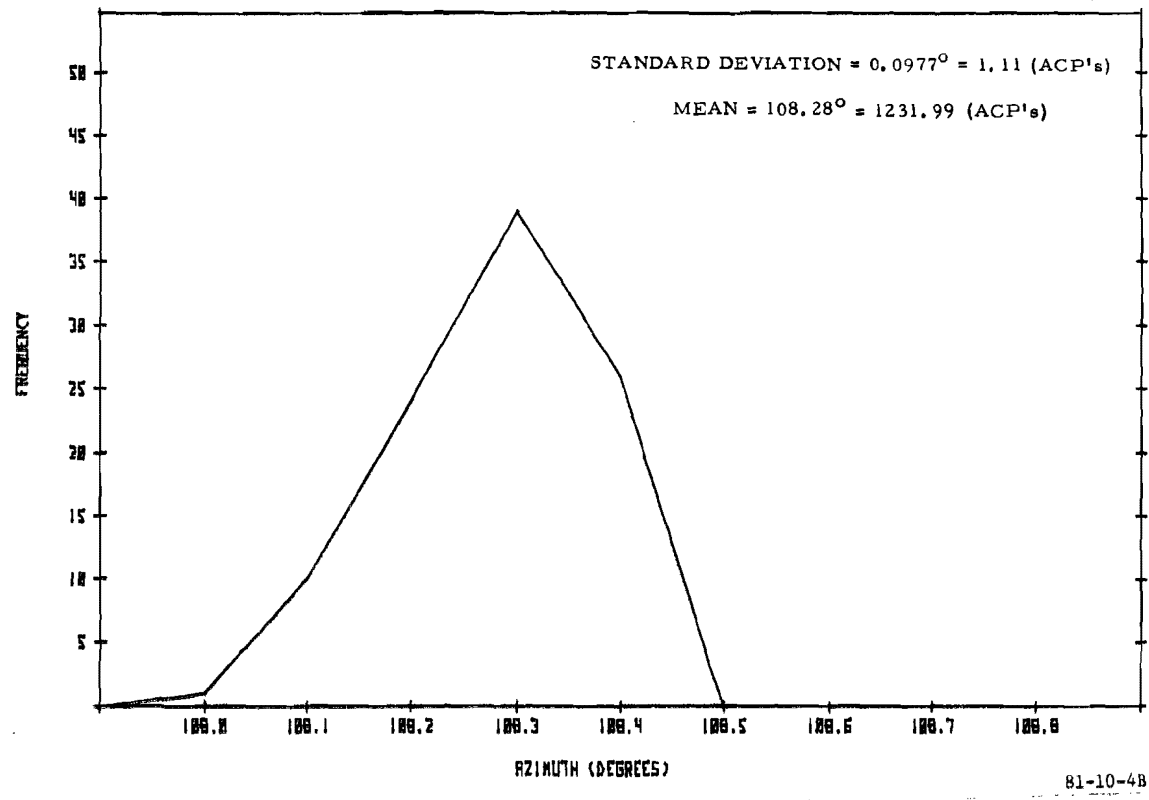
- (*) NOTE
1. NORMAL/DELAY SWITCHES SET TO NORMAL
 2. SELECTOR SWITCHES SET TO TEST

81-10-3

FIGURE 3. POWER READING CONFIGURATION

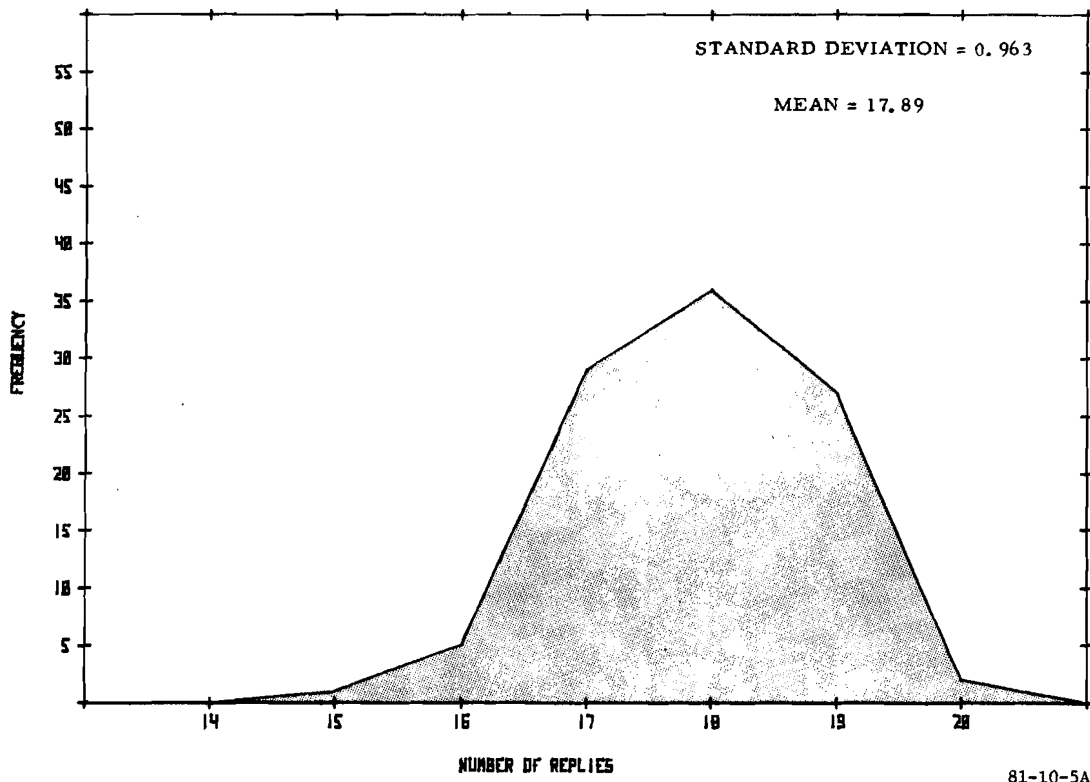


CHANNEL A

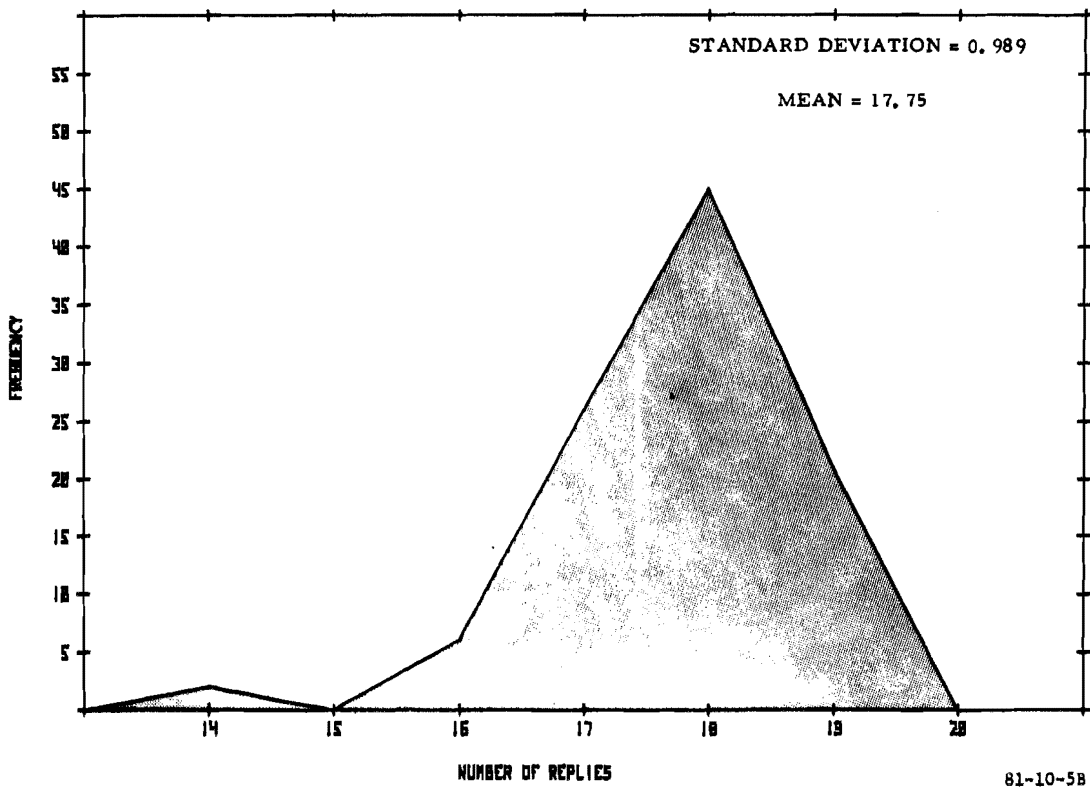


CHANNEL B

FIGURE 4. DISTRIBUTION OF TARGET REPORTS



CHANNEL A



CHANNEL B

FIGURE 5. DISTRIBUTION OF REPLIES PER TARGET REPORT

APPENDIX A
SAMPLE REPORT PRINTOUTS

0000/12.125	1TR	108.4	S	30.13	1275-3	001-3
0000/16.039	1TR	108.2	S	30.13	1275-3	001-3
0000/19.960	1TR	108.3	S	30.13	1275-3	001-3
0000/23.882	1TR	108.3	S	30.13	1275-3	001-3
0000/27.804	1TR	108.3	S	30.13	1275-3	001-3
0000/31.726	1TR	108.5	S	30.13	1275-3	001-3
0000/35.648	1TR	108.3	S	30.13	1275-3	001-3
0000/39.570	1TR	108.3	S	30.13	1275-3	001-3
0000/43.492	1TR	108.4	S	30.13	1275-3	001-3
0000/47.414	1TR	108.4	S	30.13	1275-3	001-3
0000/51.335	1TR	108.3	S	30.13	1275-3	001-3
0000/55.250	1TR	108.4	S	30.13	1275-3	001-3
0000/59.171	1TR	108.4	S	30.13	1275-3	001-3
0001/03.093	1TR	108.4	S	30.13	1275-3	001-3
0001/07.015	1TR	108.2	S	30.13	1275-3	001-3
0001/10.937	1TR	108.5	S	30.13	1275-3	001-3
0001/14.859	1TR	108.3	S	30.13	1275-3	001-3
0001/18.773	1TR	108.4	S	30.13	1275-3	001-3
0001/22.703	1TR	108.4	S	30.13	1275-3	001-3
0001/26.625	1TR	108.3	S	30.13	1275-3	001-3
0001/30.546	1TR	108.4	S	30.13	1275-3	001-3
0001/34.468	1TR	108.4	S	30.13	1275-3	001-3
0001/38.390	1TR	108.5	S	30.13	1275-3	001-3
0001/42.312	1TR	108.4	S	30.13	1275-3	001-3
0001/46.226	1TR	108.3	S	30.13	1275-3	001-3
0001/50.148	1TR	108.3	S	30.13	1275-3	001-3
0001/54.062	1TR	108.4	S	30.13	1275-3	001-3
0001/57.984	1TR	108.5	S	30.13	1275-3	001-3
0002/01.906	1TR	108.2	S	30.13	1275-3	001-3
0002/05.829	1TR	108.3	S	30.13	1275-3	001-3
0002/09.742	1TR	108.3	S	30.13	1275-3	001-3
0002/13.664	1TR	108.4	S	30.13	1275-3	001-3
0002/17.593	1TR	108.3	S	30.13	1275-3	001-3
0002/21.507	1TR	108.3	S	30.13	1275-3	001-3
0002/25.437	1TR	108.4	S	30.13	1275-3	001-3
0002/29.351	1TR	108.3	S	30.13	1275-3	001-3
0002/33.273	1TR	108.4	S	30.13	1275-3	001-3
0002/37.195	1TR	108.5	S	30.13	1275-3	001-3
0002/41.117	1TR	108.3	S	30.13	1275-3	001-3
0002/45.039	1TR	108.3	S	30.13	1275-3	001-3
0002/48.960	1TR	108.2	S	30.13	1275-3	001-3
0002/52.875	1TR	108.3	S	30.13	1275-3	001-3
0002/56.796	1TR	108.2	S	30.13	1275-3	001-3
0003/00.718	1TR	108.4	S	30.13	1275-3	001-3
0003/04.640	1TR	108.3	S	30.13	1275-3	001-3
0003/08.554	1TR	108.3	S	30.13	1275-3	001-3
0003/12.476	1TR	108.4	S	30.13	1275-3	001-3
0003/16.398	1TR	108.5	S	30.13	1275-3	001-3
0003/20.320	1TR	108.2	S	30.13	1275-3	001-3
0003/24.242	1TR	108.4	S	30.13	1275-3	001-3
0003/28.171	1TR	108.3	S	30.13	1275-3	001-3
0003/32.085	1TR	108.2	S	30.13	1275-3	001-3
0003/36.015	1TR	108.3	S	30.13	1275-3	001-3
0003/39.937	1TR	108.5	S	30.13	1275-3	001-3
0003/43.859	1TR	108.3	S	30.13	1275-3	001-3
0003/47.781	1TR	108.4	S	30.13	1275-3	001-3
0003/51.703	1TR	108.3	S	30.13	1275-3	001-3
0003/55.617	1TR	108.3	S	30.13	1275-3	001-3
0003/59.539	1TR	108.2	S	30.13	1275-3	001-3
0004/03.460	1TR	108.2	S	30.13	1275-3	001-3
0004/07.382	1TR	108.3	S	30.13	1275-3	001-3
0004/11.296	1TR	108.4	S	30.13	1275-3	001-3

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FIGURE A-1. SAMPLE TARGET REPORT PRINTOUT RSM CHANNEL A

0016/59.992	1TR 100.3 S	30.13	1275-3	001-3
0017/03.921	1TR 100.0 S	30.13	1275-3	001-3
0017/07.843	1TR 100.4 S	30.13	1275-3	001-3
0017/11.765	1TR 100.1 S	30.13	1275-3	001-3
0017/15.687	1TR 100.3 S	30.13	1275-3	001-3
0017/19.609	1TR 100.3 S	30.13	1275-3	001-3
0017/23.531	1TR 100.3 S	30.13	1275-3	001-3
0017/27.453	1TR 100.1 S	30.13	1275-3	001-3
0017/31.375	1TR 100.4 S	30.13	1275-3	001-3
0017/35.296	1TR 100.1 S	30.13	1275-3	001-3
0017/39.218	1TR 100.3 S	30.13	1275-3	001-3
0017/43.132	1TR 100.3 S	30.13	1275-3	001-3
0017/47.054	1TR 100.3 S	30.13	1275-3	001-3
0017/50.976	1TR 100.3 S	30.13	1275-3	001-3
0017/54.898	1TR 100.2 S	30.13	1275-3	001-3
0017/58.820	1TR 100.2 S	30.13	1275-3	001-3
0018/02.750	1TR 100.3 S	30.13	1275-3	001-3
0018/06.671	1TR 100.4 S	30.13	1275-3	001-3
0018/10.593	1TR 100.3 S	30.13	1275-3	001-3
0018/14.515	1TR 100.1 S	30.13	1275-3	001-3
0018/18.437	1TR 100.2 S	30.13	1275-3	001-3
0018/22.357	1TR 100.2 S	30.13	1275-3	001-3
0018/26.280	1TR 100.4 S	30.13	1275-3	001-3
0018/30.202	1TR 100.2 S	30.13	1275-3	001-3
0018/34.124	1TR 100.4 S	30.13	1275-3	001-3
0018/38.046	1TR 100.4 S	30.13	1275-3	001-3
0018/41.968	1TR 100.3 S	30.13	1275-3	001-3
0018/45.890	1TR 100.3 S	30.13	1275-3	001-3
0018/49.812	1TR 100.3 S	30.13	1275-3	001-3
0018/53.734	1TR 100.3 S	30.13	1275-3	001-3
0018/57.656	1TR 100.3 S	30.13	1275-3	001-3
0019/01.578	1TR 100.3 S	30.13	1275-3	001-3
0019/05.500	1TR 100.3 S	30.13	1275-3	001-3
0019/09.422	1TR 100.3 S	30.13	1275-3	001-3
0019/13.344	1TR 100.4 S	30.13	1275-3	001-3
0019/17.266	1TR 100.3 S	30.13	1275-3	001-3
0019/21.188	1TR 100.4 S	30.13	1275-3	001-3
0019/25.110	1TR 100.4 S	30.13	1275-3	001-3
0019/29.032	1TR 100.3 S	30.13	1275-3	001-3
0019/32.954	1TR 100.1 S	30.13	1275-3	001-3
0019/36.876	1TR 100.4 S	30.13	1275-3	001-3
0019/40.798	1TR 100.1 S	30.13	1275-3	001-3
0019/44.720	1TR 100.3 S	30.13	1275-3	001-3
0019/48.642	1TR 100.4 S	30.13	1275-3	001-3
0019/52.564	1TR 100.2 S	30.13	1275-3	001-3
0019/56.486	1TR 100.2 S	30.13	1275-3	001-3
0020/00.408	1TR 100.4 S	30.13	1275-3	001-3
0020/04.330	1TR 100.2 S	30.13	1275-3	001-3
0020/08.252	1TR 100.2 S	30.13	1275-3	001-3
0020/12.174	1TR 100.3 S	30.13	1275-3	001-3
0020/16.096	1TR 100.4 S	30.13	1275-3	001-3
0020/20.018	1TR 100.2 S	30.13	1275-3	001-3
0020/23.940	1TR 100.4 S	30.13	1275-3	001-3
0020/27.862	1TR 100.2 S	30.13	1275-3	001-3
0020/31.784	1TR 100.2 S	30.13	1275-3	001-3
0020/35.706	1TR 100.2 S	30.13	1275-3	001-3
0020/39.628	1TR 100.3 S	30.13	1275-3	001-3
0020/43.550	1TR 100.2 S	30.13	1275-3	001-3
0020/47.472	1TR 100.4 S	30.13	1275-3	001-3
0020/51.394	1TR 100.2 S	30.13	1275-3	001-3
0020/55.316	1TR 100.4 S	30.13	1275-3	001-3
0020/59.238	1TR 100.1 S	30.13	1275-3	001-3

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FIGURE A-2. SAMPLE TARGET REPORT PRINTOUT RSM CHANNEL B

APPENDIX B
SAMPLE TARGET REPLY PRINTOUTS

0000/12.125	11R 108.4 S 30.13 1275-3 001-3			
0000/16.039	1BCN REPLY-CODE	20	106.2	1275 30.13
	1BCN REPLY-CODE	20	106.3	1275 30.13
	1BCN REPLY-ALT	10	106.6	001 30.13
	1BCN REPLY-CODE	20	106.9	1275 30.13
	1BCN REPLY-CODE	20	107.1	1275 30.13
	1BCN REPLY-ALT	10	107.3	001 30.13
	1BCN REPLY-CODE	20	107.6	1275 30.13
	1BCN REPLY-CODE	20	107.8	1275 30.13
	1BCN REPLY-ALT	10	108.0	001 30.13
	1BCN REPLY-CODE	20	108.3	1275 30.13
	1BCN REPLY-CODE	20	108.5	1275 30.13
	1BCN REPLY-ALT	10	108.7	001 30.13
	1BCN REPLY-CODE	20	109.0	1275 30.13
	1BCN REPLY-CODE	20	109.2	1275 30.13
	1BCN REPLY-ALT	10	109.5	001 30.13
	1BCN REPLY-CODE	20	109.7	1275 30.13
	1BCN REPLY-CODE	20	110.0	1275 30.13
	1BCN REPLY-ALT	10	110.2	001 30.13
	11R 108.2 S 30.13 1275-3 001-3			
0000/19.960	1BCN REPLY-CODE	20	106.0	1275 30.13
	1BCN REPLY-CODE	20	106.3	1275 30.13
	1BCN REPLY-ALT	10	106.5	001 30.13
	1BCN REPLY-CODE	20	106.7	1275 30.13
	1BCN REPLY-CODE	20	107.0	1275 30.13
	1BCN REPLY-ALT	10	107.2	001 30.13
	1BCN REPLY-CODE	20	107.5	1275 30.13
	1BCN REPLY-CODE	20	107.7	1275 30.13
	1BCN REPLY-ALT	10	107.9	001 30.13
	1BCN REPLY-CODE	20	108.2	1275 30.13
	1BCN REPLY-CODE	20	108.5	1275 30.13
	1BCN REPLY-ALT	10	108.6	001 30.13
	1BCN REPLY-CODE	20	108.9	1275 30.13
	1BCN REPLY-CODE	20	109.2	1275 30.13
	1BCN REPLY-ALT	10	109.4	001 30.13
	1BCN REPLY-CODE	20	109.6	1275 30.13
	1BCN REPLY-CODE	20	109.9	1275 30.13
	1BCN REPLY-ALT	10	110.1	001 30.13
	1BCN REPLY-CODE	20	110.4	1275 30.13
	11R 108.3 S 30.13 1275-3 001-3			
0000/20.085	1BCN REPLY-ALT	10	113.7	00000 10.94
0000/23.882	1BCN REPLY-CODE	20	106.3	1275 30.13
	1BCN REPLY-ALT	10	106.4	001 30.13
	1BCN REPLY-CODE	20	106.7	1275 30.13
	1BCN REPLY-CODE	20	107.0	1275 30.13
	1BCN REPLY-ALT	10	107.2	001 30.13
	1BCN REPLY-CODE	20	107.4	1275 30.13
	1BCN REPLY-CODE	20	107.7	1275 30.13
	1BCN REPLY-ALT	10	107.9	001 30.13
	1BCN REPLY-CODE	20	108.2	1275 30.13
	1BCN REPLY-CODE	20	108.4	1275 30.13
	1BCN REPLY-ALT	10	108.6	001 30.13
	1BCN REPLY-CODE	20	108.9	1275 30.13
	1BCN REPLY-CODE	20	109.1	1275 30.13
	1BCN REPLY-ALT	10	109.3	001 30.13
	1BCN REPLY-CODE	20	109.6	1275 30.13
	1BCN REPLY-CODE	20	109.8	1275 30.13
	1BCN REPLY-ALT	10	110.0	001 30.13
	1BCN REPLY-CODE	20	110.3	1275 30.13
	11R 108.3 S 30.13 1275-3 001-3			
0000/27.804	1BCN REPLY-CODE	20	106.0	1275 30.13
	1BCN REPLY-ALT	10	106.3	001 30.13

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FIGURE B-1. SAMPLE TARGET REPORT PRINTOUT RSM CHANNEL A

	1PCN REPLY-CODE	20	106.4	1275	30.13
	13CN REPLY-CODE	23	107.1	1275	30.13
	1PCN REPLY-ALT	10	107.3	001	30.13
	13CN REPLY-CODE	23	107.5	1275	30.13
	1PCN REPLY-CODE	20	107.8	1275	30.13
	13CN REPLY-ALT	13	108.1	001	30.13
	1PCN REPLY-CODE	20	108.3	1275	30.13
	13CN REPLY-CODE	23	108.5	1275	30.13
	1PCN REPLY-ALT	10	108.8	001	30.13
	13CN REPLY-CODE	23	109.0	1275	30.13
	1PCN REPLY-CODE	20	109.2	1275	30.13
	13CN REPLY-ALT	13	109.5	001	30.13
	1PCN REPLY-CODE	20	109.8	1275	30.13
	13CN REPLY-CODE	23	110.0	1275	30.13
	1PCN REPLY-ALT	10	110.2	001	30.13
	13CN REPLY-CODE	23	110.5	1275	30.13
	1TR 108.3 S	30.13	1275-3	(01-3	
0018/45.914	13CN REPLY-CODE	23	105.0	1275	30.13
	1PCN REPLY-ALT	10	106.3	001	30.13
	13CN REPLY-CODE	23	106.5	1275	30.13
	1PCN REPLY-CODE	20	106.8	1275	30.13
	13CN REPLY-ALT	13	107.0	001	30.13
	1PCN REPLY-CODE	20	107.2	1275	30.13
	13CN REPLY-CODE	23	107.5	1275	30.13
	1PCN REPLY-ALT	10	107.8	001	30.13
	13CN REPLY-CODE	23	107.9	1275	30.13
	1PCN REPLY-CODE	20	108.2	1275	30.13
	13CN REPLY-ALT	13	108.5	001	30.13
	1PCN REPLY-CODE	20	108.7	1275	30.13
	13CN REPLY-CODE	23	108.9	1275	30.13
	1PCN REPLY-ALT	10	109.2	001	30.13
	13CN REPLY-CODE	23	109.4	1275	30.13
	1PCN REPLY-CODE	20	109.6	1275	30.13
	13CN REPLY-ALT	13	109.9	001	30.13
	1PCN REPLY-CODE	20	110.1	1275	30.13
	13CN REPLY-CODE	23	110.4	1275	30.13
	1TR 108.3 S	30.13	1275-3	(01-3	
0018/46.164	1PCN REPLY-ALT	10	131.0	16P	42.8P
0018/49.843	13CN REPLY-CODE	23	105.5	1275	30.13
	1PCN REPLY-ALT	10	106.4	001	30.13
	13CN REPLY-CODE	23	106.7	1275	30.13
	1PCN REPLY-CODE	20	107.0	1275	30.13
	13CN REPLY-ALT	13	107.1	001	30.13
	1PCN REPLY-CODE	20	107.4	1275	30.13
	13CN REPLY-CODE	23	107.7	1275	30.13
	1PCN REPLY-ALT	10	107.9	001	30.13
	13CN REPLY-CODE	23	108.1	1275	30.13
	1PCN REPLY-CODE	20	108.4	1275	30.13
	13CN REPLY-ALT	13	108.5	001	30.13
	1PCN REPLY-CODE	20	108.8	1275	30.13
	13CN REPLY-CODE	23	109.1	1275	30.13
	1PCN REPLY-ALT	10	109.3	001	30.13
	13CN REPLY-CODE	23	109.5	1275	30.13
	1PCN REPLY-CODE	20	109.8	1275	30.13
	13CN REPLY-ALT	13	110.0	001	30.13
	1PCN REPLY-CODE	20	110.3	1275	30.13
	1TR 108.3 S	30.13	1275-3	(01-3	
0018/49.960	1PCN REPLY-ALT	10	123.0	667	53.90
0018/54.755	13CN REPLY-CODE	23	105.5	1275	30.13
	1PCN REPLY-ALT	10	106.4	001	30.13
	13CN REPLY-CODE	23	106.7	1275	30.13
	1PCN REPLY-CODE	20	107.0	1275	30.13

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FIGURE B-2. SAMPLE TARGET REPORT PRINTOUT RSM CHANNEL B