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FURTHER STUDIES OF METHODS FOR REDUCING
COMMUNITY NOISE AROUND AIRPORTS

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SUMMARY

NEAR TR 73 (August, 1974) reported on several studies of various methods for reducing aircraft noise in the vicinity of airports. This report gives the results of further studies of noise reduction methods. As was the case in NEAR TR 73, a simplified method of analysis was used in which all flights at a "simulated" airport were assumed to operate from one runway in a single direction. For this simulated airport, contours of Noise Exposure Forecast were obtained and evaluated.

Four studies are reported here. All four use the "23-Airport Average" flight schedule which was developed in the earlier study. The use of this flight schedule results in a "simulated" airport which is representative of the 23 major U. S. airports.

The first study examines the effect of banning nighttime operations by four-engine, narrow-body aircraft in combination with other noise reduction options which were studied previously. The second study examines the reductions in noise which would occur if all new, two- and three-engine, narrow-body aircraft were equipped with a refanned engine which is significantly quieter than the current engine. The third study is a detailed comparison of the effects of engine cutback on takeoff versus the effects of retrofitting quiet nacelles for narrow-body aircraft. The fourth study looks at a different method of presenting the effects of various noise reduction options. The previous studies used contour plots of NEF 25, 30, and 40. In the fourth study, the results of various noise reduction options are shown by plotting contours of equal change in NEF.

INTRODUCTION

Community annoyance due to aircraft noise in the vicinity of airports is one of the most serious problems facing aviation today. The construction of new airports and expansion of existing airports has been virtually

halted by public pressure based primarily on the noise problem. Curfews and other operating restrictions have been implemented at a number of airports, and such restrictions will proliferate unless real progress is made in reducing airport noise.

The new, wide-body aircraft powered by high-bypass-ratio engines are considerably quieter than existing narrow-body aircraft, and each large wide-body aircraft can replace several smaller narrow-body aircraft. As a result, the introduction of wide-body aircraft in the next decade should result in a gradual reduction of airport noise, despite the fact that airline passenger-miles will continue to grow. This is an important reversal of the traditional trend, where the overwhelming increase in the number of flights caused a rapid escalation of airport noise. Unfortunately, projections of the future airline fleet indicate that over half of the present noisier narrow-body aircraft are expected to remain in service ten years from now. Significant airport noise reductions, in the near future, can only be obtained by reducing the noise generated by these aircraft.

The National Aeronautics and Space Administration (NASA) and the Department of Transportation (DOT) have supported work on the development of retrofit kits to reduce the noise from narrow-body aircraft. Two options have been developed: Sound Absorption Material (SAM) and Refan (RFN). SAM retrofit involves nacelle redesign and extensive use of sound absorption material. RFN retrofit involves engine modification with a larger diameter, single-stage fan (to increase bypass ratio) and nacelle redesign with sound absorption material.

Operational procedures may also be used to reduce community noise due to aircraft. Steeper than normal approach paths and two-segment approaches using a steep path followed by a normal path have been studied. Variations in takeoff procedure and curved flight paths may also be used to reduce airport noise or redistribute the noise to areas of low population density.

NEAR TR 73 presented the results of several specific noise reduction studies, and this report presents several more. These studies were performed to assist NASA in evaluating the effects of the various noise reduction methods.

METHOD OF ANALYSIS

To determine the effects of the various noise reduction methods, contours of Noise Exposure Forecast (NEF) were developed for specified airports and years. The basic method of analysis is described in reference 1. The input is a schedule of daily operations with associated flight paths at an airport. This input can represent a real or a "simulated" airport. Typically, a "simulated" airport has a schedule of operations which is obtained by averaging the operations of a given set of airports. It is presumed that the effects of noise reduction methods on such a "simulated" airport closely approximate the average of the total effect on the airports in the given set.

For this study, all operations were assumed to take place from a single runway with landings and takeoffs in the same direction of flight. In the real case, of course, operations occur in both directions and from different runways. Placing all operations on one runway and in one direction can significantly reduce the area of the NEF contours. However, it is presumed that the relative (percentage) effects of various noise reduction methods based on single runway operations closely approximate the relative effects at the real airports.

For the studies reported here, all aircraft were assumed to take off at maximum gross weight. In practice, some aircraft take off at lower weights. At these lower weights, they generate less perceived noise because their takeoff flight profile is higher. For this reason the results reported here may be somewhat conservative.

The noise contours were obtained with an airport noise analysis computer program developed by NASA/Ames Research Center based on a program originally developed under contract by Serendipity, Inc. for the DOT. This program provides rapid computation of noise contours. A graphics terminal was utilized to facilitate data input and output and provide computer-generated contour plots.

Noise data for each type of aircraft considered are incorporated in the program. The noise data used in the current studies were supplied by the NASA Refan Program Office and represent the best available data as of June, 1974. Table I gives the noise levels for the narrow-body aircraft at the FAR 36 measuring points. Note that the SAM modification gives

modest reductions on JT8D aircraft and significant reductions on JT3D aircraft. The RFN modification is not currently proposed for the JT3D; it gives large noise reductions on JT8D aircraft.

The basic outputs of the analyses are contour plots of Noise Exposure Forecast (NEF) around the airport. A typical example is shown in figure 1. The direction of flight for both takeoffs and landings is toward the right of the figure. Contours of NEF 25, NEF 30, and NEF 40 are presented. The contour portrays the boundary of the area enclosing noise levels equal to or greater than the specified contour level. The total areas within the contours are tabulated for each case. The lateral dimensions of the contours are expanded relative to the longitudinal dimensions; the true contours are quite narrow.

To assist the user of this report in further analyzing the data, computer printouts of diagnostic information are presented in the appendix. The diagnostics show the influence of each type of aircraft on the NEF at a given point on the ground. For each case analyzed in the current studies, diagnostics were obtained at the NEF 30 closure points (i.e., the points on the longitudinal axis where a NEF of 30 was obtained).

		BASE	SAM	RFN	FAR 36
B727 (JT8D)	Takeoff	102	100	88	100
	Approach	109.5	103	96	104.5
	Sideline	102	102	92	104.5
B737 (JT8D)	Takeoff	96.5	91.5	84	96.5
	Approach	111	105	99	103.5
	Sideline	104	103	92	103.5
DC9 (JT8D)	Takeoff	97	96	83.5	96
	Approach	108	102.5	93.5	103.5
	Sideline	102	102	93	103.5
B707 (JT3D)	Takeoff	114	103		104
	Approach	119.5	105		106.5
	Sideline	107.5	102.5		106.5
DC8 (JT3D)	Takeoff	117	109		103.5
	Approach	117	105		106
	Sideline	103	99		105.5

Table I.- Aircraft noise levels, EPNdB.

All dimensions in thousands of feet

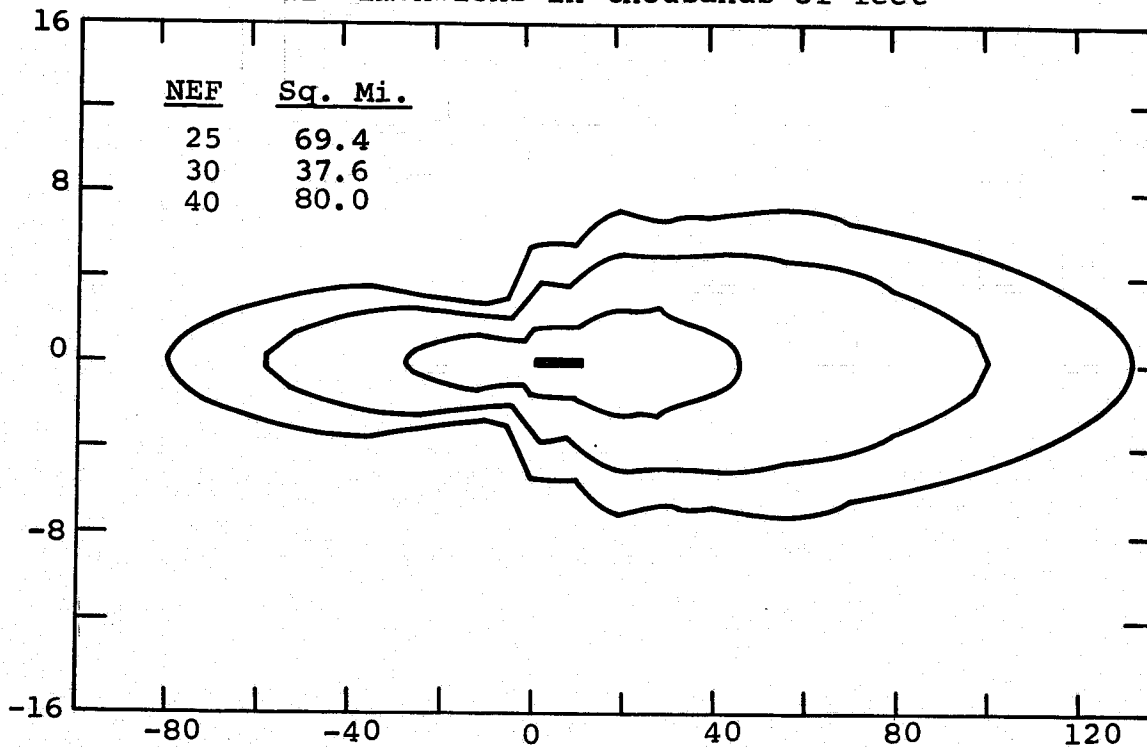


Figure 1.- Typical plot of Noise Exposure Forecast contours.

23-AIRPORT STUDY

NEAR TR 73 contains a detail report of a "23-Airport Study." This study serves as a base for the four studies to be presented herein. For convenience, the "23-Airport Study" will be summarized here, and its results are shown for easy comparison with the current studies.

Operational schedules for 23 major U. S. airports in 1972, 1981, and 1987 were supplied by the NASA Refan Program Office. These schedules are also shown in reference 2, "Airport Noise Reduction Forecast." To obtain an approximate indication of the effects of various noise reduction options at these major airports, a "23-Airport Average" airport was created by averaging the flights per day by each aircraft type at the 23 airports. The effects of the noise reduction options were evaluated by analyzing the noise contours for a single runway using the 23-Airport Average schedule. The 23 airports considered are listed in Table II, and the average schedule is given in Table III.

The baseline contours for the 23-Airport Average in 1972, 1981, and 1987 are shown in figure 2. The 1972 contours represent the current noise situation. With time, the number of operations increases, but the percentage of quieter, wide-body aircraft also increases. As the result, the contour areas are smaller in 1981 than in 1972, and there is virtually no change in area between 1981 and 1987.

The effects of various noise reduction methods in 1981 are shown in figure 3. The contours in the left column are all for standard takeoff procedures. At the top, the baseline case of figure 2 is repeated. The use of two-segment approach procedures gives a significant reduction in contour areas under the approach path. Applying the SAM modification to the JT3D-powered aircraft (B707 and DC8) results in a further general reduction of the contour area.

The contours in the right column of figure 3 include takeoff with throttle cutback at 3.5 nautical miles. This procedure results in longer, but narrower, takeoff contours than those for a standard takeoff. The general effects of instituting two-segment approaches and using SAM on the JT3D aircraft are the same as for the standard takeoff case.

The remaining option is to use either the SAM modification or the RFN modification on the JT8D-powered aircraft (B727, B737, and DC9). The effects of this option are shown in figure 4. Again the left column is for standard takeoff procedures. SAM JT8D gives a small reduction in contour areas, mostly on the approach side. RFN JT8D gives a larger general reduction in the contour areas. If cutback takeoff procedures are used, the results of JT8D modifications are shown in the right column of figure 4. The effects are similar to the standard takeoff cases.

The effects of the noise reduction options in 1987 are presented in figures 5 and 6. The results are very similar to those in 1981.

The noise contour areas for the 23-Airport Average are summarized in Table IV. The values in Table IV are slightly different from those given in NEAR TR 73 (Table VI). The changes are due to small errors in the input used previously. Table IV should be considered more accurate than NEAR TR 73 and is consistent with the further studies reported here. None of the changes amount to more than a few percent, and the changes in contour plots generally were insignificant.

Atlanta	New York/Kennedy
Boston	New York/La Guardia
Buffalo	Philadelphia
Chicago/Midway	Phoenix
Chicago/O'Hare	Portland, Oregon
Cleveland	San Diego
Denver	San Francisco
Los Angeles	St. Louis
Miami	Seattle/Tacoma
Minneapolis/St. Paul	Washington/Dulles
New Orleans	Washington/National
Newark	

Table II.- Twenty-three major U. S. airports.

YEAR	AIRCRAFT	DAY	NIGHT	EQUIVALENT*
1972	B707	31.5	7.2	152.1
	DC8	20.2	7.1	138.5
	B727	80.5	12.2	239.0
	B737	19.0	1.0	35.0
	DC9	51.0	7.3	172.8
	B747	7.9	1.2	28.2
	DC10/L1011	4.5	1.0	20.5
1981	SST	0.6	0.0	0.6
	B707	13.4	2.9	62.0
	DC8	8.4	2.4	49.1
	B727	73.1	10.3	245.5
	B727QN	8.8	1.0	25.5
	B737	22.2	1.0	39.9
	DC9	42.6	5.4	132.4
	B747	23.2	4.9	104.5
	DC10/L1011	62.1	13.8	292.5
WIDE TWIN	27.1	3.4	83.9	
1987	SST	1.2	0.0	1.2
	B707	12.0	2.5	54.0
	DC8	7.6	2.8	54.5
	B727	71.2	9.2	224.8
	B727QN	11.3	1.2	31.2
	B737	21.6	1.0	38.6
	DC9	43.7	5.1	129.1
	B747	31.5	6.7	144.0
	DC10/L1011	82.5	18.6	390.2
WIDE TWIN	49.2	5.4	139.0	

*EQUIVALENT = DAY + 16.67 NIGHT

Table III.- Landings (or takeoffs) per day,
23-Airport Average.

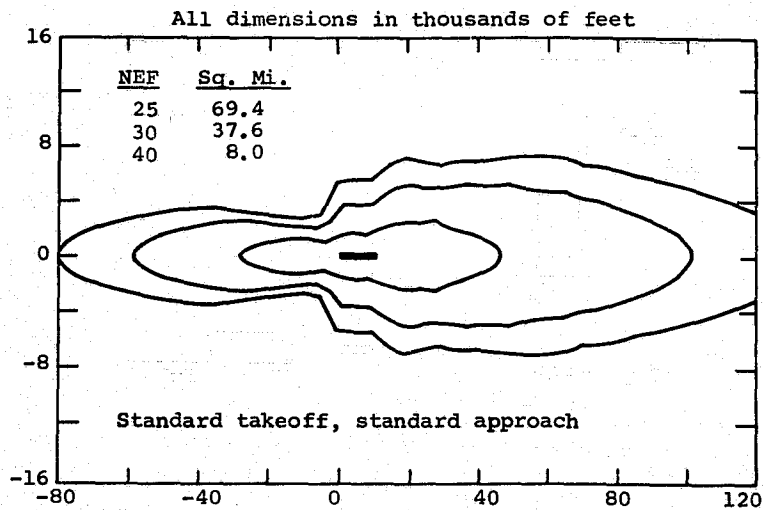
YEAR NEF	1972			1981			1987		
	25	30	40	25	30	40	25	30	40
BASELINE	69.4	37.6	8.0	58.0	30.5	5.9	58.8	30.9	6.0
TWO-SEGMENT				50.1	27.1	5.5	50.8	27.4	5.6
TWO-SEGMENT + SAM JT3D				43.6	22.9	4.4	44.5	23.3	4.5
TWO-SEGMENT + SAM JT3D + SAM JT8D				40.0	21.1	4.0	41.2	21.6	4.2
TWO-SEGMENT + SAM JT3D + RFN JT8D				26.6	12.0	2.9	28.9	13.6	3.2

(a) Standard takeoff.

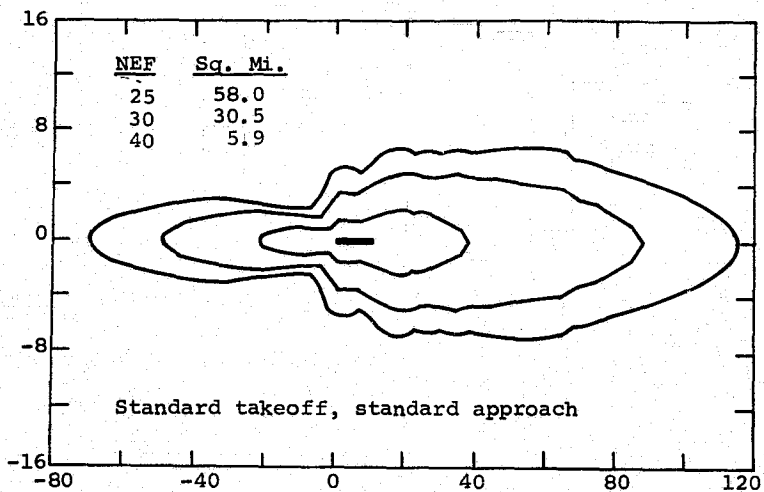
YEAR NEF	1972			1981			1987		
	25	30	40	25	30	40	25	30	40
BASELINE				61.6	30.6	5.9	62.5	31.1	6.0
TWO-SEGMENT				53.7	27.2	5.4	54.5	27.5	5.6
TWO-SEGMENT + SAM JT3D				40.8	18.9	3.5	42.0	19.7	3.7
TWO-SEGMENT + SAM JT3D + SAM JT8D				35.8	16.3	3.2	37.1	17.4	3.5
TWO-SEGMENT + SAM JT3D + RFN JT8D				28.3	12.1	2.4	30.5	13.5	2.8

(b) Takeoff with cutback.

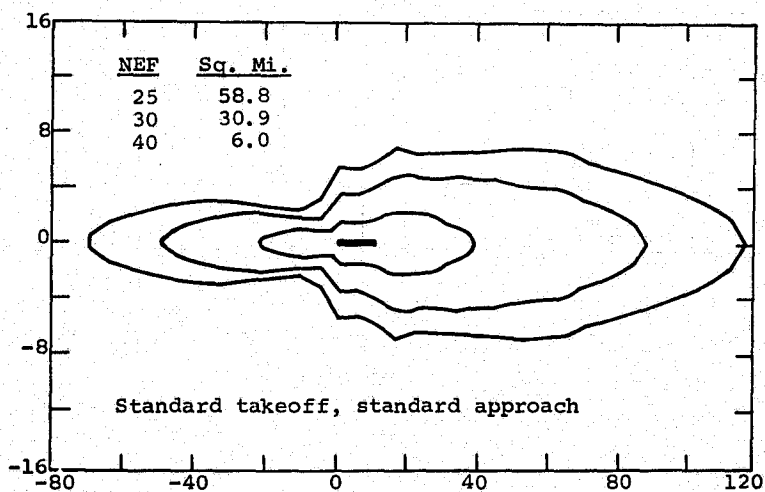
Table IV.- Summary of 23-Airport noise contour areas, square miles.



(a) 1972



(b) 1981



(c) 1987

Figure 2.- Noise contours for 23-airport average
in 1972, 1981, 1987.

All dimensions in thousands of feet

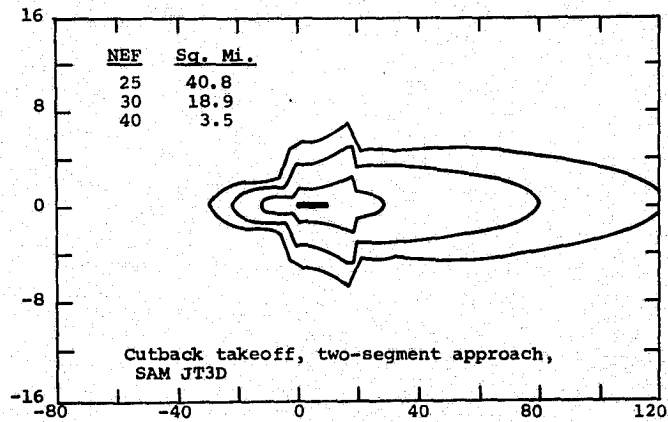
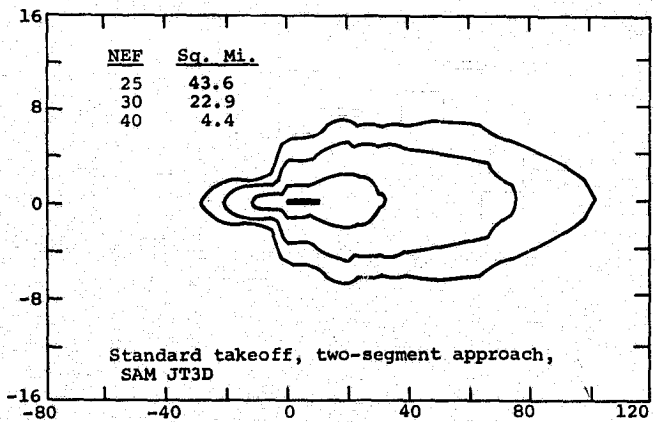
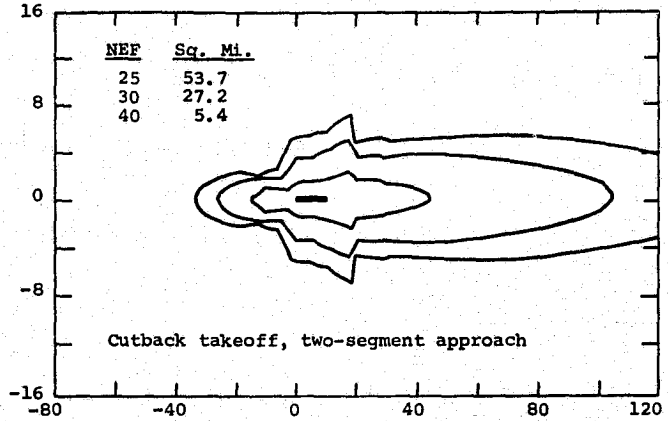
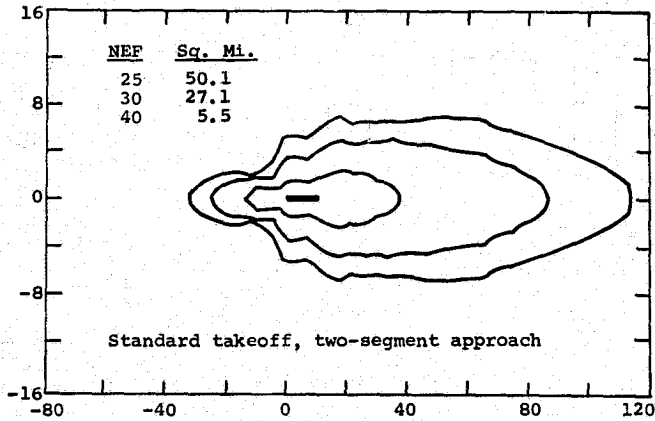
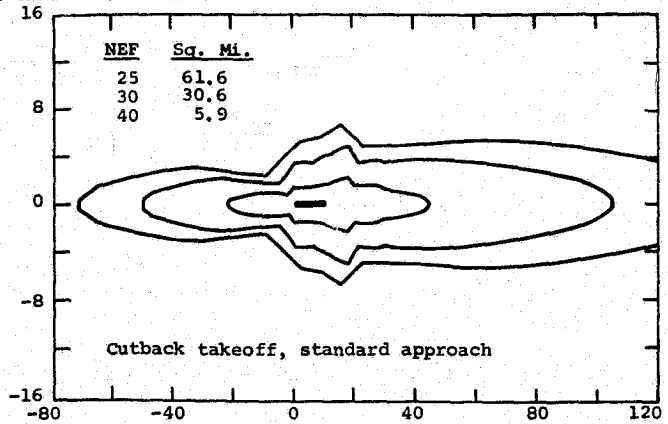
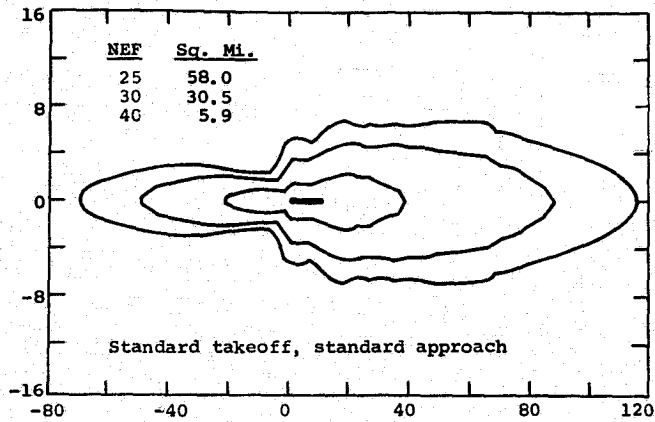


Figure 3.- Effect of cutback takeoff, two-segment approach, and SAM JT3D on 23-airport average in 1981.

All dimensions in thousands of feet

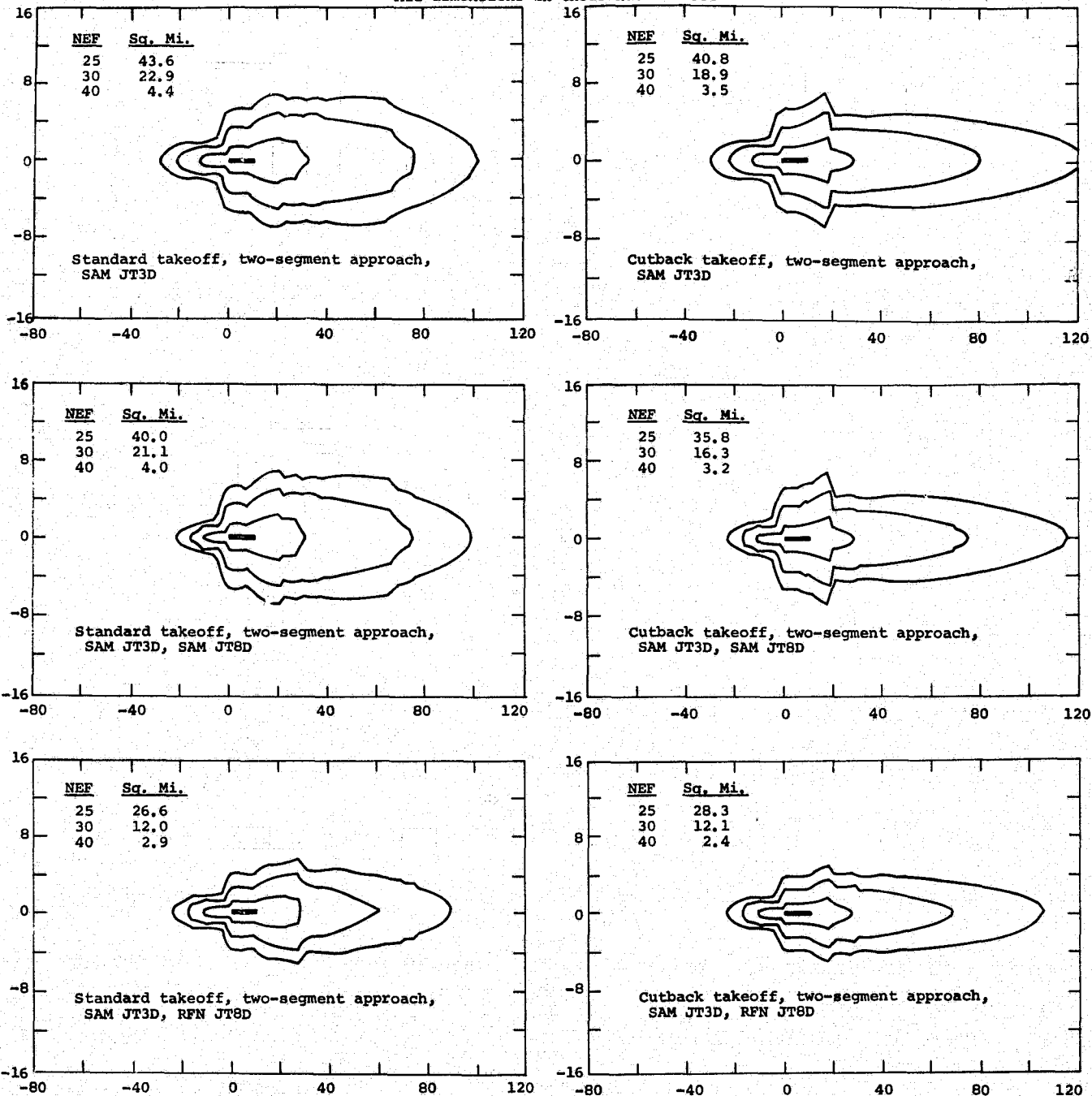


Figure 4.- Effect of SAM JT8D or RFN JT8D on 23-airport average in 1981.

All dimensions in thousands of feet

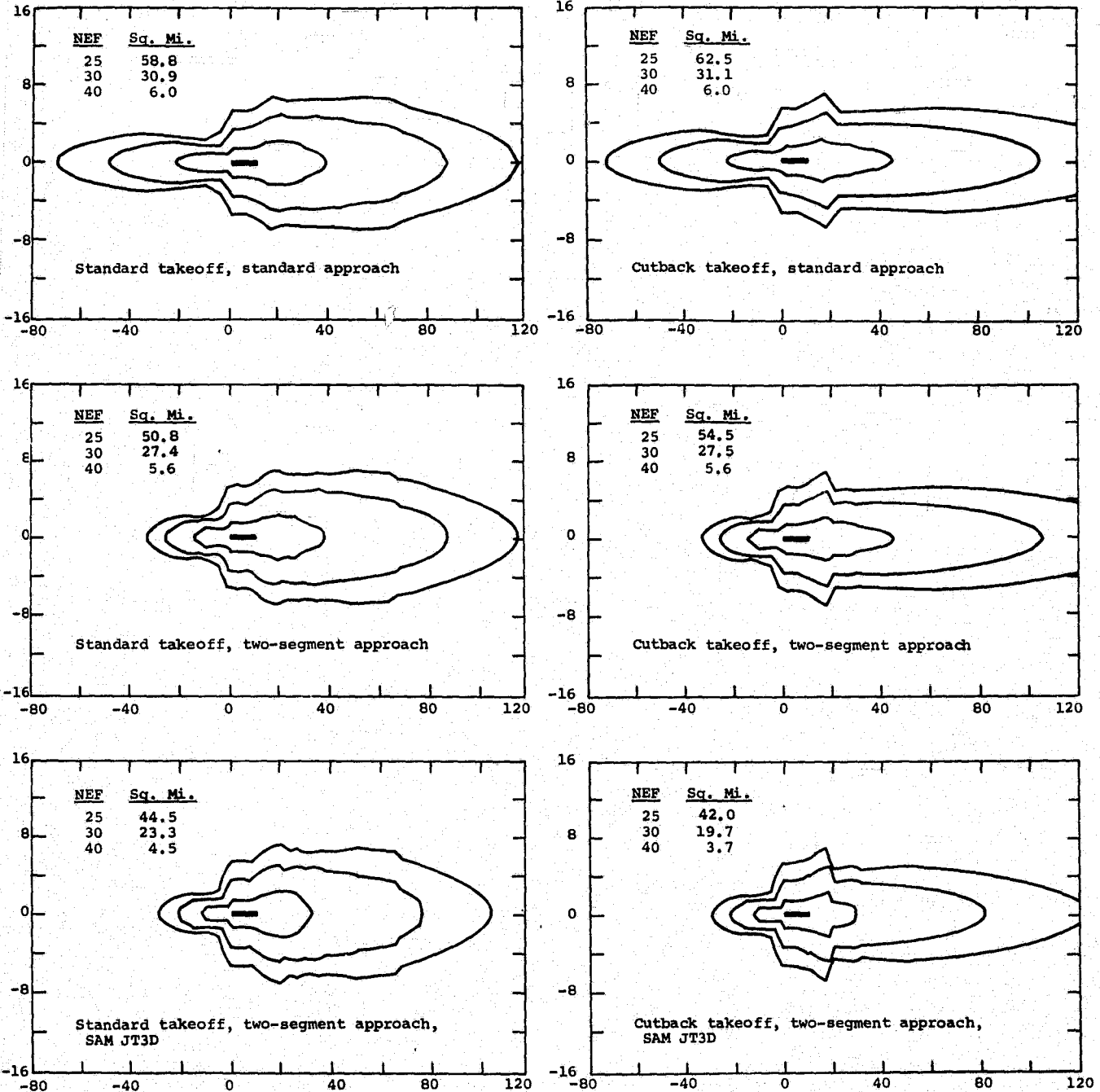


Figure 5.- Effect of cutback takeoff, two-segment approach, and SAM JT3D on 23-airport average in 1987.

All dimensions in thousands of feet

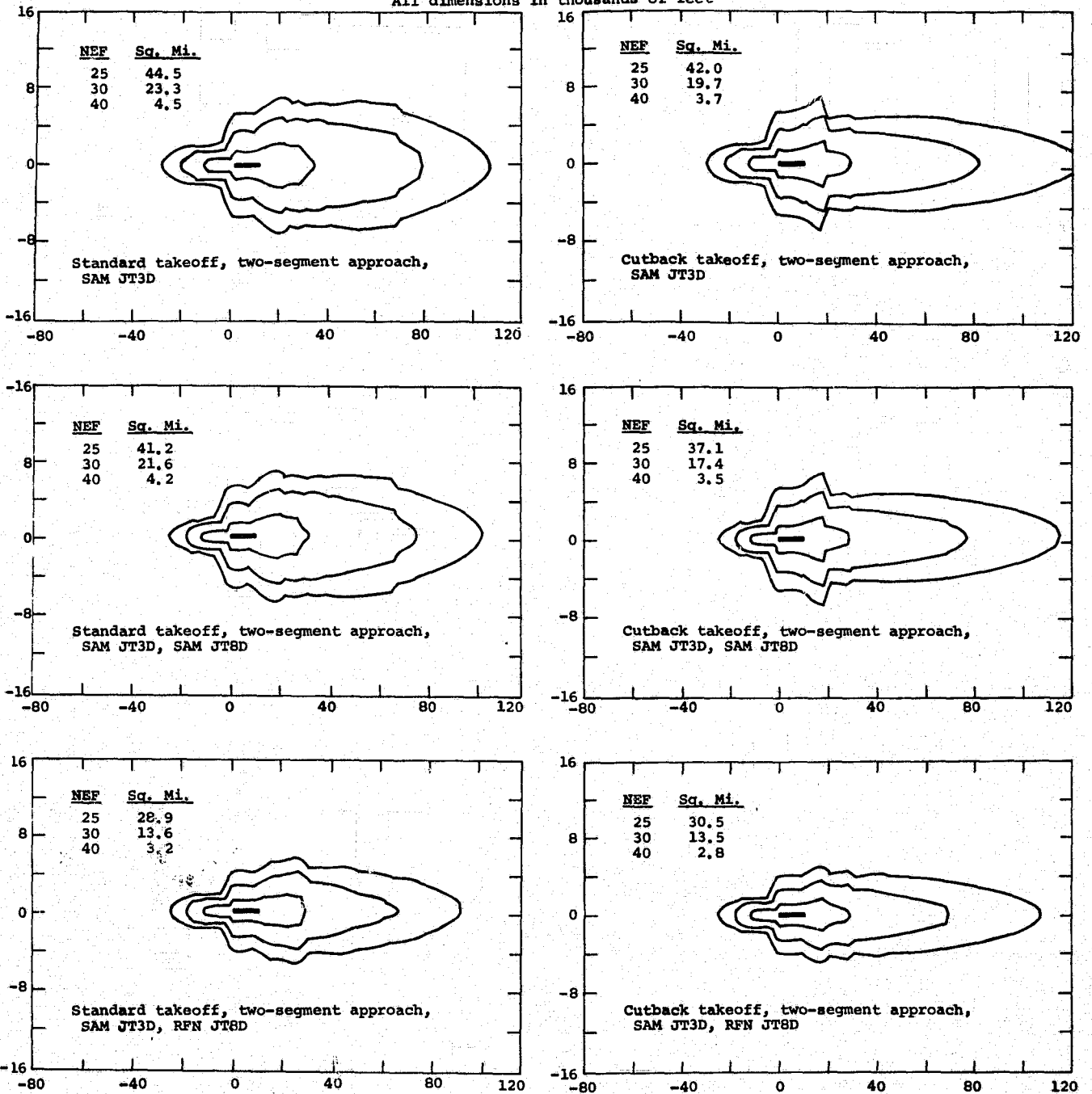


Figure 6.- Effect of SAM JT8D or RFN JT8D on 23-airport average in 1987.

NIGHT CURFEW OF JT3D AIRCRAFT

In examining the data of the original "23-Airport Study," it was clear that the baseline cases were dominated by the noise of the JT3D-powered aircraft. These aircraft were dominant in spite of the fact that they comprised only 8% of the 1981 operations and 7% of the 1987 operations. In view of this dominance, simple methods to reduce the noise due to JT3D-powered aircraft were sought.

Probably the simplest method of reducing JT3D noise is to ban nighttime operations of these aircraft. In the NEF weighting procedure, one nighttime operation (between 10:00 p.m. and 7:00 a.m.) is equivalent to 16.67 daytime operations. Therefore, banning nighttime operations and shifting those flights to day operations results in a significant reduction in perceived noise. The schedules of operations for the curfew JT3D case are shown in Table V which is analogous to Table III. Note that for this average airport case only 5.3 flights per day are changed from night to day in both 1981 and 1987.

Figure 7 shows the baseline contours for the curfew JT3D case in 1972, 1981, and 1987. This figure can be compared with figure 2 which shows the non-curfew results. Use of the curfew with no other noise reduction methods reduces the NEF 30 contour by 34% in 1972 and 19% in 1981 and 1987. It is interesting to note that with the curfew applied the noise exposure was nearly constant for the three dates studied. In effect, the noise reduction between 1972 and 1981 shown in figure 2 was primarily due to the reduction in night flights by JT3D-powered aircraft. Curfewing the JT3D aircraft is approximately as effective in reducing noise exposure as going to two-segment approaches by all aircraft. The curfew results in a general reduction of contour areas; whereas the two-segment approach results in a large reduction under the landing path.

The curfew was also applied in combination with other noise reduction options. The results for 1981 are shown in figures 8 and 9 which are analogous to figures 3 and 4. It is interesting to note that use of two-segment approaches in combination with the JT3D curfew gives almost exactly the same noise reduction as two-segment approaches in conjunction with SAM JT3D; that is, curfewing JT3D operations appears to have about the same effect as the SAM retrofit on JT3D aircraft. Use of the JT3D curfew lowers the NEF 30 contour area by 7% to 29% relative to the corresponding

non-curfew case. The reductions due to curfew are largest for the baseline, two-segment approach case and the two-segment approach plus SAM JT3D plus RFN JT8D case because these are the cases in which the JT3D aircraft strongly dominate the noise.

The effects of a JT3D curfew in 1987 are presented in figures 10 and 11 which are analogous to figures 5 and 6. The results are virtually identical to those for 1981.

The noise contour areas for all of the curfew JT3D cases are summarized in Table VI. These results can be compared with the non-curfew results given in Table IV. Use of the curfew with no other noise reduction options results in a 19% reduction of the NEF 30 contour in both 1981 and 1987. If the curfew and two-segment approaches are combined, the reductions from the non-curfew baselines are 26% in both cases, virtually the same as the reduction obtained by using two-segment approaches and SAM JT3D. Using the JT3D curfew in combination with two-segment approaches, SAM JT3D, and RFN JT8D, the NEF contour is reduced 70% in 1981 and 64% in 1987 (a reduction of 75% and 72% from the 1972 value). If SAM JT8D is used rather than RFN JT8D, the reductions are 36% in both 1981 and 1987 (48% and 47% relative to the 1972 value).

Curfewing of nighttime operations by JT3D-powered aircraft gives significant noise reductions in all cases and appears to be a promising option for consideration. Further, the curfew produces about the same noise reduction as applying the SAM retrofit to JT3D-powered aircraft. Such a curfew would obviously have some economic impact on the airlines. This impact is unknown, but should be estimated for comparison with the economic costs of other noise reduction modifications.

YEAR	AIRCRAFT	DAY	NIGHT	EQUIVALENT*
1972	B707	38.7	0.0	38.7
	DC8	27.3	0.0	27.3
	B727	80.5	12.2	239.0
	B737	19.0	1.0	35.0
	DC9	51.0	7.3	172.8
	B747	7.9	1.2	28.2
	DC10/L1011	4.5	1.0	20.5
1981	SST	0.6	0.0	0.6
	B707	16.3	0.0	16.3
	DC8	10.9	0.0	10.9
	B727	73.1	10.3	245.5
	B727QN	8.8	1.0	25.5
	B737	22.2	1.0	39.9
	DC9	42.6	5.4	132.4
	B747	23.2	4.9	104.5
	DC10/L1011	62.1	13.8	292.5
WIDE TWIN	27.1	3.4	83.9	
1987	SST	1.2	0.0	1.2
	B707	15.8	0.0	15.8
	DC8	10.3	0.0	10.3
	B727	71.2	9.2	224.8
	B727QN	11.3	1.2	31.2
	B737	21.6	1.0	38.6
	DC9	43.7	5.1	129.1
	B747	31.5	6.7	144.0
	DC10/L1011	82.5	18.6	390.2
WIDE TWIN	49.2	5.4	139.0	

*EQUIVALENT = DAY + 16.67 NIGHT

Table V.- Landings (or takeoffs) per day,
23-Airport Average, curfew on
JT3D aircraft.

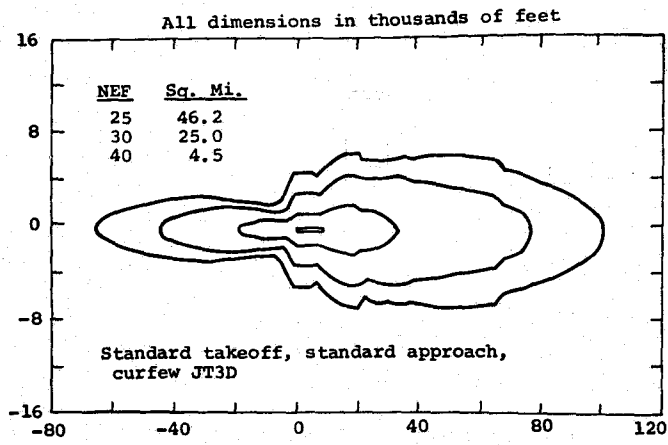
YEAR	1972			1981			1987			
	NEF	25	30	40	25	30	40	25	30	40
BASELINE		48.2	25.0	4.5	48.8	24.7	4.4	49.2	25.1	4.5
TWO-SEGMENT					42.7	22.5	4.2	43.2	22.7	4.3
TWO-SEGMENT + SAM JT3D					40.9	21.3	3.9	41.6	21.6	4.0
TWO-SEGMENT + SAM JT3D + SAM JT8D					37.0	19.4	3.6	38.1	19.9	3.7
TWO-SEGMENT + SAM JT3D + RFN JT8D					21.5	9.3	2.2	24.1	10.6	2.5

(a) Standard takeoff.

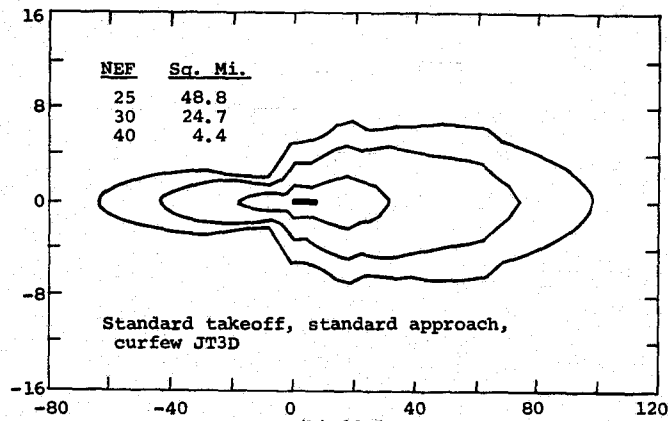
YEAR	1972			1981			1987			
	NEF	25	30	40	25	30	40	25	30	40
BASELINE					46.7	21.8	3.9	47.6	22.3	4.0
TWO-SEGMENT					41.0	19.4	3.7	41.7	20.0	3.8
TWO-SEGMENT + SAM JT3D					36.6	16.6	3.2	38.1	17.5	3.5
TWO-SEGMENT + SAM JT3D + SAM JT8D					31.6	14.0	2.9	33.3	15.1	3.2
TWO-SEGMENT + SAM JT3D + RFN JT8D					23.1	9.3	2.0	25.7	10.9	2.4

(b) Takeoff with cutback.

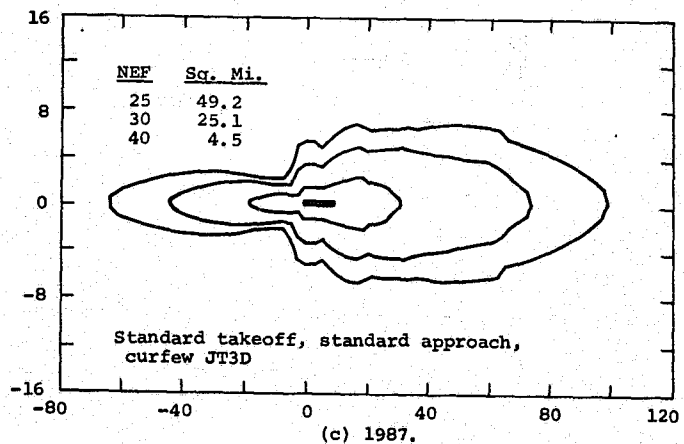
Table VI.- Summary of 23-Airport noise contour areas with curfew on JT3D aircraft, square miles.



(a) 1972.



(b) 1981.



(c) 1987.

Figure 7.- Noise contours for 23-airport average in 1972, 1981, 1987 with curfew on JT3D aircraft.

All dimensions in thousands of feet

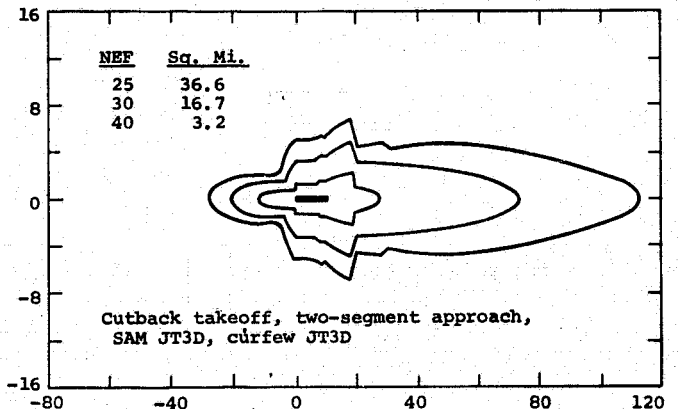
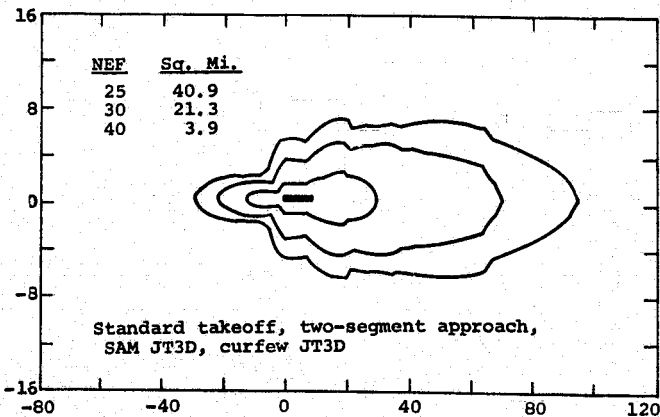
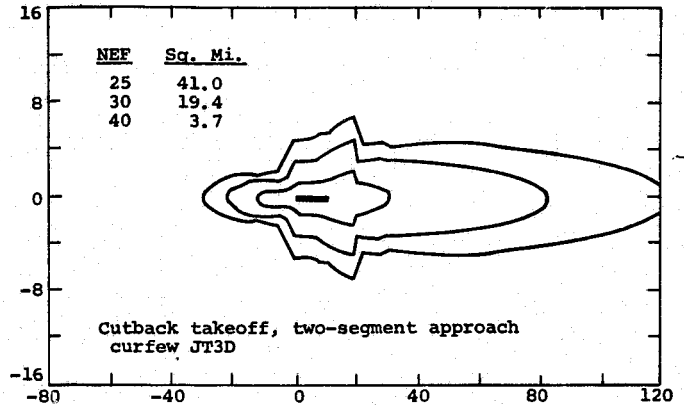
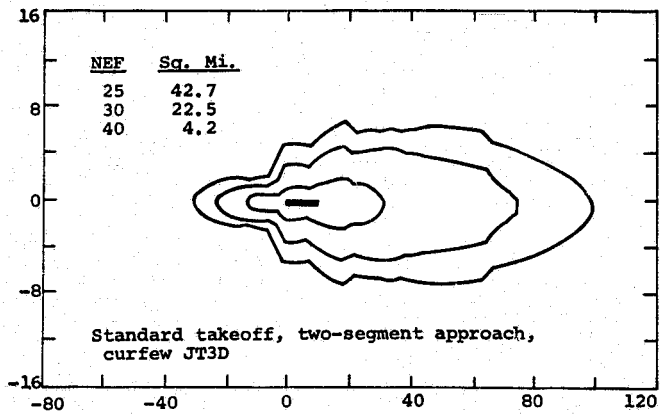
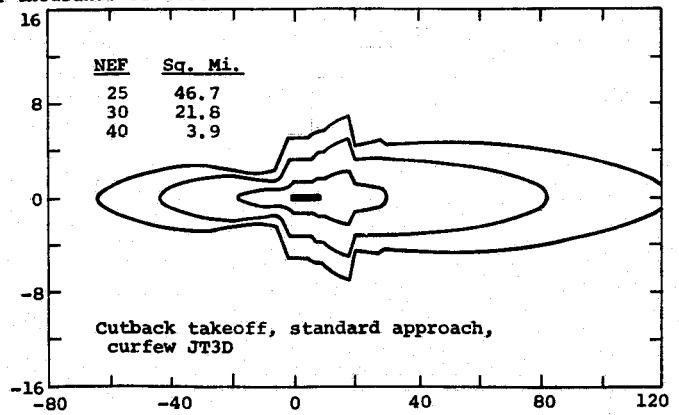
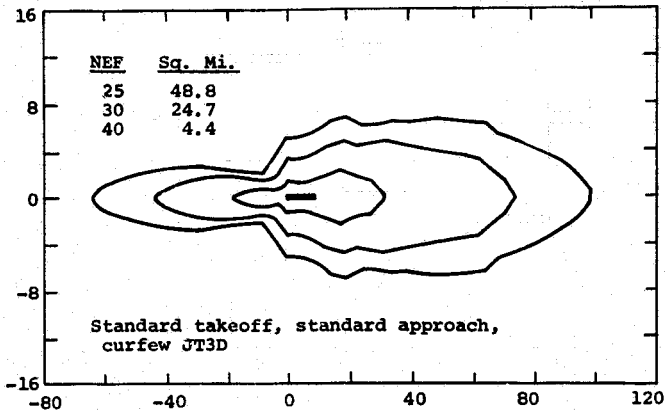


Figure 8.- Effect of cutback takeoff, two-segment approach, and SAM JT3D on 23-airport average in 1981 with curfew on JT3D aircraft.

All dimensions in thousands of feet

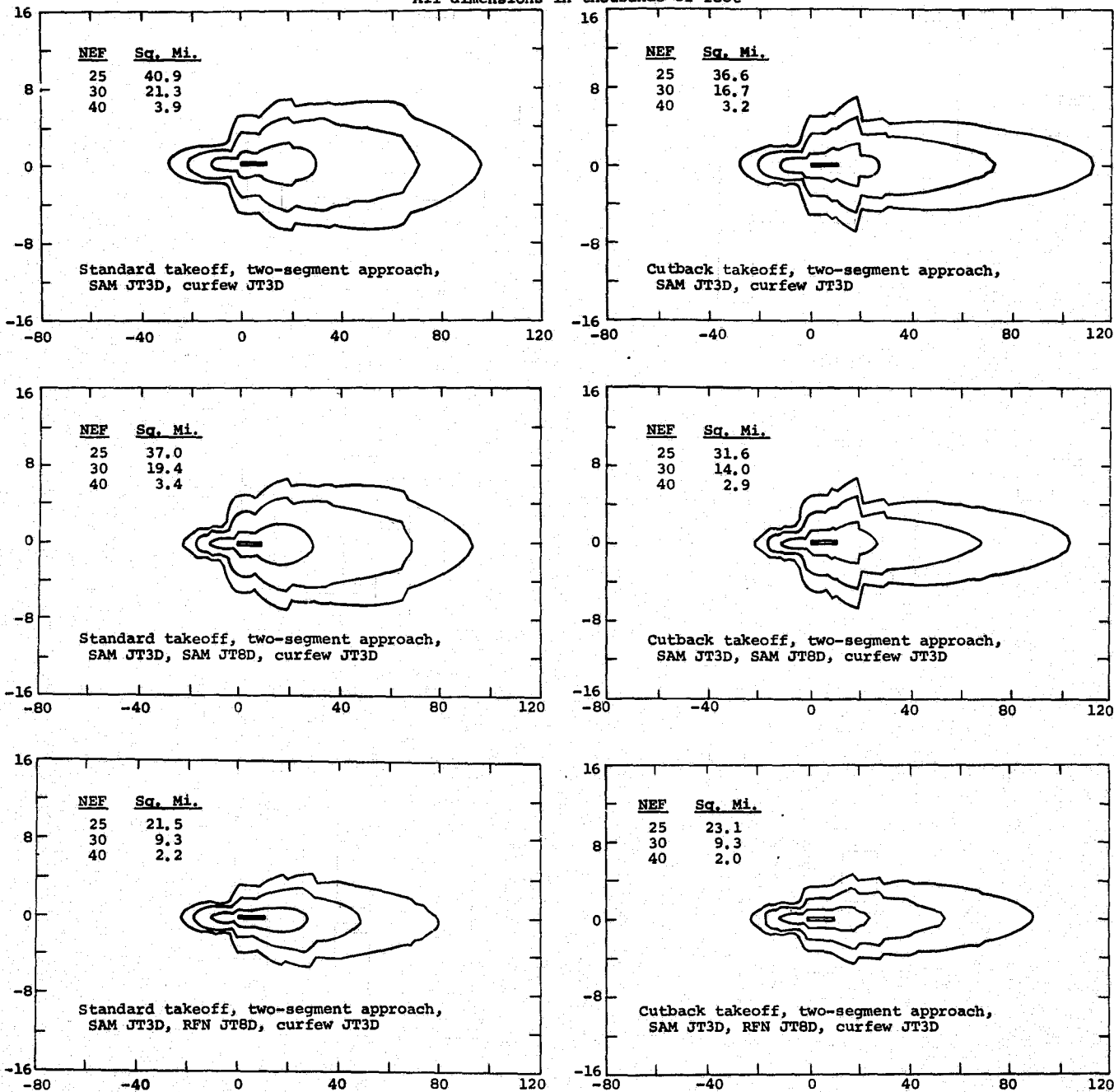


Figure 9.- Effect of SAM JT8D or RFN JT8D on 23-airport average in 1981 with curfew on JT3D aircraft.

All dimension in thousands of feet

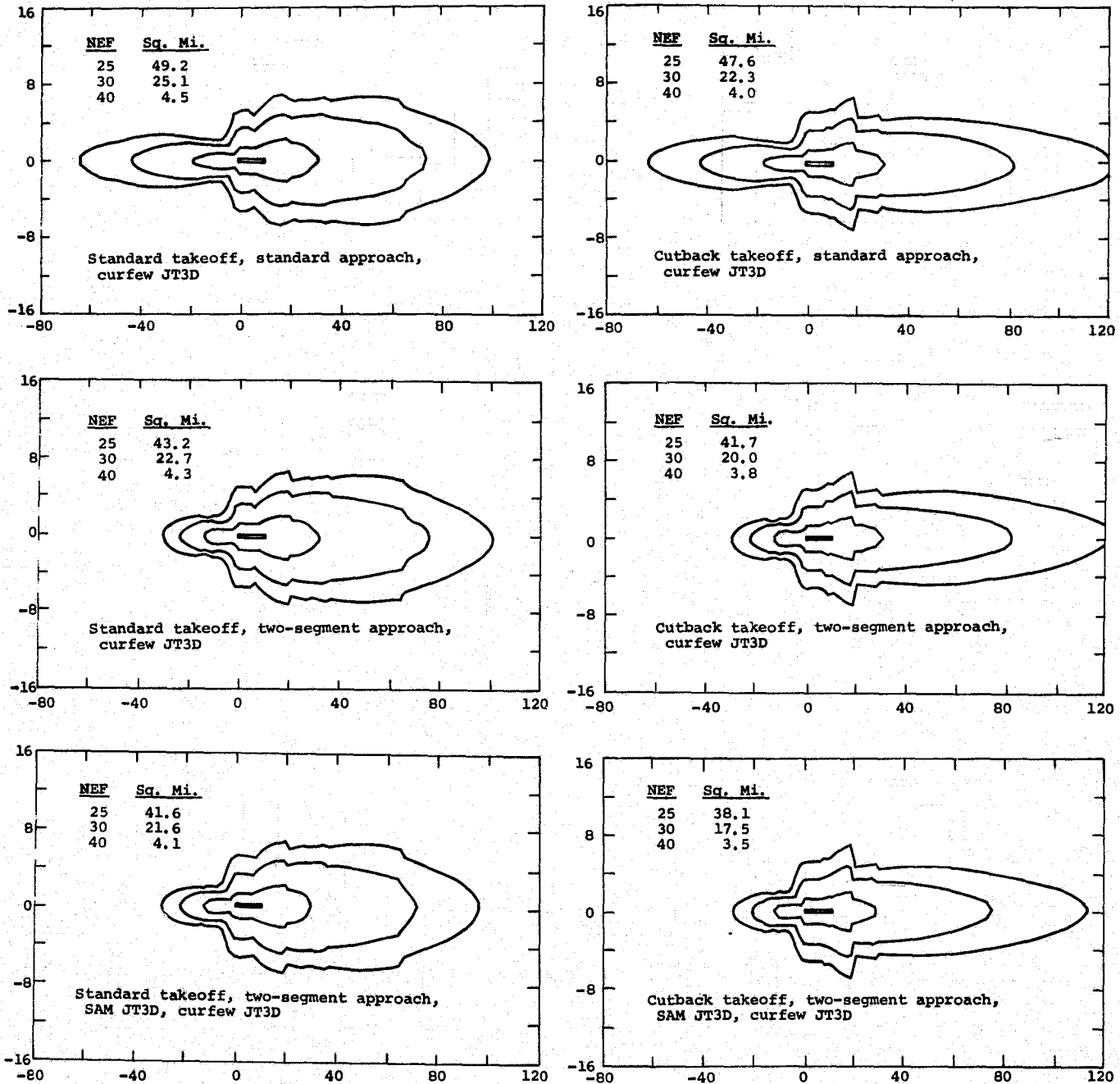


Figure 10.- Effect of cutback takeoff, two-segment approach, and SAM JT3D on 23-airport average in 1987 with curfew on JT3D aircraft.

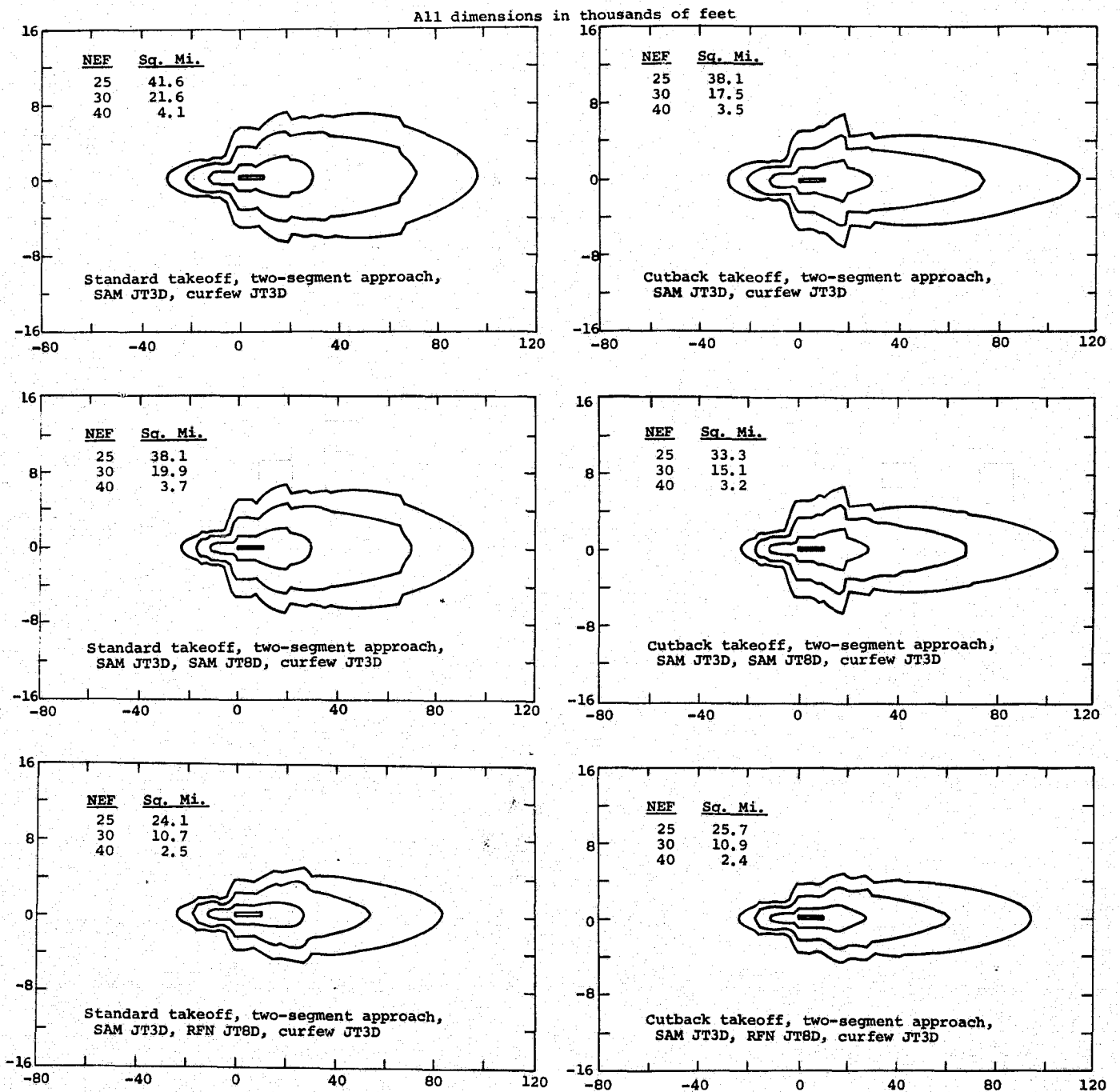


Figure 11.- Effect of SAM JT8D or RFN JT8D on 23-airport average in 1987 with curfew on JT3D aircraft.

REFANNED ENGINE FOR NEW JT8D AIRCRAFT

As shown by the results of the "23-Airport Study," the RFN retrofit on JT8D aircraft gives a large reduction in noise. Since the JT8D-powered aircraft are still in production, it seemed appropriate to examine the effects of equipping new production aircraft with engines which incorporated the RFN modification. These engines would be somewhat more expensive than current JT8D engines, but program costs would be considerably less than for retrofitting all of the JT8D aircraft.

Estimates of the total airline fleet in 1981 and 1987 are shown in reference 2. From these estimates it was determined that approximately one third of the JT8D aircraft flying in 1981 and in 1987 would be aircraft produced after 1974. The one-third value was used to adjust the 23-Airport Average schedules, although refanned engines could not be available for at least several years. The schedules of operations for the RFN new JT8D case are shown in Table VII, which is analogous to Table III. The results of refanning new JT8D aircraft in combination with other noise reduction options are shown in figures 12 and 13 for 1981. These figures are analogous to figures 3 and 4. Not unexpectedly, the effects of refanning one third of the JT8D aircraft are rather small. The reduction in noise contour areas amounts to 2% to 6% for the cases examined. Refanning all the JT8D aircraft is much more effective than refanning only the new ones.

RFN new JT8D results for 1987 are shown in figures 14 and 15 which are analogous to figures 5 and 6. The results are virtually identical to those for 1981.

The noise contour areas for the RFN new JT8D cases are summarized in Table VIII. These results can be compared with the baseline results given in Table IV. The noise reductions are small, while the number of new JT8D aircraft is probably optimistic. Refanning the new JT8D aircraft does not appear to be an attractive option despite its lower costs relative to refanning all JT8D aircraft.

YEAR	AIRCRAFT	DAY	NIGHT	EQUIVALENT*
1972	B707	31.5	7.2	152.1
	DC8	20.2	7.1	138.5
	B727	80.5	12.2	239.0
	B737	19.0	1.0	35.0
	DC9	51.0	7.3	172.8
	B747	7.9	1.2	28.2
	DC10/L1011	4.5	1.0	20.5
1981	SST	0.6	0.0	0.6
	B707	13.4	2.9	62.0
	DC8	8.4	2.4	49.1
	B727	64.5	9.3	220.3
	B727RFN	17.4	2.0	50.7
	B737	20.7	0.9	36.0
	B737RFN	1.4	0.1	3.9
	DC9	39.7	5.1	124.7
	DC9RFN	2.9	0.3	7.7
	B747	23.2	4.9	104.5
	DC10/L1011	62.1	13.8	292.5
WIDE TWIN	27.1	3.4	83.9	
1987	SST	1.2	0.0	1.2
	B707	12.0	2.5	54.0
	DC8	7.6	2.8	54.5
	B727	63.5	8.4	203.7
	B727RFN	19.0	2.0	52.3
	B737	19.2	0.8	33.0
	B737RFN	2.4	0.2	5.6
	DC9	38.9	4.7	118.0
	DC9RFN	4.8	0.4	11.1
	B747	31.5	6.7	144.0
	DC10/L1011	82.5	18.6	390.2
WIDE TWIN	49.2	5.4	139.0	

*EQUIVALENT = DAY + 16.67 NIGHT

Table VII.- Landings (or takeoffs) per day,
23-Airport Average, RFN on
new JT8D aircraft.

YEAR	1981			1987		
	NEF	25	30	40	25	30
BASELINE	56.2	29.4	5.7	56.9	29.7	5.8
TWO-SEGMENT	48.5	26.0	5.3	49.0	26.3	5.3
TWO-SEGMENT + SAM JT3D	41.6	21.7	4.2	42.3	22.0	4.3
TWO-SEGMENT + SAM JT3D + SAM JT8D	38.1	19.9	3.9	39.1	20.5	4.0

(a) Standard takeoff.

YEAR	1981			1987		
	NEF	25	30	40	25	30
BASELINE	60.1	29.9	5.7	61.1	30.5	5.8
TWO-SEGMENT	52.4	26.4	5.3	53.3	26.8	5.4
TWO-SEGMENT + SAM JT3D	39.0	17.9	3.4	40.4	18.7	3.6
TWO-SEGMENT + SAM JT3D + SAM JT8D	34.7	15.6	3.1	36.3	16.7	3.3

(b) Takeoff with cutback.

Table VIII.- Summary of 23-Airport noise contour areas with RFN on new JT8D aircraft, square miles.

All dimensions in thousands of feet

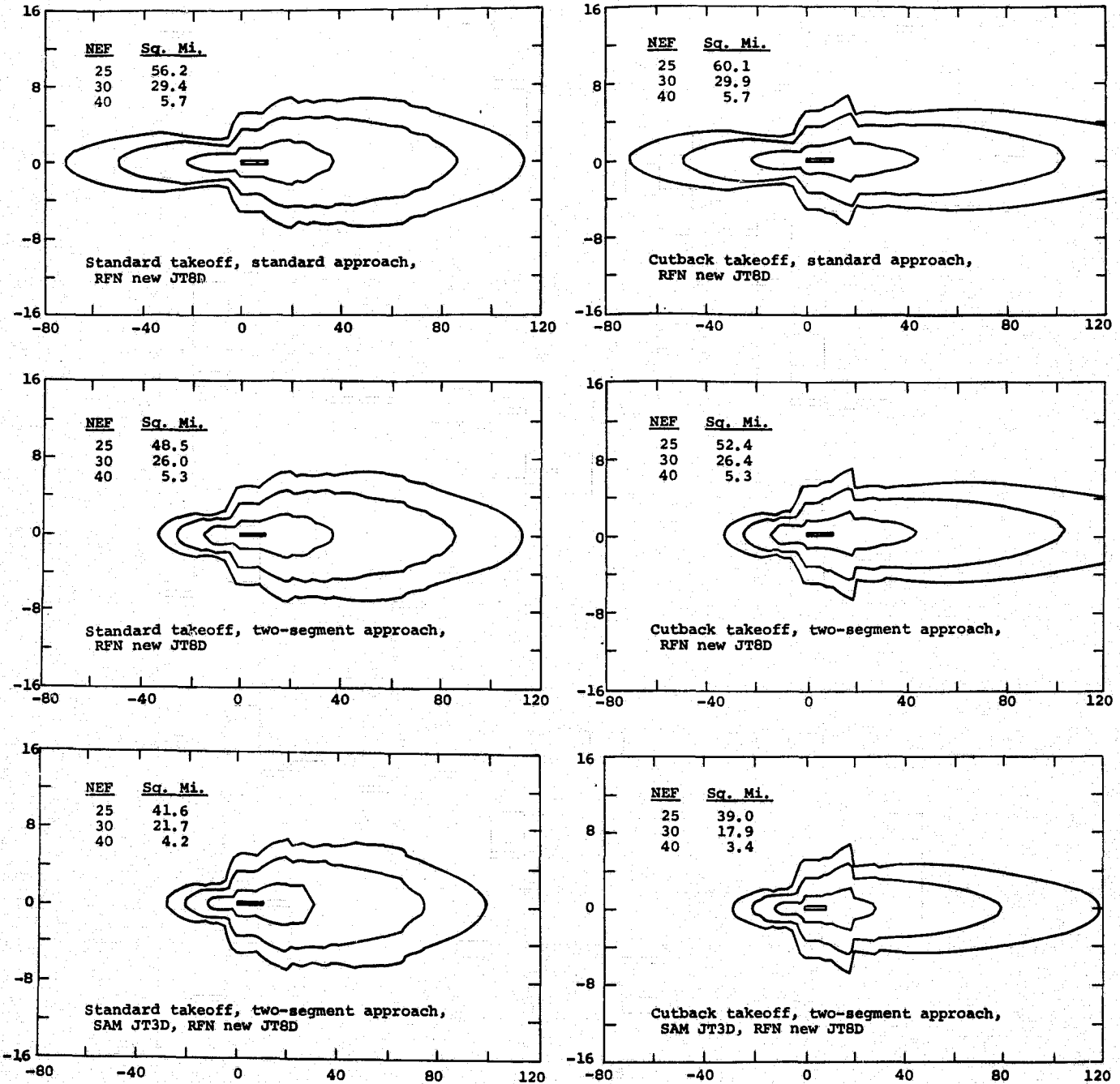


Figure 12.- Effect of cutback takeoff, two-segment approach, and SAM JT3D on 23-airport average in 1981 with refan on new JT8D aircraft.

All dimensions in thousands of feet

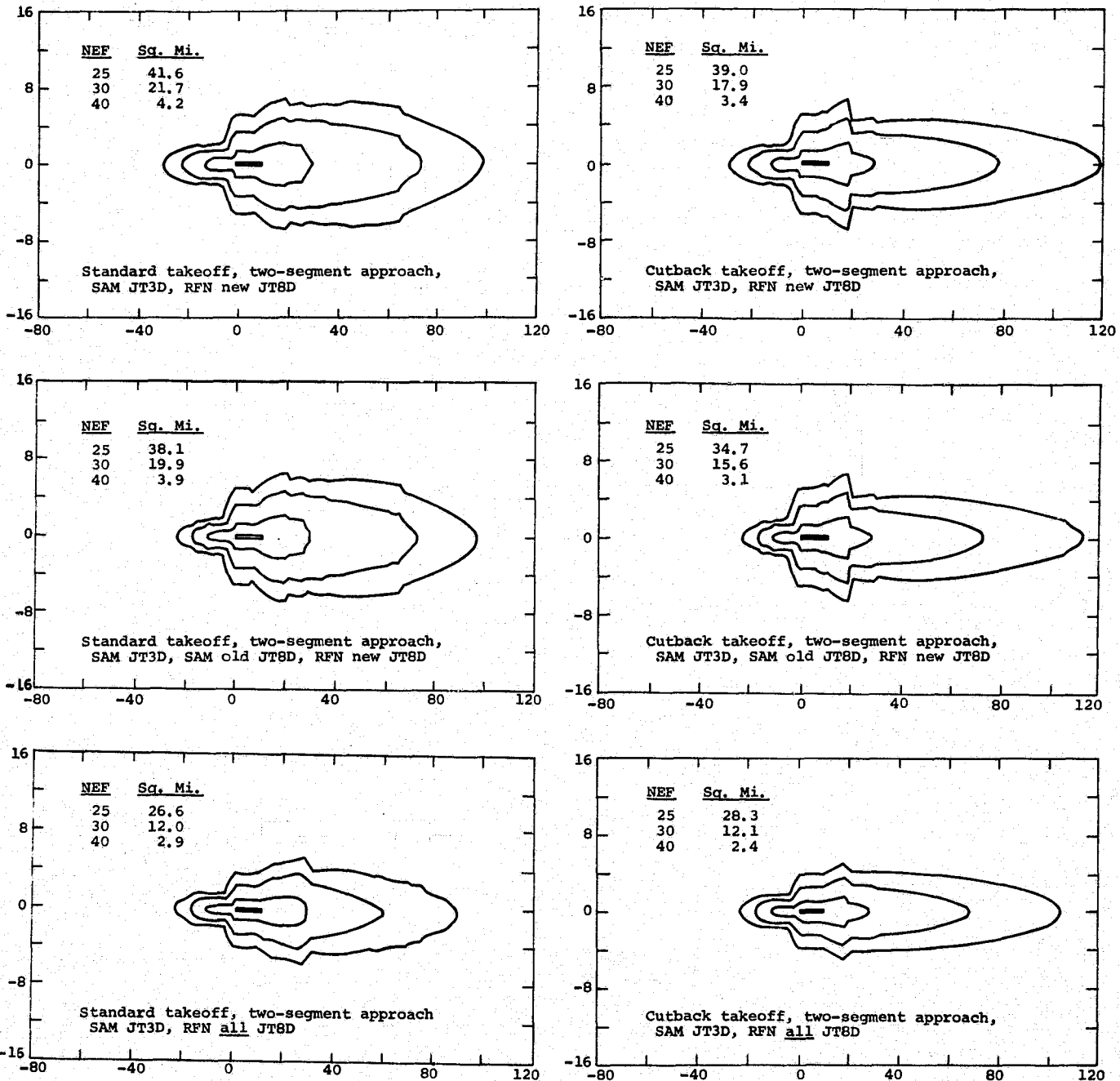


Figure 13.- Effect of SAM JT8D or RFN JT8D on 23-airport average in 1981 with refan on new JT8D aircraft.

All dimensions in thousands of feet

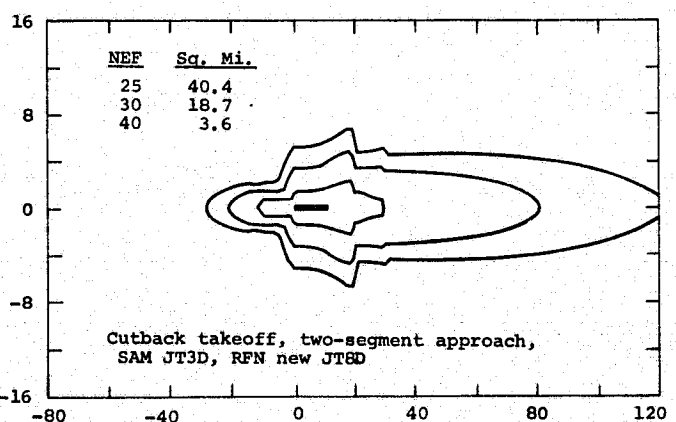
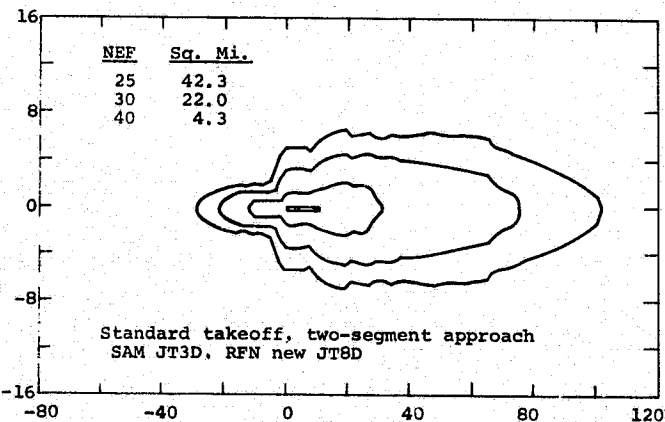
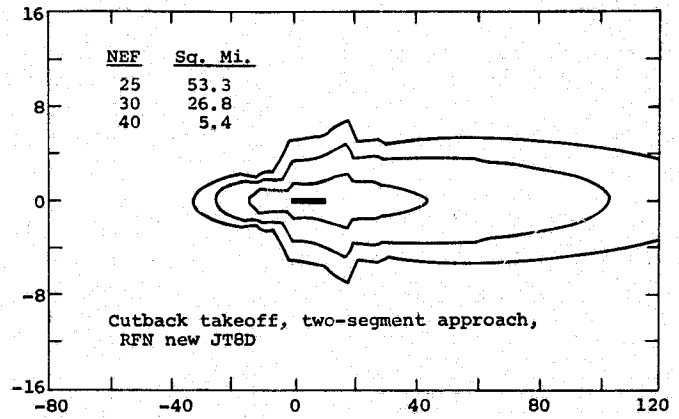
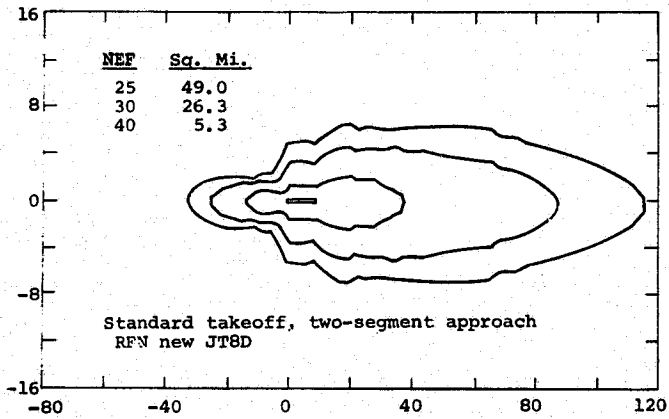
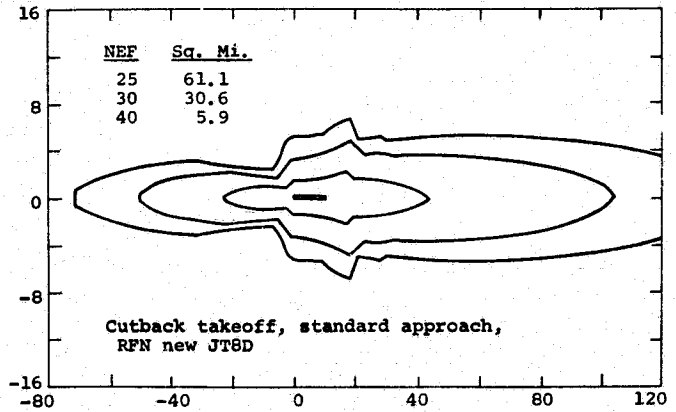
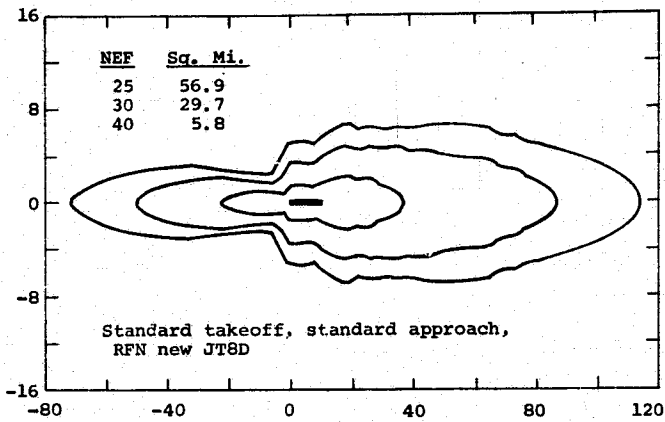


Figure 14.- Effect of cutback takeoff, two-segment approach, and SAM JT3D on 23-airport average in 1987 with refan on new JT8D aircraft.

All dimensions in thousands of feet

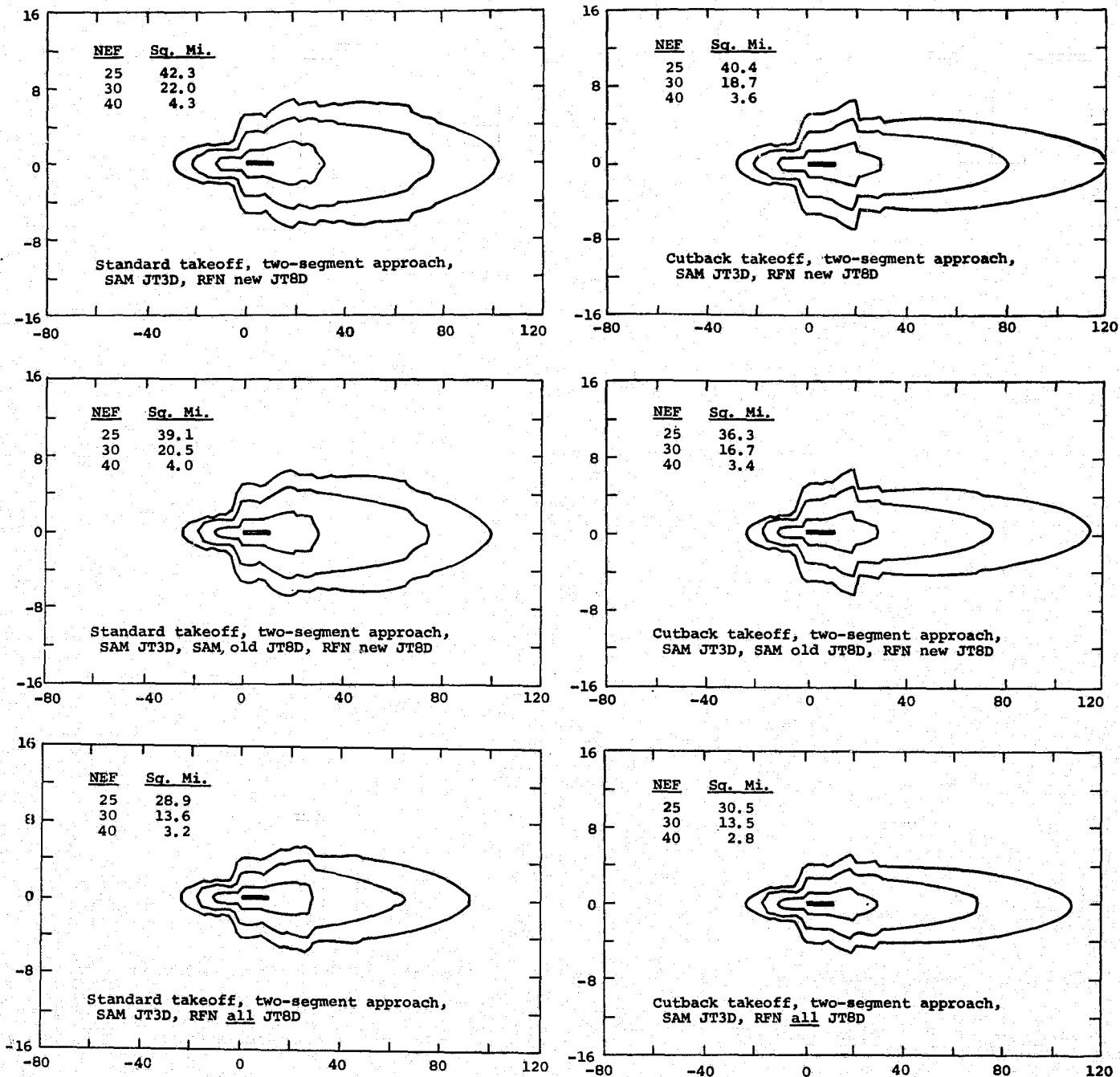


Figure 15.- Effect of SAM JT8D or RFN JT8D on 23-airport average in 1987 with refan on new JT8D aircraft.

CUTBACK TAKEOFF PROCEDURES

In general, cutback takeoff procedures did not give significant changes in the noise contour areas. However, the takeoff characteristics of the JT3D aircraft are considerably different from those of the JT8D aircraft. Because of engine-out design requirements, four-engine aircraft (JT3D-powered) generally climb less steeply and cannot cut back the throttle as much as two- and three-engine aircraft (JT8D-powered). Therefore, throttle cutbacks on takeoff are more effective on the JT8D aircraft than on JT3D aircraft.

The effects of cutback takeoff procedures for JT3D aircraft are compared with SAM JT3D in figure 16. Applying the SAM modification to the JT3D-powered aircraft results in a 15% reduction in the NEF 30 contour area. In contrast, the use of cutback takeoff procedures on the JT3D aircraft results in an 8% increase in the NEF 30 contour area. This occurs because sideline noise is reduced beyond the cutback point, but the contour is lengthened considerably because of the reduced climb angle.

The effects of SAM JT8D, cutback JT8D, and RFN JT8D are shown in figure 17. In this case, SAM gives an 8% reduction in the NEF 30 contour area, cutback gives a 16% reduction, and RFN gives a 48% reduction. Obviously, the use of cutback takeoff on JT8D aircraft is attractive. Several other cases with cutback takeoffs on JT8D aircraft are shown in figure 18.

Figure 19 is a tree of option results for combinations of SAM JT3D, cutback JT3D, and cutback JT8D in 1981. The conclusion is as above; cutback takeoffs on the JT3D are not effective in reducing noise while the SAM retrofit is effective.

Figure 20 is a similar tree for the effects of SAM JT8D, RFN JT8D, cutback JT3D, and cutback JT8D in 1981. Here the conclusion is that the SAM modification of the JT8D is not effective in reducing noise but cutback takeoff procedures are. RFN modifications to the JT8D remain very effective. A second conclusion from figure 20 is that cutback JT8D is still effective if the SAM JT8D modification has been applied, but it is not required if RFN JT8D is used.

Figures 21-25 are analogous to figures 16-20 and give the results for 1987. These results are virtually identical to those for 1981.

The cutback takeoff procedures used in this analysis are rather severe and probably are not suitable for airline operations. However, in view of the noise reductions obtained with cutback procedures on JT8D aircraft, it appears that less severe cutback procedures should be seriously studied. It appears that cutback takeoff procedures for the JT8D aircraft could reduce noise as much as the SAM modification of these aircraft and at a significantly lower cost. In contrast, cutback takeoff procedures are not effective on the JT3D aircraft.

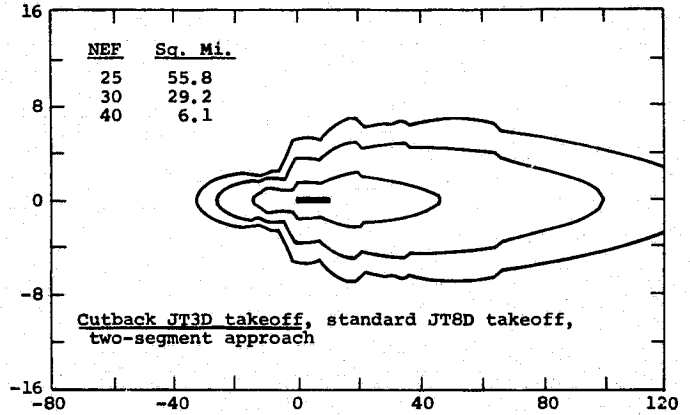
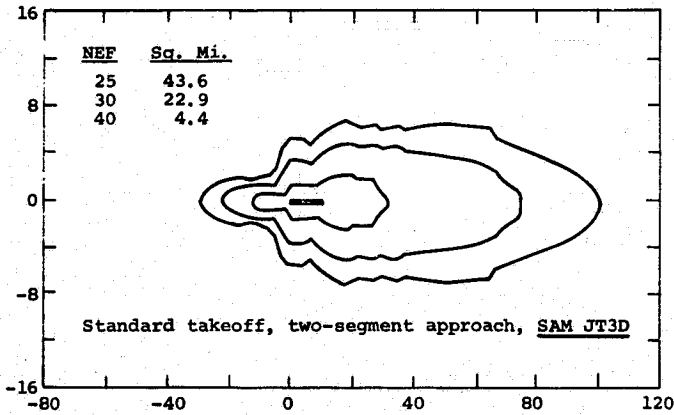
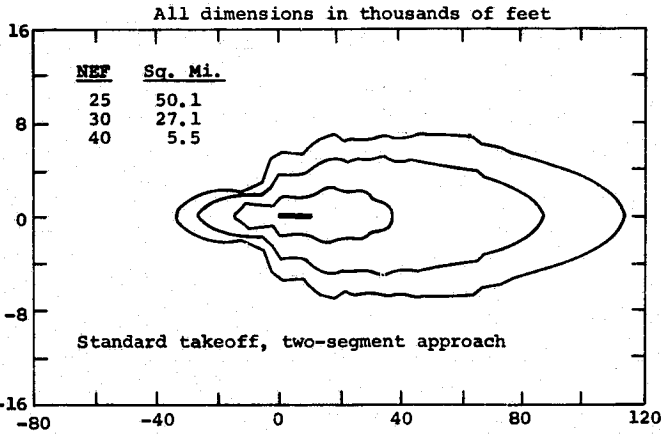


Figure 16.- Effect of SAM JT3D or cutback takeoff JT3D on 23-airport average in 1981.

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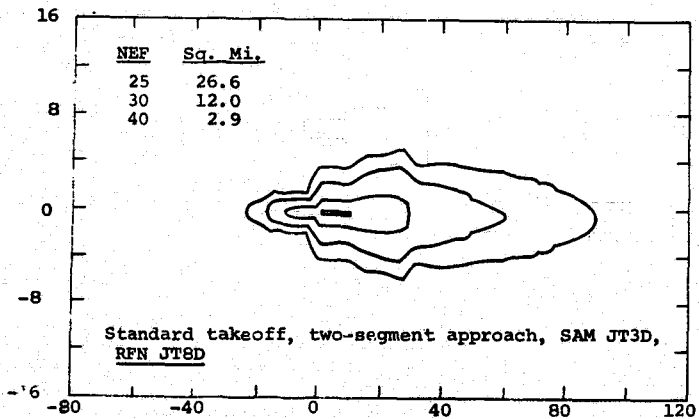
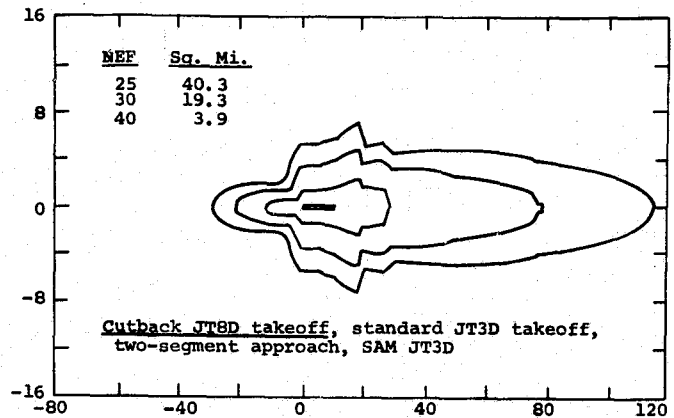
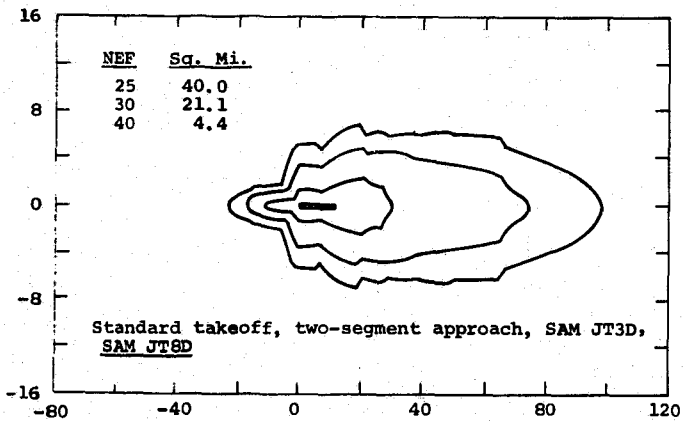
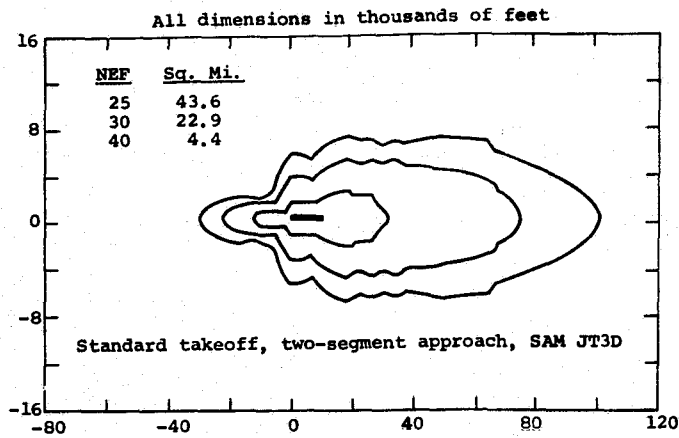


Figure 17.- Effect of SAM JT8D, cutback takeoff JT8D, or RFN JT8D on 23-airport average in 1981.

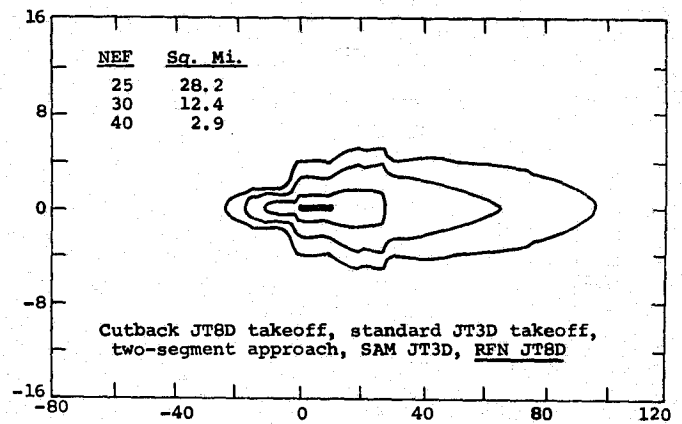
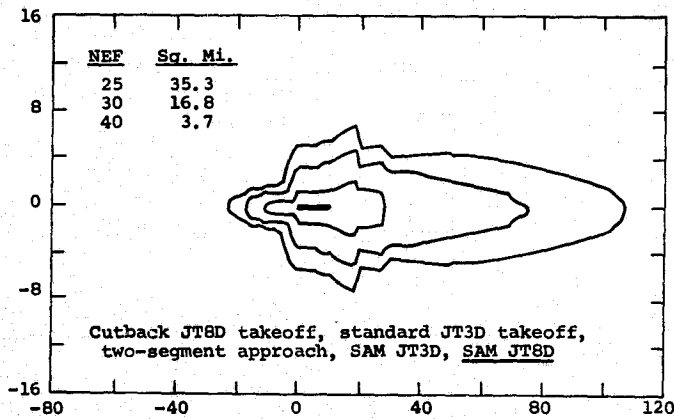
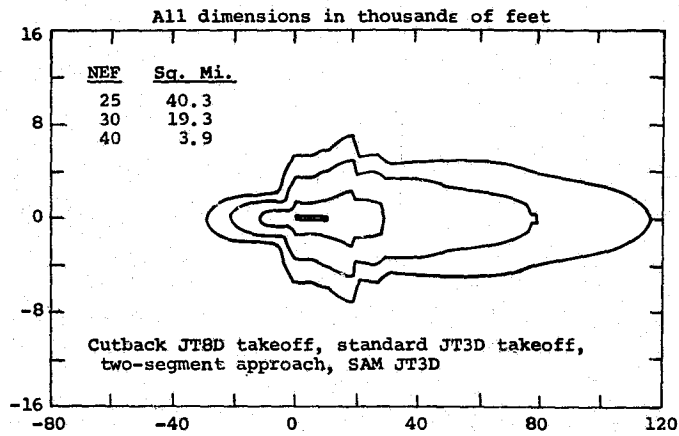


Figure 18.- Effect of SAM JT8D or RFN JT8D with cutback takeoff JT8D on 23-airport average in 1981.

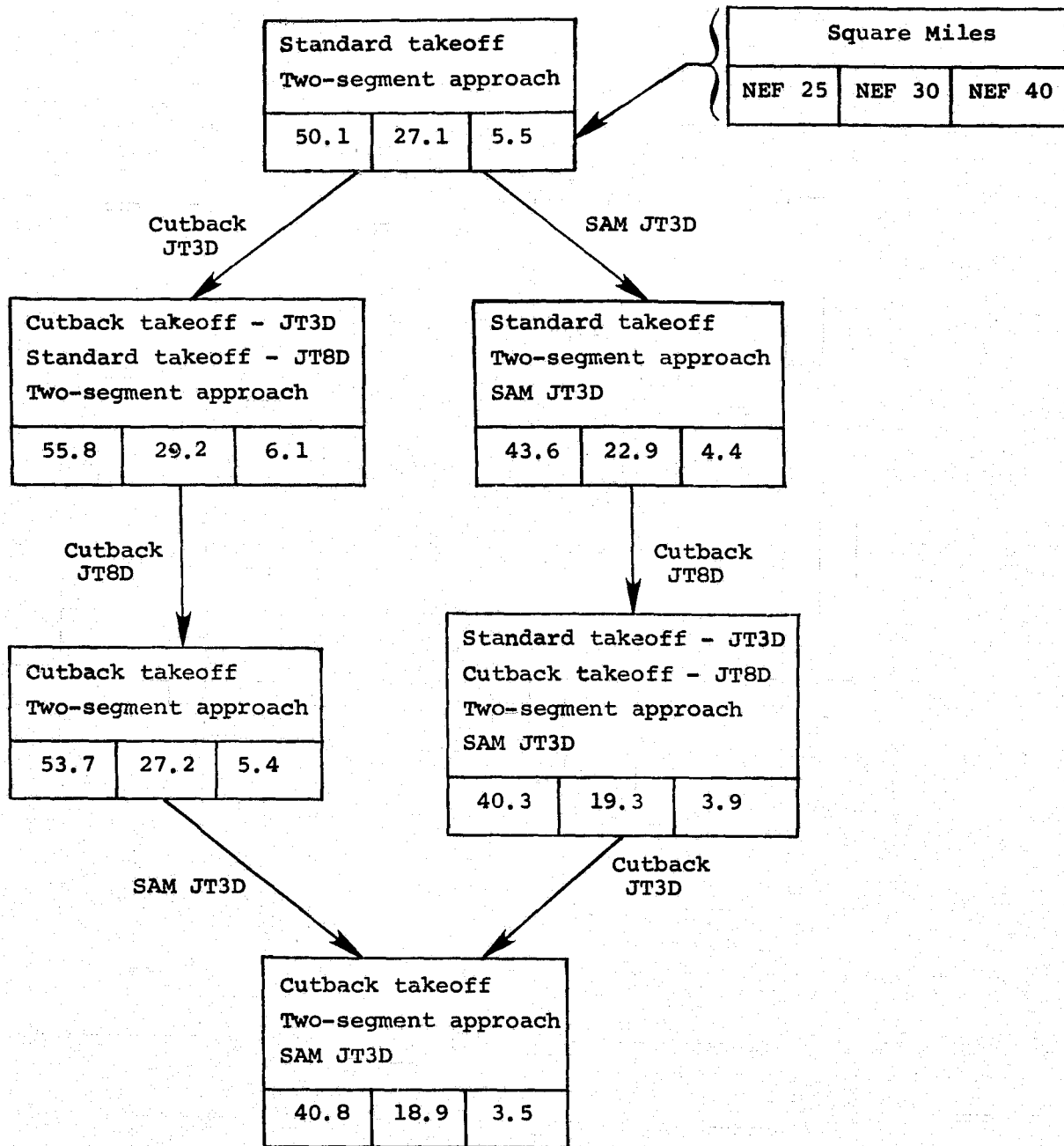


Figure 19.- Tree of effects for SAM JT3D, cutback JT3D, and cutback JT8D in 1981.

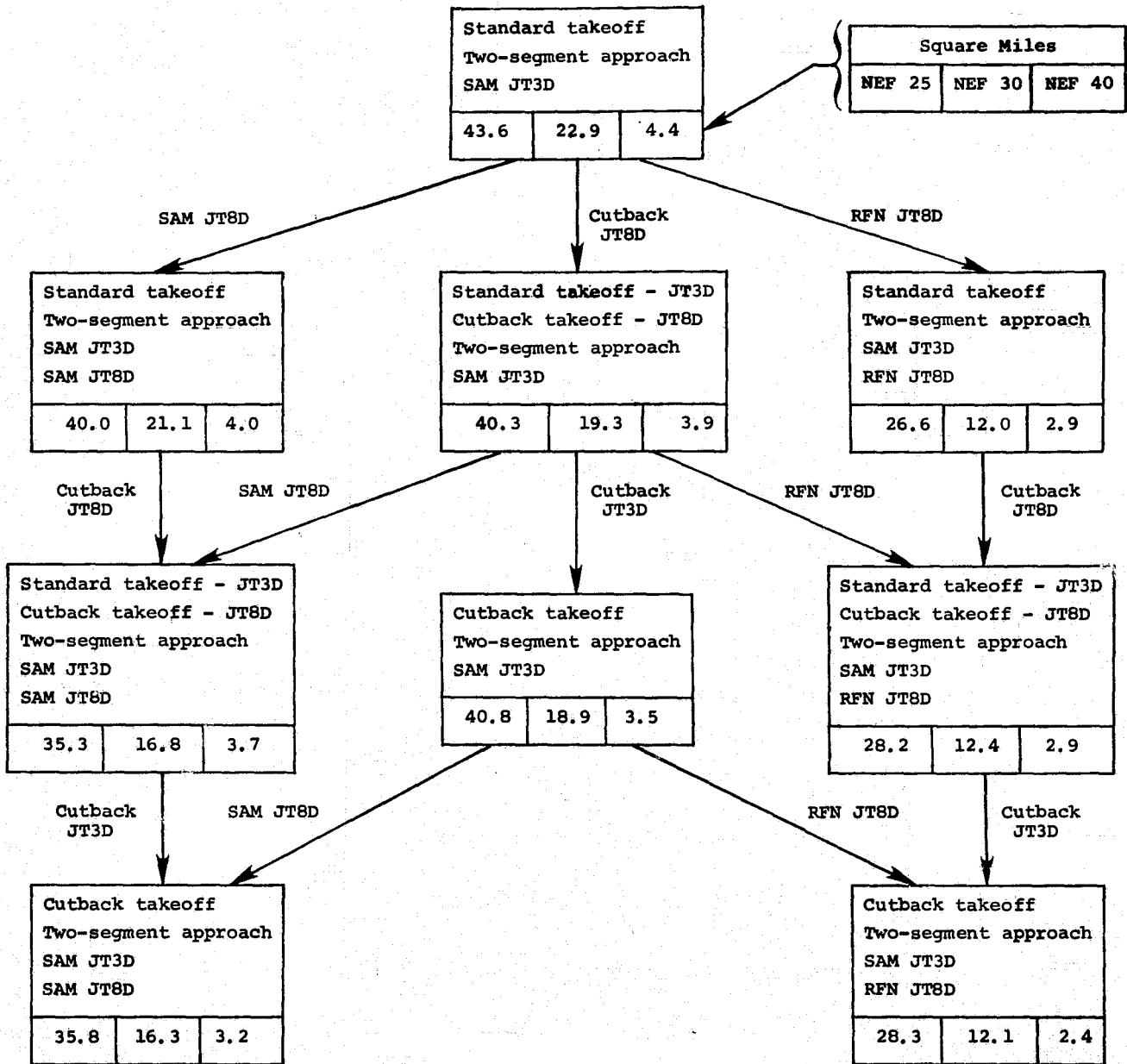


Figure 20.- Tree of effects for SAM JT8D, RFN JT8D, cutback JT3D, and cutback JT8D in 1981.

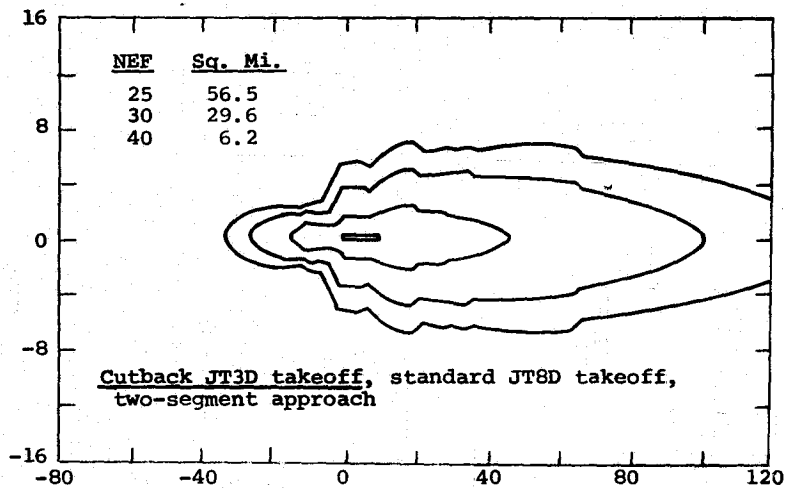
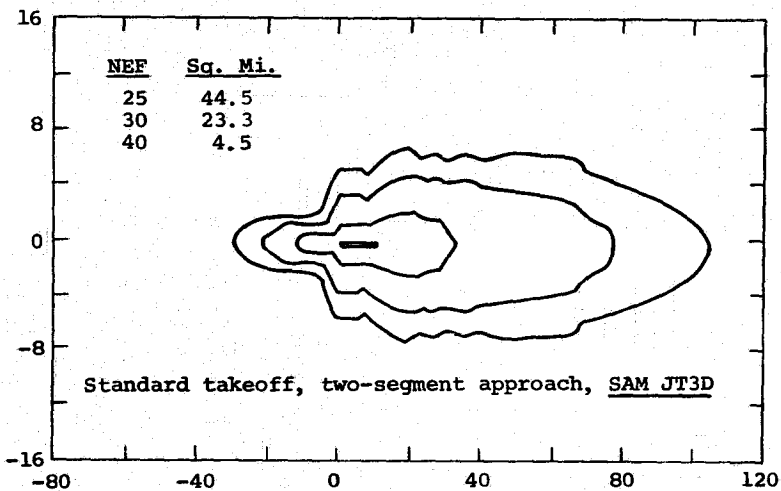
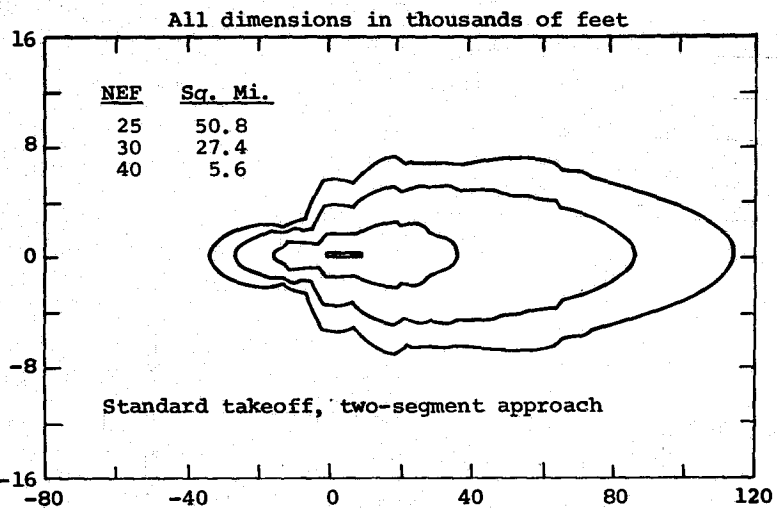


Figure 21.- Effect of SAM JT3D or cutback takeoff JT3D on 23-airport average in 1987.

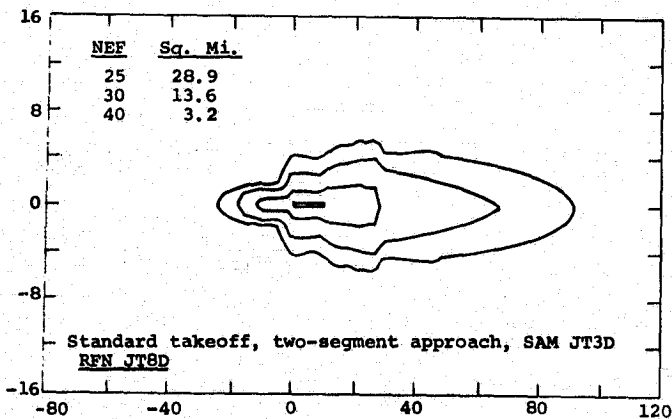
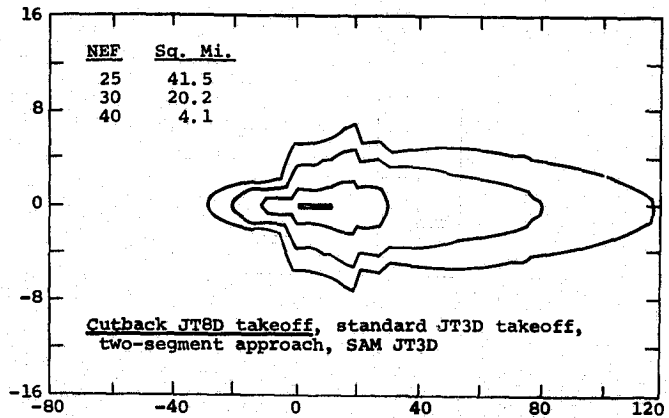
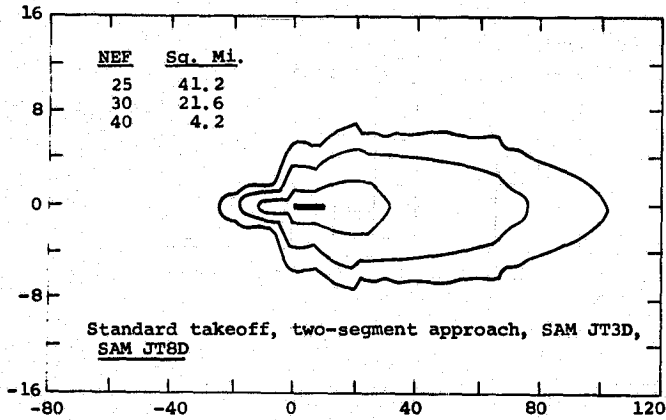
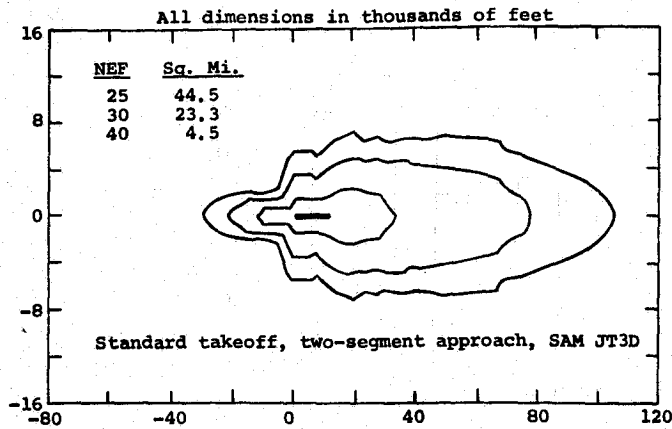


Figure 22.- Effect of SAM JT8D, cutback takeoff JT8D, or RFN JT8D on 23-airport average in 1987.

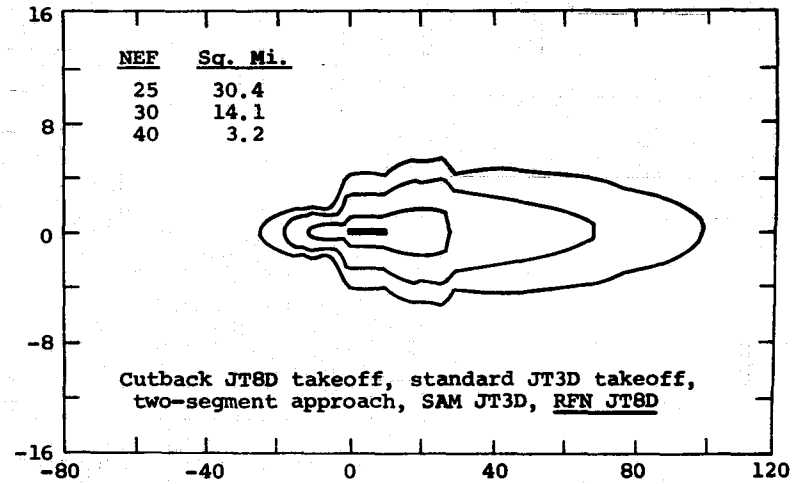
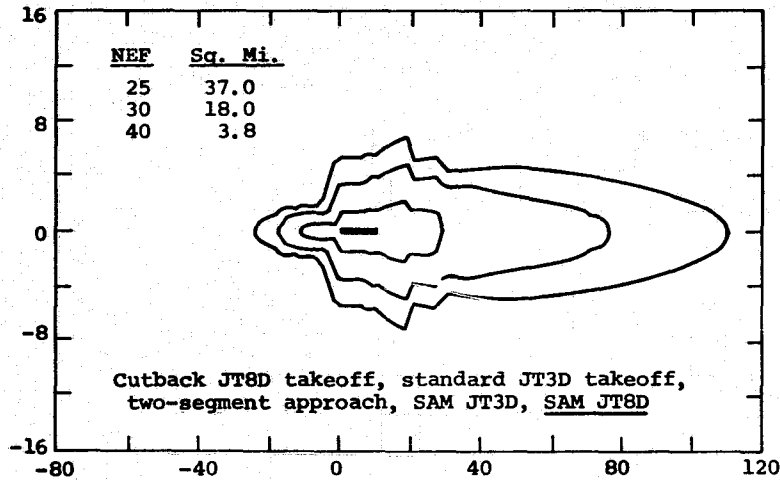
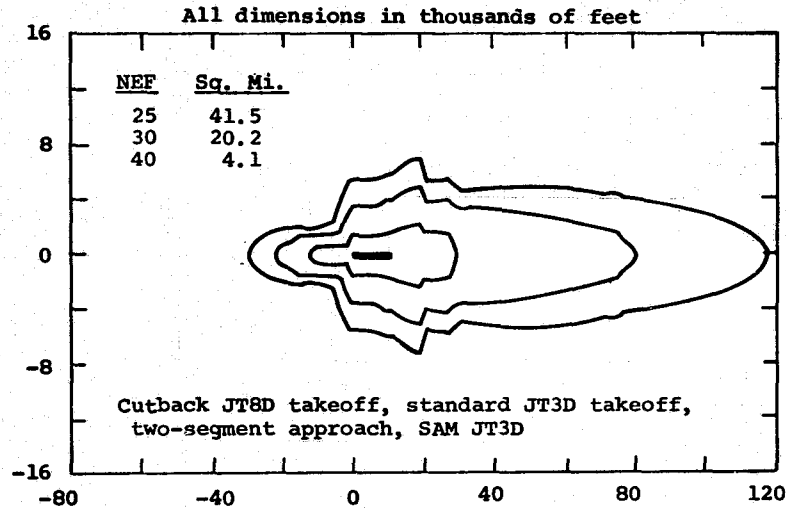


Figure 23.- Effect of SAM JT8D or RFN JT8D with cutback takeoff JT8D on 23-airport average in 1987.

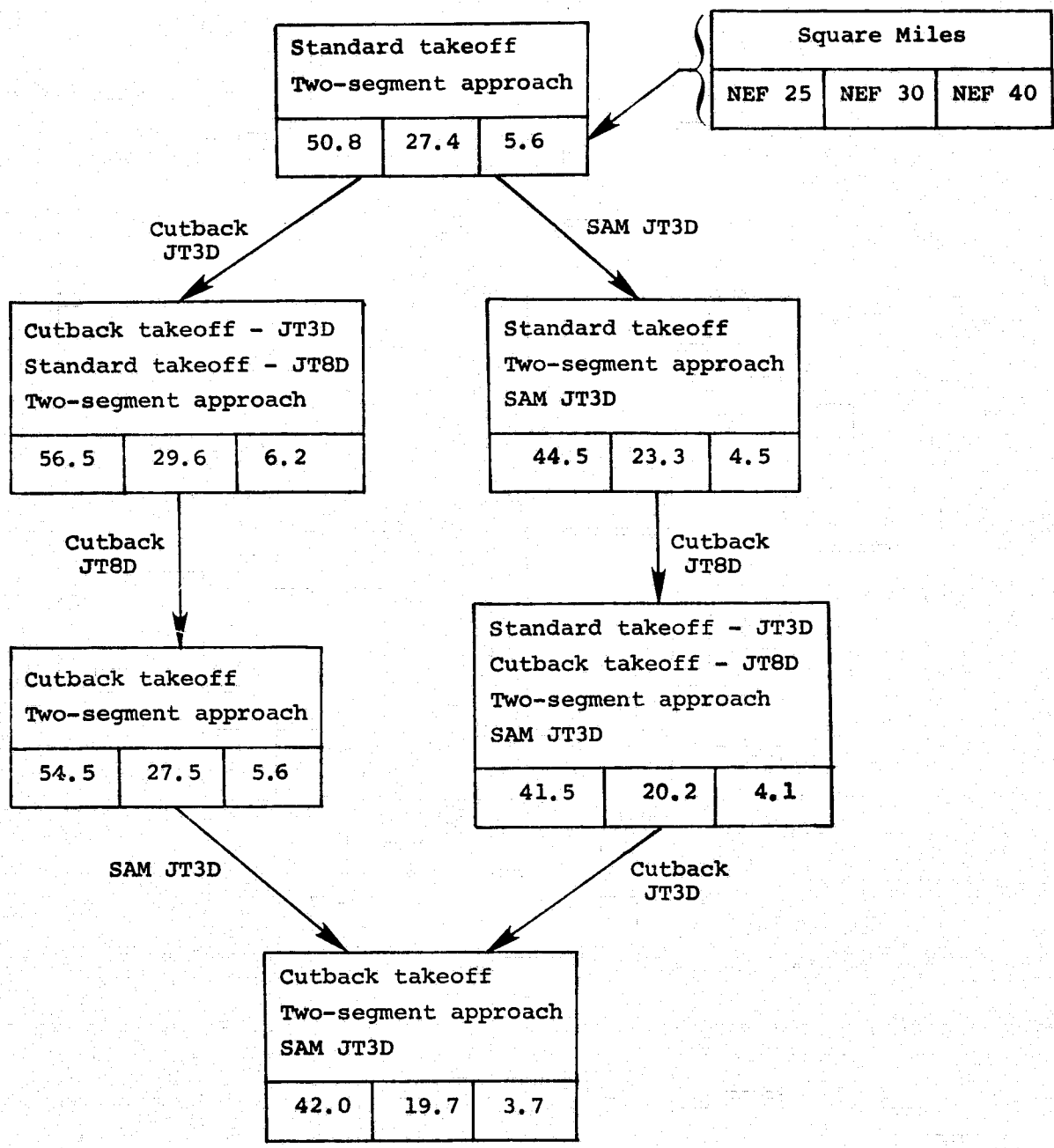


Figure 24.- Tree of effects for SAM JT3D, cutback JT3D, and cutback JT8D in 1987.

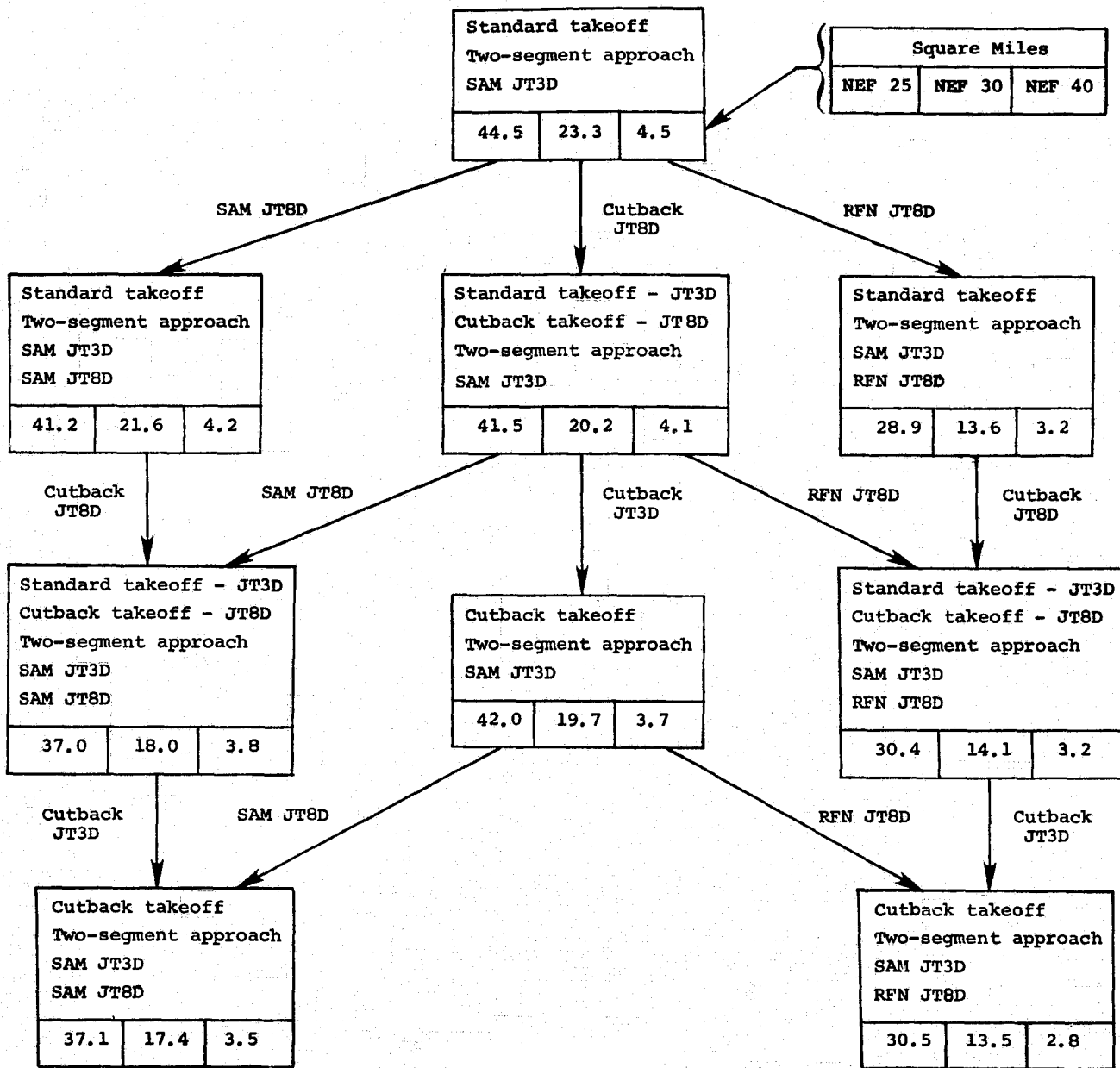


Figure 25.- Tree of effects for SAM JT8D, RFN JT8D, cutback JT3D, and cutback JT8D in 1987.

DELTA-NEF CONTOURS

The results of the previous studies were presented by showing contour plots of NEF 25, 30, and 40 and determining the total area within each of these contours. From these data, it is possible to determine the reductions in area which occur due to the various noise reduction options. However, these data do not indicate the amount which the NEF is reduced at a given location. Data on the amount of reduction is pertinent because large reductions in NEF will be immediately apparent to most residents while small reductions may go unnoticed. Generally, reductions in NEF of less than three are not noticeable (see, for instance, ref. 3).

To obtain information on the amount of NEF reduction at various locations, the program was modified to produce delta-NEF contours; that is, contours along which the reduction in NEF is a given amount. Figures 26 and 27 are delta-NEF contour plots for several example cases. The base data for these plots is the 23-Airport data shown in figures 3 and 4.

Figure 26 shows the effect of several options relative to the 1981 baseline case. The NEF 25 contour for this case is shown to indicate approximately the area within which the noise is a problem. It is clear that use of two-segment approaches gives significant reductions in noise under the approach path. SAM JT3D and SAM JT8D give small increases in the noise reduction areas beneath the approach path, but noise reductions under the takeoff path remain less than three units of NEF. RFN JT8D, in combination with two-segment approaches and SAM JT3D, gives a reduction of more than three at almost all locations and more than six in some areas under the takeoff path. The results shown in figure 26 are summarized in Table IX which indicates the square miles within which the noise reduction is more than a given amount for the various options.

Figure 27 and Table X give similar results for the noise reductions due to SAM JT8D or RFN JT8D when the base case incorporates two-segment approaches and SAM JT3D. For SAM JT8D, only a small area under the approach path shows noise reductions greater than three. RFN JT8D gives significant areas where the reduction is greater than three.

Generally, noise is not a problem in areas where NEF is less than 25. In looking at figures 26 and 27, there are significant areas, just inside the baseline NEF 25 contour, where the NEF values for the noise reduction

case are considerably below 25. (For instance, a reduction of six may occur because the original NEF was 26 and the NEF after application of the option is reduced to 20.) It probably is more valid to ignore noise reductions below NEF values of 25. To account for this a "cutoff" correction was made by setting any NEF value which was below 25 equal to 25 before taking the differences.

The results of using a "cutoff" for NEF values less than 25 are shown in figures 28 and 29 which are analogous to figures 26 and 27. The delta-NEF contours are now contained within the NEF 25 boundary rather than extending beyond that boundary. The conclusions as to the effectiveness of various noise reduction options are essentially unchanged. Tables XI and XII summarize the contour areas shown in figures 28 and 29.

Based on this preliminary investigation, delta-NEF contours appear to provide a useful tool for interpreting the effects of various noise reduction options. The use of a cutoff for NEF values less than 25 appears logical and is recommended.

	REDUCTION IN NEF				
	> 3	> 6	> 9	> 12	> 15
TWO-SEGMENT	9.9	8.6	6.1	2.8	0
TWO-SEGMENT + SAM JT3D	11.8	10.2	7.9	4.8	0
TWO-SEGMENT + SAM JT3D + SAM JT8D	12.1	10.8	9.7	7.2	0.6
TWO-SEGMENT + SAM JT3D + RFN JT8D	57.6	17.0	10.0	7.2	0.4

Table IX.- Square miles where noise reduction exceeds given values, for various options relative to standard takeoff, standard approach.
23-airport average in 1981.

REDUCTION IN NEF		
	> 3	> 6
SAM JT8D	1.9	0
RFN JT8D	33.4	0.3

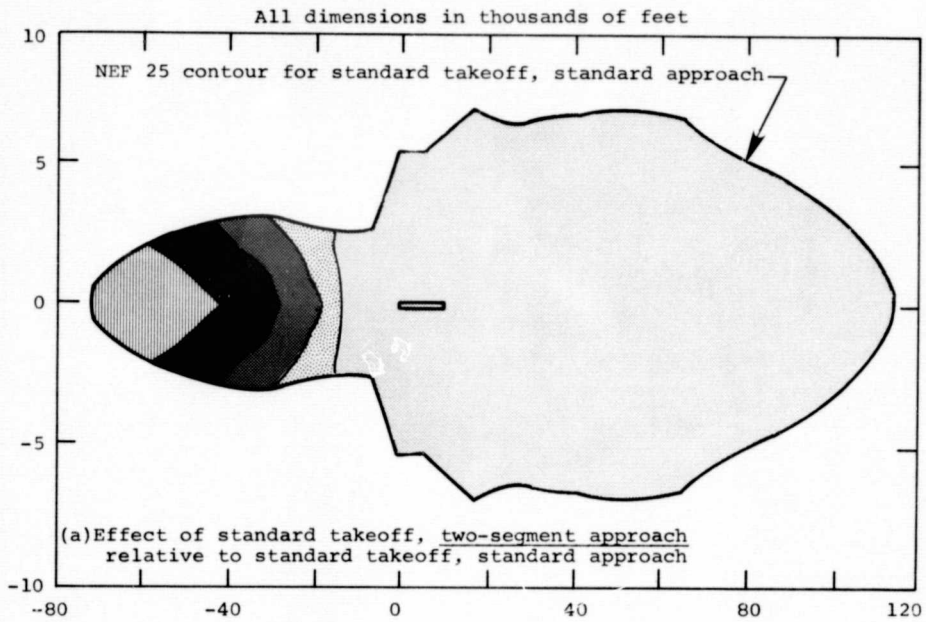
Table X.- Square miles where noise reduction exceeds given values, for various options relative to standard takeoff, two-segment approach, SAM JT3D. 23-airport average in 1981.

	REDUCTION IN NEF			
	> 3	> 6	> 9	> 12
TWO-SEGMENT	6.4	2.7	0.5	0
TWO-SEGMENT + SAM JT3D	7.8	3.6	1.3	0
TWO-SEGMENT + SAM JT3D + SAM JT8D	7.9	3.9	1.9	0.6
TWO-SEGMENT + SAM JT3D + RFN JT8D	40.2	6.4	2.0	0.5

Table XI.- Square miles where noise reduction exceeds given values, for various options relative to standard takeoff, two-segment approach. Noise cutoff for NEF < 25. 23-airport average in 1981.

	REDUCTION IN NEF	
	> 3	> 6
SAM JT8D	0.9	0
RFN JT8D	23.3	0.1

Table XII.- Square miles where noise reduction exceeds given values, for various options relative to standard takeoff, two-segment approach, SAM JT3D. Noise cutoff for NEF < 25. 23-airport average in 1981.



Noise Reduction

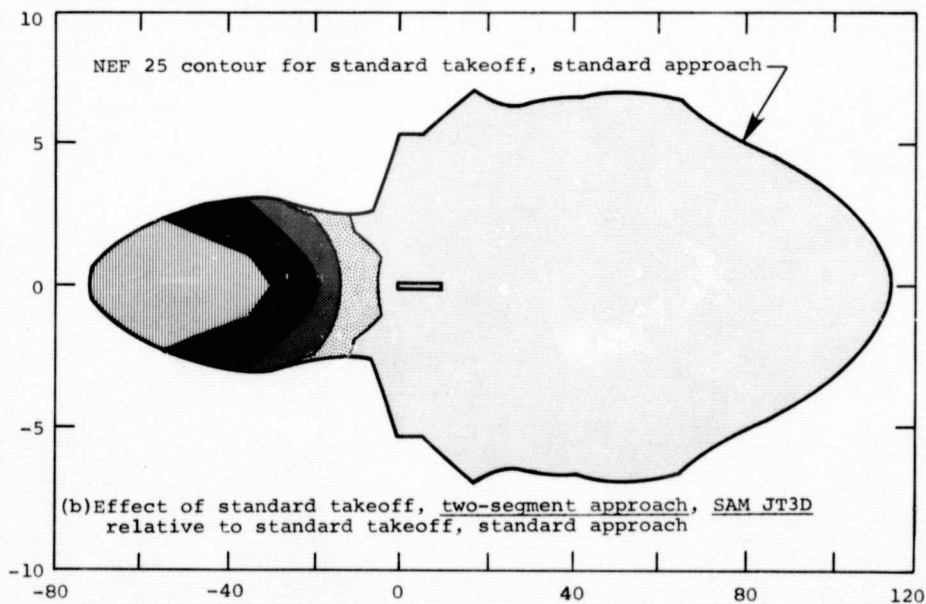
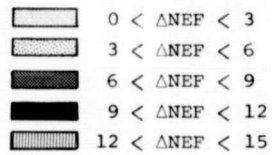


Figure 26.- Reductions in NEF for various options relative to standard takeoff, standard approach; 23-airport average in 1981.

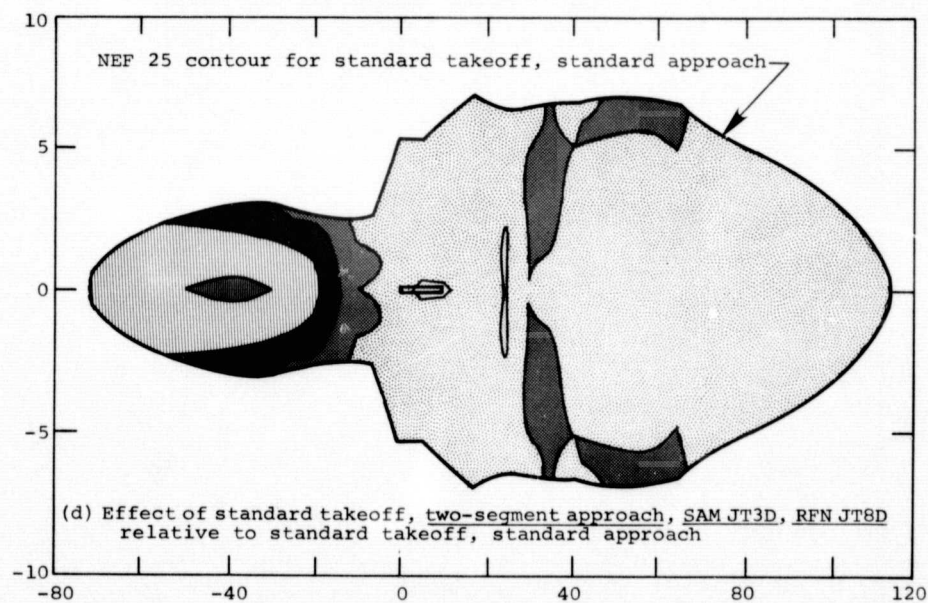
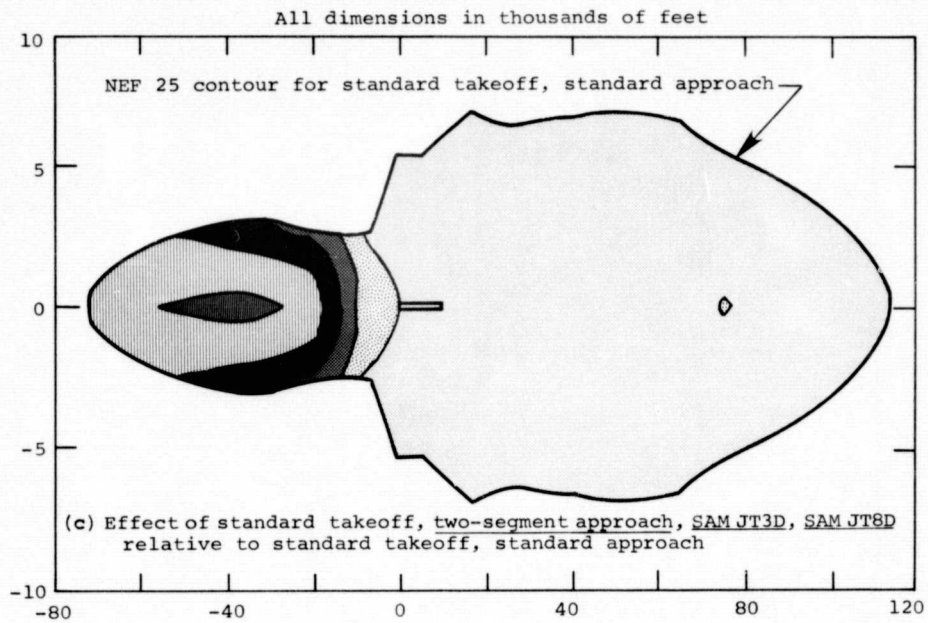
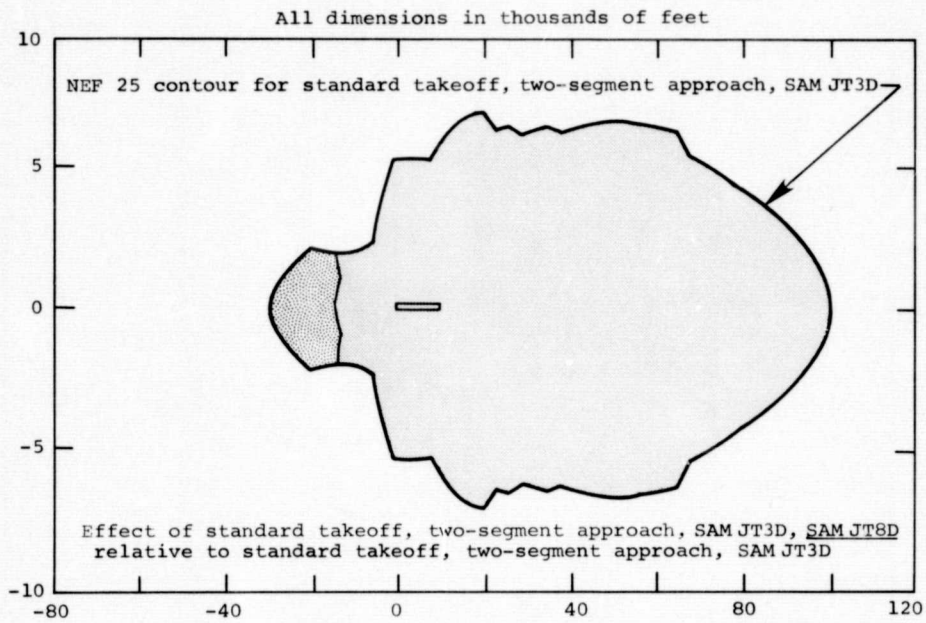


Figure 26.- Concluded.



Noise Reduction

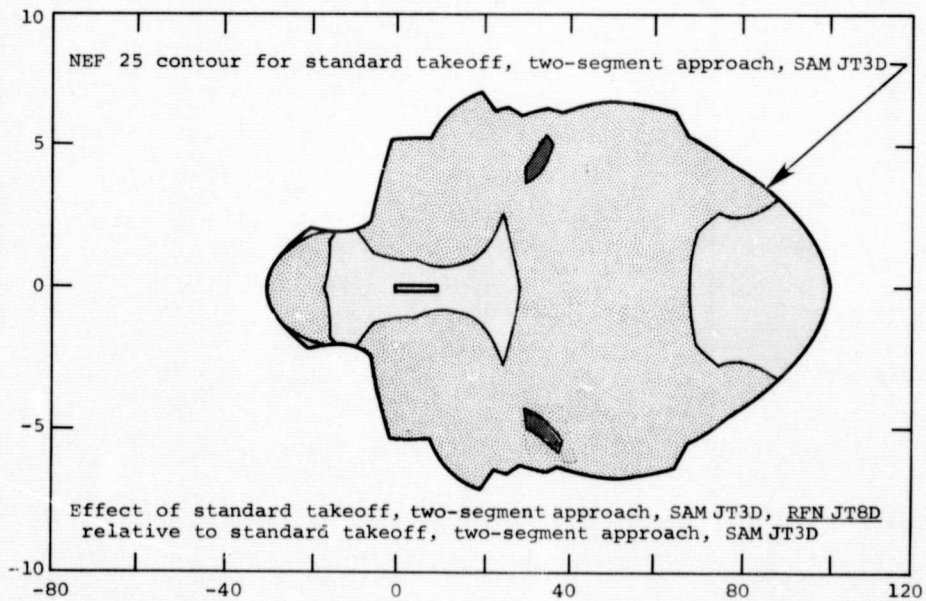
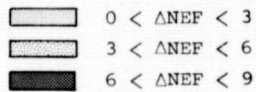
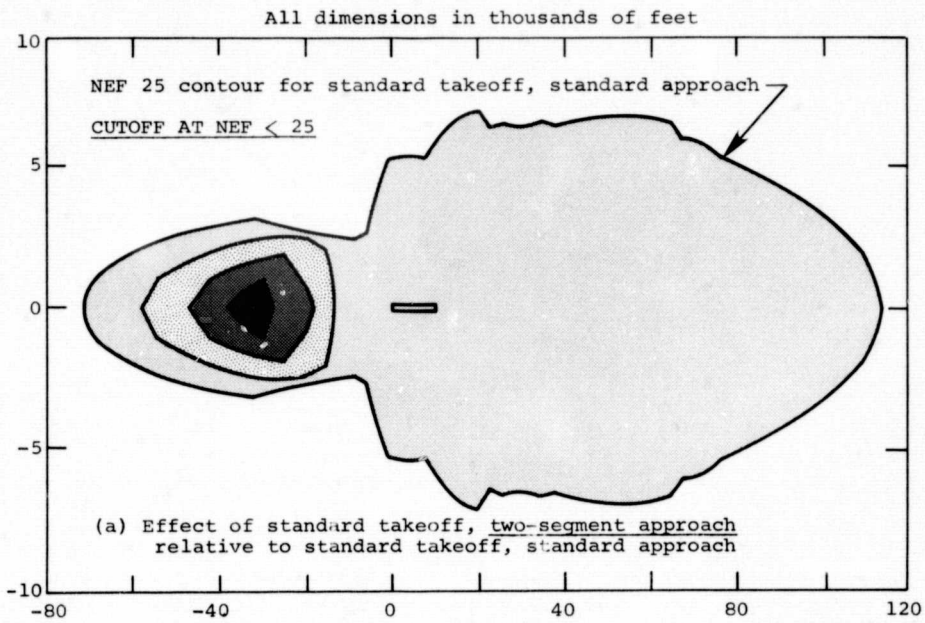


Figure 27.- Reductions in NEF for various options relative to standard takeoff, two-segment approach, SAM JT3D; 23-airport average in 1981.

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Noise Reduction

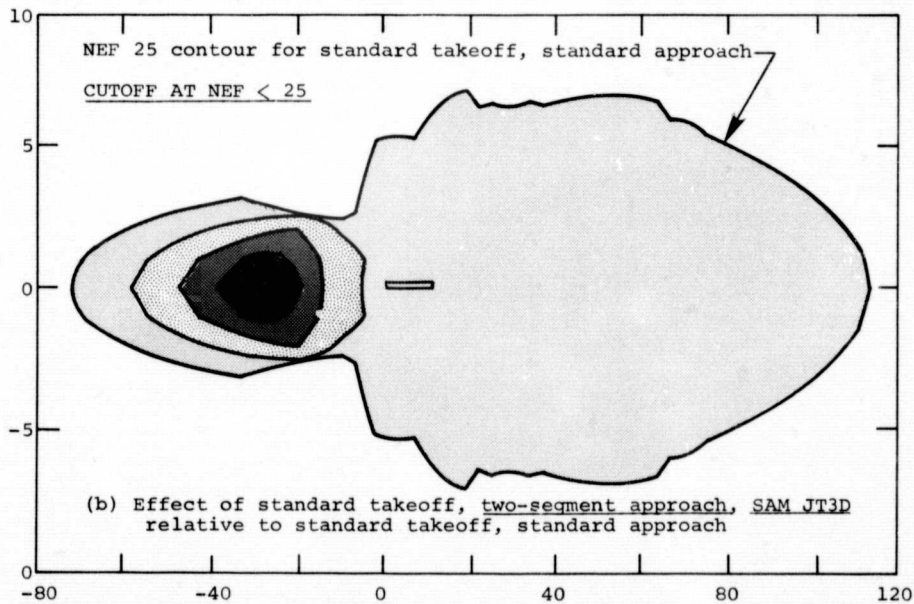
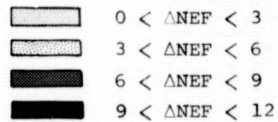


Figure 28.- Reductions in NEF for various options relative to standard takeoff, standard approach; noise cutoff for NEF <math>< 25</math>; 23-airport average in 1981.

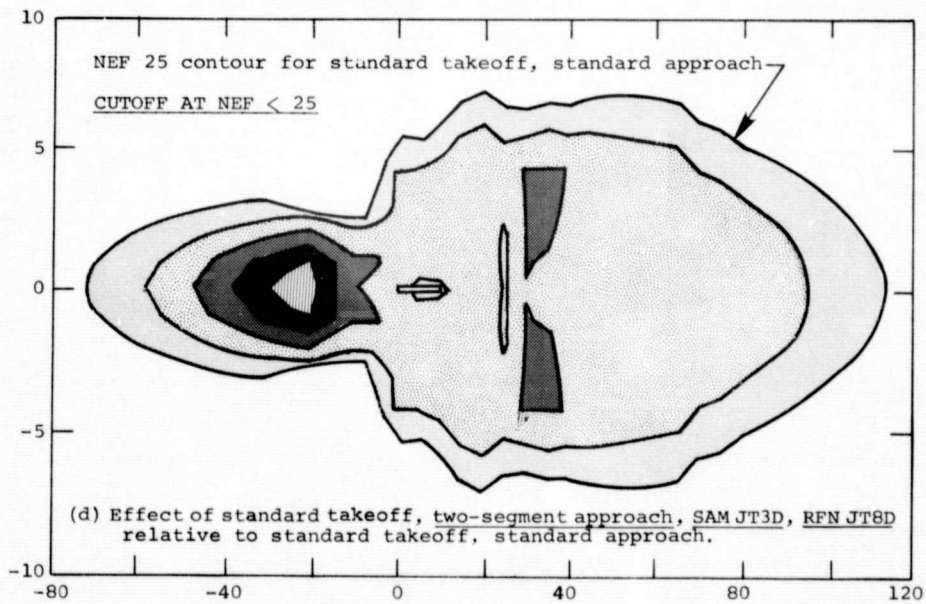
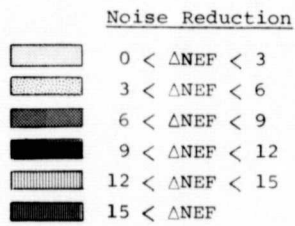
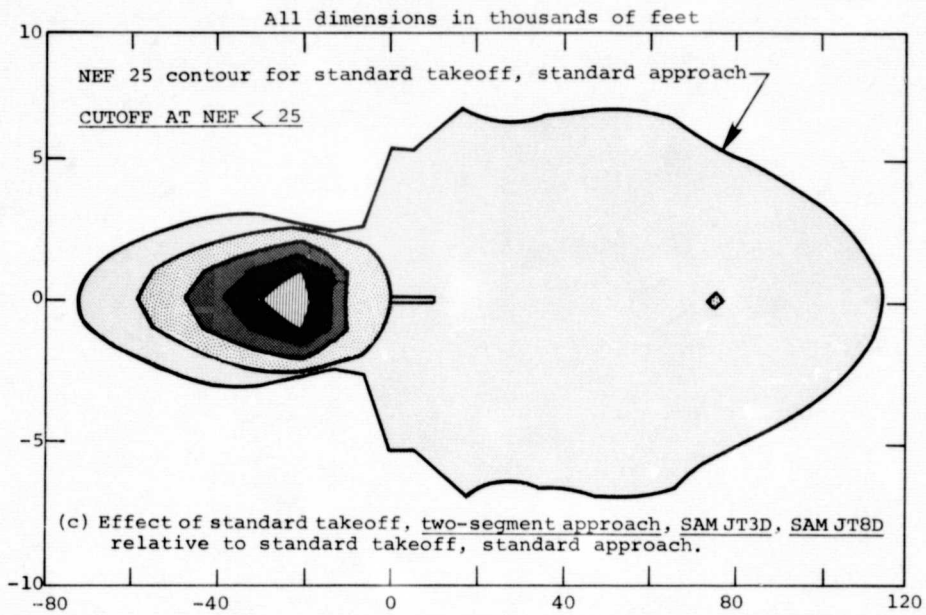


Figure 28.- Concluded.

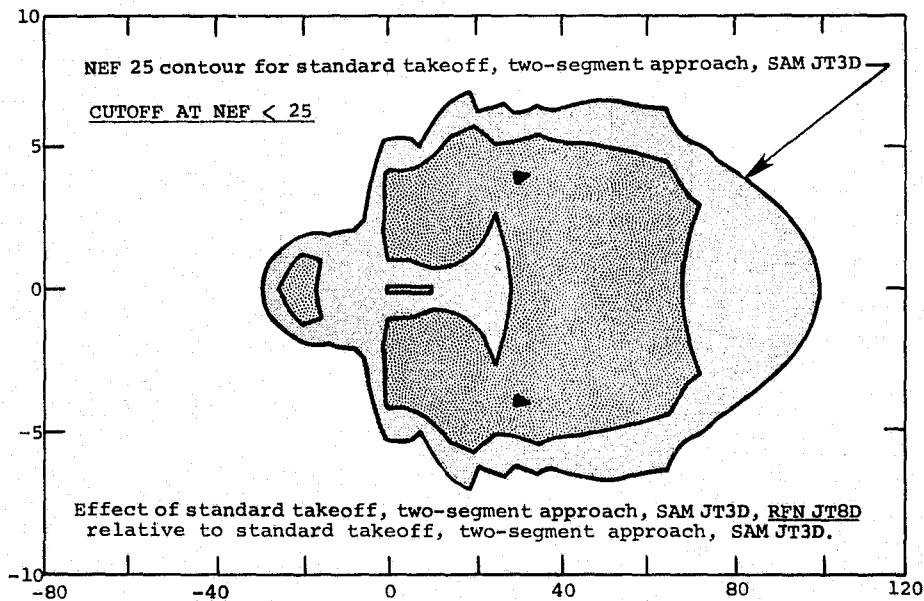
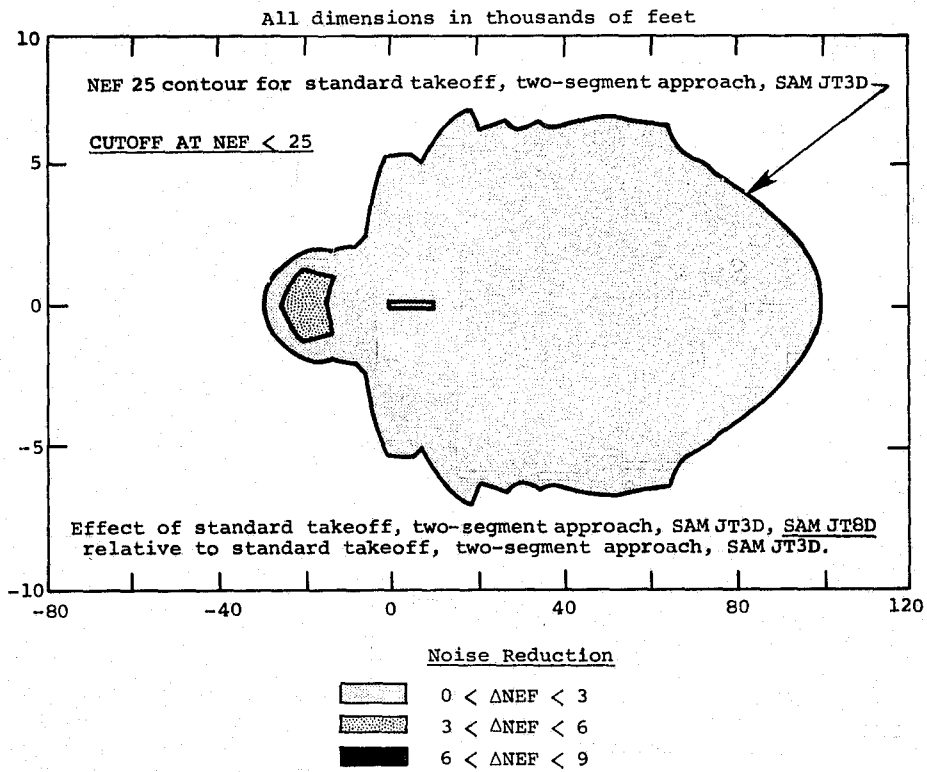


Figure 29.- Reductions in NEF for various options relative to standard takeoff, two-segment approach, SAM JT3D; noise cutoff for NEF < 25; 23-airport average in 1981.

APPENDIX A

FLIGHT PROFILES AND DIAGNOSTICS

The purpose of this appendix is to present computer printouts which may be useful in further analyzing the data of the report. Information on the operational flight paths of the aircraft is presented in Table A-I. Diagnostics, which indicate the contribution of each aircraft type to the noise at the NEF 30 closure points are presented in figures A-1 to A-66.

Table A-I lists the aircraft types which were studied and indicates a type-number for each aircraft. This number is used in the diagnostics for identification. Also, the takeoff and approach flight profiles which were used as input are shown for each aircraft type.

Two to six segments are used to describe each profile with each segment requiring one line of computer input. The numbers in each line correspond to the horizontal length of the segment in feet, the flight path angle in degrees, the thrust of the engine in pounds (except for the B747 where RPM is given), a zero indicating straight flight, and the aircraft velocity in knots. Flight profile segments are always listed from the runway position outward.

Flight profiles for the standard and cutback takeoffs and for standard and two-segment approaches are given in Table A-I. The takeoff profiles are for takeoff at maximum gross weight. For shorter range flights, the takeoff weights would be lower, the takeoff climb angles would tend to be higher, and resulting noise on the ground would be somewhat reduced. The approach profiles are for typical landing conditions and would not be dependent on the range of the flight. Note that the SAM modification does not significantly change the flight profiles, but the RFN modification results in an improvement in thrust and higher takeoff climb angles.

The diagnostics for all of the cases presented in this report are given in figures A-1 to A-66. Figures A-1 to A-21 are for the 23-Airport study; figures A-22 to A-42, the curfew JT3D study; figures A-43 to A-58, the study of refanning new JT8D aircraft; and figures A-59 to A-66, the study of cutback takeoff procedures. To aid in the use of these diagnostics, an index will be found starting on page 69, just before figure A-1.

Looking at figure A-1, the first line indicates coordinates of the point on the ground where the noise exposure was analyzed. For each case,

the noise has been analyzed at the two points on the longitudinal axis under the approach and takeoff flight tracks where the NEF value is 30. These are referred to as the NEF 30 closure points of the contour.

Each line of data in the diagnostic represents the noise effect of takeoffs or approaches by a single aircraft type. Reading across this line of data the first number is the order of the flight in the input data. The second number indicates the aircraft type as specified in Table A-1, with a positive type number indicating a takeoff operation and a negative for landing. The third number indicates which segment of the profile the aircraft is in when it is closest to the observation point on the ground. "H" is the slant range, in feet, between the aircraft and the observation point at the point of closest approach. "B" is the elevation angle of the aircraft, in degrees above the horizon, as seen from the observation point at the point of closest approach. "PFN" is the engine thrust, in pounds (or rpm for the B747), at closest approach.

"BASE EPNDB" is the basic uncorrected EPNL of the aircraft at slant range H and thrust PFN, in EPNdB. "SHIELDING" is the Δ EPNL to be subtracted for an aircraft shielding correction, in EPNdB. "ATTENUATION" is the Δ EPNL to be subtracted due to excess ground attenuation, in EPNdB. "OPERATIONS" is the Δ EPNL to be added to account for the number of operations, in EPNdB. In the NEF calculation this correction is Δ EPNL = $10 \log$ (Day Operations + $16.67 \times$ Night Operations). "NET EPNDB" is the total EPNL with corrections for the effects of shielding, excess ground attenuation, and number of operations, in EPNdB. Finally, "EPNDB SUBTOTAL" is the cumulative EPNL including the given flight and all proceeding flights, in EPNdB. Note that for the NEF 30 closure points all the diagnostics finish with an EPNdB total of 118.

The first and second most noisy flight numbers have been identified by writing in the aircraft type. The noisiest flights are those with the highest numbers in the "NET EPNDB" column. Because the noise contributions are summed logarithmically, these aircraft dominate the noise situation for that particular case. Modifications which reduce the noise of the dominant aircraft will give significant reductions in contour areas, while modifications to the less noisy aircraft will have little effect on the noise contours.

Type 1 - B747

SEGMENT LENGTH, FT	FLIGHT PATH ANGLE, DEG	POWER SETTING, LB OR RPM	RADIUS OF CURVATURE, FT (0=STRAIGHT)	VELOCITY, KNOTS	SEGMENT LENGTH, FT	FLIGHT PATH ANGLE, DEG	POWER SETTING, LB OR RPM	RADIUS OF CURVATURE, FT (0=STRAIGHT)	VELOCITY, KNOTS
10500.	0.30	3355.	C.	119.	10500.	0.00	3355.	0.	119.
19000.	4.51	3355.	C.	195.	19000.	4.51	3355.	0.	195.
24250.	3.54	2800.	C.	195.	24250.	3.54	2800.	0.	195.
20500.	0.63	2800.	0.	223.	20500.	0.63	2800.	0.	223.
200000.	3.27	2800.	0.	250.	200000.	3.27	2800.	0.	250.
Standard takeoff					Cutback takeoff				
6800.	0.30	2281.	0.	100.	6800.	0.00	2281.	0.	100.
18240.	3.30	2281.	0.	146.	18240.	3.00	2281.	0.	146.
200000.	3.30	2305.	0.	147.	200000.	5.50	1615.	0.	156.
Standard approach					Two-segment approach				

Type 2 - DC10/L1011

7800.	0.30	35300.	C.	104.	7800.	0.00	35300.	0.	104.
15450.	4.45	31000.	0.	176.	15450.	4.45	31000.	0.	176.
19250.	3.80	27400.	C.	176.	19250.	3.80	27400.	0.	176.
27000.	1.30	27400.	0.	213.	27000.	1.30	27400.	0.	213.
200000.	2.81	25800.	0.	250.	200000.	2.81	25800.	0.	250.
Standard takeoff					Cutback takeoff				
5500.	0.30	12100.	0.	100.	5500.	0.00	12100.	0.	100.
200000.	3.30	12100.	0.	140.	13190.	3.00	12100.	0.	140.
					200000.	6.00	3400.	0.	152.
Standard approach					Two-segment approach				

Type 3 - B707 and SST

9000.	0.30	15200.	0.	104.	8150.	0.00	14500.	0.	104.
4000.	2.86	15200.	0.	176.	1550.	1.25	14500.	0.	144.
15000.	4.95	15200.	C.	176.	2380.	3.15	14500.	0.	144.
21000.	4.09	12600.	0.	176.	7360.	4.85	14500.	0.	184.
26750.	0.86	12600.	0.	213.	200000.	2.29	12080.	0.	184.
200000.	3.48	12300.	0.	250.					
Standard takeoff					Cutback takeoff				
5970.	0.30	5100.	0.	100.	5970.	0.00	5100.	0.	100.
200000.	3.30	5100.	0.	144.	13190.	3.00	5100.	0.	144.
					200000.	5.50	2500.	0.	154.
Standard approach					Two-segment approach				

(a) Page 1.

Table A-I.- Aircraft type numbers and operational flight profiles.

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Type 4 - B707 SAM (same profiles as type 3)

Type 6 - DC9 SAM (same profiles as type 11)

Type 7 - B727

700.	0.00	12300.	0.	100.	6540.	0.00	12290.	0.	100.
1750.	4.90	12300.	0.	168.	1270.	1.58	12290.	0.	100.
12250.	6.40	12300.	0.	168.	1930.	3.68	12290.	0.	100.
16000.	5.36	10700.	0.	168.	9700.	6.77	12310.	0.	176.
29750.	3.65	10700.	0.	209.	200000.	2.58	8060.	0.	178.
20000.	7.17	10230.	0.	250.					
Standard takeoff					Cutback takeoff				
4800.	0.00	4330.	0.	100.	4800.	0.00	4330.	0.	100.
20000.	3.00	4330.	0.	145.	13190.	3.00	4330.	0.	145.
					200000.	6.00	1800.	0.	150.
Standard approach					Two-segment approach				

Type 8 - B727 SAM (same profiles as type 7)

Type 10 - B727 RFN

6000.	0.00	12900.	0.	100.	6030.	0.00	12900.	0.	100.
1500.	6.00	12900.	0.	168.	1220.	1.64	12900.	0.	100.
10000.	7.40	12900.	0.	168.	1990.	4.08	12900.	0.	100.
1300.	6.60	11200.	0.	168.	11060.	6.89	12840.	0.	176.
30000.	4.90	11200.	0.	209.	200000.	2.69	8250.	0.	176.
20000.	6.70	11200.	0.	250.					
Standard takeoff					Cutback takeoff				
4800.	0.00	4330.	0.	100.	4800.	0.00	4330.	0.	100.
20000.	3.00	4330.	0.	145.	13190.	3.00	4330.	0.	145.
					200000.	6.00	1800.	0.	150.
Standard approach					Two-segment approach				

Type 11 - DC9

6000.	0.00	12200.	0.	95.	5800.	0.00	12200.	0.	95.
2000.	5.71	12200.	0.	158.	2500.	6.30	12200.	0.	158.
10000.	7.41	12200.	0.	158.	4400.	8.30	12200.	0.	158.
16000.	5.36	10800.	0.	158.	6700.	7.80	12200.	0.	158.
31500.	2.82	10800.	0.	204.	200000.	5.20	9600.	0.	180.
20000.	6.17	10600.	0.	250.					
Standard takeoff					Cutback takeoff				
492.	0.00	5411.	0.	100.	4920.	0.00	5411.	0.	100.
20000.	3.00	5411.	0.	141.	13190.	3.00	5411.	0.	141.
					200000.	6.00	2800.	0.	148.
Standard approach					Two-segment approach				

(b) Page 2.

Table A-I.- Continued.

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Type 12 - DC9 RFN

5000.	0.00	12750.	0.	95.	5000.	0.00	12750.	0.	95.
7500.	4.60	12750.	0.	158.	2500.	7.00	12750.	0.	158.
10000.	7.40	12750.	0.	158.	3800.	9.40	12750.	0.	158.
12500.	6.80	12750.	0.	204.	8100.	8.80	12750.	0.	158.
200000.	7.60	11300.	0.	250.	200000.	4.60	9600.	0.	180.
Standard takeoff					Cutback takeoff				
4920.	0.00	5370.	0.	100.	4920.	0.00	5370.	0.	100.
200000.	3.00	5370.	0.	141.	13190.	3.00	5370.	0.	141.
Standard approach					Two-segment approach				
					200000.	6.00	2800.	0.	148.

Type 14 - DC8

9000.	0.00	15200.	0.	104.	8400.	0.00	15200.	0.	104.
4000.	2.86	15200.	0.	176.	4100.	2.94	15200.	0.	176.
15000.	4.95	15200.	0.	176.	6700.	4.60	15200.	0.	176.
21000.	4.05	12600.	0.	176.	200000.	2.30	11530.	0.	178.
26750.	0.86	12600.	0.	213.					
200000.	3.48	12300.	0.	250.					
Standard takeoff					Cutback takeoff				
5970.	0.00	5208.	0.	100.	5970.	0.00	5208.	0.	100.
200000.	3.00	5208.	0.	154.	13190.	3.00	5208.	0.	154.
Standard approach					Two-segment approach				
					200000.	5.50	2600.	0.	159.

Type 15 - DC8 SAM (same profiles as type 14)

Type 17 - B737

5500.	0.00	12600.	0.	100.	5130.	0.00	12460.	0.	100.
1500.	7.59	12600.	0.	167.	880.	2.28	12460.	0.	100.
8750.	9.95	12600.	0.	167.	1860.	7.56	12460.	0.	100.
11500.	7.42	10750.	0.	167.	11570.	8.98	12570.	0.	164.
9250.	3.05	10750.	0.	209.	200000.	4.25	8330.	0.	167.
200000.	5.60	10300.	0.	250.					
Standard takeoff					Cutback takeoff				
3750.	0.00	3660.	0.	100.	3750.	0.00	3660.	0.	100.
200000.	3.70	3660.	0.	146.	13190.	3.00	3660.	0.	146.
Standard approach					Two-segment approach				
					200000.	5.00	2100.	0.	151.

(c) Page 3.

Table A-I.- Continued.

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Type 18 - WIDE TWIN

7000.	0.00	43250.	0.	95.	7000.	0.00	43250.	0.	95.
2000.	6.65	38000.	0.	157.	3000.	6.65	38000.	0.	157.
8000.	8.18	38000.	0.	157.	8000.	8.18	38000.	0.	157.
12000.	7.13	33600.	0.	157.	12000.	7.13	33600.	0.	157.
32000.	2.77	33600.	0.	204.	32000.	2.77	33600.	0.	204.
200000.	4.77	31600.	0.	250.	200000.	4.77	31600.	0.	250.
Standard takeoff					Cutback takeoff				
5500.	0.00	12100.	0.	100.	5500.	0.00	12100.	0.	100.
200000.	3.00	12100.	0.	140.	13190.	3.00	12100.	0.	140.
Standard approach					Two-segment approach				
					200000.	6.00	8400.	0.	152.

Type 19 - B737 RFN

4200.	0.00	13160.	0.	100.	4710.	0.00	13160.	0.	100.
2200.	7.50	13160.	0.	167.	840.	2.39	13160.	0.	100.
7500.	10.20	13160.	0.	167.	1900.	7.91	13160.	0.	100.
9500.	8.40	11000.	0.	167.	12950.	9.24	13230.	0.	164.
9500.	4.50	11000.	0.	209.	200000.	4.23	8390.	0.	168.
200000.	7.50	11000.	0.	250.					
Standard takeoff					Cutback takeoff				
3750.	0.00	3660.	0.	100.	3750.	0.00	3660.	0.	100.
200000.	3.00	3660.	0.	146.	13190.	3.00	3660.	0.	146.
Standard approach					Two-segment approach				
					200000.	5.00	2100.	0.	151.

Type 20 - B737 SAM (same profiles as type 17)

(d) Page 4.

Table A-I.- Concluded.

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ANALYSIS FOR OBSERVER AT (-58862.00, 0.00)

		S		T		D		P		S	
		H		E		N		E		U	
		I		L		A		R		B	
		E		D		T		A		E	
		BP		I		I		O		P	
		AN		N		O		N		NN	
		SD		G		N		S		ED	
		EB		N		S		TB		DA	
		PFN		N		S		TB		BL	

DIAGNOSTIC FOR 23 ARPT AVG BASE 1972 NIGHT CORRECTED MAXGW ATA 3DG

1	3	1	58962.00	0.00	15200.0	58.5	3.0	10.0	21.8	67.3	67.3
2	-3	2	3132.93	90.00	5100.0	92.1	0.0	0.0	21.8	<u>113.9</u>	113.9 <i>B707</i>
3	7	1	58962.00	0.00	12300.0	64.8	3.0	10.0	23.8	75.6	113.9
4	-7	2	3132.93	90.00	4330.0	86.6	0.0	0.0	23.8	110.4	115.5
5	17	1	58962.00	0.00	12600.0	58.1	3.0	10.0	15.4	60.6	115.5
6	-17	2	3132.93	90.00	3660.0	80.3	0.0	0.0	15.4	95.7	115.5
7	14	1	58962.00	0.00	15200.0	59.7	3.0	10.0	21.4	68.1	115.5
8	-14	2	3132.93	90.00	5208.0	92.2	0.0	0.0	21.4	<u>113.6</u>	117.7 <i>DC8</i>
9	2	1	58962.00	0.00	35300.0	62.4	3.0	10.0	13.1	62.5	117.7
10	-2	2	3132.93	90.00	12100.0	78.7	0.0	0.0	13.1	91.8	117.7
11	11	1	58962.00	0.00	12200.0	64.9	3.0	10.0	22.4	74.3	117.7
12	-11	2	3132.93	90.00	5411.0	83.4	0.0	0.0	22.4	105.8	118.0
13	1	1	58962.00	0.00	3355.0	51.8	3.0	10.0	14.5	53.3	118.0
14	-1	3	3132.93	90.00	2305.0	84.0	0.0	0.0	14.5	98.5	118.0

(a) Page 1.

Figure A-1.- 23-Airport, 1972 - standard takeoff,
standard approach.

6	-17	1	82238.00	0.00	3660.0	27.9	3.0	15.0	16.0	25.9	114.8
7	14	6	4069.25	90.00	12300.0	96.0	0.0	0.0	16.9	112.9	116.9 DC8
8	-14	1	80018.00	0.00	5208.0	7.0	3.0	15.0	16.9	5.9	116.9
9	2	5	3939.52	90.00	25800.0	82.9	0.0	0.0	24.7	107.6	117.4
10	-2	1	80488.00	0.00	12100.0	31.3	3.0	15.0	24.7	37.9	117.4
11	11	6	6831.80	90.00	10600.0	82.1	0.0	0.0	21.2	103.3	117.6
12	-11	1	81068.00	0.00	5411.0	31.3	3.0	15.0	21.2	34.6	117.6
13	1	5	3937.65	90.00	2800.0	85.6	0.0	0.0	20.2	105.8	117.9
14	-1	1	79188.00	0.00	2281.0	35.4	3.0	15.0	20.2	37.6	117.9
15	8	6	7416.96	90.00	10230.0	86.2	0.0	0.0	14.1	100.3	117.9
16	-8	1	81188.00	0.00	4330.0	36.6	3.0	15.0	14.1	32.7	117.9
17	18	6	6591.33	90.00	31600.0	78.7	0.0	0.0	19.2	98.0	118.0
18	-18	1	80488.00	0.00	12100.0	29.5	3.0	15.0	19.2	30.7	118.0

(c) Page 3.

Figure A-2.- Concluded.

7	14	6	4057.66	90.00	12300.0	96.1	0.0	0.0	16.9	<u>113.0</u>	117.0	DC8
8	-14	1	79827.00	0.00	5208.0	7.0	3.0	15.0	16.9	5.9	117.0	
9	2	5	3930.16	90.00	25800.0	83.0	0.0	0.0	24.7	107.6	117.5	
10	-2	1	80297.00	0.00	12100.0	31.3	3.0	15.0	24.7	38.0	117.5	
11	11	6	6811.28	90.00	10600.0	82.1	0.0	0.0	21.2	103.3	117.6	
12	-11	1	80877.00	0.00	5411.0	31.4	3.0	15.0	21.2	34.6	117.6	
13	1	5	3926.76	90.00	2800.0	85.7	0.0	0.0	20.2	105.9	117.9	
14	-1	1	78997.00	0.00	2281.0	35.5	3.0	15.0	20.2	37.7	117.9	
15	8	6	7393.12	90.00	10230.0	86.3	0.0	0.0	14.1	100.3	118.0	
16	-8	1	80997.00	0.00	4330.0	36.7	3.0	15.0	14.1	32.7	118.0	
17	18	6	6575.45	90.00	31600.0	78.8	0.0	0.0	19.2	98.0	118.0	
18	-18	1	80297.00	0.00	12100.0	29.5	3.0	15.0	19.2	30.7	118.0	

(c) Page 3.

Figure A-3.- Concluded.

**ORIGINAL PAGE IS
OF POOR QUALITY**

13	11	1	22036.00	0.00	12200.0	76.6	3.0	10.0	21.2	84.9	117.1
14	-11	3	1709.04	90.00	2800.0	86.2	0.0	0.0	21.2	<u>107.4</u>	117.6 DC9
15	1	1	22036.00	0.00	3355.0	69.4	3.0	10.0	20.2	76.6	117.6
16	-1	3	1404.70	90.00	1615.0	86.6	0.0	0.0	20.2	106.8	117.9
17	8	1	22036.00	0.00	12300.0	78.8	3.0	10.0	14.1	79.9	117.9
18	-8	3	1709.04	90.00	1800.0	81.0	0.0	0.0	14.1	95.1	117.9
19	18	1	22036.00	0.00	43250.0	79.4	3.0	10.0	19.2	85.6	117.9
20	-18	3	1709.04	90.00	8400.0	80.9	0.0	0.0	19.2	100.2	118.0

ANALYSIS FOR OBSERVER AT (75309.00, 0.00)

			A T D S T P H E R I N U A L E T E B P D T I P A N N O N E D T B L								
A	I	MS									
FN	P	AF									
LU	C	XG	E	L	A	T	E				
TM	PT	IM	BP	D	T	I	P			PO	
GE	AY	MF	AN	I	I	O	NN			NT	
HF	FP	UM	SD	N	O	N	ED			DA	
TR	TC	MT	H	B	PFN	EB	G	N	S	TB	BL
DIAGNOSTIC FOR 23 APT AVG SAM3D 1981 MAXGW ATA 6-306 NIGHT CORRECTED											
1	3	5	3385.09	90.00	12462.5	97.2	0.0	0.0	-2.2	94.9	94.9
2	-3	1	68339.00	0.00	5100.0	37.8	3.0	15.0	-2.2	17.5	94.9
3	4	5	3385.09	90.00	12462.5	91.0	0.0	0.0	17.9	108.9	109.1
4	-4	1	68339.00	0.00	5100.0	34.8	3.0	15.0	17.9	34.8	109.1

(b) Page 2.

Figure A-4.- Continued.

5	7	6	5959.26	90.00	10230.0	89.9	0.0	0.0	23.9	113.8	115.0	3727
6	-7	1	69509.00	0.00	4330.0	39.7	3.0	15.0	23.9	45.6	115.0	
7	17	6	7293.66	90.00	10300.0	80.4	0.0	0.0	16.0	96.4	115.1	
8	-17	1	70559.00	0.00	3660.0	30.5	3.0	15.0	16.0	28.5	115.1	
9	15	5	3385.09	90.00	12462.5	92.8	0.0	0.0	16.9	109.7	116.2	DCS SAM
10	-15	1	68339.00	0.00	5208.0	49.9	3.0	15.0	16.9	48.8	116.2	
11	2	5	3366.97	90.00	25800.0	84.8	0.0	0.0	24.7	109.5	117.0	
12	-2	1	68809.00	0.00	12100.0	33.7	3.0	15.0	24.7	40.3	117.0	
13	11	6	5576.56	90.00	10600.0	84.7	0.0	0.0	21.2	105.9	117.4	
14	-11	1	69389.00	0.00	5411.0	34.0	3.0	15.0	21.2	37.2	117.4	
15	1	5	3271.47	90.00	2800.0	87.6	0.0	0.0	20.2	107.8	117.8	
16	-1	1	67509.00	0.00	2281.0	38.0	3.0	15.0	20.2	40.2	117.8	
17	8	6	5959.26	90.00	10230.0	88.9	0.0	0.0	14.1	103.0	118.0	
18	-8	1	69509.00	0.00	4330.0	39.1	3.0	15.0	14.1	35.2	118.0	
19	18	6	5620.15	90.00	31600.0	80.6	0.0	0.0	19.2	99.8	118.0	
20	-18	1	68809.00	0.00	12100.0	31.9	3.0	15.0	19.2	33.1	118.0	

(c) Page 3.

Figure A-4.- Concluded.

ANALYSIS FOR OBSERVER AT (-17103.00, 0.00)

FN	LU	IM	GB	HE	TR	A	I	MS	AE	XG	RT	IM	AY	ME	FP	UN	TE	MT	H	B	PFN	EB	G	N	A	T	O	P	E	R	A	E	S	U	

DIAGNOSTIC FOR 23 ARPT AVG SAM3D&8D 1981 MAXGW ATA 6-3DG NIGHT CORRECTED

1	3	1	17203.00	0.00	15200.0	79.5	3.0	10.0	-2.2	64.3	64.3																									
2	-3	3	1161.20	90.00	2500.0	102.3	0.0	0.0	-2.2	100.1	100.1																									
3	4	1	17203.00	0.00	15200.0	78.3	3.0	10.0	17.9	83.2	100.2																									
4	-4	3	1161.20	90.00	2500.0	86.6	0.0	0.0	17.9	104.5	105.9																									
5	20	1	17203.00	0.00	12600.0	77.3	3.0	10.0	16.0	80.3	105.9																									
6	-20	3	1118.50	90.00	2100.0	84.5	0.0	0.0	16.0	100.5	107.0																									
7	15	1	17203.00	0.00	15200.0	80.8	3.0	10.0	16.9	84.7	107.0																									
8	-15	3	1161.20	90.00	2600.0	93.6	0.0	0.0	16.9	<u>110.5</u>	112.1																									DC8 SAM
9	2	1	17203.00	0.00	35300.0	76.2	3.0	10.0	24.7	87.9	112.1																									
10	-2	3	1203.66	90.00	8400.0	87.3	0.0	0.0	24.7	<u>112.0</u>	115.1																									DC10
11	6	1	17203.00	0.00	12200.0	75.5	3.0	10.0	21.2	83.7	115.1																									
12	-6	3	1203.66	90.00	2800.0	86.1	0.0	0.0	21.2	107.3	115.7																									

(a) Page 1.

Figure A-5.- 23-Airport, 1981 - standard takeoff, two-segment approach, SAM JT3D, SAM JT8D.

7	15	5	3374.78	90.00	12600.0	93.6	0.0	0.0	16.9	<u>110.5</u>	113.2	DC8 SAM
8	-15	1	67652.00	0.00	5208.0	50.1	3.0	15.0	16.9	49.0	113.2	
9	2	5	3333.29	90.00	25800.0	84.9	0.0	0.0	24.7	109.6	114.8	
10	-2	1	68122.00	0.00	12100.0	33.8	3.0	15.0	24.7	40.5	114.8	
11	6	6	5502.72	90.00	10600.0	83.1	0.0	0.0	21.2	104.3	115.2	
12	-6	1	68702.00	0.00	5411.0	44.5	3.0	15.0	21.2	47.7	115.2	
13	1	5	3232.28	90.00	2800.0	87.7	0.0	0.0	20.2	107.9	115.9	
14	-1	1	66822.00	0.00	2281.0	38.2	3.0	15.0	20.2	40.4	115.9	
15	8	6	5873.51	90.00	10230.0	89.1	0.0	0.0	24.3	<u>113.4</u>	117.9	B727 SAM
16	-8	1	68822.00	0.00	4330.0	39.3	3.0	15.0	24.3	45.6	117.9	
17	18	6	5563.02	90.00	31600.0	80.7	0.0	0.0	19.2	99.9	117.9	
18	-18	1	68122.00	0.00	12100.0	32.0	3.0	15.0	19.2	33.2	117.9	

(c) Page 3.

Figure A-5.- Concluded.

13	1	1	17573.00	0.00	3355.0	73.5	3.0	10.0	20.2	80.7	115.0
14	-1	3	976.94	90.00	1615.0	90.6	0.0	0.0	20.2	110.8	116.4
15	10	1	17573.00	0.00	12900.0	73.6	3.0	10.0	24.3	84.9	116.4
16	-10	3	1242.53	90.00	1800.0	87.9	0.0	0.0	24.3	112.2	117.8 B727 AFN
17	18	1	17573.00	0.00	43250.0	81.6	3.0	10.0	19.2	87.9	117.8
18	-18	3	1242.53	90.00	8400.0	85.1	0.0	0.0	19.2	104.3	118.0

ANALYSIS FOR CESERVER AT (59526.00, 0.00)

			S H I E N U A T I U N S			A T T E N R A T I O N S			S U B E T P J N T D A B L			
A	Y	MS										
FN	R	AF										
LU	C	XG										
IM	RT	YM										
GR	AY	MF										
HF	FD	UN										
TR	TE	MT	H	B	PFN	EB	G	N	S	ED	TR	BL

DIAGNOSTIC FOR 23 ARPT AVG SAM3DRFN8D 1981 MAXGW ATA 6-30G NIGHT CORRECTED

1	3	5	3148.20	90.00	12600.0	98.5	0.0	0.0	-2.2	96.3	96.3
2	-3	1	52556.00	0.00	5100.0	42.6	3.0	15.0	-2.2	22.4	96.3
3	4	5	3148.20	90.00	12600.0	92.3	0.0	0.0	17.9	110.2	110.4
4	-4	1	52556.00	0.00	5100.0	39.3	3.0	15.0	17.9	39.2	110.4
5	19	6	7210.97	90.00	11000.0	69.7	0.0	0.0	15.0	85.7	110.4
6	-19	1	54776.00	0.00	3660.0	28.5	3.0	15.0	16.0	26.5	110.4

(b) Page 2.

Figure A-6.- Continued.

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7	15	5	3148.20	90.00	12600.0	94.3	0.0	0.0	16.9	<u>111.2</u>	113.8	DC8 SAM
8	-15	1	52556.00	0.00	5208.0	53.2	3.0	15.0	16.9	52.1	113.8	
9	2	4	2858.55	90.00	27400.0	88.3	0.0	0.0	24.7	<u>113.0</u>	116.4	DC10
10	-2	1	53026.00	0.00	12100.0	37.6	3.0	15.0	24.7	44.3	116.4	
11	12	5	6860.25	90.00	11300.0	73.6	0.0	0.0	21.2	94.8	116.5	
12	-12	1	53606.00	0.00	5370.0	43.7	3.0	15.0	21.2	46.9	116.5	
13	1	4	3053.79	90.00	2800.0	88.8	0.0	0.0	20.2	109.0	117.2	
14	-1	1	51726.00	0.00	2281.0	42.4	3.0	15.0	20.2	44.6	117.2	
15	10	5	5409.79	90.00	11200.0	84.7	0.0	0.0	24.3	109.0	117.8	
16	-10	1	53726.00	0.00	4330.0	56.0	3.0	15.0	24.3	62.3	117.8	
17	18	5	4397.47	90.00	33600.0	85.5	0.0	0.0	19.2	104.8	118.0	
18	-18	1	53026.00	0.00	12100.0	35.8	3.0	15.0	19.2	37.1	118.0	

(c) Page 3.

Figure A-6.- Concluded.

ANALYSIS FOR OBSERVER AT (-50454.00, 0.00)

			S H I E L D I N G				A T T E N U A T I O N				O P E R A T I O N S		S U B E T P O I N T D A S H		
FN	LU	IM	GB	HE	TR	H	B	PFN	EB	G	N	S	ED	TB	DL

DIAGNOSTIC FOR 23 AIRPORT AVG 1981 BASE MAXGW FAR 3DEG NT.COR.															
1	1	1	50554.00	0.00	3355.0	54.5	3.0	10.0	20.2	61.7	61.7				
2	-1	3	2652.89	90.00	2305.0	85.8	0.0	0.0	20.2	106.0	106.0				
3	3	1	50554.00	0.00	14500.0	59.3	3.0	10.0	18.0	64.3	106.0				
4	-3	2	2652.89	90.00	5100.0	94.5	0.0	0.0	18.0	<u>112.4</u>	113.3	B707			
5	7	1	50554.00	0.00	12290.0	67.1	3.0	10.0	23.9	78.0	113.3				
6	-7	2	2652.89	90.00	4330.0	88.4	0.0	0.0	23.9	<u>112.3</u>	115.8	B727			
7	17	1	50554.00	0.00	12460.0	60.1	3.0	10.0	16.0	63.1	115.8				
8	-17	2	2652.89	90.00	3660.0	82.3	0.0	0.0	16.0	98.3	115.9				
9	14	1	50554.00	0.00	15200.0	62.1	3.0	10.0	16.9	66.1	115.9				
10	-14	2	2652.89	90.00	5208.0	94.8	0.0	0.0	16.9	111.7	117.3				
11	2	1	50554.00	0.00	35300.0	64.1	3.0	10.0	24.7	75.7	117.3				
12	-2	2	2652.89	90.00	12100.0	80.8	0.0	0.0	24.7	105.5	117.6				

(a) Page 1.

Figure A-7.- 23-Airport, 1981 - cutback takeoff, standard approach.

7	17	5	8362.22	90.00	8330.0	75.7	0.0	0.0	16.0	91.7	115.6
8	-17	1	95880.00	0.00	3660.0	24.6	3.0	15.0	16.0	22.6	115.6
9	14	4	4172.07	90.00	11530.0	96.6	0.0	0.0	16.9	113.5	117.7 DC8
10	-14	1	97660.00	0.00	5208.0	1.3	3.0	15.0	16.9	0.2	117.7
11	2	5	4804.40	90.00	25800.0	80.4	0.0	0.0	24.7	105.1	117.9
12	-2	1	98130.00	0.00	12100.0	28.2	3.0	15.0	24.7	34.9	117.9
13	11	5	9534.43	90.00	9600.0	76.3	0.0	0.0	21.2	97.5	117.9
14	-11	1	98710.00	0.00	5411.0	28.0	3.0	15.0	21.2	31.2	117.9
15	18	6	8058.37	90.00	31600.0	76.4	0.0	0.0	19.2	95.7	118.0
16	-18	1	98130.00	0.00	12100.0	26.4	3.0	15.0	19.2	27.7	118.0
17	8	5	5132.70	90.00	8060.0	86.1	0.0	0.0	14.1	100.1	118.0
18	-8	1	98830.00	0.00	4330.0	33.5	3.0	15.0	14.1	29.6	118.0

(c) Page 3.

Figure A-7.- Concluded.

ANALYSIS FOR OBSERVER AT (-25947.00, 0.00)

A		S		A		D		S	
I MS		H		T		P		U	
R AE		I		E N		E R		B	
C XG		E		U A		A T		E T	
RT IM		BP		D T		I P		PO	
AY ME		AN		I I		O N		NT	
FP UN		SD		N O		N N		DA	
TE MT		EB		G C		S S		TB BL	

DIAGNOSTIC FOR 23 AIRPORT AVG BASE 1981 MAXGW FAR 6-3DEG

1	7	1	26047.00	0.00	12290.0	76.9	3.0	10.0	23.9	87.8	87.8
2	-7	3	2128.31	90.00	1800.0	89.1	0.0	0.0	23.9	<u>113.0</u>	113.1 <i>B727</i>
3	17	1	26047.00	0.00	12460.0	70.3	3.0	10.0	16.0	73.3	113.1
4	-17	3	1889.31	90.00	2100.0	84.5	0.0	0.0	16.0	100.5	113.3
5	2	1	26047.00	0.00	35300.0	71.6	3.0	10.0	24.7	83.2	113.3
6	-2	3	2128.31	90.00	8400.0	79.9	0.0	0.0	24.7	104.5	113.8
7	11	1	26047.00	0.00	12200.0	74.7	3.0	10.0	21.2	82.9	113.8
8	-11	3	2128.31	90.00	2800.0	83.4	0.0	0.0	21.2	104.6	114.3
9	8	1	26047.00	0.00	12290.0	76.2	3.0	10.0	14.1	77.3	114.3
10	-8	3	2128.31	90.00	1800.0	79.0	0.0	0.0	14.1	93.0	114.4
11	18	1	26047.00	0.00	43250.0	77.7	3.0	10.0	19.2	84.0	114.4
12	-18	3	2128.31	90.00	8400.0	78.1	0.0	0.0	19.2	97.3	114.4

(a) Page 1.

Figure A-8.- 23-Airport, 1981 - cutback takeoff,
two-segment approach.

7	11	5	9598.24	90.00	9600.0	76.2	0.0	0.0	21.2	97.4	112.7
8	-11	1	99414.00	0.00	5411.0	27.9	3.0	15.0	21.2	31.1	112.7
9	8	5	5164.38	90.00	8060.0	86.0	0.0	0.0	14.1	100.0	112.9
10	-8	1	99534.00	0.00	4330.0	33.4	3.0	15.0	14.1	29.5	112.9
11	18	6	8116.91	90.00	31600.0	76.3	0.0	0.0	19.2	95.6	113.0
12	-18	1	98834.00	0.00	12100.0	26.3	3.0	15.0	19.2	27.6	113.0
13	1	5	4984.13	90.00	2800.0	82.6	0.0	0.0	20.2	102.8	113.4
14	-1	1	97534.00	0.00	2281.0	32.0	3.0	15.0	20.2	34.2	113.4
15	14	4	4200.32	90.00	11530.0	96.4	0.0	0.0	16.9	<u>113.4</u>	116.4 DC8
16	-14	1	98364.00	0.00	5208.0	1.1	3.0	15.0	16.9	-0.0	116.4
17	3	5	4216.05	90.00	12080.0	94.8	0.0	0.0	18.0	<u>112.8</u>	117.9 B707
18	-3	1	98364.00	0.00	5100.0	31.0	3.0	15.0	18.0	31.0	117.9

(c) Page 3.

Figure A-8.- Concluded.

4	-17	1	75320.00	0.00	3660.0	29.4	3.0	15.0	16.0	27.4	114.8
5	2	5	3600.37	90.00	25800.0	84.0	0.0	0.0	24.7	108.7	115.7
6	-2	1	73570.00	0.00	12100.0	32.6	3.0	15.0	24.7	39.3	115.7
7	11	5	7308.50	90.00	9600.0	79.9	0.0	0.0	21.2	101.2	115.9
8	-11	1	74150.00	0.00	5411.0	32.9	3.0	15.0	21.2	36.1	115.9
9	8	5	4027.15	90.00	8060.0	89.0	0.0	0.0	14.1	103.1	116.1
10	-8	1	74270.00	0.00	4330.0	38.1	3.0	15.0	14.1	34.1	116.1
11	18	6	6016.05	90.00	31600.0	79.8	0.0	0.0	19.2	99.0	116.2
12	-18	1	73570.00	0.00	12100.0	30.8	3.0	15.0	19.2	32.1	116.2
13	1	5	3543.04	90.00	2800.0	86.7	0.0	0.0	20.2	106.9	116.7
14	-1	1	72270.00	0.00	2281.0	36.9	3.0	15.0	20.2	39.1	116.7
15	15	4	3186.44	90.00	11530.0	91.7	0.0	0.0	16.9	108.6	117.3
16	-15	1	73100.00	0.00	5208.0	49.1	3.0	15.0	16.9	48.0	117.3
17	3	5	3206.57	90.00	12080.0	98.4	0.0	0.0	-2.2	96.2	117.3
18	-3	1	73100.00	0.00	5100.0	36.5	3.0	15.0	-2.2	16.3	117.3
19	4	5	3206.57	90.00	12080.0	91.6	0.0	0.0	17.9	<u>109.6</u>	118.0
20	-4	1	73100.00	0.00	5100.0	33.7	3.0	15.0	17.9	33.6	118.0

B707.SAM

(c) Page 3.

Figure A-9.-- Concluded.

9	18	6	5542.73	90.00	31600.0	80.7	0.0	0.0	19.2	100.0	115.0
10	-18	1	67878.00	0.00	12100.0	32.1	3.0	15.0	19.2	33.3	115.0
11	1	5	3218.36	90.00	2800.0	87.8	0.0	0.0	20.2	107.9	110.3
12	-1	1	66578.00	0.00	2281.0	38.3	3.0	15.0	20.2	40.5	110.5
13	15	4	2958.01	90.00	11530.0	92.5	0.0	0.0	16.9	109.4	117.1
14	-15	1	67408.00	0.00	5208.0	50.1	3.0	15.0	16.9	49.0	117.1
15	3	5	2979.14	90.00	12080.0	99.3	0.0	0.0	-2.2	97.1	117.1
16	-3	1	67408.00	0.00	5100.0	38.0	3.0	15.0	-2.2	17.8	117.1
17	4	5	2979.14	90.00	12080.0	92.3	0.0	0.0	17.9	<u>110.5</u>	117.9 <i>B707 SAM</i>
18	-4	1	67408.00	0.00	5100.0	35.1	3.0	15.0	17.9	35.0	117.9

(c) Page 3.

Figure A-10.- Concluded.

ORIGINAL PAGE IS
OF POOR QUALITY

10	-3	1	60574.00	0.00	5100.0	40.0	3.0	15.0	-2.2	19.8	115.7
11	4	5	2706.07	90.00	12080.0	93.2	0.0	0.0	17.9	<u>111.2</u>	117.0 B707 SAM
12	-4	1	60574.00	0.00	5100.0	36.9	3.0	15.0	17.9	36.8	117.0
13	10	5	3715.95	90.00	8230.0	86.7	0.0	0.0	24.3	111.0	118.0
14	-10	1	61744.00	0.00	4330.0	54.5	3.0	15.0	24.3	60.8	118.0
15	12	5	6017.86	90.00	9600.0	73.2	0.0	0.0	21.2	94.5	118.0
16	-12	1	61624.00	0.00	5370.0	42.1	3.0	15.0	21.2	45.3	118.0
17	19	5	5846.26	90.00	8390.0	72.4	0.0	0.0	16.0	88.4	118.0
18	-19	1	62794.00	0.00	3660.0	26.2	3.0	15.0	16.0	24.2	118.0

**ORIGINAL PAGE IS
OF POOR QUALITY**

(c) Page 3.

Figure A-11.- Concluded.

7	14	6	4136.02	90.00	12300.0	95.8	0.0	0.0	17.4	113.1	116.6	DC8
8	-14	1	81118.00	0.00	5208.0	6.6	3.0	15.0	17.4	5.9	116.6	
9	2	5	3993.45	90.00	25800.0	82.8	0.0	0.0	25.9	108.7	117.3	
10	-2	1	81588.00	0.00	12100.0	31.1	3.0	15.0	25.9	39.0	117.3	
11	11	6	6950.03	90.00	10600.0	81.9	0.0	0.0	21.1	103.0	117.4	
12	-11	1	82168.00	0.00	5411.0	31.1	3.0	15.0	21.1	34.2	117.4	
13	1	5	4000.40	90.00	2800.0	85.5	0.0	0.0	21.6	107.1	117.8	
14	-1	1	80288.00	0.00	2281.0	35.2	3.0	15.0	21.6	38.8	117.8	
15	8	6	7554.25	90.00	10230.0	86.0	0.0	0.0	14.9	101.0	117.9	
16	-8	1	82288.00	0.00	4330.0	36.4	3.0	15.0	14.9	33.4	117.9	
17	18	6	6682.80	90.00	51600.0	78.6	0.0	0.0	21.4	100.0	118.0	
18	-18	1	81588.00	0.00	12100.0	29.3	3.0	15.0	21.4	32.7	118.0	

(c) Page 3.

Figure A-12.- Concluded.

13	1	1	25981.00	0.00	3355.0	66.5	3.0	10.0	21.6	75.1	117.7
14	-1	3	1782.81	90.00	1615.0	84.0	0.0	0.0	21.6	105.5	117.9
15	8	1	25981.00	0.00	12300.0	76.3	3.0	10.0	14.9	78.2	117.9
16	-8	3	2121.41	90.00	1800.0	79.0	0.0	0.0	14.9	94.0	118.0
17	18	1	25981.00	0.00	43250.0	77.8	3.0	10.0	21.4	86.2	118.0
18	-18	3	2121.41	90.00	8400.0	78.1	0.0	0.0	21.4	99.5	118.0

ANALYSIS FOR OBSERVER AT (88264.00, 0.00)

									A			
									T	O		
									E	P		
									N	E		S
									U	R		U
									A	A		B
									T	T		ET
									I	I		PO
									O	O		NT
									N	N		DA
									S	S		BL

DIAGNOSTIC FOR 23 ARPT AVG BASE 1987 MAXGW ATA 6-306 NT. COR.

1	3	6	4146.71	90.00	12300.0	94.0	0.0	0.0	17.4	<u>111.4</u>	111.4	B707
2	-3	1	81294.00	0.00	5100.0	34.5	3.0	15.0	17.4	34.0	111.4	
3	7	6	7576.22	90.00	10230.0	87.0	0.0	0.0	23.5	110.5	114.0	
4	-7	1	82464.00	0.00	4330.0	36.8	3.0	15.0	23.5	42.3	114.0	
5	17	6	8557.84	90.00	10300.0	78.2	0.0	0.0	15.9	94.1	114.0	

(b) Page 2.

Figure A-13.- Continued.

6	-17	1	83514.00	0.00	3660.0	27.6	3.0	15.0	15.9	25.5	114.0	
7	14	6	4146.71	90.00	12300.0	95.7	0.0	0.0	17.4	113.1	116.6	DC8
8	-14	1	81294.00	0.00	5208.0	6.5	3.0	15.0	17.4	5.9	116.6	
9	2	5	4002.08	90.00	25800.0	82.7	0.0	0.0	25.9	108.7	117.2	
10	-2	1	81764.00	0.00	12100.0	31.0	3.0	15.0	25.9	38.9	117.2	
11	11	6	6968.95	90.00	10600.0	81.8	0.0	0.0	21.1	102.9	117.4	
12	-11	1	82344.00	0.00	5411.0	31.1	3.0	15.0	21.1	34.2	117.4	
13	1	5	4010.44	90.00	2800.0	85.4	0.0	0.0	21.6	107.0	117.8	
14	-1	1	80464.00	0.00	2281.0	35.2	3.0	15.0	21.6	38.8	117.8	
15	8	6	7576.22	90.00	10230.0	86.0	0.0	0.0	14.9	100.9	117.9	
16	-8	1	82464.00	0.00	4330.0	36.4	3.0	15.0	14.9	33.3	117.9	
17	18	6	6697.44	90.00	31600.0	78.5	0.0	0.0	21.4	100.0	117.9	
18	-18	1	81764.00	0.00	12100.0	29.2	3.0	15.0	21.4	32.7	117.9	

ORIGINAL PAGE IS
OF POOR QUALITY

(c) Page 3.

Figure A-13.- Concluded.

15	1	1	22216.00	0.00	3355.0	69.3	3.0	10.0	21.6	77.9	117.4
16	-1	3	1421.95	90.00	1615.0	86.5	0.0	0.0	21.6	108.1	117.9
17	8	1	22216.00	0.00	12300.0	78.7	3.0	10.0	14.9	80.6	117.9
18	-8	3	1727.86	90.00	1800.0	80.9	0.0	0.0	14.9	95.9	117.9
19	18	1	22216.00	0.00	43250.0	79.3	3.0	10.0	21.4	87.7	117.9
20	-18	3	1727.86	90.00	8400.0	80.8	0.0	0.0	21.4	102.2	118.0

ANALYSIS FOR OBSERVER AT (76041.00, 0.00)

			A			S			T			O		
			H			E			P			E		
			I			U			R			A		
			E			L			A			T		
			BP			D			I			P		
			AN			I			O			NN		
			SD			N			O			ED		
			EB			G			N			S		
			h			B			PFN			ET		
												PO		
												NT		
												DA		
												BL		

DIAGNOSTIC FOR 23 APT AVG SAM3D 1987 MAXGW ATA 6-3DG NIGHT CORRECTED

1	3	6	3404.77	90.00	12300.0	96.5	0.0	0.0	0.8	97.3	97.3
2	-3	1	69071.00	0.00	5100.0	37.6	3.0	15.0	0.8	20.3	97.3
3	4	6	3404.77	90.00	12300.0	90.2	0.0	0.0	17.3	107.6	108.0
4	-4	1	69071.00	0.00	5100.0	34.7	3.0	15.0	17.3	34.0	108.0
5	7	6	6050.62	90.00	10230.0	89.7	0.0	0.0	23.5	113.2	114.3 <i>B727</i>
6	-7	1	70241.00	0.00	4330.0	39.5	3.0	15.0	23.5	45.0	114.3
7	17	6	7365.09	90.00	10300.0	80.3	0.0	0.0	15.9	96.2	114.4

(b) Page 2.

Figure A-14.- Continued.

8	-17	1	71291.00	0.00	3660.0	30.3	3.0	15.0	15.9	28.2	114.4
9	15	6	3404.77	90.00	12300.0	91.9	0.0	0.0	17.4	109.2	115.0
10	-15	1	69071.00	0.00	5208.0	49.8	3.0	15.0	17.4	49.2	115.0
11	2	5	3402.86	90.00	25800.0	84.7	0.0	0.0	25.9	<u>110.6</u>	110.8 De 10
12	-2	1	69541.00	0.00	12100.0	33.5	3.0	15.0	25.9	41.4	110.8
13	11	6	5655.23	90.00	10600.0	84.5	0.0	0.0	21.1	105.0	117.1
14	-11	1	70121.00	0.00	5411.0	33.8	3.0	15.0	21.1	36.9	117.1
15	1	5	3313.22	90.00	2800.0	87.5	0.0	0.0	21.6	109.0	117.7
16	-1	1	68241.00	0.00	2281.0	37.9	3.0	15.0	21.6	41.5	117.7
17	8	6	6050.02	90.00	10230.0	88.7	0.0	0.0	14.9	103.7	117.9
18	-8	1	70241.00	0.00	4330.0	38.9	3.0	15.0	14.9	35.9	117.9
19	18	6	5681.02	90.00	31600.0	80.4	0.0	0.0	21.4	101.9	118.0
20	-18	1	69541.00	0.00	12100.0	31.7	3.0	15.0	21.4	35.1	118.0

(c) Page 3.

Figure A-14.- Concluded.

ANALYSIS FOR OBSERVER AT (-17851.00, 0.00)

FN	LU	IM	GR	HE	TR	H	B	PFN	ER	G	N	S	TR	BL
A	I	MS	R	AE	C	XG	OT	IM	AY	ME	FP	UN	TE	MT
DIAGNOSTIC FOR 23 ARPT AVG SAM3D&RD 1987 MAXGW ATA 6-3DG NIGHT CORRECTED														
1	3	1	17951.00	0.00	15200.0	78.8	3.0	10.0	0.8	66.6	66.6			
2	-3	3	1232.89	90.00	2500.0	101.5	0.0	0.0	0.8	102.3	102.3			
3	4	1	17951.00	0.00	15200.0	77.6	3.0	10.0	17.3	82.0	102.4			
4	-4	3	1232.89	90.00	2500.0	86.0	0.0	0.0	17.3	103.3	105.9			
5	20	1	17951.00	0.00	12600.0	76.7	3.0	10.0	15.9	79.5	105.9			
6	-20	3	1183.70	90.00	2100.0	83.8	0.0	0.0	15.9	99.7	106.8			
7	15	1	17951.00	0.00	15200.0	80.1	3.0	10.0	17.4	84.4	106.9			
8	-15	3	1232.89	90.00	2600.0	92.9	0.0	0.0	17.4	110.3	111.9			
9	2	1	17951.00	0.00	35300.0	75.8	3.0	10.0	25.9	88.7	111.9			
10	-2	3	1282.04	90.00	8400.0	86.5	0.0	0.0	25.9	<u>112.4</u>	115.2			DC10
11	6	1	17951.00	0.00	12200.0	74.9	3.0	10.0	21.1	83.0	115.2			
12	-6	3	1282.04	90.00	2800.0	85.6	0.0	0.0	21.1	106.7	115.7			
13	1	1	17951.00	0.00	3355.0	73.1	3.0	10.0	21.6	81.7	115.7			
14	-1	3	1013.17	90.00	1615.0	90.2	0.0	0.0	21.6	<u>111.9</u>	117.2			B747
15	8	1	17951.00	0.00	12300.0	81.9	3.0	10.0	24.1	93.0	117.2			

(a) Page 1.

Figure A-15.- 23-Airport, 1987 - standard takeoff, two-segment approach, SAM JT3D, SAM JT8D.

11	6	6	5563.88	90.00	10600.0	82.9	0.0	0.0	21.1	104.0	115.2	
12	-6	1	69271.00	0.00	5411.0	44.4	3.0	15.0	21.1	47.5	115.2	
13	1	5	3264.74	90.00	2800.0	87.6	0.0	0.0	21.6	109.2	116.2	
14	-1	1	67391.00	0.00	2281.0	38.1	3.0	15.0	21.6	41.7	116.2	
15	8	6	5944.53	90.00	10230.0	88.9	0.0	0.0	24.1	<u>113.0</u>	117.9	<i>B727 SAM</i>
16	-8	1	69391.00	0.00	4330.0	39.1	3.0	15.0	24.1	45.2	117.9	
17	13	6	5610.34	90.00	31600.0	80.6	0.0	0.0	21.4	102.0	118.0	
18	-18	1	68691.00	0.00	12100.0	31.9	3.0	15.0	21.4	35.3	118.0	

(c) Page 3.

Figure A-15.- Concluded.

ANALYSIS FOR ORSERVER AT (-18253.00, 0.00)

A		S		A		O		S	
T MS		H I		T E N		P E R		U B	
FN	R AF			E L A		T I P		ET PO	
LU	C XG			BP D T		O NN		NT	
IM	RT IM			AN I I		N ED		DA	
GR	AY ME			SD N O		S TB		BL	
HE	FP UM	H	B	PFN	EB	G	N	S	TB
TR	TE MT								

DIAGNOSTIC FOR 23 ARPT AVG SAM3DRFNRD 1987 MAXGW ATA 6-3DG NIGHT CORRECTED

1	3	1	18353.00	0.00	15200.0	78.4	3.0	10.0	0.8	66.2	66.2
2	-3	3	1271.42	90.00	2500.0	101.2	0.0	0.0	0.8	102.0	102.0
3	4	1	18353.00	0.00	15200.0	77.3	3.0	10.0	17.3	81.6	102.0
4	-4	3	1271.42	90.00	2500.0	85.7	0.0	0.0	17.3	103.0	105.5
5	19	1	18353.00	0.00	13160.0	57.3	3.0	10.0	15.9	60.2	105.5
6	-19	3	1218.73	90.00	2100.0	83.3	0.0	0.0	15.9	99.1	106.4
7	15	1	18353.00	0.00	15200.0	79.7	3.0	10.0	17.4	84.1	106.5
8	-15	3	1271.42	90.00	2600.0	92.6	0.0	0.0	17.4	109.9	111.5
9	2	1	18353.00	0.00	35300.0	75.5	3.0	10.0	25.9	88.4	111.6
10	-2	3	1324.06	90.00	8400.0	86.1	0.0	0.0	25.9	<u>112.0</u>	114.8 DC/D
11	12	1	18353.00	0.00	12750.0	69.3	3.0	10.0	21.1	77.4	114.8
12	-12	3	1324.06	90.00	2800.0	82.0	0.0	0.0	21.1	103.1	115.1
13	1	1	18353.00	0.00	3355.0	72.7	3.0	10.0	21.6	81.3	115.1
14	-1	3	1051.70	90.00	1615.0	89.8	0.0	0.0	21.6	<u>111.4</u>	116.6 B747
15	10	1	18353.00	0.00	12900.0	72.9	3.0	10.0	24.1	84.0	116.6

(a) Page 1.

Figure A-16.- 23-Airport, 1987 - standard takeoff, two-segment approach, SAM JT3D, RFN JT8D.

11	12	5	7876.50	90.00	11300.0	71.9	0.0	0.0	21.1	93.0	116.6
12	-12	1	61290.00	0.00	5370.0	42.1	3.0	15.0	21.1	45.2	116.6
13	1	4	3138.28	90.00	2800.0	88.5	0.0	0.0	21.6	110.1	117.5
14	-1	1	59410.00	0.00	2281.0	40.1	3.0	15.0	21.6	43.7	117.5
15	10	6	6272.61	90.00	11200.0	82.2	0.0	0.0	24.1	106.3	117.8
16	-10	1	61410.00	0.00	4330.0	54.5	3.0	15.0	24.1	60.6	117.8
17	18	6	4946.67	90.00	31600.0	82.0	0.0	0.0	21.4	103.5	117.9
18	-18	1	60710.00	0.00	12100.0	33.8	3.0	15.0	21.4	37.2	117.9

(c) Page 3.

Figure A-16.- Concluded.

5	7	5	5188.87	90.00	8060.0	87.7	0.0	0.0	23.5	111.2	115.1
6	-7	1	100078.00	0.00	4330.0	33.6	3.0	15.0	23.5	39.1	115.1
7	17	5	8454.27	90.00	8330.0	75.5	0.0	0.0	15.9	91.3	115.1
8	-17	1	101128.00	0.00	3660.0	24.4	3.0	15.0	15.9	22.3	115.1
9	14	4	4222.15	90.00	11530.0	96.4	0.0	0.0	17.4	113.7	117.5 DC8
10	-14	1	98908.00	0.00	5208.0	0.9	3.0	15.0	17.4	0.3	117.5
11	2	5	4865.59	90.00	25800.0	80.3	0.0	0.0	25.9	106.2	117.8
12	-2	1	99378.00	0.00	12100.0	28.1	3.0	15.0	25.9	36.0	117.8
13	11	5	9647.54	90.00	9600.0	76.1	0.0	0.0	21.1	97.2	117.8
14	-11	1	99958.00	0.00	5411.0	27.8	3.0	15.0	21.1	30.9	117.8
15	18	6	8162.14	90.00	31600.0	76.3	0.0	0.0	21.4	97.7	117.9
16	-18	1	99378.00	0.00	12100.0	26.3	3.0	15.0	21.4	29.7	117.9
17	8	5	5188.87	90.00	8060.0	85.9	0.0	0.0	14.9	100.9	117.9
18	-8	1	100078.00	0.00	4330.0	33.3	3.0	15.0	14.9	30.2	117.9

(c) Page 3.

Figure A-17.- Concluded.

ANALYSIS FOR OBSERVER AT (-25898.00, 0.00)

A		S		A		O		S	
I MS		H		T		P		U	
FN	R AF			E	U	A			B
LU	C XG			L	A	T	E	ET	
IM	RT IM			D	T	I	P	PO	
GB	AY ME			AN	I	O	NN	NT	
HE	FP UN			SD	N	O	ED	DA	
TR	TE MT	H	R	PFN	EB	G	N	S	TB
									BL

DIAGNOSTIC FOR 23 AIRPORT AVG BASE 1987 MAXGW FAR 6-3DEG

1	7	1	25998.00	0.00	12290.0	76.9	3.0	10.0	23.5	87.4	87.4	
2	-7	3	2123.18	90.00	1800.0	89.2	0.0	0.0	23.5	<u>112.7</u>	112.7	B727
3	17	1	25998.00	0.00	12460.0	70.3	3.0	10.0	15.9	73.1	112.7	
4	-17	3	1885.04	90.00	2100.0	84.5	0.0	0.0	15.9	100.4	113.0	
5	2	1	25998.00	0.00	35300.0	71.6	3.0	10.0	25.9	84.5	113.0	
6	-2	3	2123.18	90.00	8400.0	79.9	0.0	0.0	25.9	105.8	113.7	
7	11	1	25998.00	0.00	12200.0	74.7	3.0	10.0	21.1	82.8	113.7	
8	-11	3	2123.18	90.00	2800.0	83.4	0.0	0.0	21.1	104.5	114.2	
9	8	1	25998.00	0.00	12290.0	76.2	3.0	10.0	14.9	78.2	114.2	
10	-8	3	2123.18	90.00	1800.0	79.0	0.0	0.0	14.9	93.9	114.3	
11	18	1	25998.00	0.00	43250.0	77.7	3.0	10.0	21.4	86.2	114.3	
12	-18	3	2123.18	90.00	8400.0	78.1	0.0	0.0	21.4	99.5	114.4	

(a) Page 1.

Figure A-18.- 23-Airport, 1987 - cutback takeoff, two-segment approach.

6	-2	1	99274.00	0.00	12100.0	28.1	3.0	15.0	25.9	36.0	112.4
7	11	5	9638.11	90.00	9600.0	76.1	0.0	0.0	21.1	97.2	112.6
8	-11	1	99854.00	0.00	5411.0	27.8	3.0	15.0	21.1	30.9	112.6
9	8	5	5184.20	90.00	8060.0	85.9	0.0	0.0	14.9	100.9	112.8
10	-8	1	99974.00	0.00	4330.0	33.3	3.0	15.0	14.9	30.3	112.8
11	18	6	8153.50	90.00	31600.0	76.3	0.0	0.0	21.4	97.7	113.0
12	-18	1	99274.00	0.00	12100.0	26.3	3.0	15.0	21.4	29.7	113.0
13	1	5	5009.23	90.00	2800.0	82.5	0.0	0.0	21.6	104.1	113.5
14	-1	1	97974.00	0.00	2281.0	32.0	3.0	15.0	21.6	35.5	113.5
15	14	4	4217.98	90.00	11530.0	96.4	0.0	0.0	17.4	<u>113.7</u>	116.6 DC8
16	-14	1	98804.00	0.00	5208.0	0.9	3.0	15.0	17.4	0.3	116.6
17	3	5	4233.64	90.00	12080.0	94.7	0.0	0.0	17.4	<u>112.2</u>	118.0 B707
18	-3	1	98804.00	0.00	5100.0	30.9	3.0	15.0	17.4	30.3	118.0

(c) Page 3.

Figure A-18.- Concluded.

4	-17	1	76714.00	0.00	3660.0	29.1	3.0	15.0	15.9	26.9	114.2	
5	2	5	3668.71	90.00	25800.0	83.8	0.0	0.0	25.9	<u>109.7</u>	115.5	DC10
6	-2	1	74964.00	0.00	12100.0	32.3	3.0	15.0	25.9	40.3	115.5	
7	11	5	7434.85	90.00	9600.0	79.7	0.0	0.0	21.1	100.8	115.7	
8	-11	1	75544.00	0.00	5411.0	32.6	3.0	15.0	21.1	35.7	115.7	
9	8	5	4089.90	90.00	8060.0	88.9	0.0	0.0	14.9	103.8	115.9	
10	-8	1	75664.00	0.00	4330.0	37.8	3.0	15.0	14.9	34.7	115.9	
11	18	6	6131.98	90.00	31600.0	79.6	0.0	0.0	21.4	101.0	116.1	
12	-18	1	74964.00	0.00	12100.0	30.5	3.0	15.0	21.4	34.0	116.1	
13	1	5	3622.56	90.00	2800.0	86.5	0.0	0.0	21.6	108.1	116.7	
14	-1	1	73664.00	0.00	2281.0	36.6	3.0	15.0	21.6	40.2	116.7	
15	15	4	3242.38	90.00	11530.0	91.5	0.0	0.0	17.4	108.9	117.4	
16	-15	1	74494.00	0.00	5208.0	48.9	3.0	15.0	17.4	48.2	117.4	
17	3	5	3262.28	90.00	12080.0	98.2	0.0	0.0	0.8	99.0	117.4	
18	-3	1	74494.00	0.00	5100.0	36.2	3.0	15.0	0.8	18.9	117.4	
19	4	5	3262.28	90.00	12080.0	91.5	0.0	0.0	17.3	108.8	118.0	
20	-4	1	74494.00	0.00	5100.0	33.4	3.0	15.0	17.3	32.7	118.0	

(c) Page 3.

Figure A-19.- Concluded.

8	-8	1	70491.00	0.00	4330.0	38.9	3.0	15.0	24.1	45.0	115.4
9	18	6	5701.81	90.00	31600.0	80.4	0.0	0.0	21.4	101.8	115.6
10	-18	1	69791.00	0.00	12100.0	31.6	3.0	15.0	21.4	35.1	115.6
11	1	5	3327.48	90.00	2800.0	87.4	0.0	0.0	21.6	109.0	116.5
12	-1	1	68491.00	0.00	2281.0	37.8	3.0	15.0	21.6	41.4	116.5
13	15	4	3034.78	90.00	11530.0	92.2	0.0	0.0	17.4	109.6	117.3
14	-15	1	69321.00	0.00	5208.0	49.8	3.0	15.0	17.4	49.1	117.3
15	3	5	3055.58	90.00	12080.0	99.0	0.0	0.0	0.8	99.8	117.4
16	-3	1	69321.00	0.00	5100.0	37.5	3.0	15.0	0.8	20.3	117.4
17	4	5	3055.58	90.00	12080.0	92.1	0.0	0.0	17.3	109.4	118.0
18	-4	1	69321.00	0.00	5100.0	34.6	3.0	15.0	17.3	33.9	118.0

(c) Page 3.

Figure A-20.- Concluded.

9	3	5	2780.39	90.00	12080.0	100.2	0.0	0.0	0.8	101.0	116.1	
10	-3	1	62434.00	0.00	5100.0	39.4	3.0	15.0	0.8	22.2	116.1	
11	4	5	2780.39	90.00	12080.0	93.0	0.0	0.0	17.3	110.3	117.1	
12	-4	1	62434.00	0.00	5100.0	36.4	3.0	15.0	17.3	35.7	117.1	
13	10	5	3803.24	90.00	8230.0	86.5	0.0	0.0	24.1	<u>110.6</u>	118.0	<i>B727 REN</i>
14	-10	1	63604.00	0.00	4330.0	54.2	3.0	15.0	24.1	60.2	118.0	
15	12	5	6167.02	90.00	9600.0	72.9	0.0	0.0	21.1	94.1	118.0	
16	-12	1	63484.00	0.00	5370.0	41.7	3.0	15.0	21.1	44.8	118.0	
17	19	5	5983.45	90.00	8390.0	72.1	0.0	0.0	15.9	88.0	118.0	
18	-19	1	64654.00	0.00	3660.0	25.7	3.0	15.0	15.9	23.6	118.0	

(c) Page 3.

Figure A-21.- Concluded.

ANALYSIS FOR OBSERVER AT (76920.00, 0.00)

				S H I E			A T T E N U A T I O N S			O P E R A T O R S	
FN	I R	MS AE		E	L	A	T	E	P	S	U
LU	C	XG		BP	D	I	I	O	NN	ET	PO
IM	RT	IM		AN	I	I	O	NN	ED	NT	DA
GB	AY	ME		SD	N	O	N	ED	TB	DA	BL
HE	FP	UN		EB	G	N	S	TB			
TR	TE	MT	H	B	PFN						

DIAGNOSTIC FOR 23 ARPT AVG BASE 1972 CURFEW 3D MAXGW ATA 3DG

1	3	6	3458.13	90.00	12300.0	96.3	0.0	0.0	15.9	112.2	112.2
2	-3	1	69950.00	0.00	5100.0	37.3	3.0	15.0	15.9	35.2	112.2
3	7	6	6160.33	90.00	10230.0	89.5	0.0	0.0	23.8	<u>113.3</u>	115.8 <i>B727</i>
4	-7	1	71120.00	0.00	4330.0	39.3	3.0	15.0	23.8	45.1	115.8
5	17	6	7450.86	90.00	10300.0	80.2	0.0	0.0	15.4	95.6	115.8
6	-17	1	72170.00	0.00	3660.0	30.1	3.0	15.0	15.4	27.6	115.8
7	14	6	3458.13	90.00	12300.0	98.0	0.0	0.0	14.4	<u>112.4</u>	117.4 <i>DC8</i>
8	-14	1	69950.00	0.00	5208.0	10.8	3.0	15.0	14.4	7.2	117.4
9	2	5	3445.95	90.00	25800.0	84.5	0.0	0.0	13.1	97.6	117.5
10	-2	1	70420.00	0.00	12100.0	33.3	3.0	15.0	13.1	28.4	117.5
11	11	6	5749.71	90.00	10600.0	84.3	0.0	0.0	22.4	106.7	117.8
12	-11	1	71000.00	0.00	5411.0	33.6	3.0	15.0	22.4	38.0	117.8
13	1	5	3363.36	90.00	2800.0	87.3	0.0	0.0	14.5	101.8	117.9
14	-1	1	69120.00	0.00	2281.0	37.7	3.0	15.0	14.5	34.2	117.9

(b) Page 2.

Figure A-22.- Concluded.

ANALYSIS FOR DESERVER AT (-42761.00, 0.00)

A		S		A		D		S	
I MS		H		T		P		U	
R AF		I		E		E		B	
C XG		E		L		A		T	
RT IM		BP		D		T		I	
AY MF		AN		I		I		O	
FP IN		SD		N		O		N	
TE MT		H		B		PFN		EB	

		DIAGNOSTIC FOR		23	ARPT	AVG	BASE	1981	MAXGW	ATA	3DG	CURFEW	3D
1	3	1	42861.00	0.00	15200.0	64.0	3.0	10.0	12.3	63.2	63.2		
2	-3	2	2290.27	90.00	5100.0	97.0	0.0	0.0	12.3	<u>109.3</u>	109.3	B707	
3	7	1	42861.00	0.00	12300.0	69.5	3.0	10.0	23.9	80.4	109.3		
4	-7	2	2290.27	90.00	4330.0	90.3	0.0	0.0	23.9	<u>114.2</u>	115.4	B727	
5	17	1	42861.00	0.00	12600.0	63.0	3.0	10.0	16.0	66.0	115.4		
6	-17	2	2290.27	90.00	3660.0	84.5	0.0	0.0	16.0	100.5	115.5		
7	14	1	42861.00	0.00	15200.0	64.8	3.0	10.0	10.4	62.2	115.5		
8	-14	2	2290.27	90.00	5208.0	97.7	0.0	0.0	10.4	108.1	116.2		
9	2	1	42861.00	0.00	35300.0	65.9	3.0	10.0	24.7	77.6	116.2		
10	-2	2	2290.27	90.00	12100.0	83.1	0.0	0.0	24.7	107.8	116.8		
11	11	1	42861.00	0.00	12200.0	68.7	3.0	10.0	21.2	76.9	116.8		
12	-11	2	2290.27	90.00	5411.0	87.5	0.0	0.0	21.2	108.7	117.5		

(a) Page 1.

Figure A-23.- 23-Airport, curfew JT3D, 1981 - standard takeoff, standard approach.

6	-17	1	70480.00	0.00	3660.0	30.5	3.0	15.0	16.0	28.5	115.2
7	14	5	3563.00	90.00	12486.2	98.8	0.0	0.0	10.4	109.1	116.2
8	-14	1	68260.00	0.00	5208.0	11.5	3.0	15.0	10.4	3.9	116.2
9	2	5	2363.10	90.00	25800.0	84.8	0.0	0.0	24.7	<u>109.5</u>	117.0 DC/O
10	-2	1	68750.00	0.00	12100.0	33.7	3.0	15.0	24.7	40.3	117.0
11	11	6	5568.07	90.00	10600.0	84.7	0.0	0.0	21.2	105.9	117.3
12	-11	1	69310.00	0.00	5411.0	34.0	3.0	15.0	21.2	37.2	117.3
13	1	5	3266.96	90.00	2800.0	87.6	0.0	0.0	20.2	107.8	117.8
14	-1	1	67430.00	0.00	2281.0	38.1	3.0	15.0	20.2	40.3	117.8
15	8	4	5949.40	90.00	10230.0	88.9	0.0	0.0	14.1	103.0	117.9
16	-8	1	64430.00	0.00	4330.0	39.1	3.0	15.0	14.1	35.2	117.9
17	18	6	5613.58	90.00	31600.0	80.6	0.0	0.0	19.2	99.8	118.0
18	-18	1	68730.00	0.00	12100.0	31.9	3.0	15.0	19.2	33.1	118.0

(c) Page 3.

Figure A-23.- Concluded.

6	-17	1	70478.00	0.00	3660.0	30.5	3.0	15.0	16.0	28.5	115.2
7	14	5	3383.87	90.00	12486.8	98.8	0.0	0.0	10.4	109.1	116.2
8	-14	1	68258.00	0.00	5208.0	11.5	3.0	15.0	10.4	3.9	116.2
9	2	5	3363.00	90.00	25800.0	84.8	0.0	0.0	24.7	<u>109.5</u>	117.0 DC10
10	-2	1	68728.00	0.00	12100.0	33.7	3.0	15.0	24.7	40.3	117.0
11	11	6	5567.86	90.00	10600.0	84.7	0.0	0.0	21.2	105.9	117.3
12	-11	1	69308.00	0.00	5411.0	34.0	3.0	15.0	21.2	37.2	117.3
13	1	5	3266.85	90.00	2800.0	87.6	0.0	0.0	20.2	107.8	117.8
14	-1	1	67428.00	0.00	2281.0	38.1	3.0	15.0	20.2	40.3	117.8
15	8	6	5949.15	90.00	10230.0	88.9	0.0	0.0	14.1	103.0	117.9
16	-8	1	69428.00	0.00	4330.0	39.1	3.0	15.0	14.1	35.2	117.9
17	10	6	5613.41	90.00	31600.0	80.6	0.0	0.0	19.2	99.8	118.0
18	-18	1	68728.00	0.00	12100.0	31.9	3.0	15.0	19.2	33.1	118.0

(c) Page 3.

Figure A-24.- Concluded.

ANALYSIS FOR OBSERVER AT (-21456.00, 0.00)

A		S		A		O		S	
I MS		H		T		P		U	
R AE		E		E		E		B	
C XG		L		U		R		ET	
RT IM		BP		A		A		PO	
AY MF		AN		T		T		NT	
FP UN		SD		I		I		DA	
TE MT		EB		N		N		BL	
		H		B		PFN			

DIAGNOSTIC FOR 23 APT AVG SAM3D 1981 MAXGW ATA 6-3DG CURFEW 3D											
1	3	1	21556.00	0.00	15200.0	75.7	3.0	10.0	-2.2	60.5	60.5
2	-3	3	1578.41	90.00	2500.0	98.5	0.0	0.0	-2.2	96.2	96.2
3	4	1	21556.00	0.00	15200.0	74.9	3.0	10.0	12.1	74.0	96.3
4	-4	3	1578.41	90.00	2500.0	83.5	0.0	0.0	12.1	95.6	98.9
5	7	1	21556.00	0.00	12300.0	79.7	3.0	10.0	23.9	90.6	99.5
6	-7	3	1658.87	90.00	1800.0	92.1	0.0	0.0	23.9	<u>116.1</u>	116.1 B727
7	17	1	21556.00	0.00	12600.0	73.5	3.0	10.0	16.0	76.5	116.1
8	-17	3	1497.89	90.00	2100.0	87.4	0.0	0.0	16.0	103.4	116.4
9	15	1	21556.00	0.00	15200.0	77.1	3.0	10.0	10.4	74.5	116.4
10	-15	3	1578.41	90.00	2600.0	90.1	0.0	0.0	10.4	100.5	116.5
11	2	1	21556.00	0.00	35300.0	73.7	3.0	10.0	24.7	85.4	116.5
12	-2	3	1658.87	90.00	8400.0	83.1	0.0	0.0	24.7	<u>107.8</u>	117.0 DC10

(a) Page 1.

Figure A-25.- 23-Airport, curfew JT3D, 1981 - standard takeoff, two-segment approach, SAM JT3D.

4	-4	1	64294.00	0.00	5100.0	35.9	3.0	15.0	12.1	30.0	104.5	
5	7	6	5454.39	90.00	10230.0	90.9	0.0	0.0	23.9	<u>114.8</u>	115.2	B727
6	-7	1	65464.00	0.00	4330.0	40.7	3.0	15.0	23.9	46.6	115.2	
7	17	6	6898.93	90.00	10300.0	81.2	0.0	0.0	16.0	97.2	115.3	
8	-17	1	66514.00	0.00	3660.0	31.5	3.0	15.0	16.0	29.5	115.3	
9	15	5	3324.38	90.00	12600.0	93.7	0.0	0.0	10.4	104.1	115.6	
10	-15	1	64294.00	0.00	5208.0	50.7	3.0	15.0	10.4	43.1	115.6	
11	2	5	3168.67	90.00	25800.0	85.5	0.0	0.0	24.7	<u>110.2</u>	116.7	DCID
12	-2	1	64764.00	0.00	12100.0	34.6	3.0	15.0	24.7	41.2	116.7	
13	11	6	5141.81	90.00	10600.0	85.8	0.0	0.0	21.2	107.0	117.1	
14	-11	1	65344.00	0.00	5411.0	35.0	3.0	15.0	21.2	38.2	117.1	
15	1	4	3182.86	90.00	2800.0	88.4	0.0	0.0	20.2	108.6	117.7	
16	-1	1	63464.00	0.00	2281.0	39.1	3.0	15.0	20.2	41.3	117.7	
17	8	6	5454.39	90.00	10230.0	90.0	0.0	0.0	14.1	104.1	117.9	
18	-8	1	65464.00	0.00	4330.0	40.1	3.0	15.0	14.1	36.1	117.9	
19	18	6	5283.79	90.00	31600.0	81.3	0.0	0.0	19.2	100.5	118.0	
20	-18	1	64764.00	0.00	12100.0	32.8	3.0	15.0	19.2	34.0	118.0	

(c) Page 3.

Figure A-25.- Concluded.

15	8	1	16948.00	0.00	12300.0	82.8	3.0	10.0	24.3	94.2	117.2
16	-8	3	1177.20	90.00	1800.0	84.5	0.0	0.0	24.3	108.9	117.8
17	18	1	16948.00	0.00	43250.0	82.0	3.0	10.0	19.2	88.2	117.8
18	-18	3	1177.20	90.00	8400.0	85.8	0.0	0.0	19.2	105.0	118.0

ANALYSIS FOR OBSERVER AT (69087.00, 0.00)

			DIAGNOSTIC FOR			23 ARPT AVG			SAM3D&8D			1981 MAXGW			ATA 6-3DG			CURFEW 3D				
A	I	MS																				
FN	R	AE																				
LU	C	XG																				
IM	RT	IM																				
GB	AY	ME																				
HE	FP	UN																				
TR	TF	MT																				

1	3	5	3291.70	90.00	12600.0	98.0	0.0	0.0	-2.2	95.8	95.8
2	-3	1	62117.00	0.00	5100.0	39.5	3.0	15.0	-2.2	19.3	95.8
3	4	5	3291.70	90.00	12600.0	91.9	0.0	0.0	12.1	104.0	104.6
4	-4	1	62117.00	0.00	5100.0	36.5	3.0	15.0	12.1	30.6	104.6
5	20	6	6686.50	90.00	10300.0	81.8	0.0	0.0	16.0	97.8	105.5
6	-20	1	64337.00	0.00	3660.0	33.2	3.0	15.0	16.0	31.2	105.5
7	15	5	3291.70	90.00	12600.0	93.8	0.0	0.0	10.4	104.2	107.9
8	-15	1	62117.00	0.00	5208.0	51.1	3.0	15.0	10.4	43.5	107.9
9	2	4	3075.46	90.00	26621.8	86.7	0.0	0.0	24.7	<u>111.3</u>	112.9 DC/O

(b) Page 2.

Figure A-26.- Continued.

10	-2	1	62587.00	0.00	12100.0	35.1	3.0	15.0	24.7	41.8	112.9	
11	6	6	4907.83	90.00	10600.0	84.7	0.0	0.0	21.2	105.9	113.7	
12	-6	1	63187.00	0.00	5411.0	45.7	3.0	15.0	21.2	48.9	113.7	
13	1	4	3158.92	90.00	2800.0	88.4	0.0	0.0	20.2	108.6	114.9	
14	-1	1	61287.00	0.00	2281.0	39.6	3.0	15.0	20.2	41.8	114.9	
15	8	6	5182.67	90.00	10230.0	90.6	0.0	0.0	24.3	114.9	117.9	<i>B72T SAM</i>
16	-8	1	63287.00	0.00	4330.0	40.6	3.0	15.0	24.3	46.9	117.9	
17	18	6	5102.75	90.00	31600.0	81.7	0.0	0.0	19.2	100.9	118.0	
18	18	1	62587.00	0.00	12100.0	33.3	3.0	15.0	19.2	34.5	118.0	

(c) Page 3.

Figure A-26.- Concluded.

ANALYSIS FOR OBSERVER AT (-17000.00, 0.00)

		A		S		T		O		S	
		T		H		E		P		U	
		E		I		L		E		B	
		N		E		D		R		E	
		U		L		T		A		T	
		A		I		I		T		P	
		T		N		O		I		N	
		I		N		N		D		N	
		O		G		S		N		E	
		N		E		B		T		B	

DIAGNOSTIC FOR 23 ARPT AVG SAM3DRFN8D 1981 MAXGW ATA 6-30G CURFEW 3D

1	3	1	17100.00	0.00	15200.0	79.6	3.0	10.0	-2.2	64.4	64.4
2	-3	3	1151.33	90.00	2500.0	102.4	0.0	0.0	-2.2	100.2	100.2
3	4	1	17100.00	0.00	15200.0	78.4	3.0	10.0	12.1	77.5	100.2
4	-4	3	1151.33	90.00	2500.0	86.7	0.0	0.0	12.1	98.8	102.6
5	19	1	17100.00	0.00	13160.0	58.7	3.0	10.0	16.0	61.7	102.6
6	-19	3	1109.53	90.00	2100.0	84.5	0.0	0.0	16.0	100.5	104.7
7	15	1	17100.00	0.00	15200.0	80.9	3.0	10.0	10.4	78.3	104.7
8	-15	3	1151.33	90.00	2600.0	93.7	0.0	0.0	10.4	104.0	107.4
9	2	1	17100.00	0.00	35300.0	76.3	3.0	10.0	24.7	88.0	107.4
10	-2	3	1193.09	90.00	8400.0	87.4	0.0	0.0	24.7	112.1	113.4
11	12	1	17100.00	0.00	12750.0	70.1	3.0	10.0	21.2	78.3	113.4
12	-12	3	1193.09	90.00	2800.0	83.2	0.0	0.0	21.2	104.4	113.9
13	1	1	17100.00	0.00	3355.0	74.0	3.0	10.0	20.2	81.2	113.9
14	-1	2	942.05	90.00	1775.1	92.5	0.0	0.0	20.2	112.7	116.3

(a) Page 1.

Figure A-27.- 23-Airport, curfew JT3D, 1981 - standard takeoff, two-segment approach, SAM JT3D, RFN JT8D.

10	-2	1	42207.00	0.00	12100.0	41.1	3.0	15.0	24.7	47.8	115.1	
11	12	5	5429.37	90.00	11300.0	76.4	0.0	0.0	21.2	97.6	115.2	
12	-12	1	42787.00	0.00	5370.0	46.3	3.0	15.0	21.2	49.5	115.2	
13	1	3	2673.80	90.00	2800.0	90.8	0.0	0.0	20.2	111.0	116.6	
14	-1	1	40907.00	0.00	2281.0	46.2	3.0	15.0	20.2	48.4	116.6	
15	10	5	4485.66	90.00	11200.0	86.8	0.0	0.0	24.3	<u>111.1</u>	117.7	B727 RFN
16	-10	1	42907.00	0.00	4330.0	58.4	3.0	15.0	24.3	64.7	117.7	
17	18	5	3874.63	90.00	33600.0	86.9	0.0	0.0	19.2	106.1	118.0	
18	-18	1	42207.00	0.00	12100.0	39.3	3.0	15.0	19.2	40.5	118.0	

(c) Page 3.

Figure A-27.- Concluded.

9	14	4	3298.97	90.00	11530.0	99.6	0.0	0.0	10.4	110.0	117.2
10	-14	1	75904.00	0.00	5208.0	8.5	3.0	15.0	10.4	0.8	117.2
11	2	5	3737.84	90.00	25800.0	83.6	0.0	0.0	24.7	108.2	117.7
12	-2	1	76374.00	0.00	12100.0	32.1	3.0	15.0	24.7	38.7	117.7
13	11	5	7562.64	90.00	9600.0	79.5	0.0	0.0	21.2	100.7	117.8
14	-11	1	76954.00	0.00	5411.0	32.2	3.0	15.0	21.2	35.5	117.8
15	18	6	6249.23	90.00	31600.0	79.3	0.0	0.0	19.2	98.6	117.9
16	-18	1	76374.00	0.00	12100.0	30.3	3.0	15.0	19.2	31.5	117.9
17	8	5	4153.37	90.00	8060.0	88.7	0.0	0.0	14.1	102.7	118.0
18	-8	1	77074.00	0.00	4330.0	37.5	3.0	15.0	14.1	33.5	118.0

(c) Page 3.

Figure A-28.- Concluded.

ANALYSIS FOR OBSERVER AT (-22824.00, 0.00)

A		S		A		O		S	
I MS		H I		T E		P E		U B	
FN	R AE			E	L A	T I	E	ET	
LU	C XG			BP	D T	I P	PO		
IM	RT IM			AN	I I	O NN	NT		
GB	AY ME			SD	N D	N ED	DA		
HE	FP UN			EB	G N	S TB	BL		
TR	TE MT	H	B	PFN					

DIAGNOSTIC FOR 23 AIRPORT AVG BASE 1981 MAXGW FAR 6-3DEG CURFEW 3D

1	7	1	22924.00	0.00	12290.0	78.8	3.0	10.0	23.9	89.7	89.7
2	-7	3	1801.86	90.00	1800.0	91.3	0.0	0.0	23.9	<u>115.2</u>	115.2 <i>B727</i>
3	17	1	22924.00	0.00	12460.0	72.2	3.0	10.0	16.0	75.2	115.2
4	-17	3	1617.12	90.00	2100.0	86.5	0.0	0.0	16.0	102.5	115.4
5	2	1	22924.00	0.00	35300.0	73.0	3.0	10.0	24.7	84.7	115.4
6	-2	3	1801.86	90.00	8400.0	82.1	0.0	0.0	24.7	106.7	116.0
7	11	1	22924.00	0.00	12200.0	76.2	3.0	10.0	21.2	84.4	116.0
8	-11	3	1801.86	90.00	2800.0	85.6	0.0	0.0	21.2	106.8	116.5
9	8	1	22924.00	0.00	12290.0	78.2	3.0	10.0	14.1	79.2	116.5
10	-8	3	1801.86	90.00	1800.0	80.5	0.0	0.0	14.1	94.6	116.5
11	18	1	22924.00	0.00	43250.0	79.0	3.0	10.0	19.2	85.2	116.5
12	-18	3	1801.86	90.00	8400.0	80.3	0.0	0.0	19.2	99.5	116.6
13	1	1	22924.00	0.00	3355.0	68.7	3.0	10.0	20.2	75.9	116.6
14	-1	3	1489.81	90.00	1615.0	85.9	0.0	0.0	20.2	106.1	117.0

(a) Page 1.

Figure A-29.- 23-Airport, curfew JT3D, 1981 - cutback takeoff, two-segment approach.

10	-8	1	77101.00	0.00	4330.0	37.5	3.0	15.0	14.1	33.5	115.7
11	18	6	6251.47	90.00	31600.0	79.3	0.0	0.0	19.2	98.6	115.8
12	-18	1	76401.00	0.00	12100.0	30.3	3.0	15.0	19.2	31.5	115.8
13	1	5	3704.53	90.00	2800.0	86.3	0.0	0.0	20.2	106.5	116.3
14	-1	1	75101.00	0.00	2281.0	36.3	3.0	15.0	20.2	38.5	116.3
15	14	4	3300.05	90.00	11530.0	99.6	0.0	0.0	10.4	109.9	117.2
16	-14	1	75931.00	0.00	5208.0	8.5	3.0	15.0	10.4	0.8	117.2
17	3	5	3319.69	90.00	12080.0	98.0	0.0	0.0	12.3	<u>110.2</u>	118.0 <i>B707</i>
18	-3	1	75931.00	0.00	5100.0	35.8	3.0	15.0	12.3	30.1	118.0

(c) Page 3.

Figure A-29.- Concluded.

8	-11	1	67516.00	0.00	5411.0	34.5	3.0	15.0	21.2	37.7	116.7
9	8	5	3728.53	90.00	8060.0	89.7	0.0	0.0	14.1	103.7	116.9
10	-8	1	67636.00	0.00	4330.0	39.5	3.0	15.0	14.1	35.6	116.9
11	18	6	5464.40	90.00	31600.0	80.9	0.0	0.0	19.2	100.1	117.0
12	-18	1	66936.00	0.00	12100.0	32.3	3.0	15.0	19.2	33.5	117.0
13	1	4	3206.74	90.00	2800.0	88.2	0.0	0.0	20.2	108.4	117.0
14	-1	1	65636.00	0.00	2281.0	38.5	3.0	15.0	20.2	40.7	117.5
15	15	4	2920.20	90.00	11530.0	92.6	0.0	0.0	10.4	103.0	117.7
16	-15	1	66466.00	0.00	5208.0	50.3	3.0	15.0	10.4	42.7	117.7
17	3	5	2941.50	90.00	12080.0	99.5	0.0	0.0	-2.2	97.3	117.7
18	-3	1	66466.00	0.00	5100.0	38.3	3.0	15.0	-2.2	18.1	117.7
19	4	5	2941.50	90.00	12080.0	92.5	0.0	0.0	12.1	104.0	117.9
20	-4	1	66466.00	0.00	5100.0	35.3	3.0	15.0	12.1	29.4	117.9

(c) Page 3.

Figure A-30.- Concluded.

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9	18	6	4967.88	90.00	31600.0	82.0	0.0	0.0	19.2	101.2	116.9
10	-18	1	60965.00	0.00	12100.0	33.7	3.0	15.0	19.2	34.9	116.9
11	1	4	3141.09	90.00	2800.0	88.5	0.0	0.0	20.2	108.7	117.5
12	-1	1	59665.00	0.00	2281.0	40.1	3.0	15.0	20.2	42.3	117.5
13	15	4	2680.57	50.00	11530.0	93.5	0.0	0.0	10.4	103.9	117.7
14	-15	1	60495.00	0.00	5208.0	51.5	3.0	15.0	10.4	43.8	117.7
15	3	5	2702.91	90.00	12080.0	100.6	0.0	0.0	-2.2	98.3	117.7
16	-3	1	60495.00	0.00	5100.0	40.0	3.0	15.0	-2.2	19.8	117.7
17	4	5	2702.91	90.00	12080.0	93.3	0.0	0.0	12.1	105.4	118.0
18	-4	1	60495.00	0.00	5100.0	36.9	3.0	15.0	12.1	31.0	118.0

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(c) Page 3.

Figure A-31.- Concluded.

ANALYSIS FOR OBSERVER AT (-16998.00, 0.00)

				S H I E L D I N G				A T T E N U A T I O N S				O P E R A T I O N S		S U B P O N T D A B L										
FN	LU	IM	GB	HE	TR	AE	XG	IM	ME	UN	H	B	PFN	EB	G	N	S	ED	TB	ET	PO	NT	DA	BL

DIAGNOSTIC FOR 23 AIRPORT AVG 1981 SAM3D R8D MAXGW FAR 6-3DEG CURFEW 3D

1	2	1	17098.00	0.00	35300.0	76.3	3.0	10.0	24.7	88.0	88.0														
2	-2	3	1192.88	90.00	8400.0	87.4	0.0	0.0	24.7	112.1	112.1														
3	18	1	17098.00	0.00	43250.0	81.9	3.0	10.0	19.2	88.1	112.1														
4	-18	3	1192.88	90.00	8400.0	85.6	0.0	0.0	19.2	104.9	112.9														
5	1	1	17098.00	0.00	3355.0	74.0	3.0	10.0	20.2	81.2	112.9														
6	-1	2	941.94	90.00	1776.4	92.5	0.0	0.0	20.2	<u>112.7</u>	115.8														B747
7	15	1	17098.00	0.00	15200.0	80.9	3.0	10.0	10.4	78.3	115.8														
8	-15	3	1151.13	90.00	2600.0	93.7	0.0	0.0	10.4	104.0	116.1														
9	3	1	17098.00	0.00	14500.0	78.3	3.0	10.0	-2.2	63.0	116.1														
10	-3	3	1151.13	90.00	2500.0	102.4	0.0	0.0	-2.2	100.2	116.2														
11	4	1	17098.00	0.00	14500.0	76.4	3.0	10.0	12.1	75.5	116.2														
12	-4	3	1151.13	90.00	2500.0	86.7	0.0	0.0	12.1	98.8	116.3														
13	10	1	17098.00	0.00	12900.0	74.0	3.0	10.0	24.3	85.3	116.3														
14	-10	3	1192.88	90.00	1800.0	88.3	0.0	0.0	24.3	<u>112.6</u>	117.8														B727 RFN

(a) Page 1.

Figure A-32.- 23-Airport, curfew JT3D, 1981 - cutback takeoff, two-segment approach, SAM JT3D, RFN JT8D.

3	5	2185.10	90.00	12080.0	103.2	0.0	0.0	-2.2	101.0	115.9	
10	-3	47536.00	0.00	5100.0	44.5	3.0	15.0	-2.2	24.3	115.9	
11	4	2185.10	90.00	12080.0	95.3	0.0	0.0	12.1	107.4	116.5	
12	-4	47536.00	0.00	5100.0	41.0	3.0	15.0	12.1	35.1	116.5	
13	10	3104.05	90.00	8230.0	88.0	0.0	0.0	24.3	<u>112.3</u>	117.9	B727 RFN
14	-10	48706.00	0.00	4330.0	57.0	3.0	15.0	24.3	63.4	117.9	
15	12	4972.22	90.00	9600.0	75.6	0.0	0.0	21.2	96.8	117.9	
16	-12	48586.00	0.00	5370.0	44.8	3.0	15.0	21.2	48.0	117.9	
17	19	4884.57	90.00	8390.0	74.7	0.0	0.0	16.0	90.7	117.9	
18	-19	45756.00	0.00	3660.0	30.1	3.0	15.0	16.0	28.1	117.9	

(c) Page 3.

Figure A-32.- Concluded.

ANALYSIS FOR OBSERVER AT (-43290.00, 0.00)

FN	LU	IM	GB	HE	TP	A I R C R T A Y F P T F	MS AE XG IM MF UN MT	H	B	PFN	E BP AN SD EB	S H I E L D I N G	A T T E N U A T I O N	O P E R A T I O N S	E P N N E D T B	S U B E T P O I N T D A B L
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DIAGNOSTIC FOR 23 ARPT AVG BASE 1987 CURFEW 3D MAXGW ATA 3DG

1	3	1	43350.00	0.00	15200.0	63.8	3.0	10.0	12.0	62.7	62.7
2	-3	2	2317.96	90.00	5100.0	96.8	0.0	0.0	12.0	108.8	108.8
3	7	1	43350.00	0.00	12300.0	69.4	3.0	10.0	23.5	79.9	108.8
4	-7	2	2317.96	90.00	4330.0	90.1	0.0	0.0	23.5	113.6	114.9
5	17	1	43350.00	0.00	12600.0	62.8	3.0	10.0	15.9	65.7	114.9
6	-17	2	2317.96	90.00	3660.0	84.4	0.0	0.0	15.9	100.2	115.0
7	14	1	43350.00	0.00	15200.0	64.6	3.0	10.0	10.1	61.7	115.0
8	-14	2	2317.96	90.00	5208.0	97.5	0.0	0.0	10.1	107.6	115.7
9	2	1	43350.00	0.00	35300.0	65.8	3.0	10.0	25.9	78.7	115.8
10	-2	2	2317.96	90.00	12100.0	83.0	0.0	0.0	25.9	108.9	116.6
11	11	1	43350.00	0.00	12200.0	68.6	3.0	10.0	21.1	76.7	116.6
12	-11	2	2317.96	90.00	5411.0	87.4	0.0	0.0	21.1	108.5	117.2

B727

(a) Page 1.

Figure A-33.- 23-Airport, curfew JT3D, 1987 - standard takeoff, standard approach.

7	14	5	3391.80	90.00	12328.4	98.3	0.0	0.0	10.1	108.4	115.6
8	-14	1	68786.00	0.00	5208.0	11.3	3.0	15.0	10.1	3.4	115.6
9	2	5	3388.88	90.00	25800.0	84.7	0.0	0.0	25.9	<u>110.6</u>	116.8
10	-2	1	69256.00	0.00	12100.0	33.6	3.0	15.0	25.9	41.5	116.8
11	11	6	5624.61	90.00	10600.0	84.6	0.0	0.0	21.1	105.7	117.1
12	-11	1	69836.00	0.00	5411.0	33.9	3.0	15.0	21.1	37.0	117.1
13	1	5	3296.97	90.00	2800.0	87.5	0.0	0.0	21.6	109.1	117.7
14	-1	1	67556.00	0.00	2281.0	37.9	3.0	15.0	21.6	41.5	117.7
15	8	6	6015.05	90.00	10230.0	88.8	0.0	0.0	14.9	103.7	117.9
16	-8	1	69956.00	0.00	4330.0	39.0	3.0	15.0	14.9	35.9	117.9
17	18	6	5657.32	90.00	31600.0	80.5	0.0	0.0	21.4	101.9	118.0
18	-18	1	69256.00	0.00	12100.0	31.8	3.0	15.0	21.4	35.2	118.0

DC10

(c) Page 3.

Figure A-33.- Concluded.

7	14	6	3399.31	90.00	12300.0	98.2	0.0	0.0	10.1	108.3	115.5	
8	-14	1	68981.00	0.00	5208.0	11.2	3.0	15.0	10.1	3.3	115.5	
9	2	5	3398.44	90.00	25800.0	84.7	0.0	0.0	25.9	<u>110.6</u>	116.7	<i>DC10</i>
10	-2	1	69451.00	0.00	12100.0	33.5	3.0	15.0	25.9	41.4	116.7	
11	11	6	5645.56	90.00	10600.0	84.5	0.0	0.0	21.1	105.7	117.0	
12	-11	1	70031.00	0.00	5411.0	33.8	3.0	15.0	21.1	37.0	117.0	
13	1	5	3308.09	90.00	2800.0	87.5	0.0	0.0	21.6	109.1	117.7	
14	-1	1	68151.00	0.00	2281.0	37.9	3.0	15.0	21.6	41.5	117.7	
15	8	6	6039.39	90.00	10230.0	88.7	0.0	0.0	14.9	103.7	117.9	
16	-8	1	70151.00	0.00	4330.0	39.0	3.0	15.0	14.9	35.9	117.9	
17	18	6	5673.54	90.00	31600.0	80.5	0.0	0.0	21.4	101.9	118.0	
18	-18	1	69451.00	0.00	12100.0	31.7	3.0	15.0	21.4	35.1	118.0	

(c) Page 3.

Figure A-34.- Concluded.

ANALYSIS FOR OBSERVER AT (-21612.00, 0.00)

	A	MS							A	O		S
FN	I	AF							T	P		U
LU	R	XG							E	R		B
IM	C	IM							N	A		ET
GB	RT	ME							I	T		PO
HE	AY	UN							O	I		NT
TR	FP	UN							N	O		DA
	TE	MT	H	B	PFN	EB	G	N	S	ED	TB	BL

	DIAGNOSTIC FOR 23 APT AVG SAM3D 1987 MAXGW ATA 6-3DG CURFEW 3D											
1	3	1	21712.00	0.00	15200.0	75.6	3.0	10.0	0.8	63.4	63.4	
2	-3	3	1593.37	90.00	2500.0	98.3	0.0	0.0	0.8	99.1	99.1	
3	4	1	21712.00	0.00	15200.0	74.8	3.0	10.0	11.6	73.4	99.2	
4	-4	3	1593.37	90.00	2500.0	83.4	0.0	0.0	11.6	95.0	100.6	
5	7	1	21712.00	0.00	12300.0	79.6	3.0	10.0	23.5	90.1	100.9	
6	-7	3	1675.18	90.00	1800.0	92.0	0.0	0.0	23.5	<u>115.6</u>	115.7	B727
7	17	1	21712.00	0.00	12600.0	73.4	3.0	10.0	15.9	76.3	115.7	
8	-17	3	1511.49	90.00	2100.0	87.3	0.0	0.0	15.9	103.2	115.9	
9	15	1	21712.00	0.00	15200.0	77.0	3.0	10.0	10.1	74.1	115.9	
0	-15	3	1593.37	90.00	2600.0	90.0	0.0	0.0	10.1	100.1	116.1	
11	2	1	21712.00	0.00	35300.0	73.6	3.0	10.0	25.9	86.5	116.1	
12	-2	3	1675.18	90.00	8400.0	83.0	0.0	0.0	25.9	<u>108.9</u>	116.8	DC10

(a) Page 1.

Figure A-35.- 23-Airport, curfew JT3D, 1987 - standard takeoff, two-segment approach, SAM JT3D.

13	11	1	21712.00	0.00	12200.0	76.8	3.0	10.0	21.1	84.9	116.8
14	-11	3	1675.18	90.00	2800.0	86.5	0.0	0.0	21.1	107.6	117.3
15	1	1	21712.00	0.00	3355.0	69.7	3.0	10.0	21.6	78.3	117.3
16	-1	3	1373.64	90.00	1615.0	86.9	0.0	0.0	21.6	108.4	117.9
17	8	1	21712.00	0.00	12300.0	79.0	3.0	10.0	14.9	81.0	117.9
18	-8	3	1675.18	90.00	1800.0	81.2	0.0	0.0	14.9	96.2	117.9
19	18	1	21712.00	0.00	43250.0	79.5	3.0	10.0	21.4	88.0	117.9
20	-18	3	1675.18	90.00	8400.0	81.2	0.0	0.0	21.4	102.6	118.0

ANALYSIS FOR OBSERVER AT (73200.00, 0.00)

			S H I E L D I N G			A T T E N T I O N			O P E R A T I O N S			S U B E T P O N T D A B L
A	J	MS										
FN	R	AF										
LU	C	XG										
IM	RT	IM										
GB	AY	MF										
HE	FP	UN										
TR	TE	MT	H	B	PFN	EB	G	N	S	TB		BL

DIAGNOSTIC FOR 23 APT AVG SAM3D 1987 MAXGW ATA 6-3DG CURFEW 3D												
1	3	5	3353.43	90.00	12600.0	97.7	0.0	0.0	0.8	98.5	98.5	
2	-3	1	66230.00	0.00	5100.0	38.3	3.0	15.0	0.8	21.1	98.5	
3	4	5	3353.43	90.00	12600.0	91.7	0.0	0.0	11.6	103.4	104.6	
4	-4	1	66230.00	0.00	5100.0	35.4	3.0	15.0	11.6	29.0	104.6	

(b) Page 2.

Figure A-35.- Continued.

5	7	6	5696.03	90.00	10230.0	90.4	0.0	0.0	23.5	<u>113.9</u>	114.4	B727
6	-7	1	67400.00	0.00	4330.0	40.2	3.0	15.0	23.5	45.7	114.4	
7	17	6	7067.86	90.00	10300.0	80.8	0.0	0.0	15.9	96.7	114.5	
8	-17	1	68450.00	0.00	3660.0	31.0	3.0	15.0	15.9	28.9	114.5	
9	15	5	3353.43	90.00	12600.0	93.6	0.0	0.0	10.1	103.7	114.8	
10	-15	1	66230.00	0.00	5208.0	50.3	3.0	15.0	10.1	42.5	114.8	
11	2	5	3263.58	90.00	25800.0	85.2	0.0	0.0	25.9	<u>111.1</u>	116.4	DC10
12	-2	1	66700.00	0.00	12100.0	34.1	3.0	15.0	25.9	42.0	116.4	
13	11	6	5349.89	90.00	10600.0	85.2	0.0	0.0	21.1	106.4	116.8	
14	-11	1	67280.00	0.00	5411.0	34.5	3.0	15.0	21.1	37.6	116.8	
15	1	4	3204.14	90.00	2800.0	88.3	0.0	0.0	21.6	109.9	117.6	
16	-1	1	65400.00	0.00	2281.0	38.6	3.0	15.0	21.6	42.2	117.6	
17	8	6	5696.03	90.00	10230.0	89.5	0.0	0.0	14.9	104.4	117.8	
18	-8	1	67400.00	0.00	4330.0	39.6	3.0	15.0	14.9	36.5	117.8	
19	18	6	5444.77	90.00	31600.0	80.9	0.0	0.0	21.4	102.4	117.9	
20	-18	1	66700.00	0.00	12100.0	32.3	3.0	15.0	21.4	35.8	117.9	

(c) Page 3.

Figure A-35.- Concluded.

ANALYSIS FOR OBSERVER AT (-17176.00, 0.00)

A		S		T		D		P		S	
I		H		E		R		E		U	
FN	R	AE		E	L	A	T	E	P	ET	B
LU	C	XG		BP	D	T	I	P		PU	
IM	RT	IM		AN	I	I	O	NW		NT	
GB	AY	ME		SD	N	O	N	ED		DA	
HF	FP	UN									
TR	TE	MT	H	B	PFN	EB	G	N	S	TB	BL
DIAGNOSTIC FOR 23 ARPT AVG SAM3D&8D 1987 MAXGW ATA 6-30G CURFEW 3D											
1	3	1	17276.00	0.00	15200.0	79.5	3.0	10.0	0.8	67.3	67.3
2	-3	3	1168.20	90.00	2500.0	102.2	0.0	0.0	0.8	103.0	103.0
3	4	1	17276.00	0.00	15200.0	78.2	3.0	10.0	11.6	76.9	103.0
4	-4	3	1168.20	90.00	2500.0	86.5	0.0	0.0	11.6	98.2	104.3
5	20	1	17276.00	0.00	12600.0	77.3	3.0	10.0	15.9	80.1	104.3
6	-20	3	1124.87	90.00	2100.0	84.4	0.0	0.0	15.9	100.3	105.7
7	15	1	17276.00	0.00	15200.0	80.7	3.0	10.0	10.1	77.8	105.7
8	-15	3	1168.20	90.00	2600.0	93.5	0.0	0.0	10.1	103.6	107.8
9	2	1	17276.00	0.00	35300.0	76.2	3.0	10.0	25.9	89.1	107.9
10	-2	3	1211.49	90.00	8400.0	87.2	0.0	0.0	25.9	<u>113.1</u>	114.3 DC10
11	6	1	17276.00	0.00	12200.0	75.4	3.0	10.0	21.1	83.5	114.3
12	-6	3	1211.49	90.00	2800.0	86.0	0.0	0.0	21.1	107.1	112.0
13	1	1	17276.00	0.00	3355.0	73.8	3.0	10.0	21.6	82.4	115.0
14	-1	2	951.26	90.00	1657.7	91.3	0.0	0.0	21.6	<u>112.9</u>	117.1 B747

(a) Page 1.

Figure A-36.- 23-Airport, curfew JT3D, 1987 - standard takeoff, two-segment approach, SAM JT3D, SAM JT8D.

11	6	6	5032.29	90.00	10600.0	84.3	0.0	0.0	21.1	105.4	113.0
12	-6	1	64325.00	0.00	5411.0	45.4	3.0	15.0	21.1	48.5	113.8
13	1	4	3171.65	90.00	2800.0	88.4	0.0	0.0	21.6	110.0	115.3
14	-1	1	62445.00	0.00	2281.0	39.3	3.0	15.0	21.6	42.9	115.3
15	8	6	5327.20	90.00	10230.0	90.3	0.0	0.0	24.1	114.4	117.9
16	-8	1	64445.00	0.00	4330.0	40.3	3.0	15.0	24.1	46.4	117.9
17	18	6	5199.05	90.00	31600.0	81.5	0.0	0.0	21.4	102.9	118.0
18	-18	1	63745.00	0.00	12100.0	33.0	3.0	15.0	21.4	36.4	118.0

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(c) Page 3.

Figure A-36.- Concluded.

ANALYSIS FOR OBSERVER AT (-17529.00, 0.00)

A			S			A			U			S		
I MS			H I			T E			P F			U B		
FN	R	AE				E	L	U	E	E	ET			
LU	C	XG				BP	D	A	P	PJ				
IM	RT	IM				AN	I	I	NN	NT				
GR	AY	MF				SD	N	U	ED	DA				
HE	FP	UM				EB	G	N	TB	BL				
TR	TE	MT	H	B	PFN	EB	G	N	S	TB	BL			

DIAGNOSTIC FOR 23 ARPT AVG SAM3DRFN8D 1987 MAXGW ATA 6-306 LUKFEW 3D

1	3	1	17629.00	0.00	15200.0	79.1	3.0	10.0	0.8	66.9	66.9		
2	-3	3	1202.03	90.00	2500.0	101.9	0.0	0.0	0.8	102.7	102.7		
3	4	1	17629.00	0.00	15200.0	77.9	3.0	10.0	11.6	76.6	102.7		
4	-4	3	1202.03	90.00	2500.0	86.3	0.0	0.0	11.6	97.9	103.9		
5	19	1	17629.00	0.00	13160.0	58.1	3.0	10.0	15.9	61.0	103.9		
6	-19	3	1155.63	90.00	2100.0	84.0	0.0	0.0	15.9	99.8	105.3		
7	15	1	17629.00	0.00	15200.0	80.4	3.0	10.0	10.1	77.5	105.4		
8	-15	3	1202.03	90.00	2600.0	93.2	0.0	0.0	10.1	103.3	107.5		
9	2	1	17629.00	0.00	35300.0	76.0	3.0	10.0	25.9	88.9	107.5		
10	-2	3	1248.39	90.00	8400.0	86.8	0.0	0.0	25.9	<u>112.7</u>	113.9	DC10	
11	12	1	17629.00	0.00	12750.0	69.8	3.0	10.0	21.1	77.9	113.9		
12	-12	3	1248.39	90.00	2800.0	82.7	0.0	0.0	21.1	103.8	114.3		
13	1	1	17629.00	0.00	3355.0	73.4	3.0	10.0	21.6	82.0	114.3		
14	-1	3	982.30	90.00	1615.0	90.6	0.0	0.0	21.6	<u>112.1</u>	116.4	B747	

(a) Page 1.

Figure A-37.- 23-Airport, curfew JT3D, 1987 - standard takeoff, two-segment approach, SAM JT3D, RFN JT8D.

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9	2	4	2748.99	90.00	27400.0	88.7	0.0	0.0	25.9	<u>114.7</u>	115.5	DC10
10	-2	1	48197.00	0.00	12100.0	39.1	3.0	15.0	25.9	47.0	115.5	
11	12	5	6221.58	90.00	11300.0	74.7	0.0	0.0	21.1	35.8	115.0	
12	-12	1	48777.00	0.00	5370.0	44.8	3.0	15.0	21.1	47.9	115.6	
13	1	4	3000.70	90.00	2800.0	89.0	0.0	0.0	21.6	<u>110.0</u>	110.0	B747
14	-1	1	46897.00	0.00	2281.0	44.0	3.0	15.0	21.6	47.0	115.0	
15	10	5	4997.31	90.00	11200.0	85.6	0.0	0.0	24.1	109.7	117.5	
16	-10	1	46897.00	0.00	4330.0	57.0	3.0	15.0	24.1	63.1	117.5	
17	18	5	4164.10	90.00	33600.0	86.1	0.0	0.0	21.4	107.6	118.0	
18	-18	1	48197.00	0.00	12100.0	37.3	3.0	15.0	21.4	40.7	118.0	

(c) Page 3.

Figure A-37.- Concluded.

9	14	4	3317.95	90.00	11530.0	99.5	0.0	0.0	10.1	109.6	117.0
10	-14	1	76377.00	0.00	5208.0	8.3	3.0	15.0	10.1	0.4	117.0
11	2	5	3761.03	90.00	25800.0	83.5	0.0	0.0	25.9	109.4	117.7
12	-2	1	76847.00	0.00	12100.0	32.0	3.0	15.0	25.9	59.9	117.7
13	11	5	7605.51	90.00	9600.0	79.4	0.0	0.0	21.1	100.5	117.8
14	-11	1	77427.00	0.00	5411.0	32.1	3.0	15.0	21.1	35.2	117.8
15	18	6	6288.56	90.00	31600.0	79.3	0.0	0.0	21.4	100.7	117.8
16	-18	1	76847.00	0.00	12100.0	30.2	3.0	15.0	21.4	33.6	117.8
17	8	5	4174.66	90.00	8060.0	88.6	0.0	0.0	14.9	103.5	118.0
18	-8	1	77547.00	0.00	4330.0	37.4	3.0	15.0	14.9	34.3	118.0

(c) Page 3.

Figure A-38.- Concluded.

9	8	5	4172.09	90.00	8060.0	88.6	0.0	0.0	14.9	103.6	115.7
10	-8	1	77490.00	0.00	4330.0	37.4	3.0	15.0	14.9	34.3	115.7
11	18	6	6283.82	90.00	31600.0	79.3	0.0	0.0	21.4	100.7	115.8
12	-18	1	76790.00	0.00	12100.0	30.2	3.0	15.0	21.4	33.6	115.8
13	1	5	3726.71	90.00	2800.0	86.2	0.0	0.0	21.6	107.8	116.5
14	-1	1	75490.00	0.00	2281.0	36.2	3.0	15.0	21.6	39.8	116.5
15	14	4	3315.66	90.00	11530.0	99.5	0.0	0.0	10.1	109.6	117.3
16	-14	1	76320.00	0.00	5208.0	8.3	3.0	15.0	10.1	0.4	117.3
17	3	5	3335.24	90.00	12080.0	97.9	0.0	0.0	12.0	<u>109.9</u>	118.0
18	-3	1	76320.00	0.00	5100.0	35.7	3.0	15.0	12.0	29.7	118.0

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(c) Page 3.

Figure A-39.- Concluded.

ANALYSIS FOR OBSERVER AT (-21612.00, 0.00)

				S T P			A T O		
				H	E	E			S
				I	N	R			U
				E	U	A			B
A	MS			E	L	A	T	E	ET
FN	R	AE		BP	D	T	I	P	PO
LU	C	XG		AN	I	O	NN		NT
IM	RT	IM		SD	N	O	N	ED	DA
GB	AY	ME		EB	G	N	S	TB	BL
HF	FP	UN							
TR	TE	MT	H	B	PFN				

DIAGNOSTIC FOR 23 AIRPORT AVG 1987 SAM3D MAXGW FAR 6-3DEG CURFEW 3D

1	7	1	21712.00	0.00	12290.0	79.6	3.0	10.0	23.5	90.1	90.1	
2	-7	3	1675.18	90.00	1800.0	92.0	0.0	0.0	23.5	<u>115.6</u>	115.6	B727
3	17	1	21712.00	0.00	12460.0	73.0	3.0	10.0	15.9	75.9	115.6	
4	-17	3	1511.49	90.00	2100.0	87.3	0.0	0.0	15.9	103.2	115.8	
5	2	1	21712.00	0.00	35300.0	73.6	3.0	10.0	25.9	86.5	115.8	
6	-2	3	1675.18	90.00	8400.0	83.0	0.0	0.0	25.9	<u>108.9</u>	116.6	DC10
7	11	1	21712.00	0.00	12200.0	76.8	3.0	10.0	21.1	84.9	116.6	
8	-11	3	1675.18	90.00	2800.0	86.5	0.0	0.0	21.1	107.6	117.1	
9	8	1	21712.00	0.00	12290.0	79.0	3.0	10.0	14.9	80.9	117.1	
10	-8	3	1675.18	90.00	1800.0	81.2	0.0	0.0	14.9	96.2	117.2	
11	18	1	21712.00	0.00	43250.0	79.5	3.0	10.0	21.4	88.0	117.2	
12	-18	3	1675.18	90.00	8400.0	81.2	0.0	0.0	21.4	102.6	117.3	
13	1	1	21712.00	0.00	3355.0	69.7	3.0	10.0	21.6	78.3	117.3	
14	-1	3	1373.64	90.00	1615.0	86.9	0.0	0.0	21.6	108.4	117.9	

(a) Page 1.

Figure A-40.- 23-Airport, curfew JT3D, 1987 - cutback takeoff, two-segment approach, SAM JT3D.

15	15	1	21712.00	0.00	15200.0	77.0	3.0	10.0	10.1	74.1	117.9
16	-15	3	1593.37	90.00	2600.0	90.0	0.0	0.0	10.1	100.1	117.9
17	3	1	21712.00	0.00	14500.0	74.1	3.0	10.0	0.8	61.9	117.9
18	-3	3	1593.37	90.00	2500.0	98.3	0.0	0.0	0.8	99.1	118.0
19	4	1	21712.00	0.00	14500.0	72.7	3.0	10.0	11.6	71.3	118.0
20	-4	3	1593.37	90.00	2500.0	83.4	0.0	0.0	11.6	95.0	118.0

ANALYSIS FOR OPSERVER AT (74941.00, 0.00)

			S	A T	D P			
A			H	E	E			S
I	MS		I	N	R			U
FN	R AE		E	U	A			B
LU	C XG		F	L	T	F		ET
IM	RT IM		BP	D	I	P		PO
GB	AY ME		AN	I	D	NN		NT
HE	FP UN		SD	N	N	ED		DA
TR	TF MT	H	EB	G	N	S	TR	BL

DIAGNOSTIC FOR 23 AIRPORT AVG 1987 SAM3D MAXGW FAR 6-3DEG CURFEW 3D

1	7	5	3796.27	90.00	9060.0	91.4	0.0	0.0	23.5	<u>114.9</u>	114.9	B727
2	-7	1	69141.00	0.00	4330.0	39.7	3.0	15.0	23.5	45.3	114.9	
3	17	5	6172.36	90.00	8330.0	75.8	0.0	0.0	15.9	95.7	114.9	
4	-7	1	70191.00	0.00	3660.0	30.6	3.0	15.0	15.9	28.4	114.9	
5	2	5	3348.93	90.00	25800.0	84.9	0.0	0.0	25.9	<u>110.8</u>	116.3	DC10
6	-2	1	68441.00	0.00	12100.0	33.7	3.0	15.0	25.9	41.6	116.3	

(b) Page 2.

Figure A-40.- Continued.

7	11	5	6843.65	90.00	9600.0	80.8	0.0	0.0	21.1	101.9	116.5
8	-11	1	69021.00	0.00	5411.0	34.1	3.0	15.0	21.1	37.2	116.5
9	8	5	3796.27	90.00	8060.0	89.5	0.0	0.0	14.9	104.5	116.8
10	-8	1	69141.00	0.00	4330.0	39.2	3.0	15.0	14.9	36.1	116.8
11	18	6	5589.55	90.00	31600.0	80.6	0.0	0.0	21.4	102.1	116.9
12	-18	1	68441.00	0.00	12100.0	31.9	3.0	15.0	21.4	35.4	116.9
13	1	5	3250.48	90.00	2800.0	87.7	0.0	0.0	21.6	109.2	117.6
14	-1	1	67141.00	0.00	2281.0	38.1	3.0	15.0	21.6	41.7	117.6
15	15	4	2980.60	90.00	11530.0	92.4	0.0	0.0	10.1	102.5	117.7
16	-15	1	67971.00	0.00	5208.0	50.0	3.0	15.0	10.1	42.1	117.7
17	3	5	3001.63	90.00	12080.0	99.2	0.0	0.0	0.8	100.0	117.8
18	-3	1	67971.00	0.00	5100.0	37.9	3.0	15.0	0.8	20.6	117.8
19	4	5	3001.63	90.00	12080.0	92.3	0.0	0.0	11.6	103.9	118.0
20	-4	1	67971.00	0.00	5100.0	34.9	3.0	15.0	11.6	28.6	118.0

(c) Page 3.

Figure A-40.- Concluded.

ANALYSIS FOR OBSERVER AT (-17176.00, 0.00)

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9	18	6	5116.23	90.00	31600.0	81.6	0.0	0.0	21.4	103.1	116.7
10	-18	1	62749.00	0.00	12100.0	33.3	3.0	15.0	21.4	36.7	116.7
11	1	4	3160.70	90.00	2800.0	88.4	0.0	0.0	21.6	110.0	117.6
12	-1	1	61449.00	0.00	2281.0	39.6	3.0	15.0	21.6	43.2	117.6
13	15	4	2752.17	90.00	11530.0	93.2	0.0	0.0	10.1	103.3	117.7
14	-15	1	62279.00	0.00	5208.0	51.1	3.0	15.0	10.1	43.2	117.7
15	3	5	2774.20	90.00	12080.0	100.2	0.0	0.0	0.8	101.0	117.8
16	-3	1	62279.00	0.00	5100.0	39.5	3.0	15.0	0.8	22.3	117.8
17	4	5	2774.20	90.00	12080.0	93.0	0.0	0.0	11.6	104.7	118.0
18	-4	1	62279.00	0.00	5100.0	36.4	3.0	15.0	11.6	30.1	118.0

(c) Page 3.

Figure A-41.- Concluded.

11	4	5	2463.33	90.00	12080.0	94.1	0.0	0.0	11.6	105.8	116.8
12	-4	1	54499.00	0.00	5100.0	38.7	3.0	15.0	11.6	32.3	116.8
13	10	5	3430.84	90.00	8230.0	87.2	0.0	0.0	24.1	<u>111.3</u>	117.9
14	-10	1	55669.00	0.00	4330.0	55.6	3.0	15.0	24.1	61.7	117.9
15	12	5	5530.64	90.00	9600.0	74.3	0.0	0.0	21.1	95.4	117.9
16	-12	1	55549.00	0.00	5370.0	43.3	3.0	15.0	21.1	46.4	117.9
17	10	5	5398.16	90.00	8390.0	73.4	0.0	0.0	15.9	89.3	118.0
18	-10	1	56719.00	0.00	3660.0	27.9	3.0	15.0	15.9	25.8	118.0

B727 RFN

(c) Page 3.

Figure A-42.- Concluded.

C-3

3	7	6	7328.21	90.00	10230.0	87.4	0.0	0.0	23.4	110.8	114.7
4	-7	1	80477.00	0.00	4330.0	37.2	3.0	15.0	23.4	42.7	114.7
5	17	6	8363.95	90.00	10300.0	78.6	0.0	0.0	15.6	94.1	114.7
6	-17	1	81527.00	0.00	3660.0	28.0	3.0	15.0	15.6	25.6	114.7
7	14	6	4026.10	90.00	12300.0	96.2	0.0	0.0	16.9	113.1	117.0 DC8
8	-14	1	75307.00	0.00	5208.0	7.2	3.0	15.0	16.9	6.1	117.0
9	2	5	3904.67	90.00	25800.0	83.0	0.0	0.0	24.7	107.7	117.5
10	-2	1	79777.00	0.00	12100.0	31.4	3.0	15.0	24.7	38.1	117.5
11	11	6	6755.39	90.00	10600.0	82.2	0.0	0.0	21.0	103.2	117.6
12	-11	1	80357.00	0.00	5411.0	31.5	3.0	15.0	21.0	34.5	117.6
13	1	5	3897.10	90.00	2800.0	85.7	0.0	0.0	20.2	105.9	117.9
14	-1	1	78477.00	0.00	2281.0	35.6	3.0	15.0	20.2	37.8	117.9
15	18	6	6532.21	90.00	31600.0	78.8	0.0	0.0	19.2	98.1	118.0
16	-18	1	79777.00	0.00	12100.0	29.6	3.0	15.0	19.2	30.8	118.0
17	10	6	8497.17	90.00	11200.0	78.6	0.0	0.0	17.1	95.7	118.0
18	-10	1	80477.00	0.00	4330.0	51.6	3.0	15.0	17.1	50.7	118.0
19	19	6	10702.68	90.00	11000.0	62.8	0.0	0.0	5.9	68.7	118.0
20	-19	1	81527.00	0.00	3660.0	21.9	3.0	15.0	5.9	9.8	118.0
21	12	5	10398.23	90.00	11300.0	68.7	0.0	0.0	8.9	77.5	118.0
22	-12	1	80357.00	0.00	5370.0	39.0	3.0	15.0	8.9	29.8	118.0

(c) Page 3.

Figure A-43.- Concluded.

3	7	6	7356.05	90.00	10230.0	87.3	0.0	0.0	23.4	110.8	114.6
4	-7	1	80700.00	0.00	4330.0	37.2	3.0	15.0	23.4	42.6	114.6
5	17	6	8385.71	90.00	10300.0	78.5	0.0	0.0	15.6	94.1	114.7
6	-17	1	81750.00	0.00	3660.0	28.0	3.0	15.0	15.6	25.6	114.7
7	14	6	4039.63	90.00	12300.0	96.1	0.0	0.0	16.9	113.0	116.9 DC8
8	-14	1	79530.00	0.00	5208.0	7.1	3.0	15.0	16.9	6.0	116.9
9	2	5	3915.60	90.00	25800.0	83.0	0.0	0.0	24.7	107.7	117.4
10	-2	1	80000.00	0.00	12100.0	31.4	3.0	15.0	24.7	38.0	117.4
11	11	6	6779.36	90.00	10600.0	82.2	0.0	0.0	21.0	103.1	117.6
12	-11	1	80580.00	0.00	5411.0	31.5	3.0	15.0	21.0	34.4	117.6
13	1	5	3909.82	90.00	2800.0	85.7	0.0	0.0	20.2	105.9	117.9
14	-1	1	78700.00	0.00	2281.0	35.5	3.0	15.0	20.2	37.7	117.9
15	18	6	6550.75	90.00	31600.0	78.8	0.0	0.0	19.2	98.0	117.9
16	-18	1	80000.00	0.00	12100.0	29.6	3.0	15.0	19.2	30.8	117.9
17	10	6	8533.60	90.00	11200.0	78.6	0.0	0.0	17.1	95.6	117.9
18	-10	1	80700.00	0.00	4330.0	51.6	3.0	15.0	17.1	50.6	117.9
19	19	6	10731.78	90.00	11000.0	62.7	0.0	0.0	5.9	68.6	117.9
20	-19	1	81750.00	0.00	3660.0	21.9	3.0	15.0	5.9	9.8	117.9
21	12	5	10427.73	90.00	11300.0	68.6	0.0	0.0	8.9	77.5	117.9
22	-12	1	80580.00	0.00	5370.0	38.9	3.0	15.0	8.9	29.8	117.9

(c) Page 3.

Figure A-44.- Concluded.

ANALYSIS FOR OBSERVER AT (-21530.00, 0.00)

FN	LU	IM	GB	HE	TR	A	I	MS	AE	XG	IM	ME	UN	MT	H	B	PFN	EB	AN	SD	BP	E	EL	IC	NI	ON	GN	AT	UN	TA	TI	ON	NS	UP	ER	AT	IP	ED	TB	SU	B	ET	PO	NT	DA	BL					

DIAGNOSTIC FOR 23 APT AVG RFN/NEW 8D SAM3D 1981 MAXGW ATA 6-3DG																																																			
1	3	1	21630.00	C.00	15200.0	75.6	3.0	10.0	-2.2	60.4	60.4																																								
2	-3	3	1585.51	90.00	2500.0	98.4	0.0	0.0	-2.2	96.2	96.2																																								
3	4	1	21630.00	C.00	15200.0	74.8	3.0	10.0	17.9	79.7	96.3																																								
4	-4	3	1585.51	90.00	2500.0	83.4	0.0	0.0	17.9	101.3	102.5																																								
5	7	1	21630.00	C.00	12300.0	79.6	3.0	10.0	23.4	90.1	102.8																																								
6	-7	3	1666.60	90.00	1800.0	92.1	0.0	0.0	23.4	<u>115.5</u>	115.8																																								
7	17	1	21630.00	C.00	12600.0	73.5	3.0	10.0	15.6	76.0	115.8																																								
8	-17	3	1504.34	90.00	2100.0	87.4	0.0	0.0	15.6	102.9	116.0																																								
9	15	1	21630.00	C.00	15200.0	77.0	3.0	10.0	16.9	80.9	116.0																																								
10	-15	3	1585.51	90.00	2600.0	90.1	0.0	0.0	16.9	107.0	116.5																																								
11	2	1	21630.00	C.00	35300.0	73.7	3.0	10.0	24.7	85.3	116.5																																								
12	-2	3	1666.60	90.00	8400.0	83.1	0.0	0.0	24.7	<u>107.7</u>	117.0																																								

B727

DC10

(a) Page 1.

Figure A-45.- 23-Airport, refan new JT8D's, 1981 - standard takeoff, two-segment approach, SAM JT3D.

13	11	1	21630.00	C.00	12200.0	76.9	3.0	10.0	21.0	84.8	117.0
14	-11	3	1666.60	90.00	2800.0	86.5	0.0	0.0	21.0	107.5	117.5
15	1	1	21630.00	C.00	3355.0	69.8	3.0	10.0	20.2	76.9	117.5
16	-1	3	1365.78	90.00	1615.0	86.9	0.0	0.0	20.2	107.1	117.9
17	18	1	21630.00	C.00	43250.0	79.6	3.0	10.0	19.2	85.8	117.9
18	-18	3	1666.60	90.00	8400.0	81.3	0.0	0.0	19.2	100.5	118.0
19	10	1	21630.00	C.00	12900.0	70.5	3.0	10.0	17.1	74.5	118.0
20	-10	3	1666.60	90.00	1800.0	84.8	0.0	0.0	17.1	101.9	118.1
21	19	1	21630.00	C.00	13160.0	54.1	3.0	10.0	5.9	47.0	118.1
22	-19	3	1504.34	90.00	2100.0	80.5	0.0	0.0	5.9	86.4	118.1
23	12	1	21630.00	C.00	12750.0	67.4	3.0	10.0	8.9	63.3	118.1
24	-12	3	1666.60	90.00	2800.0	79.3	0.0	0.0	8.9	88.1	118.1

(b) Page 2.

Figure A-45.- Continued.

15	1	5	3237.81	90.00	2800.0	87.7	0.0	0.0	20.2	107.9	117.9
16	-1	1	66919.00	0.00	2281.0	38.2	3.0	15.0	20.2	40.4	117.9
17	18	6	5571.09	90.00	31600.0	80.7	0.0	0.0	19.2	99.9	118.0
18	-18	1	68219.00	0.00	12100.0	32.0	3.0	15.0	19.2	33.2	118.0
19	10	6	7159.10	90.00	11200.0	80.7	0.0	0.0	17.1	97.8	118.0
20	-10	1	68919.00	0.00	4330.0	53.3	3.0	15.0	17.1	52.3	118.0
21	19	6	9194.05	90.00	11000.0	65.7	0.0	0.0	5.9	71.6	118.0
22	-19	1	69969.00	0.00	3660.0	24.4	3.0	15.0	5.9	12.3	118.0
23	12	5	8869.62	90.00	11300.0	70.5	0.0	0.0	8.9	79.4	118.0
24	-12	1	68799.00	0.00	5270.0	40.8	3.0	15.0	8.9	31.6	118.0

(d) Page 4.

Figure A-45.- Concluded.

ANALYSIS FOR OBSERVER AT (-17170.00, 0.00)

FN	IR	MS	AE	H	B	PFN	EB	SHIELDING	ATTENUATION	OPERATION	ETP	SUBJECT POINT DATA

DIAGNOSTIC FOR 23 ARPT AVG RFN/NEW 8D SAM3D&8D 1981 MAXGW ATA 6-3DG												
1	3	1	17270.00	C.00	15200.0	79.5	3.0	10.0	-2.2	64.2	64.2	
2	-3	3	1167.62	9C.00	2500.0	102.2	0.0	0.0	-2.2	100.0	100.0	
3	4	1	17270.00	C.00	15200.0	78.2	3.0	10.0	17.9	83.1	100.1	
4	-4	3	1167.62	9C.00	2500.0	86.6	0.0	0.0	17.9	104.5	105.8	
5	20	1	17270.00	0.00	12600.0	77.3	3.0	10.0	15.6	79.8	105.8	
6	-20	3	1124.34	9C.00	2100.0	84.4	0.0	0.0	15.6	100.0	106.8	
7	15	1	17270.00	C.00	15200.0	80.7	3.0	10.0	16.9	84.6	106.9	
8	-15	3	1167.62	9C.00	2600.0	93.5	0.0	0.0	16.9	110.4	112.0	
9	2	1	17270.00	C.00	35300.0	76.2	3.0	10.0	24.7	87.9	112.0	
10	-2	3	1210.86	9C.00	8400.0	87.2	0.0	0.0	24.7	111.9	115.0	DC10
11	6	1	17270.00	C.00	12200.0	75.4	3.0	10.0	21.0	83.4	115.0	
12	-6	3	1210.86	9C.00	2800.0	86.0	0.0	0.0	21.0	107.0	115.6	
13	1	1	17270.00	C.00	3355.0	73.8	3.0	10.0	20.2	81.0	115.6	
14	-1	2	550.94	9C.00	1661.7	91.3	0.0	0.0	20.2	<u>111.5</u>	117.0	B747

(a) Page 1.

Figure A-46.- 23-Airport, refan new JT8D's, 1981 - standard takeoff, two-segment approach, SAM JT3D, SAM JT8D.

5	20	6	7048.14	90.00	10300.0	81.2	0.0	0.0	15.6	96.7	110.1	
6	-20	1	68043.00	C.00	3660.0	32.3	3.0	15.0	15.6	29.9	110.1	
7	15	5	3347.32	90.00	12600.0	93.6	0.0	0.0	16.9	<u>110.5</u>	113.3	DC8 SAM
8	-15	1	65823.00	C.00	5208.0	50.4	3.0	15.0	16.9	49.3	113.3	
9	2	5	3243.63	90.00	25800.0	85.2	0.0	0.0	24.7	109.9	114.9	
10	-2	1	66293.00	C.00	12100.0	34.2	3.0	15.0	24.7	40.9	114.9	
11	6	6	5306.14	90.00	10600.0	83.6	0.0	0.0	21.0	104.5	115.3	
12	-6	1	66873.00	C.00	5411.0	44.9	3.0	15.0	21.0	47.8	115.3	
13	1	4	3199.67	90.00	2800.0	88.3	0.0	0.0	20.2	108.5	116.1	
14	-1	1	64993.00	C.00	2281.0	38.7	3.0	15.0	20.2	40.9	116.1	
15	8	6	5645.23	90.00	10230.0	85.6	0.0	0.0	23.4	<u>113.0</u>	117.9	B727 SAM
16	-8	1	66993.00	C.00	4330.0	39.7	3.0	15.0	23.4	45.1	117.9	
17	18	6	5410.93	90.00	31600.0	81.0	0.0	0.0	19.2	100.2	117.9	
18	-18	1	66293.00	C.00	12100.0	32.4	3.0	15.0	19.2	33.7	117.9	
19	10	6	6934.39	90.00	11200.0	81.1	0.0	0.0	17.1	98.2	118.0	
20	-10	1	66993.00	C.00	4330.0	52.6	3.0	15.0	17.1	52.6	118.0	
21	19	6	8942.66	90.00	11000.0	66.2	0.0	0.0	5.9	72.1	118.0	
22	-19	1	68043.00	C.00	3660.0	24.9	3.0	15.0	5.9	12.8	118.0	
23	12	5	8614.89	90.00	11300.0	70.9	0.0	0.0	8.9	79.7	118.0	
24	-12	1	66873.00	C.00	5370.0	41.1	3.0	15.0	8.9	32.0	118.0	

(c) Page 3.

Figure A-46.- Concluded.

ORIGINAL PAGE IS
OF POOR QUALITY

15	18	1	50100.00	0.00	45250.0	71.3	3.0	10.0	19.2	77.5	117.9
16	-18	2	2009.15	90.00	12100.0	79.2	0.0	0.0	19.2	90.4	110.0
17	10	1	50100.00	0.00	12900.0	57.7	3.0	10.0	17.1	01.0	110.0
18	-10	2	2009.15	90.00	4330.0	03.9	0.0	0.0	17.1	100.9	110.0
19	19	1	50100.00	0.00	13100.0	37.5	3.0	10.0	5.9	30.5	110.0
20	-19	2	2009.15	90.00	5000.0	75.3	0.0	0.0	5.9	81.2	110.0
21	12	1	50100.00	0.00	12750.0	57.6	3.0	10.0	8.9	53.5	110.0
22	-12	2	2009.15	90.00	5570.0	77.7	0.0	0.0	8.9	06.5	110.1

ANALYSIS FOR RESERVE AT (104563.00, 0.00)

A			S			A			J			S		
I MS			H I			T E			P E			R A		
FA C AE			E L			U A			R A			U B		
LL C XG			BP G			T I			I P			ET PJ		
IM PT IM			AN I			U I			N N			ED JA		
GP AY MF			SD N			C N			S TB			BL		
HF FY UN			EB G			N S								
TF T- MT			F B PFN											

DIAGNOSTIC FOR 23 AIRPORT AVG REFAN/NEW BD 1981 BASE MAXW PAR 3DEG

1	1	5	4340.15	90.00	2800.0	82.7	0.0	0.0	20.2	102.9	102.9
2	-1	1	90703.00	0.00	2281.0	52.2	3.0	15.0	20.2	34.4	102.9
3	3	5	4103.25	90.00	12080.0	94.9	0.0	0.0	10.0	<u>112.9</u>	113.3 B707
4	-3	1	97593.00	0.00	5100.0	31.1	3.0	15.0	18.0	51.1	113.3
5	7	5	5125.00	90.00	8000.0	67.6	0.0	0.0	23.4	111.3	113.4

(b) Page 2.

Figure A-47.- Continued.

ORIGINAL PAGE IS
OF POOR QUALITY

6	-7	1	98763.00	0.00	4330.0	33.8	3.0	15.0	23.4	39.3	113.4
7	17	5	6357.28	50.00	6330.0	75.7	0.0	0.0	15.6	91.2	113.4
8	-17	1	99813.00	0.00	3660.0	24.6	3.0	15.0	15.6	22.2	113.4
9	14	4	+169.36	50.00	11530.0	96.6	0.0	0.0	16.9	113.5	117.8 DC8
10	-14	1	97553.00	0.00	5208.0	1.3	3.0	15.0	16.9	0.2	117.8
11	2	5	4801.12	90.00	25800.0	80.4	0.0	0.0	24.7	105.1	117.8
12	-2	1	98063.00	0.00	12100.0	28.3	3.0	15.0	24.7	34.9	117.8
13	11	5	9528.36	50.00	9600.0	76.3	0.0	0.0	21.0	97.2	117.8
14	-11	1	98643.00	0.00	5411.0	28.0	3.0	15.0	21.0	31.0	117.8
15	18	6	8052.80	90.00	31600.0	76.4	0.0	0.0	19.2	95.7	117.9
16	-18	1	98063.00	0.00	12100.0	26.5	3.0	15.0	19.2	27.7	117.9
17	10	5	5453.32	90.00	8230.0	83.0	0.0	0.0	17.1	100.0	117.9
18	-10	1	98763.00	0.00	4330.0	49.4	3.0	15.0	17.1	46.5	117.9
19	19	5	8576.78	90.00	8390.0	67.2	0.0	0.0	5.9	73.1	117.9
20	-19	1	99813.00	0.00	3660.0	18.6	3.0	15.0	5.9	6.5	117.9
21	12	5	8986.73	50.00	9600.0	68.4	0.0	0.0	8.9	77.3	117.9
22	-12	1	98643.00	0.00	5370.0	36.6	3.0	15.0	8.9	27.4	117.9

(c) Page 3.

Figure A-47.- Concluded.

ORIGINAL PAGE IS
OF POOR QUALITY

6	-2	1	98273.00	0.00	12100.0	28.2	3.0	15.0	24.7	34.9	112.2	
7	11	5	9547.39	90.00	9600.0	76.3	0.0	0.0	21.0	97.2	112.3	
8	-11	1	98853.00	0.00	5411.0	28.0	3.0	15.0	21.0	30.9	112.3	
9	18	6	8070.26	90.00	31600.0	76.4	0.0	0.0	19.2	95.6	112.4	
10	-18	1	98273.00	0.00	12100.0	26.4	3.0	15.0	19.2	27.7	112.4	
11	1	5	4952.13	90.00	2800.0	82.7	0.0	0.0	20.2	102.8	112.9	
12	-1	1	96973.00	0.00	2281.0	32.1	3.0	15.0	20.2	34.3	112.9	
13	14	4	4177.80	90.00	11530.0	96.5	0.0	0.0	16.9	<u>113.4</u>	116.2	DC8
14	-14	1	97803.00	0.00	5208.0	1.2	3.0	15.0	16.9	0.1	116.2	
15	3	5	4193.64	90.00	12080.0	94.9	0.0	0.0	18.0	<u>112.9</u>	117.8	B707
16	-3	1	97803.00	0.00	5100.0	31.1	3.0	15.0	18.0	31.1	117.8	
17	10	5	5463.18	90.00	8230.0	83.0	0.0	0.0	17.1	100.0	117.9	
18	-10	1	98973.00	0.00	4330.0	49.4	3.0	15.0	17.1	48.4	117.9	
19	19	5	8592.27	90.00	8390.0	67.1	0.0	0.0	5.9	73.1	117.9	
20	-19	1	100023.00	0.00	3660.0	18.5	3.0	15.0	5.9	6.4	117.9	
21	12	5	9003.57	90.00	9600.0	68.4	0.0	0.0	8.9	77.3	117.9	
22	-12	1	98853.00	0.00	5370.0	36.5	3.0	15.0	8.9	27.4	117.9	

(c) Page 3.

Figure A-48.- Concluded.

15	3	1	21660.00	0.00	14500.0	74.1	3.0	10.0	-2.2	58.9	117.8
16	-3	3	1588.38	90.00	2500.0	98.4	0.0	0.0	-2.2	96.2	117.8
17	4	1	21660.00	0.00	14500.0	72.7	3.0	10.0	17.9	77.7	117.8
18	-4	3	1588.38	90.00	2500.0	83.4	0.0	0.0	17.9	101.3	117.9
19	10	1	21660.00	0.00	12900.0	70.4	3.0	10.0	17.1	74.5	117.9
20	-10	3	1669.74	90.00	1800.0	84.8	0.0	0.0	17.1	101.9	118.0
21	19	1	21660.00	0.00	13160.0	54.1	3.0	10.0	5.9	47.0	118.0
22	-19	3	1506.96	90.00	2100.0	80.5	0.0	0.0	5.9	86.4	118.0
23	12	1	21660.00	0.00	12750.0	67.4	3.0	10.0	8.9	63.2	118.0
24	-12	3	1669.74	90.00	2800.0	79.2	0.0	0.0	8.9	88.1	118.1

ANALYSIS FOR OBSERVER AT (78484.00, 0.00)

			S H I E L D I O N			A T E N U A T I O N			O P E R A T I O N			S U B J E C T P O I N T D A T A			
A	I	MS	E	B	P	A	N	I	O	N	E	P	N	T	B
FN	R	AF													
LU	C	XG													
IM	RT	IM													
GB	AY	ME													
HE	FP	UN													
TR	TE	MT	H	B	PFN	EB	G	N	S	TB					

DIAGNOSTIC FOR 23 AIRPORT AVG RFN/NEW 8D 1981 SAM3D MAXGW FAR 6-3DEG

1	7	5	3955.76	90.00	8060.0	91.0	0.0	0.0	23.4	114.5	114.5	B727
2	-7	1	72684.00	0.00	4330.0	38.9	3.0	15.0	23.4	44.4	114.5	
3	17	5	6433.69	90.00	8330.0	79.3	0.0	0.0	15.6	94.8	114.5	
4	-17	1	73734.00	0.00	3660.0	29.7	3.0	15.0	15.6	27.3	114.5	

(b) Page 2.

Figure A-49.- Continued.

5	2	5	3522.62	90.00	25800.0	84.3	0.0	0.0	24.7	108.9	115.6	
6	-2	1	71984.00	0.00	12100.0	33.0	3.0	15.0	24.7	39.6	115.6	
7	11	5	7164.76	90.00	9600.0	80.2	0.0	0.0	21.0	101.2	115.7	
8	-11	1	72564.00	0.00	5411.0	33.2	3.0	15.0	21.0	36.2	115.7	
9	18	6	5884.17	90.00	31600.0	80.0	0.0	0.0	19.2	99.3	115.8	
10	-18	1	71984.00	0.00	12100.0	31.2	3.0	15.0	19.2	32.4	115.8	
11	1	5	3452.57	90.00	2800.0	87.0	0.0	0.0	20.2	107.2	116.4	
12	-1	1	70684.00	0.00	2281.0	37.3	3.0	15.0	20.2	39.5	116.4	
13	15	4	3122.79	90.00	11530.0	91.9	0.0	0.0	16.9	108.8	117.1	
14	-15	1	71514.00	0.00	5208.0	49.4	3.0	15.0	16.9	48.3	117.1	
15	3	5	3143.20	90.00	12080.0	98.6	0.0	0.0	-2.2	96.4	117.1	
16	-3	1	71514.00	0.00	5100.0	36.9	3.0	15.0	-2.2	16.7	117.1	
17	4	5	3143.20	90.00	12080.0	91.8	0.0	0.0	17.9	<u>109.8</u>	117.8	<i>B707 SAM</i>
18	-4	1	71514.00	0.00	5100.0	34.1	3.0	15.0	17.9	34.0	117.8	
19	10	5	4229.39	90.00	8230.0	85.6	0.0	0.0	17.1	102.6	118.0	
20	-10	1	72684.00	0.00	4330.0	52.7	3.0	15.0	17.1	51.8	118.0	
21	19	5	6653.19	90.00	8390.0	70.8	0.0	0.0	5.9	76.7	118.0	
22	-19	1	73734.00	0.00	3660.0	23.6	3.0	15.0	5.9	11.5	118.0	
23	12	5	6895.23	90.00	9600.0	71.6	0.0	0.0	8.9	80.5	118.0	
24	-12	1	72564.00	0.00	5370.0	40.1	3.0	15.0	8.9	31.0	118.0	

(c) Page 3.

Figure A-49.- Concluded.

5	6	5	6672.54	90.00	9600.0	79.5	0.0	0.0	21.0	100.5	110.5	
6	-6	1	67133.00	0.00	5411.0	44.8	3.0	15.0	21.0	47.8	110.5	
7	8	5	3711.29	90.00	8060.0	89.7	0.0	0.0	23.4	<u>113.1</u>	115.0	B727 SAM
8	-8	1	67253.00	0.00	4330.0	39.6	3.0	15.0	23.4	45.1	115.0	
9	18	6	5432.55	90.00	31600.0	81.0	0.0	0.0	19.2	100.2	115.2	
10	-18	1	66553.00	0.00	12100.0	32.4	3.0	15.0	19.2	33.6	115.2	
11	1	4	3202.53	90.00	2800.0	88.3	0.0	0.0	20.2	108.5	116.0	
12	-1	1	65253.00	0.00	2281.0	38.6	3.0	15.0	20.2	40.8	116.0	
13	15	4	2904.83	90.00	11530.0	92.7	0.0	0.0	16.9	109.6	116.9	
14	-15	1	66083.00	0.00	5208.0	50.4	3.0	15.0	16.9	49.3	116.9	
15	3	5	2926.19	90.00	12080.0	99.6	0.0	0.0	-2.2	97.3	116.9	
16	-3	1	66083.00	0.00	5100.0	38.4	3.0	15.0	-2.2	18.2	116.9	
17	4	5	2926.19	90.00	12080.0	92.5	0.0	0.0	17.9	<u>110.4</u>	117.8	B707 SAM
18	-4	1	66083.00	0.00	5100.0	35.4	3.0	15.0	17.9	35.3	117.8	
19	10	5	3974.50	90.00	8230.0	86.2	0.0	0.0	17.1	103.3	118.0	
20	-10	1	67253.00	0.00	4330.0	53.6	3.0	15.0	17.1	52.6	118.0	
21	19	5	6252.60	90.00	8390.0	71.6	0.0	0.0	5.9	77.5	118.0	
22	-19	1	68303.00	0.00	3660.0	24.8	3.0	15.0	5.9	12.7	118.0	
23	12	5	6459.66	90.00	9600.0	72.4	0.0	0.0	8.9	81.2	118.0	
24	-12	1	67133.00	0.00	5370.0	41.1	3.0	15.0	8.9	31.9	118.0	

(c) Page 3.

Figure A-50.- Concluded.

15	18	1	50562.00	0.00	43250.0	71.2	3.0	10.0	21.4	79.6	117.8
16	-18	2	2693.31	90.00	12100.0	79.0	0.0	0.0	21.4	100.5	117.9
17	10	1	50562.00	0.00	12900.0	57.6	3.0	10.0	17.2	61.8	117.9
18	-10	2	2693.31	90.00	4330.0	83.8	0.0	0.0	17.2	101.0	118.0
19	19	1	50562.00	0.00	13160.0	37.4	3.0	10.0	7.5	31.8	118.0
20	-19	2	2693.31	90.00	3660.0	75.2	0.0	0.0	7.5	82.6	118.0
21	12	1	50562.00	0.00	12750.0	57.5	3.0	10.0	10.5	54.9	118.0
22	-12	2	2693.31	90.00	5370.0	77.6	0.0	0.0	10.5	88.0	118.0

ANALYSIS FOR OBSERVER AT (87282.00, 0.00)

					S H I E L D I N G			A T T E N T I O N			O P E R A T I O N S			S U B E T P O N T D A B L												
FN	LU	IM	GB	HE	TR	MS	AE	XG	RT	IM	AY	ME	FP	UN	TE	MT	H	B	PFN	EB	G	N	S	TB	BL	

DIAGNOSTIC FOR 23 ARPT AVG RFN/NEW 8D BASE 1987 MAXGW ATA 3DG																										
1	3	6	4087.10	90.00	12300.0	94.2	0.0	0.0	17.4	<u>111.6</u>	111.6	B707														
2	-3	1	80312.00	0.00	5100.0	34.8	3.0	15.0	17.4	34.2	111.6															
3	7	6	7453.65	90.00	10230.0	87.2	0.0	0.0	23.1	110.3	114.0															
4	-7	1	81482.00	0.00	4330.0	37.0	3.0	15.0	23.1	42.1	114.0															

(b) Page 2.

Figure A-51.- Continued.

5	17	6	8462.02	90.00	10300.0	78.4	0.0	0.0	15.2	93.6	114.0
6	-17	1	82532.00	0.00	3660.0	27.8	3.0	15.0	15.2	25.0	114.0
7	14	6	4087.10	90.00	12300.0	95.9	0.0	0.0	17.4	<u>113.3</u>	116.7 DC8
8	-14	1	80312.00	0.00	5208.0	6.9	3.0	15.0	17.4	6.2	116.7
9	2	5	3953.94	90.00	25800.0	82.9	0.0	0.0	25.9	108.8	117.4
10	-2	1	80782.00	0.00	12100.0	31.2	3.0	15.0	25.9	39.1	117.4
11	11	6	6863.41	90.00	10600.0	82.0	0.0	0.0	20.7	102.7	117.5
12	-11	1	81362.00	0.00	5411.0	31.3	3.0	15.0	20.7	34.0	117.5
13	1	5	3954.42	90.00	2800.0	85.6	0.0	0.0	21.6	107.2	117.9
14	-1	1	79482.00	0.00	2281.0	35.4	3.0	15.0	21.6	39.0	117.9
15	18	6	6615.78	90.00	31600.0	78.7	0.0	0.0	21.4	100.1	118.0
16	-18	1	80782.00	0.00	12100.0	29.4	3.0	15.0	21.4	32.8	118.0
17	10	6	8614.43	90.00	11200.0	78.4	0.0	0.0	17.2	95.6	118.0
18	-10	1	81482.00	0.00	4330.0	51.5	3.0	15.0	17.2	50.7	118.0
19	19	6	10833.86	90.00	11000.0	62.5	0.0	0.0	7.5	70.0	118.0
20	-19	1	82532.00	0.00	3660.0	21.7	3.0	15.0	7.5	11.2	118.0
21	12	5	10531.15	90.00	11300.0	68.5	0.0	0.0	10.5	79.0	118.0
22	-12	1	81362.00	0.00	5370.0	38.8	3.0	15.0	10.5	31.3	118.0

(c) Page 3.

Figure A-51.- Concluded.

15	18	1	25833.00	0.00	43250.0	77.8	3.0	10.0	21.4	86.2	117.9
16	-18	3	2105.94	90.00	8400.0	78.2	0.0	0.0	21.4	99.6	118.0
17	10	1	25833.00	0.00	12900.0	67.8	3.0	10.0	17.2	71.9	118.0
18	-10	3	2105.94	90.00	1800.0	82.4	0.0	0.0	17.2	99.6	118.0
19	19	1	25833.00	0.00	13160.0	50.6	3.0	10.0	7.5	45.1	118.0
20	-19	3	1870.66	90.00	2100.0	77.6	0.0	0.0	7.5	85.1	118.0
21	12	1	25833.00	0.00	12750.0	65.3	3.0	10.0	10.5	62.8	118.0
22	-12	3	2105.94	90.00	2800.0	76.5	0.0	0.0	10.5	87.0	118.0

ANALYSIS FOR OBSERVER AT (87291.00, 0.00)

A			S			A			S		
I MS			H I			T E			U R		
R AF			E L			N U			A A		
LU C XG			F L			A T			E E		
IM RT IM			BP D			T I			P PD		
GR AY MF			AN I			I O			NN NT		
HF EP UN			SD N			O N			ED UA		
TR TE MT			EB G			N S			TB BL		
			H	B	PFN						

DIAGNOSTIC FOR 23 ARPT AVG RFN/NEW 8D BASE 1987 MAXGW ATA 6-3DG.

1	3	6	4087.65	90.00	12300.0	94.2	0.0	0.0	17.4	<u>111.6</u>	111.6	B707
2	-3	1	80321.00	0.00	5100.0	34.8	3.0	15.0	17.4	34.2	111.6	
3	7	6	7454.78	90.00	10230.0	87.2	0.0	0.0	23.1	110.2	114.0	
4	-7	1	81451.00	0.00	4330.0	37.0	3.0	15.0	23.1	42.1	114.0	

(b) Page 2.

Figure A-52.- Continued.

5	17	6	8462.89	90.00	10300.0	78.4	0.0	0.0	15.2	93.6	114.0
6	-17	1	82541.00	0.00	3660.0	27.8	3.0	15.0	15.2	25.0	114.0
7	14	6	4087.65	90.00	12300.0	95.9	0.0	0.0	17.4	113.3	116.7 DC8
8	-14	1	80321.00	0.00	5208.0	6.9	3.0	15.0	17.4	6.2	116.7
9	2	5	3954.38	90.00	25800.0	82.9	0.0	0.0	25.9	108.8	117.3
10	-2	1	80791.00	0.00	12100.0	31.2	3.0	15.0	25.9	39.1	117.3
11	11	6	6864.37	90.00	10600.0	82.0	0.0	0.0	20.7	102.7	117.5
12	-11	1	81371.00	0.00	5411.0	31.3	3.0	15.0	20.7	34.0	117.5
13	1	5	3954.94	90.00	2800.0	85.6	0.0	0.0	21.6	107.2	117.9
14	-1	1	79491.00	0.00	2281.0	35.4	3.0	15.0	21.6	39.0	117.9
15	18	6	6616.53	90.00	31600.0	78.7	0.0	0.0	21.4	100.1	118.0
16	-18	1	80791.00	0.00	12100.0	29.4	3.0	15.0	21.4	32.8	118.0
17	10	6	8625.89	90.00	11200.0	78.4	0.0	0.0	17.2	95.6	118.0
18	-10	1	81491.00	0.00	4330.0	51.5	3.0	15.0	17.2	50.7	118.0
19	19	6	10835.03	90.00	11000.0	62.5	0.0	0.0	7.5	70.0	118.0
20	-19	1	82541.00	0.00	3660.0	21.7	3.0	15.0	7.5	11.2	118.0
21	12	5	10532.34	90.00	11300.0	68.5	0.0	0.0	10.5	79.0	118.0
22	-12	1	81371.00	0.00	5370.0	38.8	3.0	15.0	10.5	31.3	118.0

(c) Page 3.

Figure A-52.- Concluded.

5	7	6	5977.48	90.00	10230.0	89.8	0.0	0.0	23.1	<u>112.9</u>	114.3	B727
6	-7	1	69655.00	0.00	4330.0	39.6	3.0	15.0	23.1	44.7	114.3	
7	17	6	7507.90	90.00	10300.0	80.4	0.0	0.0	15.2	95.6	114.3	
8	-17	1	70705.00	0.00	3660.0	30.5	3.0	15.0	15.2	27.6	114.3	
9	15	5	3387.28	90.00	12418.7	92.5	0.0	0.0	17.4	109.9	115.7	
10	-15	1	68485.00	0.00	5208.0	49.9	3.0	15.0	17.4	49.3	115.7	
11	2	5	3374.13	90.00	25800.0	84.8	0.0	0.0	25.9	<u>110.7</u>	116.9	DC10
12	-2	1	68955.00	0.00	12100.0	33.6	3.0	15.0	25.9	41.5	116.9	
13	11	6	5592.25	90.00	10600.0	84.7	0.0	0.0	20.7	105.4	117.2	
14	-11	1	69535.00	0.00	5411.0	34.0	3.0	15.0	20.7	36.7	117.2	
15	1	5	3279.80	90.00	2800.0	87.6	0.0	0.0	21.6	109.1	117.8	
16	-1	1	67655.00	0.00	2281.0	38.0	3.0	15.0	21.6	41.6	117.8	
17	18	6	5632.29	90.00	31600.0	80.5	0.0	0.0	21.4	102.0	117.9	
18	-18	1	68955.00	0.00	12100.0	31.8	3.0	15.0	21.4	35.3	117.9	
19	10	6	7244.97	90.00	11200.0	80.6	0.0	0.0	17.2	97.8	118.0	
20	-10	1	69655.00	0.00	4330.0	53.2	3.0	15.0	17.2	52.4	118.0	
21	19	6	9290.12	90.00	11000.0	65.5	0.0	0.0	7.5	73.0	118.0	
22	-19	1	70705.00	0.00	3660.0	24.3	3.0	15.0	7.5	13.7	118.0	
23	12	5	8966.96	90.00	11300.0	70.4	0.0	0.0	10.5	80.9	118.0	
24	-12	1	69535.00	0.00	5370.0	40.6	3.0	15.0	10.5	33.1	118.0	

(c) Page 3.

Figure A-53.- Concluded.

5	20	6	7241.94	90.00	10300.0	80.8	0.0	0.0	15.2	96.0	109.6	
6	-20	1	70029.00	0.00	3660.0	31.8	3.0	15.0	15.2	29.0	109.6	
7	15	5	3377.13	90.00	12600.0	93.5	0.0	0.0	17.4	<u>110.9</u>	113.3	DC8 SAM
8	-15	1	67809.00	0.00	5208.0	50.0	3.0	15.0	17.4	49.4	113.3	
9	2	5	3340.99	90.00	25800.0	84.9	0.0	0.0	25.9	110.8	115.2	
10	-2	1	63279.00	0.00	12100.0	33.8	3.0	15.0	25.9	41.7	115.2	
11	6	6	5519.60	90.00	10600.0	83.0	0.0	0.0	20.7	103.8	115.5	
12	-6	1	68859.00	0.00	5411.0	44.5	3.0	15.0	20.7	47.2	115.5	
13	1	5	3241.24	90.00	2800.0	87.7	0.0	0.0	21.6	109.3	116.5	
14	-1	1	66979.00	0.00	2281.0	38.2	3.0	15.0	21.6	41.8	116.5	
15	8	6	5893.11	90.00	10230.0	89.0	0.0	0.0	23.1	<u>112.1</u>	117.8	B727 SAM
16	-8	1	68979.00	0.00	4330.0	39.2	3.0	15.0	23.1	44.3	117.8	
17	18	6	5576.08	90.00	31600.0	80.7	0.0	0.0	21.4	102.1	117.9	
18	-18	1	63279.00	0.00	12100.0	32.0	3.0	15.0	21.4	35.4	117.9	
19	10	6	7166.10	90.00	11200.0	80.7	0.0	0.0	17.2	97.9	118.0	
20	-10	1	68979.00	0.00	4330.0	53.3	3.0	15.0	17.2	52.5	118.0	
21	19	6	9201.89	90.00	11000.0	65.7	0.0	0.0	7.5	73.2	118.0	
22	-19	1	70029.00	0.00	3660.0	24.4	3.0	15.0	7.5	13.9	118.0	
23	12	5	9877.55	90.00	11300.0	70.5	0.0	0.0	10.5	81.0	118.0	
24	-12	1	68859.00	0.00	5370.0	40.8	3.0	15.0	10.5	33.2	118.0	

(c) Page 3.

Figure A-54.- Concluded.

5	7	5	5164.83	90.00	8060.0	87.7	0.0	0.0	23.1	110.8	115.0
6	-7	1	99543.81	0.00	4330.0	33.7	3.0	15.0	23.1	38.8	115.0
7	17	5	8414.67	90.00	8330.0	75.6	0.0	0.0	15.2	90.7	115.0
8	-17	1	100593.81	0.00	3660.0	24.5	3.0	15.0	15.2	21.7	115.0
9	14	4	4200.71	90.00	11530.0	96.4	0.0	0.0	17.4	113.8	117.4
10	-14	1	98373.81	0.00	5208.0	1.1	3.0	15.0	17.4	0.4	117.4
11	2	5	4839.40	90.00	25800.0	80.3	0.0	0.0	25.9	106.2	117.8
12	-2	1	98843.81	0.00	12100.0	28.1	3.0	15.0	25.9	36.0	117.8
13	11	5	9559.13	90.00	9600.0	76.2	0.0	0.0	20.7	96.9	117.8
14	-11	1	99423.81	0.00	5411.0	27.9	3.0	15.0	20.7	30.6	117.8
15	18	6	8117.72	90.00	31600.0	76.3	0.0	0.0	21.4	97.8	117.8
16	-18	1	98843.81	0.00	12100.0	26.3	3.0	15.0	21.4	29.8	117.8
17	10	5	5489.97	90.00	8230.0	82.9	0.0	0.0	17.2	100.1	117.9
18	-10	1	99543.81	0.00	4330.0	49.3	3.0	15.0	17.2	48.5	117.9
19	19	5	8634.37	90.00	8390.0	67.1	0.0	0.0	7.5	74.5	117.9
20	-19	1	100593.81	0.00	3660.0	18.4	3.0	15.0	7.5	7.9	117.9
21	12	5	9049.35	90.00	9600.0	68.3	0.0	0.0	10.5	78.8	117.9
22	-12	1	99423.81	0.00	5370.0	36.5	3.0	15.0	10.5	28.9	117.9

(c) Page 3.

Figure A-55.- Concluded.

5	2	5	4827.74	90.00	25800.0	80.4	0.0	0.0	25.9	106.3	112.2	
6	-2	1	98606.00	0.00	12100.0	28.2	3.0	15.0	25.9	36.1	112.2	
7	11	5	9577.57	90.00	9600.0	76.2	0.0	0.0	20.7	96.9	112.3	
8	-11	1	99186.00	0.00	5411.0	27.9	3.0	15.0	20.7	30.6	112.3	
9	18	6	8097.95	90.00	31600.0	76.4	0.0	0.0	21.4	97.8	112.5	
10	-18	1	98606.00	0.00	12100.0	26.4	3.0	15.0	21.4	29.8	112.5	
11	1	5	4971.13	90.00	2800.0	82.6	0.0	0.0	21.6	104.2	113.1	
12	-1	1	97306.00	0.00	2281.0	32.1	3.0	15.0	21.6	35.7	113.1	
13	14	4	4191.17	90.00	11530.0	96.5	0.0	0.0	17.4	113.8	116.5	DC8
14	-14	1	98136.00	0.00	5208.0	1.1	3.0	15.0	17.4	0.5	116.5	
15	3	5	4206.94	90.00	12080.0	94.8	0.0	0.0	17.4	112.3	117.9	B707
16	-3	1	98136.00	0.00	5100.0	31.0	3.0	15.0	17.4	30.5	117.9	
17	10	5	5478.81	90.00	8230.0	82.9	0.0	0.0	17.2	100.1	117.9	
18	-10	1	99306.00	0.00	4330.0	49.4	3.0	15.0	17.2	48.5	117.9	
19	19	5	8616.83	90.00	8390.0	67.1	0.0	0.0	7.5	74.6	117.9	
20	-19	1	100356.00	0.00	3660.0	18.5	3.0	15.0	7.5	7.9	117.9	
21	12	5	9030.27	90.00	9600.0	68.4	0.0	0.0	10.5	78.8	117.9	
22	-12	1	99186.00	0.00	5370.0	36.5	3.0	15.0	10.5	29.0	117.9	

(c) Page 3.

Figure A-56.- Concluded.

5	2	5	3609.10	90.00	25800.0	84.0	0.0	0.0	25.9	<u>109.9</u>	115.4	DC10
6	-2	1	73748.00	0.00	12100.0	32.6	3.0	15.0	25.9	<u>40.5</u>	115.4	
7	11	5	7324.64	90.00	9600.0	79.9	0.0	0.0	20.7	100.6	115.5	
8	-11	1	74328.00	0.00	5411.0	32.8	3.0	15.0	20.7	<u>35.5</u>	115.5	
9	18	6	6030.86	90.00	31600.0	79.8	0.0	0.0	21.4	<u>101.2</u>	115.7	
10	-18	1	73748.00	0.00	12100.0	30.8	3.0	15.0	21.4	<u>34.2</u>	115.7	
11	1	5	3553.19	90.00	2800.0	86.7	0.0	0.0	21.6	108.3	116.4	
12	-1	1	72448.00	0.00	2281.0	36.9	3.0	15.0	21.6	40.5	116.4	
13	15	4	3143.58	90.00	11530.0	91.7	0.0	0.0	17.4	109.0	117.1	
14	-15	1	73278.00	0.00	5208.0	49.1	3.0	15.0	17.4	48.4	117.1	
15	3	5	3213.69	90.00	12080.0	98.4	0.0	0.0	0.8	<u>99.2</u>	117.2	
16	-3	1	73278.00	0.00	5100.0	36.5	3.0	15.0	0.8	19.3	117.2	
17	4	5	3213.69	90.00	12080.0	91.6	0.0	0.0	17.3	108.9	117.8	
18	-4	1	73278.00	0.00	5100.0	33.6	3.0	15.0	17.3	33.0	117.8	
19	10	5	4312.18	90.00	8230.0	85.4	0.0	0.0	17.2	<u>102.6</u>	117.9	
20	-10	1	74448.00	0.00	4330.0	52.5	3.0	15.0	17.2	51.6	117.9	
21	19	5	6793.30	90.00	8390.0	70.6	0.0	0.0	7.5	<u>78.0</u>	117.9	
22	-19	1	75498.00	0.00	3660.0	23.2	3.0	15.0	7.5	12.7	117.9	
23	12	5	7036.70	90.00	9600.0	71.3	0.0	0.0	10.5	<u>81.8</u>	117.9	
24	-12	1	74328.00	0.00	5370.0	39.9	3.0	15.0	10.5	52.3	117.9	

(c) Page 3.

Figure A-57.- Concluded.

ANALYSIS FOR OBSERVER AT (-17954.00, 0.00)

A	I	MS											
FN	R	AE											
LU	C	XG											
IM	RT	IM											
GB	AY	MF											
HE	FP	UN											
TR	TE	MT	H	B	PFN	EB	G	N	S	TB			
DIAGNOSTIC FOR 23 AIRPORT AVG R.FN/NEW 8D 1987 SAM 3D&8D MAXGW FAR 6-3DEG													
1	20	1	18054.00	0.00	12460.0	76.3	3.0	10.0	15.2	78.5	78.5		
2	-20	3	1192.67	90.00	2100.0	83.7	0.0	0.0	15.2	98.9	99.0		
3	2	1	18054.00	0.00	35300.0	75.7	3.0	10.0	25.9	88.6	99.3		
4	-2	3	1292.81	90.00	8400.0	86.4	0.0	0.0	25.9	<u>112.3</u>	112.5	DC10	
5	6	1	18054.00	0.00	12200.0	74.8	3.0	10.0	20.7	82.5	112.5		
6	-6	3	1292.81	90.00	2800.0	85.5	0.0	0.0	20.7	106.2	113.4		
7	8	1	18054.00	0.00	12290.0	81.8	3.0	10.0	23.1	91.9	113.5		
8	-8	3	1292.81	90.00	1800.0	83.7	0.0	0.0	23.1	106.7	114.3		
9	18	1	18054.00	0.00	43250.0	81.4	3.0	10.0	21.4	89.8	114.3		
10	-18	3	1292.81	90.00	8400.0	84.6	0.0	0.0	21.4	106.0	114.9		
11	1	1	18054.00	0.00	3355.0	73.0	3.0	10.0	21.6	81.6	114.9		
12	-1	3	1023.04	90.00	1615.0	90.1	0.0	0.0	21.6	<u>111.7</u>	116.6	B747	
13	15	1	18054.00	0.00	15200.0	80.0	3.0	10.0	17.4	84.4	116.6		
14	-15	3	1242.76	90.00	2600.0	92.8	0.0	0.0	17.4	110.2	117.5		

(a) Page 1.

Figure A-58.- 23-Airport, refan new JT8D's, 1987 - cutback takeoff, two-segment approach, SAM JT3D, SAM JT8D.

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5	6	5	6868.21	90.00	9600.0	79.1	0.0	0.0	20.7	99.9	111.2
6	-6	1	69292.00	0.00	5411.0	44.4	3.0	15.0	20.7	47.1	111.2
7	8	5	6808.47	90.00	8060.0	89.5	0.0	0.0	23.1	<u>112.6</u>	115.0
8	-8	1	69412.00	0.00	4330.0	39.1	3.0	15.0	23.1	44.2	115.0
9	18	6	5612.09	90.00	31600.0	80.6	0.0	0.0	21.4	102.0	115.2
10	-18	1	68712.00	0.00	12100.0	31.9	3.0	15.0	21.4	35.3	115.2
11	1	5	3265.93	90.00	2800.0	87.6	0.0	0.0	21.6	109.2	116.1
12	-1	1	67412.00	0.00	2281.0	38.1	3.0	15.0	21.6	41.7	116.1
13	15	4	2991.48	90.00	11530.0	92.3	0.0	0.0	17.4	109.7	117.0
14	-15	1	68242.00	0.00	5208.0	50.0	3.0	15.0	17.4	49.3	117.0
15	3	5	3012.46	90.00	12080.0	99.2	0.0	0.0	0.8	100.0	117.1
16	-3	1	68242.00	0.00	5100.0	37.8	3.0	15.0	0.8	20.6	117.1
17	4	5	3012.46	90.00	12080.0	92.2	0.0	0.0	17.3	109.6	117.8
18	-4	1	68242.00	0.00	5100.0	34.9	3.0	15.0	17.3	34.2	117.8
19	10	5	4075.83	90.00	8230.0	86.0	0.0	0.0	17.2	103.2	118.0
20	-10	1	69412.00	0.00	4330.0	53.2	3.0	15.0	17.2	52.4	118.0
21	19	5	6411.85	90.00	8390.0	71.3	0.0	0.0	7.5	78.8	118.0
22	-19	1	70462.00	0.00	3660.0	24.3	3.0	15.0	7.5	13.8	118.0
23	12	5	6632.82	90.00	9600.0	72.1	0.0	0.0	10.5	82.5	118.0
24	-12	1	69292.00	0.00	5370.0	40.7	3.0	15.0	10.5	33.1	118.0

B727 SAM

(c) Page 3.

Figure A-58.- Concluded.

5	17	6	9777.14	90.00	10300.0	76.1	0.0	0.0	16.0	92.1	114.6
6	-17	1	96009.00	0.00	3660.0	25.3	3.0	15.0	16.0	23.3	114.6
7	2	5	4614.63	90.00	25800.0	80.9	0.0	0.0	24.7	105.6	115.1
8	-2	1	94259.00	0.00	12100.0	28.9	3.0	15.0	24.7	35.5	115.1
9	11	6	8311.89	90.00	10600.0	79.5	0.0	0.0	21.2	100.7	115.3
10	-11	1	94839.00	0.00	5411.0	28.7	3.0	15.0	21.2	31.9	115.3
11	1	5	4723.17	90.00	2800.0	83.3	0.0	0.0	20.2	103.5	115.5
12	-1	1	92959.00	0.00	2281.0	32.8	3.0	15.0	20.2	35.0	115.5
13	8	6	9135.77	90.00	10230.0	83.2	0.0	0.0	14.1	97.3	115.6
14	-8	1	94959.00	0.00	4330.0	34.1	3.0	15.0	14.1	30.2	115.6
15	18	6	7736.47	90.00	31600.0	76.9	0.0	0.0	19.2	96.1	115.7
16	-18	1	94259.00	0.00	12100.0	27.1	3.0	15.0	19.2	28.3	115.7
17	14	4	4016.72	90.00	11530.0	97.2	0.0	0.0	16.9	114.1	117.9 DCS
18	-14	1	93789.00	0.00	5208.0	2.4	3.0	15.0	16.9	1.3	117.9

(c) Page 3.

Figure A-59.- Concluded.

13	7	1	21904.00	0.00	12290.0	79.4	3.0	10.0	23.9	90.3	112.6
14	-7	3	1695.24	90.00	1800.0	91.9	0.0	0.0	23.9	<u>115.8</u>	117.5 <i>B727</i>
15	17	1	21904.00	0.00	12460.0	72.9	3.0	10.0	16.0	75.9	117.5
16	-17	3	1528.22	50.00	2100.0	87.2	0.0	0.0	16.0	103.2	117.7
17	11	1	21904.00	0.00	12200.0	76.7	3.0	10.0	21.2	84.9	117.7
18	-11	3	1695.24	90.00	2800.0	86.3	0.0	0.0	21.2	<u>107.5</u>	118.1 <i>DC9</i>
19	8	1	21904.00	0.00	12290.0	78.9	3.0	10.0	14.1	79.9	118.1
20	-8	3	1695.24	50.00	1800.0	81.1	0.0	0.0	14.1	95.2	118.1

ANALYSIS FOR OBSERVER AT (77994.00, 0.00)

A I MS			S H I E L D I N G			A T T E N T I O N			O P E R A T I O N S			S U B E T P O N T D A B L				
FM	R	AE														
LU	C	XG														
IM	RT	IM														
GB	AY	ME														
HE	FP	UN														
TR	TE	MT	H	B	PFN	EB	G	N	S	TB	BL					

DIAGNOSTIC FOR 23 APT AVG SAM3D 1981 MAXGW FAR 8D ATA 3D 6-3DEC

1	3	6	3523.32	90.00	12300.0	96.1	0.0	0.0	-2.2	93.9	93.9
2	-3	1	71024.00	0.00	5100.0	37.0	3.0	15.0	-2.2	16.8	93.9
3	4	6	3523.32	90.00	12300.0	89.9	0.0	0.0	17.9	107.8	108.0

(b) Page 2.

Figure A-60.- Continued.

4	-4	1	71024.00	0.00	5100.0	34.2	3.0	15.0	17.9	34.1	108.0	
5	15	6	3523.32	90.00	12300.0	91.5	0.0	0.0	16.9	108.4	111.2	
6	-15	1	71024.00	0.00	5208.0	49.4	3.0	15.0	16.9	48.4	111.2	
7	2	5	3458.60	90.00	25800.0	84.3	0.0	0.0	24.7	<u>109.0</u>	113.3	DC10
8	-2	1	71494.00	0.00	12100.0	33.1	3.0	15.0	24.7	39.7	113.3	
9	1	5	3424.62	90.00	2800.0	87.1	0.0	0.0	20.2	107.3	114.2	
10	-1	1	70194.00	0.00	2281.0	37.4	3.0	15.0	20.2	35.6	114.2	
11	18	6	5843.43	90.00	31600.0	80.1	0.0	0.0	19.2	99.4	114.4	
12	-18	1	71494.00	0.00	12100.0	31.3	3.0	15.0	19.2	32.5	114.4	
13	7	5	3933.70	90.00	8060.0	91.1	0.0	0.0	23.9	<u>115.0</u>	117.7	B727
14	-7	1	72194.00	0.00	4330.0	39.0	3.0	15.0	23.9	44.9	117.7	
15	17	5	6397.55	90.00	8330.0	79.3	0.0	0.0	16.0	95.3	117.7	
16	-17	1	73244.00	0.00	3660.0	29.9	3.0	15.0	16.0	27.9	117.7	
17	11	5	7120.35	90.00	9600.0	80.3	0.0	0.0	21.2	101.5	117.8	
18	-11	1	72074.00	0.00	5411.0	33.4	3.0	15.0	21.2	36.6	117.8	
19	8	5	3933.70	90.00	8060.0	89.3	0.0	0.0	14.1	103.3	118.0	
20	-8	1	72194.00	0.00	4330.0	38.5	3.0	15.0	14.1	34.6	118.0	

(c) Page 3.

Figure A-60.- Concluded.

ANALYSIS FOR OBSERVER AT (-17107.00, 0.00)

										S H I E L D I N G		A T T E N T I O N		O P E R A T I O N S		S U B S T A N T I A L				
A	I	MS								E	BP	AN	SD	EB	G	N	S	E	P	U
FN	R	AE								BP	AN	SD	EB	G	N	S	E	P	U	
LU	C	XG								BP	AN	SD	EB	G	N	S	E	P	U	
IM	RT	IM								BP	AN	SD	EB	G	N	S	E	P	U	
GB	AY	ME								BP	AN	SD	EB	G	N	S	E	P	U	
HF	FP	UN								BP	AN	SD	EB	G	N	S	E	P	U	
TR	TF	MT	H	B	PFN	E	BP	AN	SD	EB	G	N	S	E	P	U				
DIAGNOSTIC FOR 23 ARPT AVG SAM3D&8D 1981 MAXGW FAR 8D ATA 3D 6-3DEG																				
1	3	1	17206.99	0.00	15200.0	79.5	3.0	10.0	-2.2	64.3	64.3									
2	-3	3	1161.58	90.00	2500.0	102.3	0.0	0.0	-2.2	100.1	100.1									
3	4	1	17206.99	0.00	15200.0	78.3	3.0	10.0	17.9	83.2	100.2									
4	-4	3	1161.58	90.00	2500.0	86.6	0.0	0.0	17.9	104.5	105.9									
5	15	1	17206.99	0.00	15200.0	80.8	3.0	10.0	16.9	84.7	105.9									
6	-15	3	1161.58	90.00	2600.0	93.6	0.0	0.0	16.9	<u>110.5</u>	111.8								DC8 SAM	
7	2	1	17206.99	0.00	35300.0	76.2	3.0	10.0	24.7	87.9	111.8									
8	-2	3	1204.27	90.00	8400.0	87.3	0.0	0.0	24.7	<u>112.0</u>	114.9								DC10	
9	1	1	17206.99	0.00	3355.0	73.9	3.0	10.0	20.2	81.0	114.9									
10	-1	2	947.65	90.00	1703.7	91.8	0.0	0.0	20.2	<u>112.0</u>	116.7								B747	
11	18	1	17206.99	0.00	43250.0	81.8	3.0	10.0	19.2	88.1	116.7									
12	-18	3	1204.27	90.00	8400.0	85.5	0.0	0.0	19.2	104.7	117.0									
13	20	1	17206.99	0.00	12460.0	77.0	3.0	10.0	16.0	80.1	117.0									
14	-20	3	1118.85	90.00	2100.0	84.5	0.0	0.0	16.0	100.5	117.1									

(a) Page 1.

Figure A-61.- 23-Airport, 1981 - cutback JT8D takeoff; standard JT3D takeoff, two-segment approach, SAM JT3D, SAM JT8D.

10	-1	1	66961.00	0.00	2281.0	38.2	3.0	15.0	20.2	40.4	115.5	
11	18	6	5574.58	90.00	31600.0	80.7	0.0	0.0	19.2	99.9	115.6	
12	-18	1	68261.00	0.00	12100.0	32.0	3.0	15.0	19.2	33.2	115.6	
13	20	5	6159.09	90.00	8330.0	80.0	0.0	0.0	16.0	96.0	115.7	
14	-20	1	70011.00	0.00	3660.0	31.8	3.0	15.0	16.0	29.9	115.7	
15	6	5	6827.34	90.00	9600.0	79.2	0.0	0.0	21.2	100.4	115.8	
16	-6	1	68841.00	0.00	5411.0	44.5	3.0	15.0	21.2	47.7	115.8	
17	8	5	3788.17	90.00	8060.0	89.5	0.0	0.0	24.3	113.9	118.0	B727 SAM
18	-8	1	68961.00	0.00	4330.0	39.2	3.0	15.0	24.3	45.6	118.0	

(c) Page 3.

Figure A-61.- Concluded.

12	-18	1	56785.00	0.00	12100.0	34.0	3.0	15.0	19.2	35.2	116.9	
13	17	5	3656.86	90.00	8230.0	86.8	0.0	0.0	24.3	<u>111.1</u>	117.9	<i>B727 RFN</i>
14	-10	1	60485.00	0.00	4330.0	54.7	3.0	15.0	24.3	61.0	117.9	
15	12	5	5916.88	90.00	9600.0	73.4	0.0	0.0	21.2	94.7	117.9	
16	-12	1	60365.00	0.00	5370.0	42.3	3.0	15.0	21.2	45.5	117.9	
17	19	5	5753.39	90.00	8390.0	72.6	0.0	0.0	16.0	98.6	117.9	
18	-19	1	61555.00	0.00	3660.0	26.6	3.0	15.0	16.0	24.6	117.9	

(c) Page 3.

Figure A-62.- Concluded.

ANALYSIS FOR OBSERVER AT (-25999.00, 0.00)

				S H I F T		A T T E N T I O N		O P E R A T I O N		S U R F A C E						
FN	LU	IM	GP	HE	TR	TE	MT	H	B	PFN	EB	C	N	S	TB	BL

DIAGNOSTIC FOR 23 AIRPORT AVG BASE 1987 MAXGW FAR 3D ATA 8D 6-3 DEG

1	14	1	25999.00	0.00	15200.0	72.8	3.0	10.0	17.4	77.1	77.1					
2	-14	3	2004.26	90.00	2600.0	93.6	0.0	0.0	17.4	111.7	111.0					
3	3	1	25999.00	0.00	14500.0	70.9	3.0	10.0	17.4	75.4	111.0					
4	-3	3	2004.26	90.00	2500.0	95.5	0.0	0.0	17.4	<u>112.9</u>	115.1					B707
5	7	1	25999.00	0.00	12300.0	76.9	3.0	10.0	23.5	87.4	115.1					
6	-7	3	2123.29	90.00	1800.0	89.2	0.0	0.0	23.5	<u>112.7</u>	117.0					B727
7	17	1	25999.00	0.00	12600.0	70.6	3.0	10.0	15.9	73.5	117.1					
8	-17	3	1825.13	90.00	2100.0	84.5	0.0	0.0	15.9	100.4	117.1					
9	7	1	25999.00	0.00	35300.0	71.6	3.0	10.0	25.9	84.5	117.1					
10	-7	3	2123.29	90.00	8400.0	79.9	0.0	0.0	25.9	105.8	117.5					
11	17	1	25999.00	0.00	12200.0	74.7	3.0	10.0	21.1	82.8	117.5					
12	-17	3	2123.29	90.00	2800.0	83.4	0.0	0.0	21.1	104.5	117.7					
13	7	1	25999.00	0.00	3355.0	66.5	3.0	10.0	21.6	75.0	117.7					
14	-7	3	1784.52	90.00	1615.0	83.9	0.0	0.0	21.6	105.5	117.9					

(a) Page 1.

Figure A-63.- 23-Airport, 1987 - cutback JT3D takeoff, standard JT8D takeoff, two-segment approach.

9	0	5	4646.94	90.00	25800.0	80.8	0.0	0.0	25.9	106.8	117.6
10	-2	1	94918.00	0.00	12100.0	28.8	3.0	15.0	25.9	36.7	117.6
11	11	6	8382.72	90.00	10600.0	79.4	0.0	0.0	21.1	100.5	117.7
12	-11	1	95498.00	0.00	5411.0	28.6	3.0	15.0	21.1	31.7	117.7
13	1	5	4760.76	90.00	2800.0	83.2	0.0	0.0	21.6	104.8	117.9
14	-1	1	93618.00	0.00	2281.0	32.7	3.0	15.0	21.6	36.3	117.9
15	3	6	9218.02	90.00	10230.0	83.1	0.0	0.0	14.9	98.0	117.9
16	-8	1	95618.00	0.00	4330.0	34.0	3.0	15.0	14.9	31.0	117.9
17	18	6	7791.27	90.00	31600.0	76.8	0.0	0.0	21.4	98.2	118.0
18	-18	1	94918.00	0.00	12100.0	27.0	3.0	15.0	21.4	30.4	118.0

(c) Page 3.

Figure A-63.- Concluded.

7	8	5	3992.58	90.00	8060.0	89.1	0.0	0.0	14.9	104.1	115.1	
8	-8	1	73502.00	0.00	4330.0	38.2	3.0	15.0	14.9	35.2	115.1	
9	3	6	3602.71	90.00	12300.0	95.8	0.0	0.0	0.8	96.6	115.1	
10	-3	1	72332.00	0.00	5100.0	36.7	3.0	15.0	0.8	19.5	115.1	
11	4	6	3602.71	90.00	12300.0	89.7	0.0	0.0	17.3	107.0	115.8	
12	-4	1	72332.00	0.00	5100.0	33.9	3.0	15.0	17.3	33.2	115.8	
13	15	6	3602.71	90.00	12300.0	91.3	0.0	0.0	17.4	108.6	116.5	
14	-15	1	72332.00	0.00	5208.0	49.2	3.0	15.0	17.4	48.6	116.5	
15	2	5	3562.72	90.00	25800.0	84.1	0.0	0.0	25.9	<u>110.0</u>	117.4	<i>DC10</i>
16	-2	1	72802.00	0.00	12100.0	32.8	3.0	15.0	25.9	40.7	117.4	
17	1	5	3499.23	90.00	2800.0	86.9	0.0	0.0	21.6	108.5	117.9	
18	-1	1	71502.00	0.00	2281.0	37.1	3.0	15.0	21.6	40.7	117.9	
19	16	6	5952.19	90.00	31600.0	79.9	0.0	0.0	21.4	101.3	118.0	
20	-16	1	72802.00	0.00	12100.0	31.0	3.0	15.0	21.4	34.4	118.0	

(c) Page 3.

Figure A-64.- Concluded.

16	-1	3	1012.78	90.00	1615.0	90.2	0.0	0.0	21.6	<u>111.8</u>	117.7	B747
17	18	1	17046.99	0.00	43250.0	81.4	3.0	10.0	21.4	89.8	117.7	
18	-18	3	1281.63	90.00	8400.0	84.7	0.0	0.0	21.4	106.1	118.0	

ANALYSIS FOR URSE ER AT (75345.00, 0.00)

				S H I E L D I N G			A T E N T I O N			D E R A T I O N		S U B E T P O N T D A B L	
AS	AE	XG	IM	BP	AN	SD	EB	GI	IT	IO	NN	ED	TB
H	B	PFN											

DIAGNOSTIC FOR 23 AIRPORT AVG 1987 SAM 3D&8D MAXGW FAR 80 ATA 3D 6-3DEG

1	20	5	6202.16	90.00	8330.0	79.9	0.0	0.0	15.9	95.8	95.8	
2	-20	1	70595.00	0.00	3660.0	31.7	3.0	15.0	15.9	29.6	95.8	
3	6	5	6880.27	90.00	9600.0	79.1	0.0	0.0	21.1	100.2	101.6	
4	-6	1	69425.00	0.00	5411.0	44.3	3.0	15.0	21.1	47.4	101.6	
5	3	5	3814.46	90.00	8060.0	89.5	0.0	0.0	24.1	<u>113.6</u>	113.8	B727 SAM
6	-3	1	69545.00	0.00	4330.0	39.1	3.0	15.0	24.1	45.2	113.8	
7	3	5	3385.63	90.00	12451.7	97.1	0.0	0.0	0.8	97.9	114.0	
8	-3	1	68375.00	0.00	5100.0	37.7	3.0	15.0	0.8	20.5	114.0	
9	4	5	3385.63	90.00	12451.7	91.0	0.0	0.0	17.3	108.3	115.0	
10	-4	1	68375.00	0.00	5100.0	34.8	3.0	15.0	17.3	34.2	115.0	
11	15	5	3385.63	90.00	12451.7	92.7	0.0	0.0	17.4	110.1	116.2	

(b) Page 2.

Figure A-65.- Continued.

12	-15	1	68375.00	0.00	5208.0	49.9	3.0	15.0	17.4	49.3	116.2
13	?	5	3368.73	90.00	25800.0	84.8	0.0	0.0	25.9	<u>110.7</u>	117.3 DC10
14	-2	1	68845.00	0.00	12100.0	33.6	3.0	15.0	25.9	41.6	117.3
15	1	5	3273.52	90.00	2800.0	87.6	0.0	0.0	21.6	109.2	117.9
16	-1	1	67545.00	0.00	2281.0	38.0	3.0	15.0	21.6	41.6	117.9
17	1?	6	5623.14	90.00	31600.0	80.6	0.0	0.0	21.4	102.0	118.0
18	-18	1	68845.00	0.00	12100.0	31.8	3.0	15.0	21.4	35.3	118.0

(c) Page 3.
Figure A-65.- Concluded.

12	-10	1	67006.00	0.00	12100.0	33.3	3.0	15.0	21.4	36.7	117.2
13	10	5	3789.26	50.00	8290.0	86.5	0.0	0.0	24.1	110.6	118.1
14	-10	1	63306.00	0.00	4330.0	54.2	3.0	15.0	24.1	60.3	118.1
15	12	5	5145.13	90.00	9600.0	73.0	0.0	0.0	21.1	94.3	118.1
16	-12	1	63176.00	0.00	5370.0	41.8	3.0	15.0	21.1	44.9	118.1
17	10	5	1071.47	50.00	8390.0	72.2	0.0	0.0	15.9	88.1	118.1
18	-16	1	64776.00	0.00	3660.0	25.8	3.0	15.0	15.9	23.7	118.1

(c) Page 3.

Figure A-66.- Concluded.

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