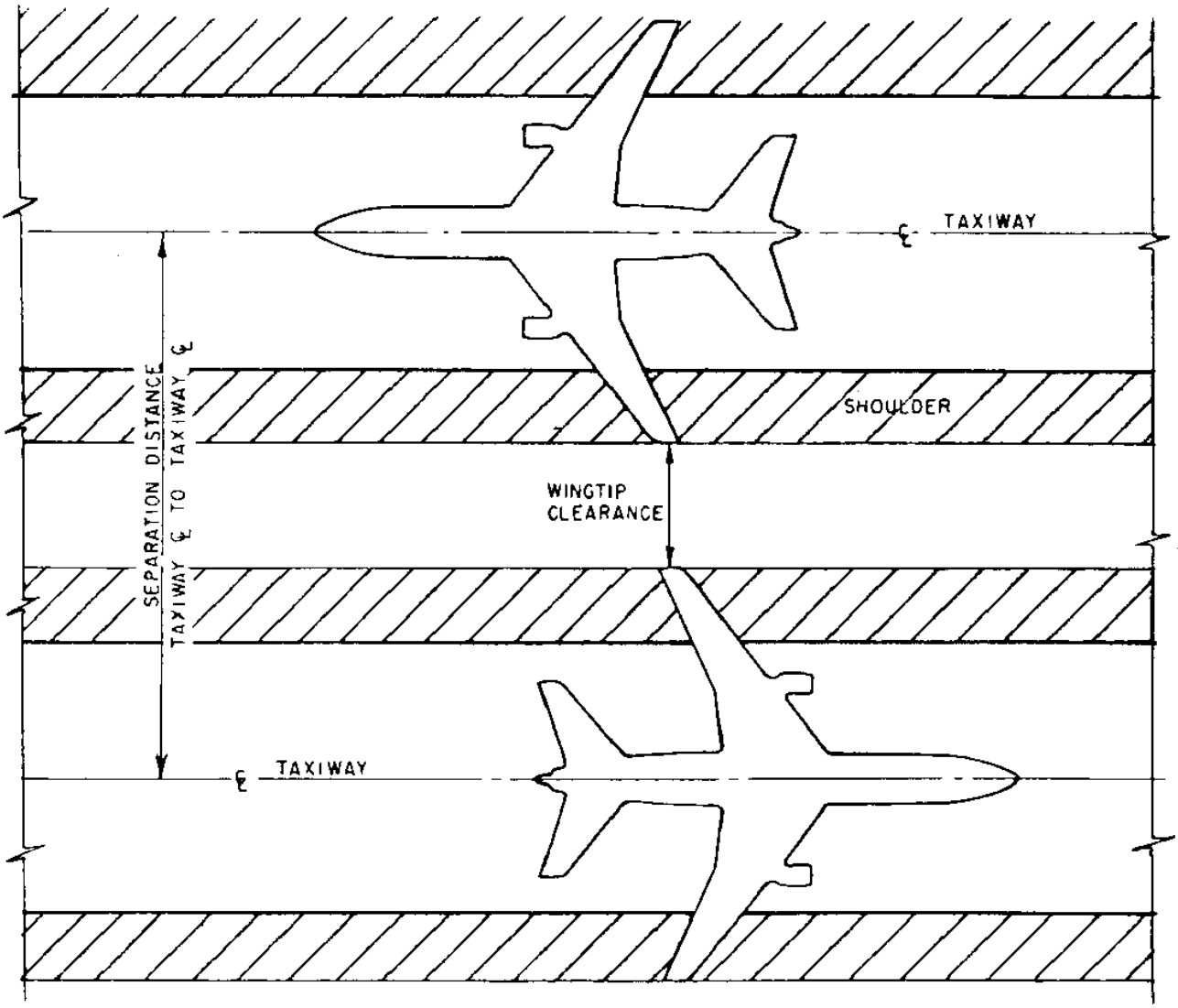


Figure A9-1. Wingtip clearance - parallel taxiways

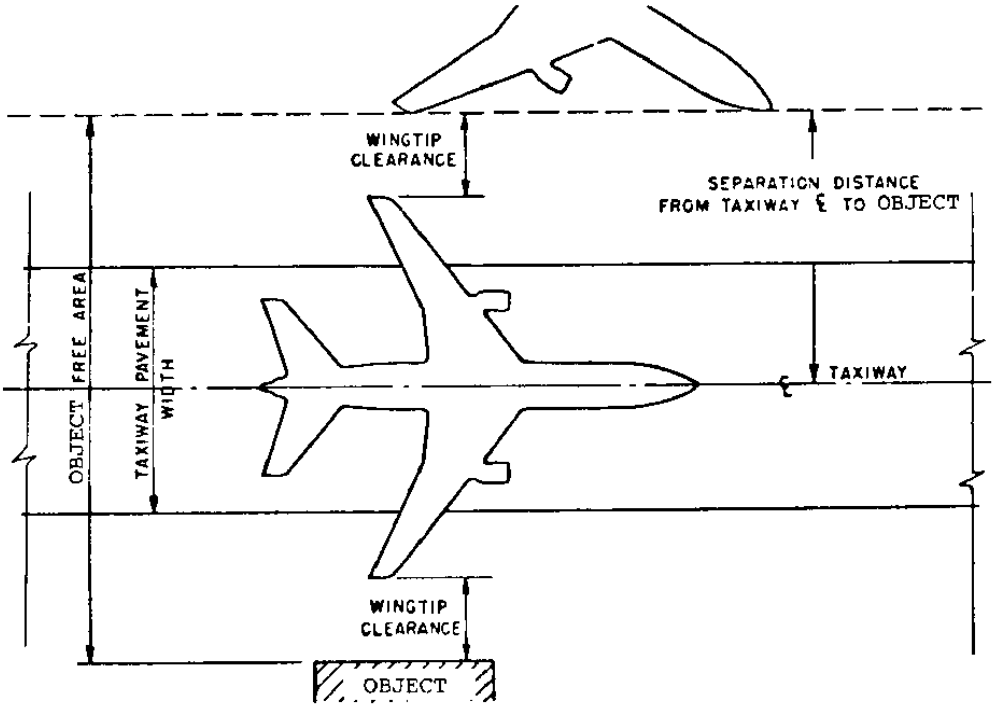


Figure A9-2. Wingtip clearance from taxiway

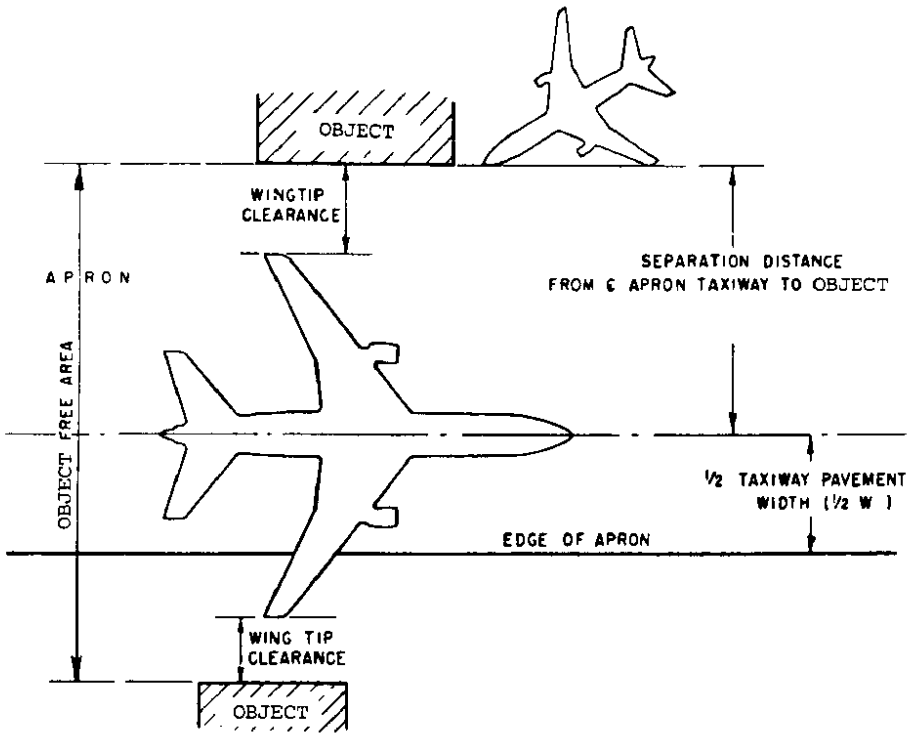


Figure A9-3. Wingtip clearance from apron taxiway

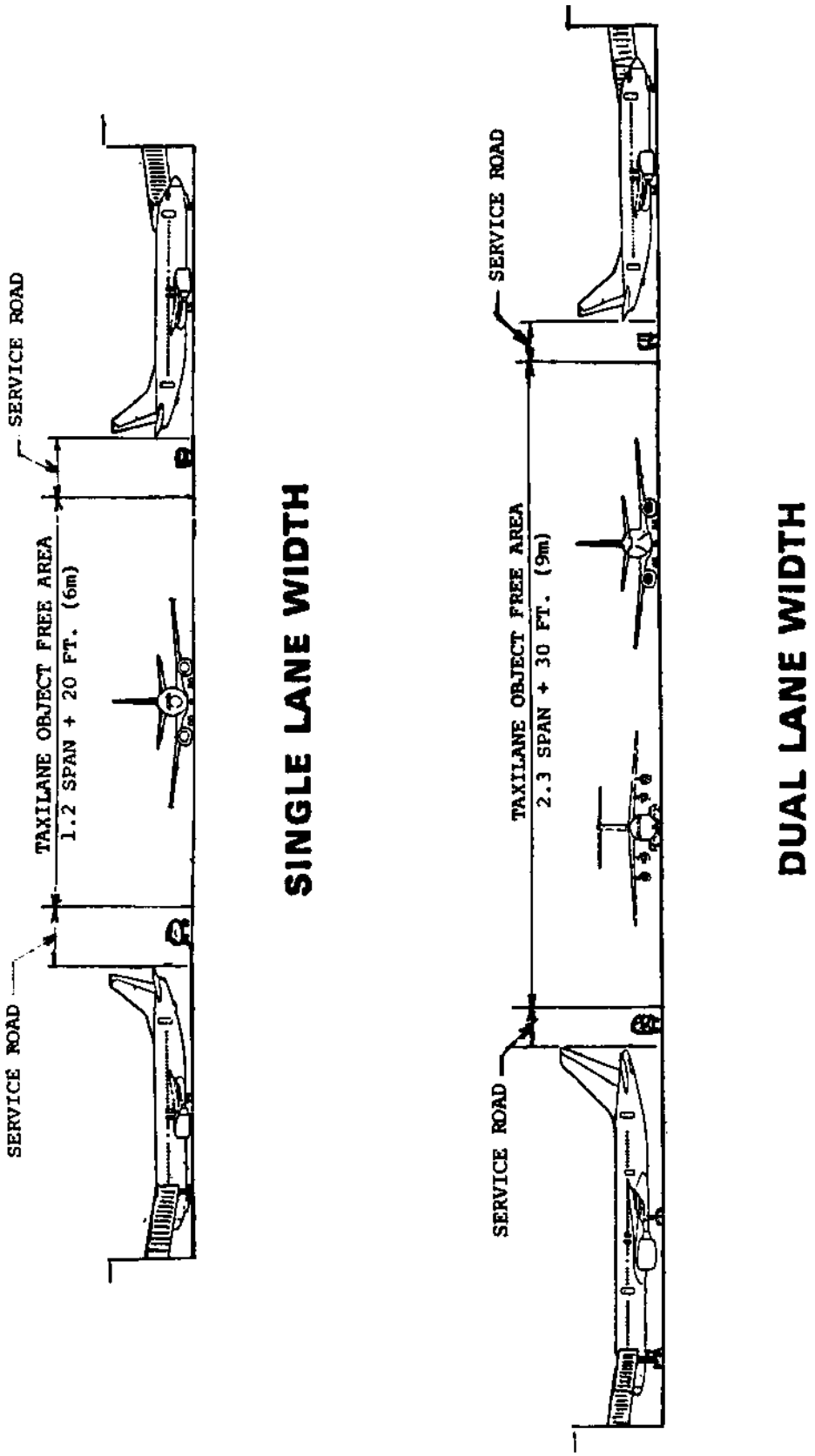


Figure A9-4. Wingtip clearance from taxilane

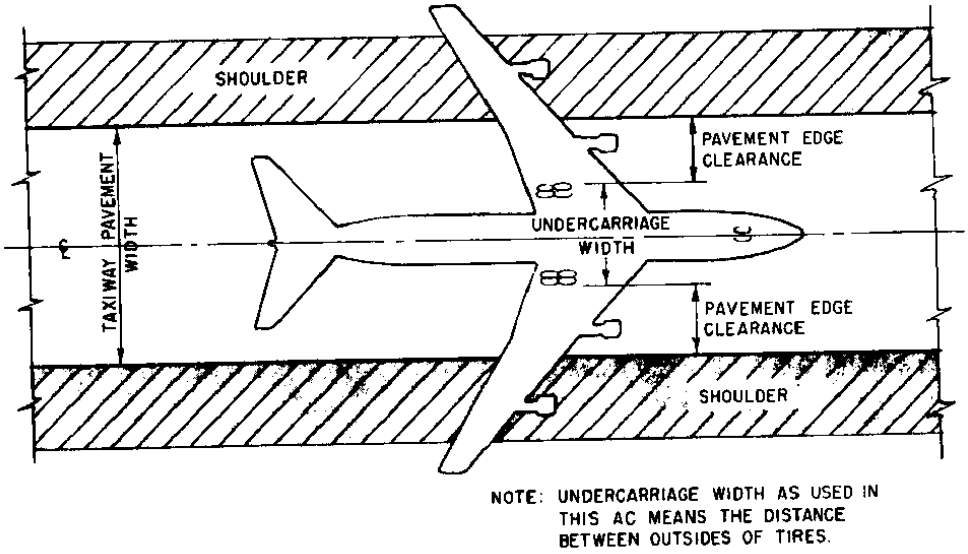


Figure A9-5. Pavement edge clearance on tangent

4. WINGTIP TRACE. The following equations calculate the rectangular coordinates of points on the wingtip trace.

$x = x_c - t \cos (A - B) + .5s \sin (A - B)$

$y = y_c + t \sin (A - B) + .5s \cos (A - B)$

x_c and y_c are the rectangular coordinates of a selected point on the centerline pavement markings. One centerline point is required for each trace point.

A is the angle formed by the tangent to the centerline pavement markings and the longitudinal axis of the airplane at the selected point. Appendix 10 provides instructions for obtaining this angle.

B is the angle direction of the centerline pavement markings at the select centerline point.

t is the longitudinal distance from the center of airplane cockpit to the airplane wingtip.

s is the airplane wingspan.

To obtain the wingtip clearance trace, add the wingtip clearance to the wingtip trace.

a. The airport design computer program described in appendix 11 provides the OFA clearance fillet requirement directly.

(1) Figure A9-6 depicts the McDonnell-Douglas MD-88 wingtip clearance traces for a 100-foot (30.5 m) radius of turn with centerline pavement markings.

(2) Figure A9-7 depicts the McDonnell-Douglas MD-88 wingtip clearance trace for a 100-foot (30.5 m) radius of turn with offset centerline pavement markings located on a 120-foot (30.5 m) radius arc.

(3) Figure A9-8 depicts the Boeing 727-200 wingtip clearance trace for a 100-foot (30.5 m) radius of turn with offset centerline pavement markings located on a 120-foot (30.5 m) radius arc.

(4) Figure A9-9 depicts the Boeing 727-100 wingtip clearance trace for a 100-foot (30.5 m) radius of turn with offset centerline pavement markings located on a 120-foot (30.5 m) radius arc.

b. The computer program treats the offset taxilane pavement markings arcs as five sections:

(1) A tangent section;

(2) A circular section comprised of a $\pm\cos^{-1}$(turn radius/offset radius) degree angle (same sign as the intersection angle) and a 0-foot radius;

(3) the offset arc (a circular section comprised of the intersection angle and the offset radius);

(4) A circular section comprised of a $\pm\cos^{-1}$(turn radius/offset radius) degree angle (apposite sign as the intersection angle) and a 0-foot radius; and

(5) A tangent section.

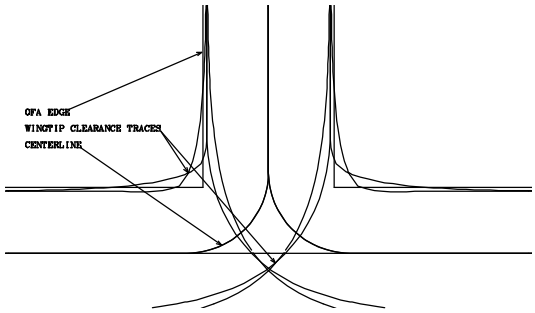


Figure A9-6. McDonnell-Douglas MD-88 wingtip clearance trace for a 100-foot (30.5 m) radius centerline

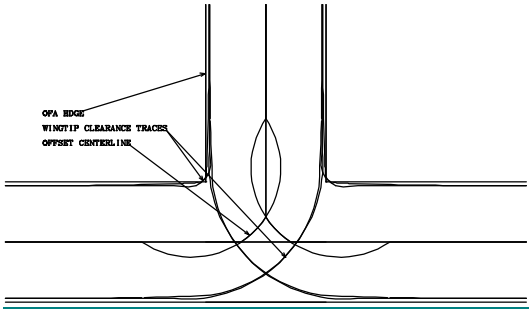


Figure A9-7. McDonnell-Douglas MD-88 wingtip clearance trace for a 120-foot (36.5 m) radius offset centerline

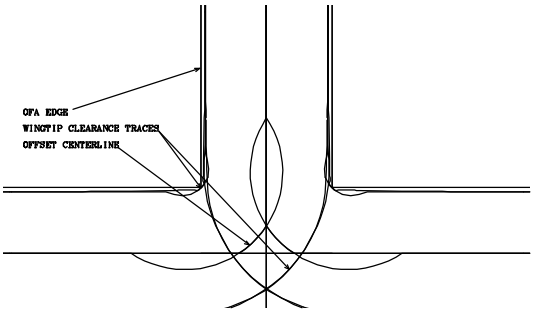


Figure A9-8. Boeing 727-200 wingtip clearance trace for a 120-foot (36.5 m) radius offset centerline

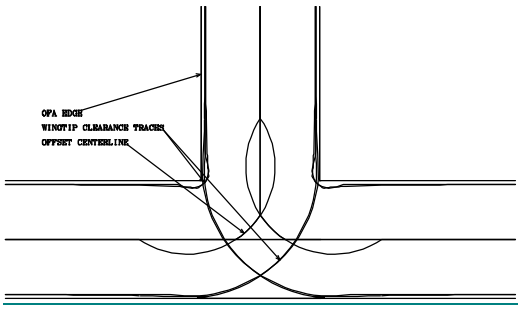


Figure A9-9. Boeing 727-100 wingtip clearance trace for a 120-foot (36.5 m) radius offset centerline

Appendix 10. TAXIWAY FILLET DESIGN

1. **INTRODUCTION**. This appendix details the methodology for the design of fillets for airport taxiways. This methodology is equally applicable for either the judgmental oversteering and the maintaining cockpit over centerline method of fillet design. The computer program cited in Appendix 11 computes these fillet dimensions for the maintaining cockpit over centerline method of fillet design. Figures A10-1 and A10-2 illustrate the terms and symbols used in the following equations:

a. Angle A. The angle formed by the tangent to the guideline and the longitudinal axis of airplane at point N.

(1) For R less than d:

$$A = 2 \tan^{-1}[x \tan(\tan^{-1}((\tan(.5A_o) - R/d)/x) + 28.648xS/R) + R/d]$$

(2) For R equal to d:

$$A = 2 \tan^{-1}[1/(1/(\tan(.5A_o) - 1) - .5S/R) + 1]$$

(3) For R greater than d:

$$A = 2 \tan^{-1}[y(2/(1 - z) - 1) + R/d]$$

(4) For tangent section:

$$A = 2 \tan^{-1}[\tan(.5A_t)/2.7183^{S/d}]$$

b. Angle A_{max}. Angle A with point N at the point of tangency (P.T.) or at the point of change of curvature (P.C.C.). At the end of a long curve:

$$A_{max} = \sin^{-1}(d/R)$$

c. Angle A_o. Angle A with point N at the point of curvature (P.C.). The angle A_o at the end of a long tangent section is zero (0) degrees.

d. Angle A_t. Angle A with point N at the point of tangency (P.T.).

e. Nosewheel Steering Angle (B). The angle the nosewheel makes with the longitudinal axis of the airplane. In the design of pavement fillets, check to ensure that the nosewheel steering angle does not exceed 50 degrees. If exceeded, choose a larger radius of arc (R).

$B = \tan^{-1}[(w/d)\tan A]$

$B_{max} = \tan^{-1}[(w/d)\tan A_{max}]$

f. Airplane Datum Length (d). The distance between point N and the center of the main undercarriage.

g. Radius of Fillet Arc (F). The radius of the fillet measured from the center of the taxiway longitudinal curvature (0). To provide an acceptable taxiway edge safety margin (M), the radius of fillet should be equal to or less than:

$F = (R^2 + d^2 - 2Rd \sin A_{max})^{.5} - .5u - M$

h. Length of Lead-in to Fillet (L). The distance from the P.T. to the end of the fillet. To provide an acceptable taxiway edge safety margin (M), the length of lead-in to the fillet should be equal to or greater than:

$L = d\{\ln[4d \tan(.5A_t)/(W - u - 2M)]\} - d$

i. Taxiway Edge Safety Margin (M). The minimum distance between the outside of the airplane wheels and the pavement edge. The minimum acceptable taxiway edge safety margin is given in table 4-1.

j. Point N. The point beneath the longitudinal axis of the airplane which tracks the guideline on the ground. Point N is located:

(1) For judgmental oversteering, beneath the longitudinal axis of the airplane at a distance from the center of the main undercarriage equal to the following. This distance provides a safety margin to compensate for the lack of positive guidance.

(a) Widening on only one side:

$d = (R^2 - (R + .5W - 2M)^2 + w^2)^{.5}$

(b) Widening symmetrical:

$d = (R^2 - (2R - F - 2M)^2 + w^2)^{.5}$

(2) For cockpit over centerline, beneath the cockpit of the airplane.

k. Radius of Arc (R). The radius of the arc at point N measured from center of curvature (O) to the point N.

l. Distance S. The distance from the P.C. to the point N along the arc for arc sections and from the P.T. to the point N along the tangent for tangent sections.

m. Undercarriage Width (u). The distance between the airplane's outer main wheels, including the width of the wheels. For airport design purposes, when the dimension "u" is not available, assume "u" to be 1.15 times the airplane's main gear track.

n. Wheelbase (w). The distance between the nosewheel and the center of the main undercarriage.

o. Taxiway Width (W). The taxiway pavement width on the tangent section. The taxiway width should be greater than the sum of the undercarriage width plus two times the acceptable taxiway edge safety margin (M).

p. Symbol x.

$$x = (1 - (R/d)^2)^{.5}$$

q. Symbol y.

$$y = ((R/d)^2 - 1)^{.5}$$

r. Symbol z.

$$z = 2.7183^{yS/R}(R/d + y - \tan(.5A_o))/(R/d - y - \tan(.5A_o))$$

2. EXAMPLE NO. 1, JUDGMENTAL OVERSTEERING. Given: Airplane wingspan 196 feet (59.7 m), wheelbase 84 feet (25.6 m), undercarriage width 41 feet (12.5 m), and R = 150 feet (45 m) for 180 degree turn. Taxiway width is 75 feet (23 m), fillet radius, widening on only one side, is 97 feet (29 m), and lead-in to fillet is 250 feet (75 m).

Step 1 - Acceptable M = 15.0 feet (4.5 m)

Step 2 - Calculate Amax = 27.3 degrees
(27.2 degrees)

Step 3 - Calculate Bmax = 32.2 degrees
(32.6 degrees)

Step 4 - Calculate provided M = 15.8 feet
(4.8 m)

3. EXAMPLE NO. 2, MAINTAINING COCKPIT OVER CENTERLINE. Given: Airplane wingspan 196 feet (59.7 m), wheelbase 84 feet (25.6 m), distance between main undercarriage and cockpit 90 feet (27.4 m), undercarriage width 41 feet (12.5 m), and cockpit following R = 150 feet (45 m) for 180 degree turn. Taxiway width is 75 feet (22 m).

Step 1 - Acceptable M = 15.0 feet (4.5 m)

Step 2 - Calculate A_{max} = 36.4 degrees
(37.0 degrees)

Step 3 - Calculate B_{max} = 34.5 degrees
(35.1 degrees)

Step 4 - Calculate F_{max} = 85.2 feet (25.2 m)

Step 5 - Calculate L_{min} = 215 feet (60.2 m)

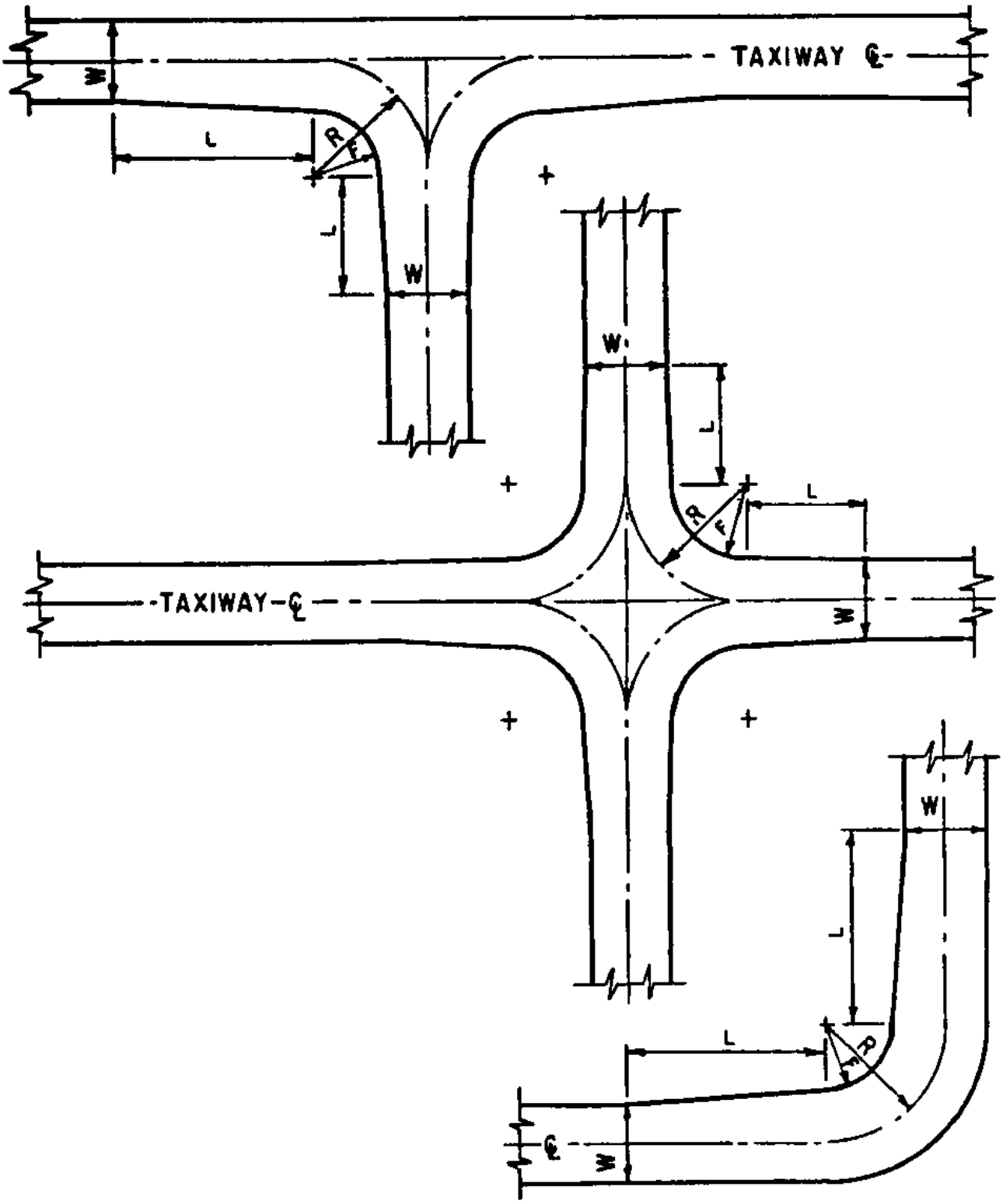


Figure A10-1. Taxiway intersection details

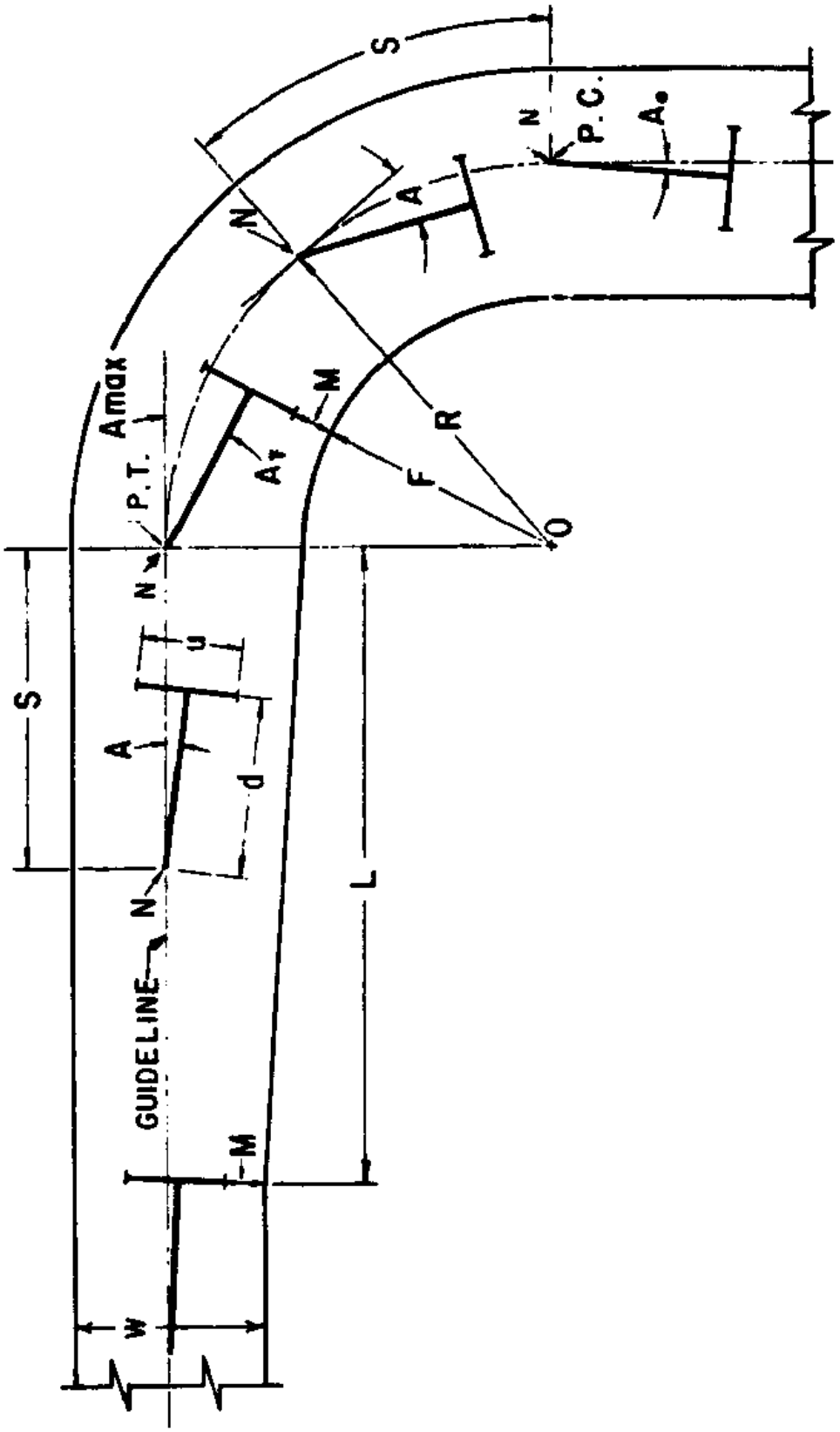


Figure A10-2. Depiction of symbols

Appendix 11. COMPUTER PROGRAM

1. AIRPORT DESIGN (FOR MICROCOMPUTERS) VERSION 4.1. Airport Design (for microcomputers) version 4.1 provides:

a. Width and clearance standard dimensions for runway, taxiway, taxilane, and associated facilities;

b. Recommended runway lengths;

c. Runway wind coverage analysis;

d. Files for editing, printing, and plotting windroses with AutoCAD and Design CAD2D (formally Prodesign II);

e. Files loadable into WordPerfect, Microsoft Word, and other CAD/CAM systems;

f. Taxiway exit, intersection, and curve configurations; and

g. Airplane wingtip clearance analyses.

h. Airport capacity and delay for long range planning.

i. Declared distance lengths.

2. HOW TO OBTAIN A COPY OF AIRPORT DESIGN (FOR MICROCOMPUTERS) VERSION 4.1. Airport Design version 4.1 is available for downloading from the Office of Airport Safety and Standards Electronic Bulletin Board System.

Telephone number:	(202) 267-5205
Data bits:	8
Parity:	(N)one
Stop bits:	1
Buad rate:	300/1200/2400/9600/14400

3. REQUIREMENTS. Airport Design version 4.1 runs on the IBM PC family of computers and all true IBM compatible. It requires DOS of 3.1 or higher and at least 640K of RAM.

4. SETUP ON A MICROCOMPUTER. This program is composed of seven files namely AD.EXE, HELP.TXT, HELPE.PLT, HELPM.PLT, WINDDXF.AD, WINDPD1.AD, and WINDPLT.AD. These files must be located into a subdirectory. If you have Microsoft Windows, run this program as a Non-Windows Application to make use of the Windows graphic printing applications. Make the subdirectory where the program files are located the start-up directory. The working directories should be other than the start-up directory. Adjust the graphic colors with Shift F4, the size with Page Up and Page Down, and the location with the cursor keys of the graphic displayed on the screen as required by the windows application.

5. RUN AIRPORT DESIGN PROGRAM. The first window displayed on the screen upon executing AD.EXE is the airport design task selection window. Press the task number listed in the left margin or scroll to the task line and press < to select a task from this list.

6. HOT KEYS. The HOT KEYS are as follows:

< advances the program one step.
Esc retreats the program one or more steps.
Alt X exits the program.
Ctrl C (Controlled Crash) aborts the program.

Hot keys, when listed at the bottom of screen, are:

F1-Help - Press F1 and scroll for more program help instructions. When the help instructions are on the screen, press H or the task number to fast scroll to the top of the HOT KEYS or the top of the task help instructions. Press < or Esc to end the help section.

F2-Save - Press F2 and enter output file name to create a DOS text *.TXT file. Scroll to preview the entire file. Press < or Esc to end the preview section. These files are retrievable into WordPerfect, Microsoft Notepad, and back into the task which created the file.

F3-Retrieve or F3-Retrieve/Clear - Press F3 or F5 to retrieve a file. When files and directories are listed on the screen and hot key F3 is listed on the bottom of the screen type or scroll to the file name and press F3 to retrieve the highlighted file or press Esc to return to where the program was when F3 or F5 was pressed. When a file is displayed on the screen and hot key F3 is listed on the bottom of the screen press F3 to retrieve the file. When files and directories are listed on the screen, all of the F5-Files functions may also be executed.

F3-Retrieve/Clear - Press Shift F3 to clear the wind observation data.

F4-Dir/Color - Press F4 and enter the drive letter to change the working drive. Press Shift F4 to change the graphic screen colors (Background and Pen colors). Press < or Esc to end the color change section.

F5-Files - Press F5 to list files and directories and to add hot keys F3, F4, F6, and F7 to the bottom of the screen. When files and directories are listed on the screen, type or scroll to the file or directory name and press < to preview the highlighted file or change the highlighted directory or press Esc to return to where the program was when F5 was pressed. Line only HP plotter (HPGL) files are previewed in graphic format. To preview a HPGL file in the DOS text format, press < while "Please wait" is displayed on the screen. Press < or Esc to end the preview section.

F6-Delete - Type or scroll to the file name and press F6 to delete the highlighted file. Press F6 to delete a file being previewed on the screen.

F7-Print - When files and directories are listed on the screen and hot key F7 is listed on the bottom of the screen, type or scroll to the file name and press F7 to print the highlighted file. Press F7 to print the file being previewed on the screen.

F8-Quit - Press F8 to exit the program.

F9-PLT/PD1/DXF - Press F9 to create a windrose in the HP 7440A ColorPro plotter (HPGL) file format. Press Shift F9 to create a windrose in the Design CAD2D (formerly Prodesign II) file format. Press Alt F9 to create a windrose in the AutoCAD Drawing

Interchange file format (DXF). Press < or Esc to end the preview section. The HPGL files are loadable into WordPerfect, Microsoft Word, and other CAD/CAM systems. The PD1 files are loadable into Design CAD2D (formerly Prodesign II). Call (918) 825-4844 for information on Design CAD2D.

F10-Find - Press F10 to find a string of characters in a file.

F10-Next - Press F10 to move to the next taxiway section. Press Esc to move back to the previous taxiway section.

7. RUNWAY AND TAXIWAY WIDTH AND CLEARANCE STANDARD DIMENSIONS. Task 1 calculates site specific runway, taxiway, taxilane, and other airport item's standard width and clearance dimensions. To obtain these dimensions:

a. Select task 1 (Item N1), from the airport design task selection window. Update the data items listed on the airport design airplane and airport data window (see figure A11-3). A change in one item may change one or more items down the list. Select items for updating starting from the top and work down the list. Press the item letter listed in the left margin, or scroll to the item line and type in the data, or press < to select an item. Press the data number or letter listed in the left margin or scroll to the data line and press < to select an item on the subtables. The following explains some of the data items:

(1) Item B. Changing the airplane design group will change the airplane wingspan to the maximum wingspan for that group. This is the wingspan used for the standard design group method of airport design. A small airplane is an airplane of 12,500 lbs (5 700 kilograms) or less maximum takeoff weight. A large airplane is an airplane of over 12,500 lbs (5 700 kilograms) maximum takeoff weight.

(2) Item C. Changing the airplane wingspan will adjust the airplane design group automatically. For airplanes with folding wingtips, input the taxiing wingspan(s) for taxiway and taxilane width and clearance standard dimension (Item N3). Input the takeoff and landing wingspan for all other width and clearance standard dimensions (Item N2).

(3) Item D. The primary runway end is the runway end the user selected as the primary end.

(4) Item I. The undercarriage width is the distance between the airplane's outer main wheels, including the width of the wheels. When this distance is not available, use 1.15 times the airplane's main gear track.

When the data items are updated, press F2, enter the output file name, and press < or Esc to end the preview section. Line items with two numbers represent the calculated design values for the rationale method (column one) and the airport reference code method (column two) (see figures A11-4 and A11-5).

8. RECOMMENDED RUNWAY LENGTHS. Task 2 from the airport design task selection window calculates the recommended runway length for airport design. Press F2 to save the recommended runway lengths and then print them by pressing F7. Refer to AC 150/5325-4, Runway Length Requirements for Airport Design, for details on runway length. The publication "Monthly Station Normals of Temperature, Precipitation, and Heating and Cooling Degree Days" (Climatography of the United States No.81) is the official source for the mean maximum temperature for the hottest month. This temperature is presented by station under the heading "Normal Max." The higher of these values should be selected to represent the hottest month. The latest data, averaged over a period of thirty years, may be obtained from the National Climatic Data Center, Federal Building, Asheville, North Carolina 28801. Specify the state(s) when ordering. Price is $2.00 per state plus a $5.00 service and handling charge.

9. STANDARD WIND ANALYSIS. This task calculates the wind coverage for up to a six runway configuration. Figure A11-6 displays a two bi-directional runway configuration analysis printout and figure A11-8 displays a one uni-directional runway configuration analysis printout.

a. To preform the wind analysis, select task 3 from the airport design task selection window, press Shift F3 to clear the wind data, and enter the wind data either from the keyboard, a DOS text file (retrieve by pressing F3), or a combination of both. Enter 60 knot tailwind component for bi-directional runways. Press F2 and enter the output file name to create a DOS text windrose file. Scroll to preview the entire file. Press F9 to create a windrose in the HP 7440A ColorPro plotter (HPGL) file format (PLT). Press Shift F9 to create a windrose in the Design CAD2D (formerly Prodesign II) file format (PD1). Press Alt F9 to create a windrose in the AutoCAD Drawing Interchange file format (DXF). Press < or Esc to end the preview section. The PLT files are loadable into WordPerfect, Microsoft Word, and other CAD/CAM systems. The PD1 files are loadable into Design CAD2D or Prodesign II.

b. The DOS text file may have an unlimited number of lines with a maximum of 120 columns each.

(1) The first 80 columns of the third line contain the location name. The third, fourth, and etc. words (numbers) of the fourth, fifth, and sixth lines are the runway orientations, the crosswind components, and the tailwind components of the first, second, and etc. runways.

(2) Lines 12 through 48 are wind observation data. The first word is the wind direction, the second word is the number of 0-3 knot wind observations, the third word is the number of 4-6 knot wind observations, etc. For words which are not numbers or are omitted, the number of wind observations is zero. All other data are ignored. The WIND.PRN file in the Airport Design package is an example of this DOS text file.

c. Wind data in this FAA format on disk can be purchased from the National Climatic Data Center (NCDC), Federal Building, Asheville, NC 28801 at a cost of $200.00 per summary plus an $11.00 service and handling charge. A summary can be ordered with several tables. One table for each combination of all weather and various combinations of ceiling and visibility for monthly, seasonal, and annual periods, with 24 hourly and selected time-of-day observations. Ask for the wind data summary in the FAA format for use with the Airport Design Microcomputer Program. For details on availability, call (704) 254-6283 (CLIMATE).

10. TAXIWAY DESIGN. Task 4 from the airport design task selection window contains seven subtasks. Figure A11-10 and appendix 10 depict the nomenclature used in this task.

a. Subtask 1 calculates the data required for laying out

circular and spiral curves by the offset method. To calculate this data, select subtask 1, the type of section, and update the data items. Due to the redundance in data items, more than one datum item may change with each data entry; the number of * after the data items define which data items will change to accommodate the new entry. When the data items are updated, press F2, enter the station interval and the file name, preview the output file, and press < or Esc to end the preview.

b. Subtasks 2 through 5 calculate the offset distances from centerline to edge of pavement or object using the maintaining cockpit over centerline or the nosewheel on centerline method of pavement fillet design.

(1) To calculate the offset distances, select a subtask (2 through 5) and define the design airplane and conditions at the entrance of station 1 by updating the data items. The steering angle is the angle formed by the tangent to the guideline (centerline marking or lighting) and the longitudinal axis of the airplane. Angle A on figure A10-2 depicts the steering angle. All longitudinal distances are measured parallel to the airplane's longitudinal axis. Press F10 when the data items are updated.

(2) Subdivide the taxiway/taxilane centerline into sections (tangent, circular, and spiral). Select the type of section 1 and update the data items for section 1. Except for the last section, press F10 when the data items are updated. For the last section, press F2 when the data items are updated. When F10 is pressed, select the type of the next section and update the data items for that section. When F2 is pressed, enter the station interval and the file name, preview the output file, and press < or Esc to end the preview.

c. Subtask 6 creates a HP 7440A ColorPro plotter (HPGL) offset distance file with a PLT extension. To create this file, select subtask 6, retrieve a file created with subtask 2 through 5, enter the output file name, and press < or Esc to end the preview section. The HPGL files are loadable into WordPerfect, Microsoft Word, and other CAD/CAM systems.

d. Subtask 7 creates a Design CAD2D offset distance file with a PD1 extension. To create this file, select subtask 7, retrieve a file created with subtask 2 through 5, enter the output file name, and press < or Esc to end the preview section. The PD1 file are loadable into Design CAD2D or Prodesign II.

e. Subtasks 8, 9, and 0 create DOS text files of the centerline, left offset, and right offset X, Y coordinates. To create these files, select subtask 8, 9, or 0, retrieve a file created with subtask 2 through 5, enter the output file name, and press < or Esc to end the preview section.

f. Subtask A creates a file in the AutoCAD Drawing Interchange file format (DXF) from a subtask 2 through 5 file. To create this file, select subtask A, retrieve a file created with subtask 2 through 5, enter the output file name, and press < or Esc to end the preview section.

g. To familiarize yourself with the taxiway design task, design the taxiway pavement fillet depicted in figure 4-4 and the exit taxiway depicted in figure 4-13.

11. AIRPORT CAPACITY AND DELAY FOR LONG RANGE PLANNING. Task 5 from the airport capacity and delay for long range planning task selection window approximates the airport capacity and delay. Press F2 to save the approximations. Refer to AC 150/5060-5, Airport Capacity and Delay, for details on airport capacity and delay. Import graphics file HELPE.PLT or HELPM.PLT into WordPerfect or Microsoft Word and print to obtain a hard copy of the runway-use configuration sketches.

12. DECLARED DISTANCE LENGTHS. Task 6 from the airport design task selection window calculates the declared distance lengths. See appendix 14 for details on declared distances. Declared distance lengths may be calculated for standard or modified RSA and ROFA lengths. Press W within task 6 to alternate between the standard and the modified RSA and ROFA lengths applications. Figure A11-11 depicts the nomenclature used in this task.

a. The declared distance lengths obtained from the standard RSA and ROFA lengths application are displayed to scale on the screen except for the ARC C-III and D-III runway widths, and the ARC D-1 through D-VI+ RSA widths. Go to task 1 and enter the 150,000 pounds (68 100 kg) weight entry to display the ADG C-III and D-III runway width to scale and enter the airport elevation to display the ADG D-I through D-VI+ RSA width to scale.

b. The declared distance lengths obtained from the modified RSA and ROFA lengths are displayed to scale by setting items A through D for the standard RSA and ROFA length application, as above, and then switching to the modified RSA and ROFA length application.

c. The dashed lines display the clearway. When present, the clearway extends between the TORA far end and the TODA far end. (The dotted lines display 14 CFR Part 77 primary and approach surfaces and are provided for informational purposes only. The primary surface extends out to 200 feet (60 m) beyond the runway ends or out to the far ends of TODA, whichever is further.)

d. Items A through D on the modified RSA and ROFA lengths application. Enter the RSA and ROFA lengths which will exist beyond the end of the ASDA and the LDA when the ASDA and the LDA end at or prior to the end of the runway or the RSA and ROFA lengths which will exist beyond the end of ASDA when the LDA terminates at the runway end and the ASDA extends onto a stopway.

e. Item E. Enter the runway length from runway end to runway end. The area behind a threshold which is used for TORA in at least one direction or for LDA from the opposite direction is runway. The area behind a threshold which is used for ASDA from the opposite direction is either runway or stopway. The area behind a threshold which is used for TODA from the opposite direction is runway and/or clearway. The clearway may be located above a runway or stopway. The runway length is the same for both directions.

f. Items F and G. Enter 0 feet for runway ends without a stopway.

g. Items H and I. Enter 0 feet for runway ends without a clearway.

h. Items N and O. Enter 0 feet for runway ends without displaced threshold.

i. Items P and Q. Enter 0 feet for runway ends without displaced start of takeoff.

j. Items R and S. Enter 0 feet for runways without displaced clearway. Items R and S may not be longer than the clearway length items H and I.

k. Items T and U. Enter a negative (-) distance for runways extending into the departure runway 6protection zone (RPZ).

13. INPUT AIRPLANE DATA AVAILABILITY. Figure A11-2 provides estimated airplane data for which calculated data is not available in appendixes 12 or 13.

Figure A11-1. THIS FIGURE INTENTIONALLY LEFT BLANK

Airplane	Airport Reference Code	OFZ-N		OFZ-CL		C-NG		MU-W	
		feet	(m)	feet	(m)	feet	(m)	feet	(m)
A 300-600	C-IV	19.4	5.91	54.7	16.67	13.3	4.05	23.8	7.25
A 320	C-III	14.5	4.42	39.1	11.92	8.5	2.59	14.5	4.42
ATR-42,-200,-300	B-III	7.8	2.38	27.0	8.23	-1.0	-0.30	1.4	0.43
BAe 146-100	B-III	9.0	2.74	33.2	10.12	-2.5	-0.76	6.2	1.89
Beechcraft 95	B-I	4.7	1.43	10.1	3.08	-5.6	-1.71	1.5	0.46
Beechcraft 1900	B-II	6.2	1.89	18.0	5.49	-7.3	-2.23	0.5	0.15
Beechcraft C99	B-I	5.2	1.58	14.4	4.39	-10.4	-3.17	1.0	0.30
Boeing 707-320	C-IV	13.0	3.96	42.1	12.83	10.0	3.05	31.8	9.69
Boeing 727-200	C-III	12.0	3.66	38.0	11.58	6.9	2.10	21.5	6.55
Boeing 737-200	C-III	11.8	3.60	37.3	11.37	4.8	1.46	13.4	4.08
Boeing 747-400	D-V	25.4	7.74	64.3	19.60	7.7	2.35	57.5	17.53
Boeing 747-SP	C-V	24.9	7.59	65.8	20.10	5.0	1.52	54.0	16.46
Boeing 757-200	C-IV	17.0	5.18	45.1	13.75	12.0	3.66	17.0	5.18
Boeing 767-200	C-IV	18.5	5.64	52.9	16.12	7.5	2.29	28.8	8.78
Boeing 767-300	C-IV	18.5	5.64	52.6	16.03	7.5	2.29	28.8	8.78
C-130 H	C-IV	10.9	3.32	39.4	12.01	3.1	0.94	3.3	1.01
CASA CN-235	B-III	8.3	2.53	26.8	8.17	1.3	0.40	2.1	0.64
Dash 7	A-III	7.5	2.29	31.0	9.45	-2.3	-0.70	1.7	0.52
Dash 8-300	A-III	7.5	2.29	28.9	8.81	-3.4	-1.04	2.1	0.64
DC-8-43	C-IV	13.4	4.08	43.4	13.23	6.0	1.83	26.7	8.14
DC-8-55	C-IV	13.4	4.08	43.4	13.23	6.0	1.83	26.7	8.14
DC-8-63/73	D-IV	13.4	4.08	43.0	13.11	6.0	1.83	26.7	8.14
DC-9-32	C-III	10.7	3.26	31.0	9.45	-2.0	-0.61	11.5	3.51
DC-10-10	C-IV	18.0	5.49	58.4	17.80	20.9	6.37	32.8	10.00
Embraer EMB-110	B-II	6.9	2.10	16.5	5.03	-2.0	-0.61	1.5	0.46
Fokker F-27,-200	B-III	7.6	2.32	28.7	8.75	-4.1	-1.25	2.0	0.61
Fokker F-28,-3000	C-III	11.3	3.44	30.2	9.20	4.4	1.34	9.8	2.99
Gulfstream III	D-II	10.2	3.11	29.2	8.90	-1.5	-0.46	13.2	4.02
JetStar II	C-II	6.6	2.01	20.4	6.22	6.0	1.83	9.5	2.90
L-1011-1,-100,-20	C-IV	20.4	6.22	55.8	17.01	21.9	6.68	36.6	11.16
L-1011-500	D-IV	20.4	6.22	55.8	17.01	21.9	6.68	28.8	8.78
MD-11	D-IV	21.3	6.49	58.8	17.92	20.9	6.37	38.9	

11.86								
MD-81,-82,-83,-88	C-III	9.8	2.99	34.2	10.42	-1.8	-0.55	13.8
4.21								
MD-87	C-III	10.4	3.17	34.8	10.61	-1.8	-0.55	15.0
4.57								
SAAB/Fairchild	B-II	9.1	2.77	21.7	6.61	-0.9	-0.27	2.2
0.67								
SAAB SF 340 A	B-II	8.8	2.68	23.3	7.10	-1.5	-0.46	2.0
0.61								
Shorts 330-200	B-II	6.6	2.01	19.4	5.91	-2.1	-0.64	2.5
0.76								
Shorts 360-300	B-II	6.3	1.92	23.8	7.25	-2.0	-0.61	3.0
0.91								
Westwind 1124	C-I	7.0	2.13	15.8	4.82	-4.3	-1.31	4.4
1.34								

OFZ-N: OFZ height at nose of airplane holding clear of OFZ (airplane perpendicular to runway centerline).
OFZ-CL: OFZ height at centerline of airplane taxiing clear of OFZ (airplane parallel to runway centerline).
C-NG: Center of airplane cockpit to nosewheel.
MU-W: Longitudinal distance from main undercarriage to wingtip.

Figure A11-2. Estimated airplane data elements for input in the computer program

```
N       RUNWAY AND TAXIWAY WIDTH AND CLEARANCE STANDARD DIMENSIONS

                AIRPORT DESIGN AIRPLANE AND AIRPORT DATA

A  Aircraft Approach Category C
B  Airplane Design Group III
C  Airplane wingspan  . . . . . .  107.85 feet
D  Primary runway end is precision instrument  1/2 statute mile or less
E  Other runway end is visual

G  Airplane maximum certificated takeoff weight is over 150,000 lbs
H  Airplane wheelbase is less than 60 feet
I  Airplane undercarriage width (1.15 x main gear track)  . . . .   19.17 feet
J  Airport elevation  . . . . . .      0 feet
K  Airplane tail height . . . . . .   30.00 feet

F2 Calculate airport design standard dimensions for the above airport
```

Figure A11-3. Example of the airport design airplane and airport data window

```
                AIRPORT DESIGN AIRPLANE AND AIRPORT DATA

   Aircraft Approach Category C
   Airplane Design Group III
   Airplane wingspan . . . . . .  107.85 feet
   Primary runway end is precision instrument  1/2-statute mile or less
   Other runway end is visual
   Airplane maximum certificated takeoff weight is over 150,000 lbs
   Airplane wheelbase is less than 60 feet
   Airplane undercarriage width (1.15 x main gear track) . . .    19.17 feet
   Airport elevation . . . . . .        0 feet
   Airplane tail height  . . . . . .    30.00 feet

          RUNWAY AND TAXIWAY WIDTH AND CLEARANCE STANDARD DIMENSIONS

                                                          Airplane  Group/ARC
Runway centerline to parallel runway centerline simultaneous operations
   when wake turbulence is not treated as a factor:

   VFR operations . . . . . .    700 feet
   VFR operations with intervening taxiway  . . . . . .    800 feet
   VFR operations with two intervening taxiways . . . . . .    952 feet
   IFR approach and departure with approach to near threshold  2500 feet less
      100 ft for each 500 ft of threshold stagger to a minimum of 1000 ft.

Runway centerline to parallel runway centerline simultaneous operations
   when wake turbulence is a factor:

   VFR operations . . . . . .   2500 feet
   IFR departures . . . . . .   2500 feet
   IFR approach and departure with approach to near threshold . .   2500 feet
   IFR approach and departure with approach to far threshold   2500 feet plus
      100 feet for each 500 feet of threshold stagger.
   IFR approaches . . . . . .   3400 feet

Runway centerline to parallel taxiway/taxilane centerline . 303.9    400 feet
Runway centerline to edge of aircraft parking . . . . . 400.0    500 feet
```

Figure A11-4. Example printout of width and clearance standard dimensions page 1

```
Taxiway centerline to parallel taxiway/taxilane centerline  139.4    152 feet
Taxiway centerline to fixed or movable object . . . . . .  85.5     93 feet
Taxilane centerline to parallel taxilane centerline . . . . 128.6    140 feet
Taxilane centerline to fixed or movable object  . . . . . .  74.7     81 feet

Runway protection zone at the primary runway end:

   Length . . . . . .   2500 feet
   Width 200 feet  from runway end  . . . . . .   1000 feet
   Width 2700 feet  from runway end . . . . . .   1750 feet

 Runway protection zone at other runway end:

   Length . . . . . .   1000 feet
   Width 200 feet  from runway end  . . . . . .   1000 feet
   Width 1200 feet  from runway end . . . . . .   1100 feet

 Departure runway protection zone:

   Length . . . . . .   1700 feet
   Width 200 feet  from the far end of TORA . . . . . .    500 feet
   Width 1900 feet  from the far end of TORA  . . . . . .   1010 feet

Runway obstacle free zone (OFZ) width . . . . . 400.0    400 feet
Runway obstacle free zone length beyond each runway end . . . . .    200 feet
Approach obstacle free zone width  . . . . . 400.0    400 feet
Approach obstacle free zone length beyond approach light system .    200 feet
 Approach obstacle free zone slope from 200 feet  beyond threshold   50:1
 Inner-transitional surface obstacle free zone slope . . . . . .    3:1

Runway width  . . . . . .    150 feet
Runway shoulder width . . . . . .     25 feet
Runway blast pad width  . . . . . .    200 feet
Runway blast pad length . . . . . .    200 feet
Runway safety area width  . . . . . .    500 feet
 Runway safety area length beyond each runway end
   or stopway end, whichever is greater . . . . . .   1000 feet
Runway object free area width . . . . . .    800 feet
 Runway object free area length beyond each runway end
   or stopway end, whichever is greater . . . . . .   1000 feet
Clearway width  . . . . . .    500 feet
Stopway width . . . . . .    150 feet

Taxiway width . . . . . .  39.2     50 feet
Taxiway edge safety margin  . . . . . .     10 feet
Taxiway shoulder width  . . . . . .     20 feet
Taxiway safety area width . . . . . 107.8    118 feet
Taxiway object free area width  . . . . . 171.0    186 feet
Taxilane object free area width . . . . . 149.4    162 feet
Taxiway wingtip clearance . . . . . .  31.6     34 feet
Taxilane wingtip clearance  . . . . . .  20.8     22 feet

 Threshold surface at primary runway end:

   Distance out from threshold to start of surface  . . . . . .    200 feet
   Width of surface at start of trapezoidal section . . . . . .   1000 feet
   Width of surface at end of trapezoidal section . . . . . .   4000 feet
   Length of trapezoidal section  . . . . . .  10000 feet
   Length of rectangular section  . . . . . .      0 feet
    Slope of surface . . . . . .   34:1

 Threshold surface at other runway end:

   Distance out from threshold to start of surface  . . . . . .      0 feet
   Width of surface at start of trapezoidal section . . . . . .    400 feet
   Width of surface at end of trapezoidal section . . . . . .   1000 feet
   Length of trapezoidal section  . . . . . .   1500 feet
   Length of rectangular section  . . . . . .   8500 feet
    Slope of surface . . . . . .   20:1

REFERENCE:  AC 150/5300-13, AIRPORT DESIGN.
```

Figure A11-5. Example printout of width and clearance standard dimensions page 2

WIND OBSERVATIONS

STATION: ANYWHERE, USA
RUNWAY ORIENTATION: 105.00 195.00 DEGREE
CROSSWIND COMPONENT: 10.50 10.50 KNOTS
TAILWIND COMPONENT: 60.00 60.00 KNOTS
WIND COVERAGE: 98.84 %

	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)							41	
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40	OVER	TOTAL
DIRECTION										
1	469	842	568	212	0	0	0	0	0	2091
2	568	1263	820	169	0	0	0	0	0	2820
3	294	775	519	73	9	0	0	0	0	1670
4	317	872	509	62	11	0	0	0	0	1771
5	268	861	437	106	0	0	0	0	0	1672
6	357	534	151	42	8	0	0	0	0	1092
7	369	403	273	84	36	10	0	0	0	1175
8	158	261	138	69	73	52	41	22	0	814
9	167	352	176	128	68	59	21	0	0	971
10	119	303	127	180	98	41	9	0	0	877
11	323	586	268	312	111	23	28	0	0	1651
12	618	1397	624	779	271	69	21	0	0	3779
13	472	1375	674	531	452	67	0	0	0	3571
14	647	1377	574	281	129	0	0	0	0	3008
15	338	1093	348	135	27	0	0	0	0	1941
16	560	1399	523	121	19	0	0	0	0	2622
17	587	883	469	128	12	0	0	0	0	2079
18	1046	1984	1068	297	83	18	0	0	0	4496
19	499	793	586	241	92	0	0	0	0	2211
20	371	946	615	243	64	0	0	0	0	2239
21	340	732	528	323	147	8	0	0	0	2078
22	479	768	603	231	115	38	19	0	0	2253
23	187	1008	915	413	192	0	0	0	0	2715
24	458	943	800	453	96	11	18	0	0	2779
25	351	899	752	297	102	21	9	0	0	2431
26	368	731	379	208	53	0	0	0	0	1739
27	411	748	469	232	118	19	0	0	0	1997
28	191	554	276	287	118	0	0	0	0	1426
29	271	642	548	479	143	17	0	0	0	2100
30	379	873	526	543	208	34	0	0	0	2563
31	299	643	597	618	222	19	0	0	0	2398
32	397	852	521	559	158	23	0	0	0	2510
33	236	721	324	238	48	0	0	0	0	1567
34	280	916	845	307	24	0	0	0	0	2372
35	252	931	918	487	23	0	0	0	0	2611
36	501	1568	1381	569	27	0	0	0	0	4046
0	7729	0	0	0	0	0	0	0	0	7729
TOTAL:	21676	31828	19849	10437	3357	529	166	22	0	87864

Figure A11-6. Example printout of wind analysis (two bi-directional runways)

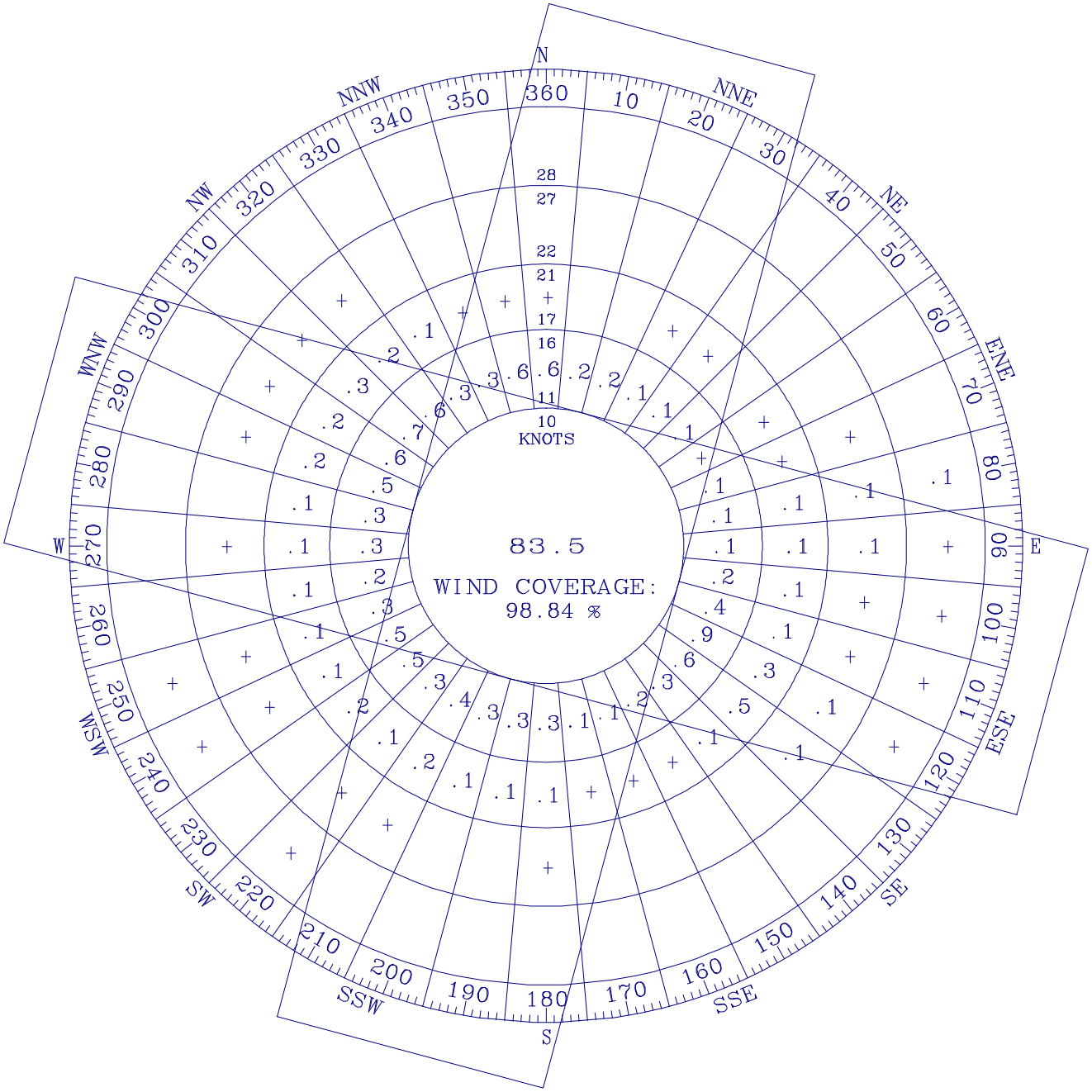


Figure A11-7. Example printout of windrose (two bi-directional runways)

WIND OBSERVATIONS

STATION: ANYWHERE, USA
RUNWAY ORIENTATION: 105.00 DEGREE
CROSSWIND COMPONENT: 13.00 KNOTS
TAILWIND COMPONENT: 5.00 KNOTS
WIND COVERAGE: 80.41 %

	HOURLY OBSERVATIONS OF WIND SPEED (KNOTS)							41	
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40	OVER	TOTAL
DIRECTION										
1	469	842	568	212	0	0	0	0	0	2091
2	568	1263	820	169	0	0	0	0	0	2820
3	294	775	519	73	9	0	0	0	0	1670
4	317	872	509	62	11	0	0	0	0	1771
5	268	861	437	106	0	0	0	0	0	1672
6	357	534	151	42	8	0	0	0	0	1092
7	369	403	273	84	36	10	0	0	0	1175
8	158	261	138	69	73	52	41	22	0	814
9	167	352	176	128	68	59	21	0	0	971
10	119	303	127	180	98	41	9	0	0	877
11	323	586	268	312	111	23	28	0	0	1651
12	618	1397	624	779	271	69	21	0	0	3779
13	472	1375	674	531	452	67	0	0	0	3571
14	647	1377	574	281	129	0	0	0	0	3008
15	338	1093	348	135	27	0	0	0	0	1941
16	560	1399	523	121	19	0	0	0	0	2622
17	587	883	469	128	12	0	0	0	0	2079
18	1046	1984	1068	297	83	18	0	0	0	4496
19	499	793	586	241	92	0	0	0	0	2211
20	371	946	615	243	64	0	0	0	0	2239
21	340	732	528	323	147	8	0	0	0	2078
22	479	768	603	231	115	38	19	0	0	2253
23	187	1008	915	413	192	0	0	0	0	2715
24	458	943	800	453	96	11	18	0	0	2779
25	351	899	752	297	102	21	9	0	0	2431
26	368	731	379	208	53	0	0	0	0	1739
27	411	748	469	232	118	19	0	0	0	1997
28	191	554	276	287	118	0	0	0	0	1426
29	271	642	548	479	143	17	0	0	0	2100
30	379	873	526	543	208	34	0	0	0	2563
31	299	643	597	618	222	19	0	0	0	2398
32	397	852	521	559	158	23	0	0	0	2510
33	236	721	324	238	48	0	0	0	0	1567
34	280	916	845	307	24	0	0	0	0	2372
35	252	931	918	487	23	0	0	0	0	2611
36	501	1568	1381	569	27	0	0	0	0	4046
0	7729	0	0	0	0	0	0	0	0	7729
TOTAL:	21676	31828	19849	10437	3357	529	166	22	0	87864

Figure A11-8. Example printout of wind analysis (one uni-directional runway)

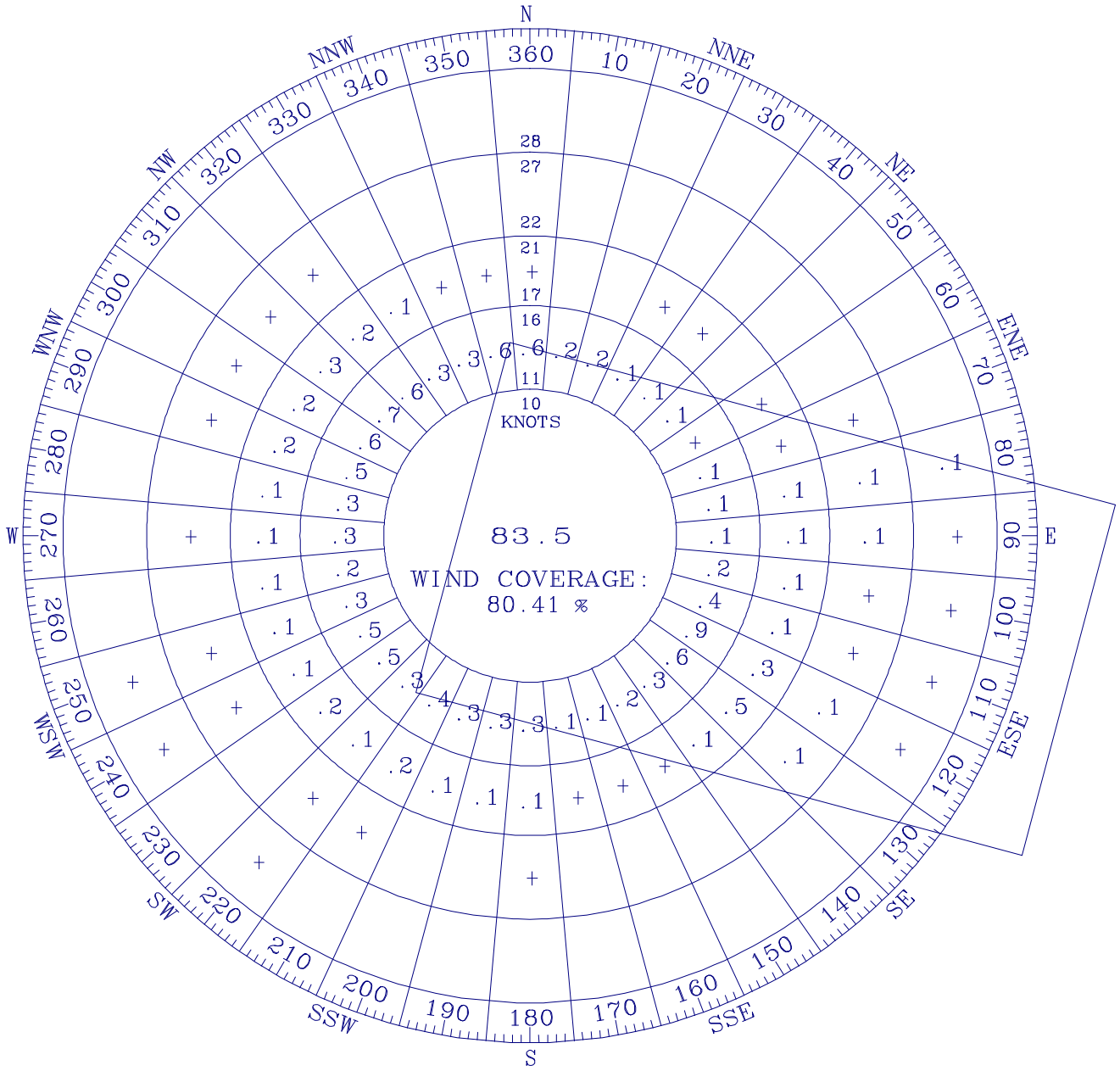


Figure A11-9. Example printout of windrose (one uni-directional runway)

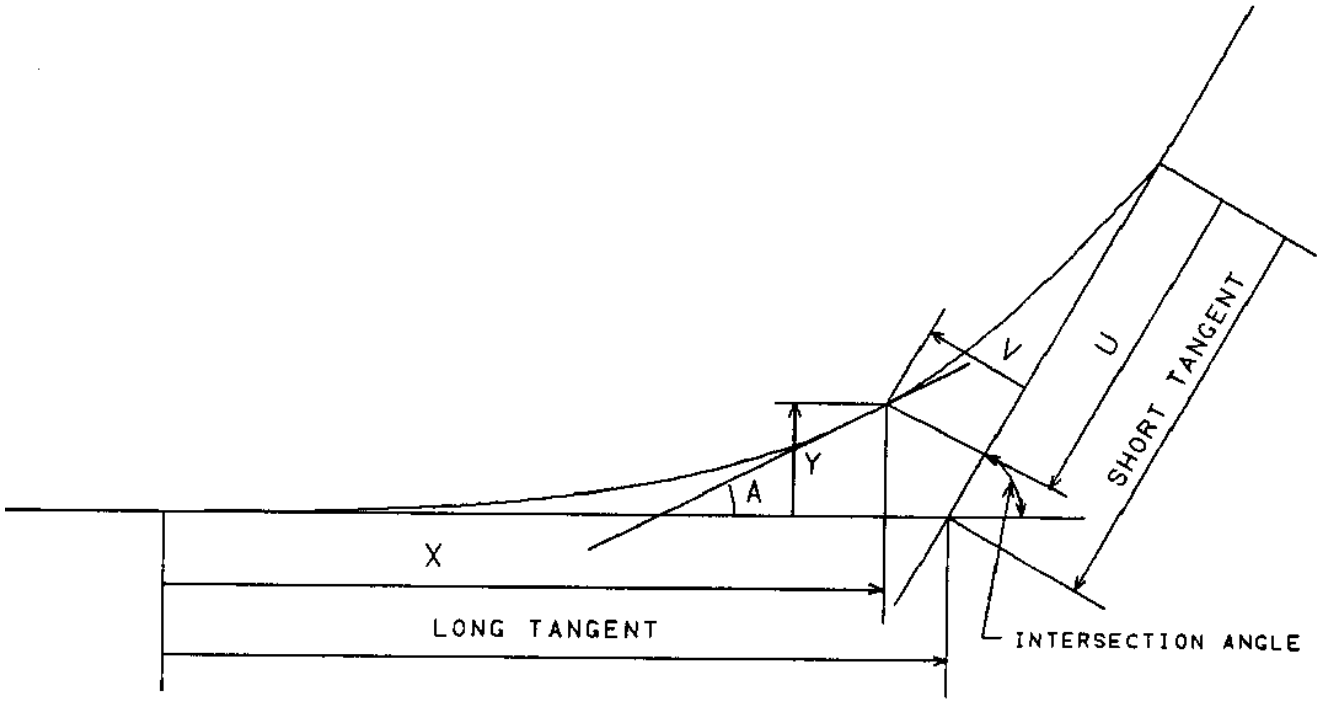


Figure A11-10. Nomenclature used in the taxiway design task

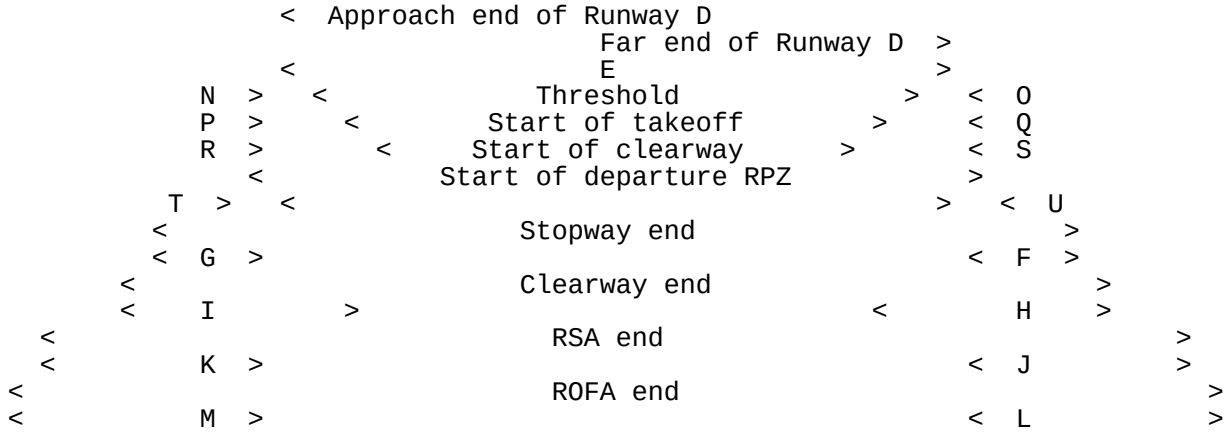


Figure A11-11. Nomenclature used in the declared distance task

Appendix 12. AIRPLANE DATA

1. BACKGROUND.

a. Airplane physical characteristics have operational and economic significance which materially affect an airport's design, development, and operation. Their consideration when planning a new airport or improving existing airport facilities maximizes their possible utilization and safety within expected demands. For example, they influence the design aspects of runways, taxiways, ramps, aprons, servicing facilities, gates, and life safety facilities. In addition, airport designers should consider anticipated growth in air traffic and the effects of near future model airplane operating weights and physical dimensions on ground operating areas.

b. Military airplanes frequently operate at civil airports. Joint-use airports should also meet the physical characteristics of military airplanes. Hence, during airport facility design, consider routine military operations such as medical evacuation, strategic deployment and dispersal, and Reserve and National Guard training missions.

c. Civil airplane versions of military counterparts are shown below.

MILITARY DESIGNATION	CIVIL DESIGNATION
C-7	DeHavilland Caribou
C-9A	McDonnell Douglas DC-9-30
C-12	Beech Huron
C-45	Twin Beech 18
C-46	Curtis-Wright Commando
C-47/R-5D	Douglas DC-3, Skytrain
C-54/R-4D	Douglas DC-4, Skymaster
C-97	Boeing Stratocruiser
C-118/R-6D	Douglas DC-6, Liftmaster
C-119	Fairchild/Republic Flying Box Car
C-121/R-7	Lockheed 749, 1049 Constellation
C-123	Fairchild/Republic Provider
C-130	Lockheed L-382 Hercules
C-131, T-29	Convair 240/340/580
C-135	Boeing 707-120B, Starlifter
C-137, VC-137B, C	Boeing 707-320B
C-140	Lockheed 1329 JetStar
C-141	Lockeed StarLifter
E-4	Boeing 747-200B
KC-10A	McDonnell Douglas, DC-10-30CF, Extender
KC-135A	Boeing 707, Stratotanker
P-3	Lockheed L-188 Electra, 185/285 Orion
T-34	Beech Mentor
T-37	Cessna 318
T-39	Rockwell International NA-265-40 Sabreliner
T-42	Beech Cochise
T-43A	Boeing 737-200
T-47A	Cessna 552
U-3	Cessna 310/T310
U-9	Aero Commander 560
U-18	DeHavilland Twin Otter

2. EXPLANATORY INFORMATION.

a. Presentation of data is in three forms:

(1) Figures A12-1 to A12-8 are representatives of general types of airplanes and not a specific model.

(2) Most figures illustrate a particular model with its specific data.

(3) Some figures present data for several similar models or series of airplanes by a single representative drawing (e.g., General Dynamics/Convair 880 and 990).

b. The alpha-symbols in the data tables and drawings use the following list of airplane physical characteristics:

Alpha-Symbol	Airplane Physical Characteristics
A	Wingspan
B	Length Overall
C	Height Overall
D	Wheelbase
E	Nose to centerline of main gear
F	Wheel track (tread)
G	Centerline of fuselage to centerline of inboard engine
H	Centerline of fuselage to centerline of outboard engine
J	Outside of main gear to wingtip
K	Vertical clearance of inboard engine or propeller at maximum weight
L	Vertical clearance of outboard engine or propeller at maximum weight
M	Centerline of fuselage to approximate pivot point based on maximum nosewheel steering angle or locked wheels
N	Vertical clearance of wingtip at maximum weight
P	Height of exhaust of jet engine on centerline of fuselage (three-engine jet airplane only)

c. Measurement of turn radius is either at maximum nosewheel steering angle or with locked wheels, whichever produces the larger radius. It is a horizontal measurement from the pivot point to the farthest point of the airplane during execution of a turn. This dimension represents a maximum effort maneuver not normally used by the airlines due to excessive tire wear. THIS DIMENSION IS NOT FOR AIRPORT FACILITY DESIGN PURPOSES. Contact the airline(s) involved for the turn radius to use for design purposes.

d. The abbreviation "SRS" denotes "series."

e. The abbreviation "NA" denotes "datum is not available."

f. The weight and dimensional information for transport type airplanes are from aircraft manufacturer publications titled "Airplane Characteristics, Airport Planning." Each airplane model has a publication that is available from its manufacturer. Since each publication has considerably more information of interest to an airport designer than assembled in this advisory circular, revisions are frequent. For example, weight and dimensional data is subject to change as a result of modifications and improvements to the airplane that differs from this advisory circular. Hence, it is advisable during airport facility planning and design to contact manufacturers of applicable airplanes.

BUILDER	MODEL	NAME	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS	B
LLANCA	7	CITABRIA	1,650 LB 748 KG	1,650 LB 748 KG	33'5" 10.19M	22'8" 6.91M	6'8" 2.03M	16'1" 4.90M	6'4" 1.93M	2		BE
ESSNA	120 140		1,450 LB 658 KG	1,450 LB 658 KG	32'10" 10.00M	21'0" 6.40M	6'3" 1.91M		6'5" 1.96M	2		C
	170		2,200 LB 998 KG	2,200 LB 998 KG	36'0" 10.97M	25'0" 7.60M	6'7" 2.00M			4		
	180 185	SKYWAGON	2,800 LB 1 270 KG	2,800 LB 1,270 KG	36'2" 11.04M	25'9" 7.85M	7'9" 2.34M		7'8" 2.31M	4	21'10" 6.65M	
	190 195		3,350 LB 1 520 KG	3,350 LB 1,520 KG	36'2" 11.04M	27'1" 8.26M	7'2" 2.16M			4		
HELIO RCRAFT	H-250 H-295	HELIO COURIER	3,400 LB 1,542 KG	3,400 LB 1,542 KG	39'0" 10.87M	31'6" 9.59M	8'10" 2.70M	23'5" 7.22M	9'0" 2.75M	6		AI
	HST-550	HELIO STALLION	5,000 LB 2 268 KG	5,100 LB 2,313 KG	41'0" 12.49M	39'7" 11.04M	9'3" 2.83M		9'8" 2.96M	11		
DEL 185 HAS MAXIMUM WEIGHTS OF 3,350 LB (1 520 KG) AND 6 SEATS.												MO
DEL 195 HAS LENGTH OF 27'4" (8.33M).												MO

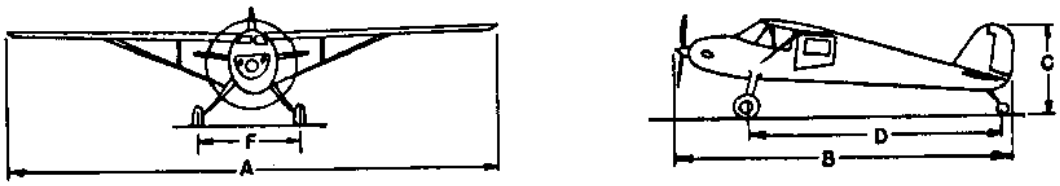


Figure A12-1. Single engine, high wing, tailwheel airplanes 8,000 lb. (3,628 Kg) or less

MFGR	MODEL	NAME	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS	BU
PIPER	PA-12, 14,15	SUPER CRUISER	1,750 LB 794 KG	1,750 LB 794 KG	35'6" 10.80M	22'6" 6.85M	6'10" 2.08M		6'3" 1.91M	3	20'8" 6.29M	P
	PA-18	SUPER CUB	1,500 LB 680 KG	1,500 LB 680 KG	35'3" 10.72M	22'5" 6.83M	6'8" 2.03M			2	20'7" 2.26M	
	PA-20	PACER	1,650 LB 748 KG	1,650 LB 748 KG	29'4" 8.90M	20'5" 6.20M	6'3" 1.91M			4		
FAIRE	8		1,400 LB 635 KG	1,400 LB 635 KG	35'0" 10.67M	20'0" 6.10M	6'3" 1.91M		6'4" 1.93M	2		SIL
FLOR- AFT	BC-12		1,150 LB 522 KG	1,150 LB 522 KG	36'0" 10.97M	22'0" 6.72M	6'8" 2.03M		6'0" 1.83M	2		TA CE
FAIR RAFT	108	VOYAGER	2,150 LB 975 KG	2,150 LB 975 KG	33'11" 10.34M	24'6" 7.46M	6'10" 2.08M	18'7" 5.66M	7'1" 2.16M	4	20'6" 2.24M	UNI AIRC

1: MODEL PA-20 MAY HAVE MAXIMUM WEIGHTS OF 1,800 LB (816 KG). NOTE

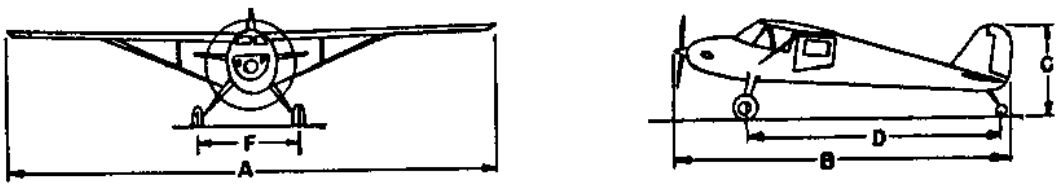
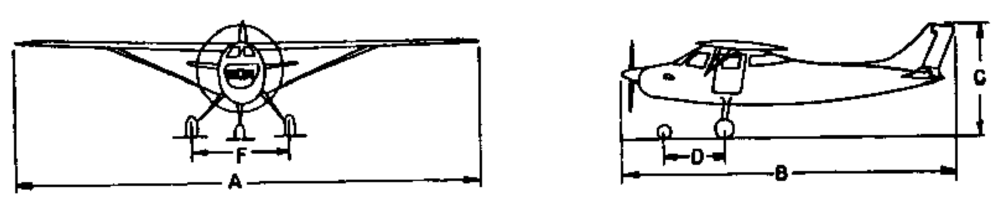


Figure A12-2. Single engine, high wing, tailwheel airplanes 8,000 lb. (3,628 Kg) or less (cont'd)

BUILDER	MODEL	NAME	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
BEDE AIRCRAFT	BD-4		1,400 LB 635 KG	1,400 LB 635 KG	25'6" 7.77M	21'11" 6.68M	6'3" 1.91M		8'3" 2.51M	4	
CESSNA	150		1,600 LB 726 KG	1,600 LB 726 KG	32'9" 9.98M	23'10" 7.26M	8'0" 2.44M	4'10" 1.48M	6'7" 2.01M	2	19'10" 6.05M
	172	SKYHAWK	2,300 LB 1 043 KG	2,300 LB 1 043 KG	35'10" 10.93M	26'11" 8.20M	8'10" 2.84M	5'4" 1.63M	7'2" 2.23M	4	19'8" 6.00M
	177	CARDINAL	2,500 LB 1 134 KG	2,500 LB 1 134 KG	35'6" 10.82M	27'2" 8.28M	8'6" 2.59M	6'5" 1.96M	8'4" 2.54M	4	
	182	SKYLANE	2,950 LB 1 338 KG	2,950 LB 1 338 KG	35'10" 10.93M	28'1" 8.56M	8'11" 2.72M	5'7" 1.70M	8'0" 2.44M	4	21'4" 6.50M
	206	STATIONAIR	3,600 LB 1 633 KG	3,600 LB 1 633 KG	35'10" 10.93M	28'0" 8.53M	9'8" 2.95M	6'11" 2.11M	8'2" 2.49M	6	
	207	SUPER SKYWAGON	3,800 LB 1 724 KG	3,800 LB 1 724 KG	35'10" 10.93M	31'9" 9.68M	9'7" 2.92M		10'0" 3.04M	6	
	210	CENTURION	3,800 LB 1 724 KG	3,800 LB 1 724 KG	36'9" 11.20M	28'3" 8.61M	9'8" 2.95M	5'9" 1.76M	8'6" 2.59M	6	22'5" 6.84M
PIPER	PA-22	TRI-PACER	1,800 LB 816 KG	1,800 LB 816 KG	29'4" 8.97M	20'4" 6.20M	6'3" 1.91M			3	19'11" 6.07M

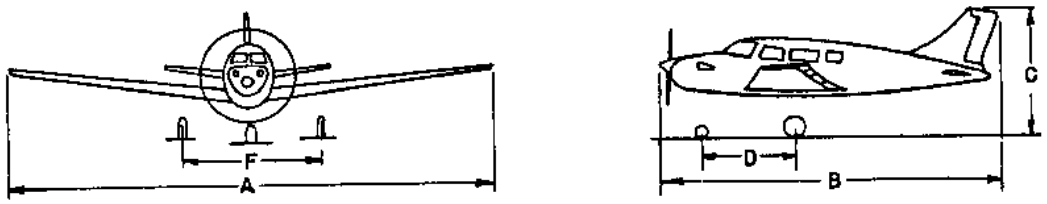


Error!Figure A12-3. Single engine, high wing, tricycle gear airplanes 8,000 lb. (3,628 Kg) or less

ILDER	MODEL	NAME	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS	BU
OSTAR ATION	415	ERCOUPE	1,450 LB 658 KG	1,450 LB 658 KG	30'0" 9.14M	20'7" 6.27M	6'3" 1.91M	5'4" 1.63M	7'9" 2.36M	2	18'9" 5.71M	AER AVI
	M-20		2,525 LB 1 145 KG	2,525 LB 1 145 KG	35'0" 10.67M	23'7" 7.06M	8'4" 2.54M	5'7" 1.70M	9'1" 2.77M	4	22'1" 6.72M	
	M-22	MARK 22	3,680 LB 1 669 KG	3,680 LB 1 669 KG	35'0" 10.67M	27'0" 8.23M	9'10" 3.00M	8'3" 2.51M	11'0" 3.35M	5		
ECH-AFT	23	MUSKETEER	2,450 LB 1 111 KG	2,200 LB 998 KG	32'9" 9.98M	25'0" 7.62M	8'3" 2.51M	6'4" 1.91M	11'10" 3.61M	4		BE CR
	V-35B	BONANZA	3,400 LB 1 542 KG	3,400 LB 1 542 KG	33'6" 10.21M	26'5" 8.05M	6'7" 2.01M	7'0" 2.13M	9'7" 2.92M	4	21'6" 6.55M	
	F-33	BONANZA	3,050 LB 1 383 KG	3,050 LB 1 383 KG	32'10" 10.00M	25'6" 7.77M	8'3" 2.51M	7'5" 2.26M	9'7" 2.92M	5	21'3" 6.48M	
	F-33A	BONANZA	3,400 LB 1 542 KG	3,400 LB 1 542 KG	33'6" 10.21M	26'8" 8.13M	8'3" 2.51M	7'5" 2.26M	9'7" 2.92M	5	21'3" 6.48M	
LANCA	260 300	VIKING	3,000 LB 1 361 KG	3,000 LB 1 361 KG	24'2" 10.41M	23'6" 7.15M	7'4" 2.23M	6'8" 2.03M	9'0" 2.75M	4		DEL

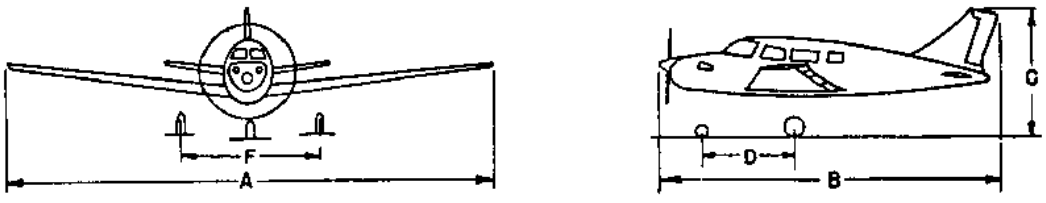
E: MODEL M-20 MAY BE KNOWN AS: CHAPARRAL, EXECUTIVE, MUSTANG, RANGER, STATESMAN.

NOT



Error!Figure A12-4. Single engine, low wing, tricycle gear airplanes 8,000 lb. (3,628 Kg) or less

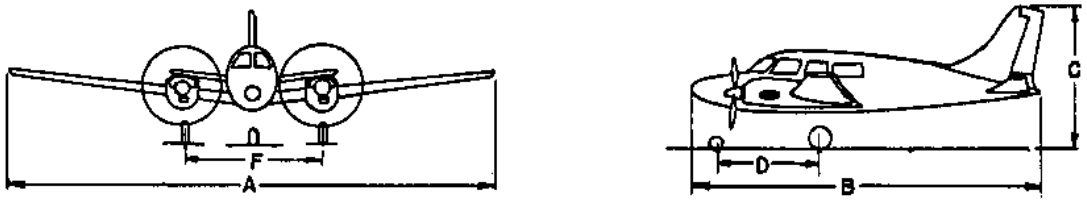
BUILDER	MODEL	NAME	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS	S
BUMHAN	AA-1	YANKEE	1,500 LB 680 KG	1,500 LB 680 KG	24'6" 7.47M	19'3" 5.87M	6'10" 2.08M	4'5" 1.35M	8'3" 2.51M	2		G
AVION	G-1	RANGE-MASTER	3,315 LB 1 504 KG	3,150 LB 1 489 KG	34'9" 10.59M	27'6" 8.38M	8'4" 2.54M	5'8" 1.74M	8'9" 2.67M	4		M
PIPER	PA-24	COMMANCHE	2,550 LB 1 157 KG	2,550 LB 1 157 KG	36'0" 10.97M	24'9" 7.54M	7'3" 2.25M	6'7" 2.01M	9'8" 2.94M	4	22'10" 6.96M	
	PA-28-180	CHEROKEE	2,400 LB 1 089 KG	2,400 LB 1 089 KG	30'0" 9.14M	23'6" 7.16M	7'4" 2.22M	6'3" 1.89M	10'0" 3.04M	4	20'0" 6.08M	
	PA-28-200	CHEROKEE ARROW	2,600 LB 1 179 KG	2,600 LB 1 179 KG	30'0" 9.14M	24'2" 7.37M	8'0" 2.44M	7'5" 2.26M	10'6" 3.20M	5	20'3" 6.17M	
	PA-32	CHEROKEE SIX	3,400 LB 1 542 KG	3,400 LB 1 542 KG	32'10" 10.00M	27'9" 8.45M	7'11" 2.41M	7'10" 2.39M	10'7" 3.22M	6	21'9" 6.63M	
CNWELL TERNAT.	112		2,475 LB 1 127 KG	2,475 LB 1 127 KG	35'0" 10.67M	27'2" 8.28M	10'1" 3.07M		7'2" 2.18M	4		RO IN



Error!Figure A12-5. Single engine, low wing, tricycle gear airplanes 8,000 lb. (3,628 Kg) or less (cont'd)

JILDER	MODEL	NAME	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
ROSTAR	600	AEROSTAR	5,500 LB	5,500 LB	34'3"	34'10"	12'2"		10'3"	5	
IATION	601		2 495 KG	2 495 KG	10.44M	10.62M	3.71M		3.12M		
ECH-	B-55	BARRON	5,100 LB	5,100 LB	37'10"	28'0"	9'2"	7'0"	7'0"	4	23'8"
AFT			2 313 KG	3 313 KG	11.53M	8.53M	2.79M	2.13M	2.13M		7.21M
	E-55	BARRON	5,300 LB	5,300 LB	37'10"	29'0"	9'2"	8'0"	8'0"	4	23'8"
			2 404 KG	2 404 KG	11.53M	8.88M	2.79M	2.44M	2.44M		7.21M
	B-60	DUKE	6,775 LB	6,775 LB	39'3"	33'10"	12'4"	9'3"	11'0"	6	
			3 073 KG	3 073 KG	11.96M	10.32M	3.76M	2.82M	3.35M		
SSNA	310		5,100 LB	5,100 LB	37'6"	29'7"	9'11"	9'6"	12'0"	6	24'0"
			2 313 KG	2 313 KG	11.43M	9.02M	3.03M	2.90M	3.66M		7.31M

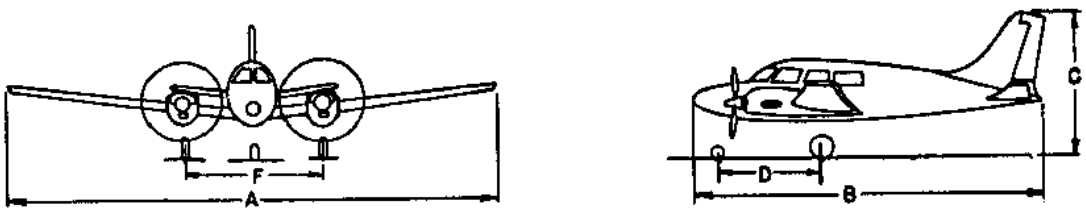
E: E-55 TURBO HAS MAXIMUM WEIGHTS OF 5,900 LB (2 676 KG).
310 TURBO HAS MAXIMUM WEIGHTS OF 5,500 LB (2 495 KG).



Error!Figure A12-6. Twin engine, low or mid wing, tricycle gear airplanes 8,000 lb. (3,628 Kg) or less

ILDER	MODEL	NAME	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS	BU
SSNA	401, 402, 421	TWIN CESSNA	6,300 LB 2 858 KG	6,200 LB 2 812 KG	39'10" 12.27M	36'2" 11.02M	11'8" 3.56M	10'6" 3.20M	14'8" 4.47M	6		CE
IPER	PA-23-160	APACHE	3,800 LB 1 724 KG	3,800 LB 1 724 KG	37'2" 11.32M	27'5" 8.34M	9'6" 2.87M	7'6" 2.28M	11'0" 3.35M	5	24'0" 7.31M	P
	PA-23-250	AZTEC	4,800 LB 2 177 KG	4,800 LB 2 177 KG	37'0" 11.27M	27'7" 8.42M	10'4" 3.15M	7'6" 2.28M	11'4" 3.45M	6	24'0" 7.31M	
	PA-30	TWIN COMMANCHE	3,600 LB 1 633 KG	3,600 LB 1 633 KG	36'0" 10.97M	25'2" 7.67M	8'3" 2.51M	7'4" 2.23M	9'10" 2.98M	4	22'8" 6.90M	
	PA-31	NAVAJO	6,200 LB 2 812 KG	6,200 LB 2 812 KG	40'8" 12.40M	32'8" 9.94M	13'0" 3.96M	8'8" 2.64M	13'9" 4.19M	7	27'3" 8.32M	

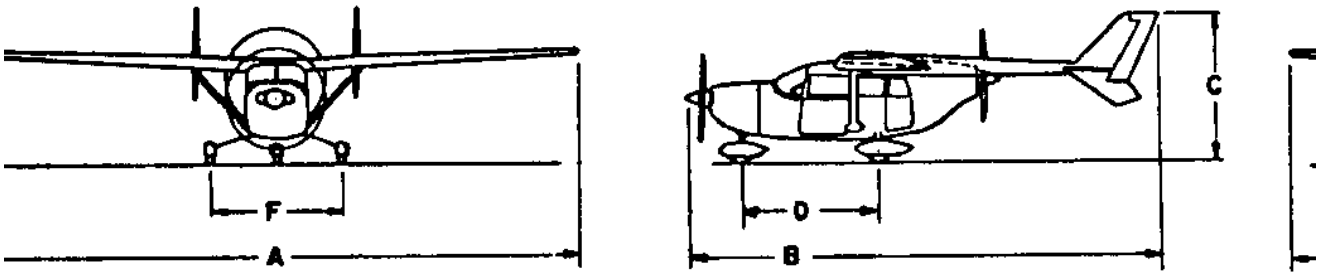
E: MODEL (421) HAS OPTIONAL TAKEOFF WEIGHT OF 6,350 LB (2 880 KG).
(421B) 7,450 LB (3 379 KG). MOI



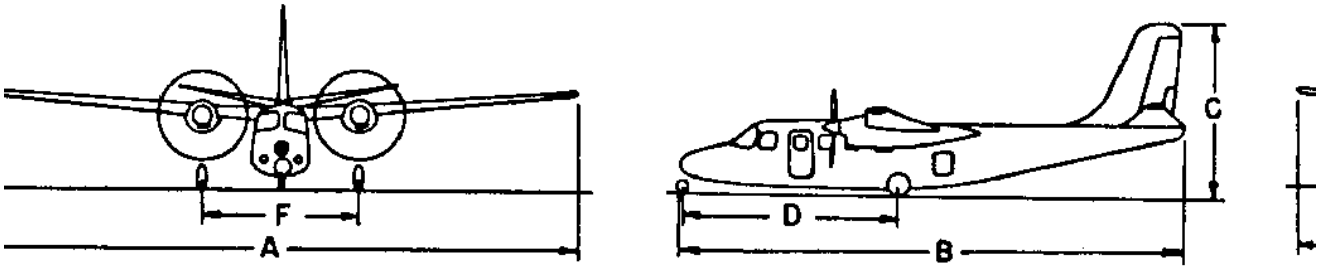
Error!Figure A12-7. Twin engine, low or mid wing, tricycle gear airplanes 8,000 lb. (3,628 Kg) or less (cont,d)

BUILDER	MODEL	NAME	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
CESSNA	336 337	SUPER SKYMASTER	4,630 LB 2 100 KG	4,400 LB 1 996 KG	38'2" 11.85M	29'10" 9.10M	9'4" 2.85M	7'10" 2.39M	8'2" 2.48M	4	
ROCKWELL INTERNAT.	500	AERO COMMANDER	6,500 LB 2 948 KG	6,500 LB 2 948 KG	49'6" 15.09M	35'1" 10.69M	14'6" 4.42M		12'11" 3.94M	7	31'2" 9.50M
	560, 680	GRAND	7,700 LB	7,700 LB	49'1"	36'7"	14'6"	14'0"	12'11"	7	
	SHRIKE	SHRIKE CDR	3 493 KG	3 493 KG	14.96M	11.15M	4.42M	4.28M	3.94M		

NOTE: SHRIKE COMMANDER HAS MAXIMUM WEIGHTS OF 6,750 LB (3 062 KG).
MODEL 681, TURBO II, HAWK COMMANDER HAS WINGSPAN OF 44'0" (13.41M) AND MAXIMUM WEIGHTS OF 9,400 LB (4 264 KG); OTHERWISE AS MODEL 560.



CESSNA SUPER SKYMASTER.



ROCKWELL INTERNATIONAL AERO COMMANDER SERIES.

Error!**Figure A12-8. Twin engine, high or mid wing, tricycle gear airplanes 8,000 lb. (3,628 Kg) or less**

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
MOHAWK 298	23,480 LB 10 653 KG	22,710 LB 10 301 KG	71'11" 21.92M	63'4" 19.30M	20'5" 6.22M	23'9" 7.24M	29'9" 9.07M	10'3" 3.12M	9'8" 2.95M	30'5" 9.27M	5'5" 1.65M	5.2" 1.60M	12'6" 3.84M	41'1" 12.52M

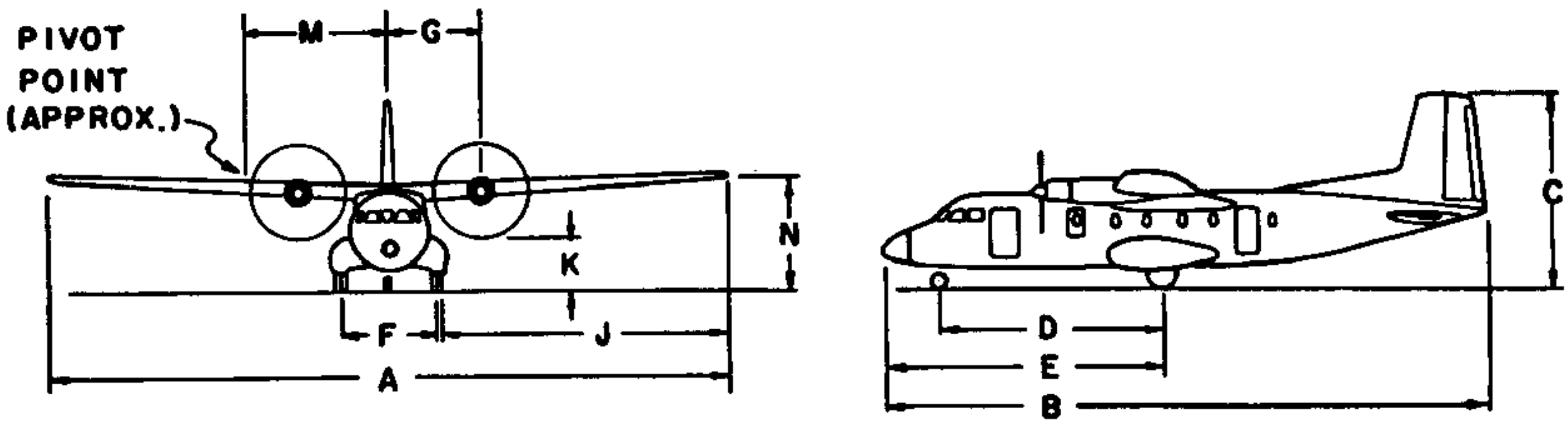
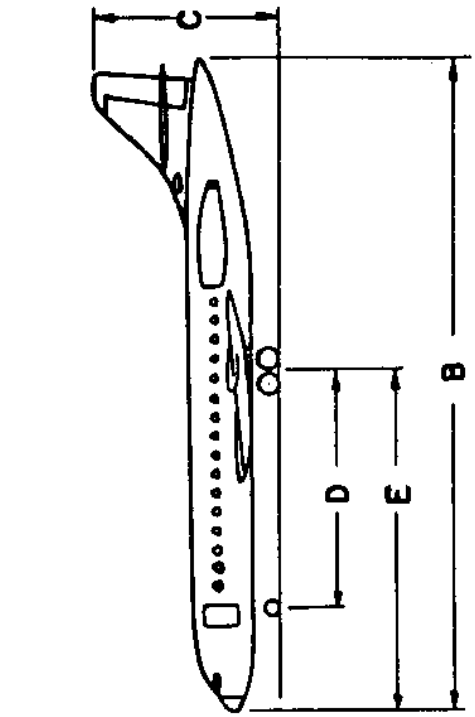


Figure A12-9. Aérospatiale Nord 262

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	N	M	TURN RADIUS
CARAVELLE	114,640 LB 52 000 KG	104,990 LB 47 623 KG	112'6" 34.29M	105'0" 32.00M	28'7" 8.72M	38'6" 11.74M	55'6" 16.92M	17'1" 5.21M	7'10" 2.39M	46'7" 14.20M	7'2" 2.18M	33'2" 10.11M	7'5" 2.26M	90'3" 27.51M



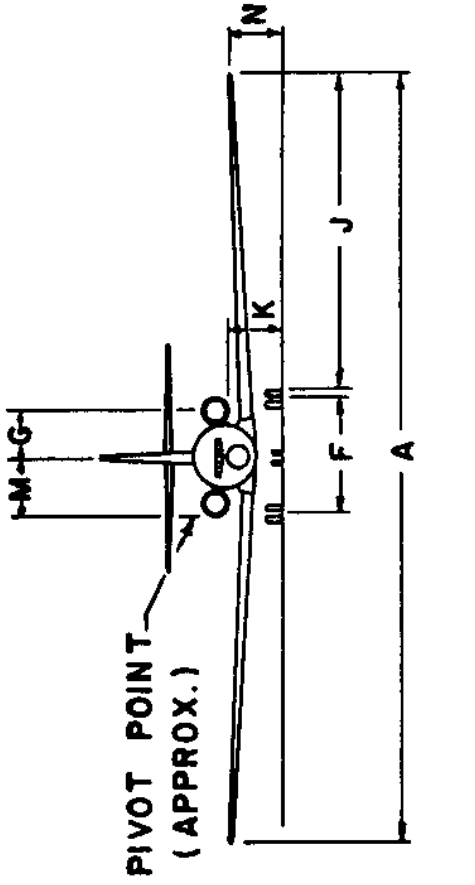


Figure A12-10. Aérospatiale/Sud SE-210 Caravelle

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
A-300 -B2	302,000 LB 136 985 KG	281,000 LB 127 459 KG	147'1" 44.83M	175'6" 53.49M	55'6" 16.92M	60'10" 18.54M	82'8" 25.20M	31'6" 9.60M	26'0" 79.2M	55'10" 17.02M	2'7" 0.79M	37'3" 11.35M	19'4" 5.89M	113'6" 34.59M
A-300 -B4	330,700 LB 150 003 KG	293,200 LB 132 993 KG	147'1" 44.83M	175'6" 53.49M	55'6" 16.92M	60'10" 18.54M	82'8" 25.20M	31'6" 9.60M	26'0" 7.92M	55'5" 16.89M	2'7" 0.79M	37'3" 11.35M	19'4" 5.89M	113'6" 34.59M
A-300 -600	363,763 LB 165 000 KG	304,238 LB 138 000 KG	147'1" 44.83M	177'6' 54.08M	54'8" 16.66M	61'1" 18.26M	82'11" 25.27M	31'6" 9.60M	26'0" 7.92M	55'5" 16.89M	3'3" 0.98M	37'11" 11.55M	18'9" 5.70M	109'3" 33.31M
A-310 -300	330,693 LB 150 000 KG	271,169 LB 123 000 KG	144'1" 43.90M	153'2" 46.67M	52'4" 15.95M	49'11" 15.21M	71'9" 21.87M	31'6" 9.60M	25'3" 7.70M	54'2" 16.51M	2'2" 0.65M	34'2" 10.41M	16'11" 5.17M	108'2" 32.97M
A-320 -100	145,505 LB 66 000 KG	134,482 LB 61 000 KG	111'3" 39.91M	123'3" 37.57M	39'1" 11.91M	41'6" 12.64M	58'1" 17.70M	24'11" 7.59M	18'10" 5.74M	40'10" 12.45M	1'10" 0.55M	15'1" 4.61M	13'5" 4.08M	72'3" 21.99M

NOTE: A-310-200 HAS OPTIONAL (TAKEOFF) WEIGHT OF 305,560 LB (138 610 KG) AND 313,055 LB (141 999 KG).
(LANDING) 268,965 LB (122 000 KG).

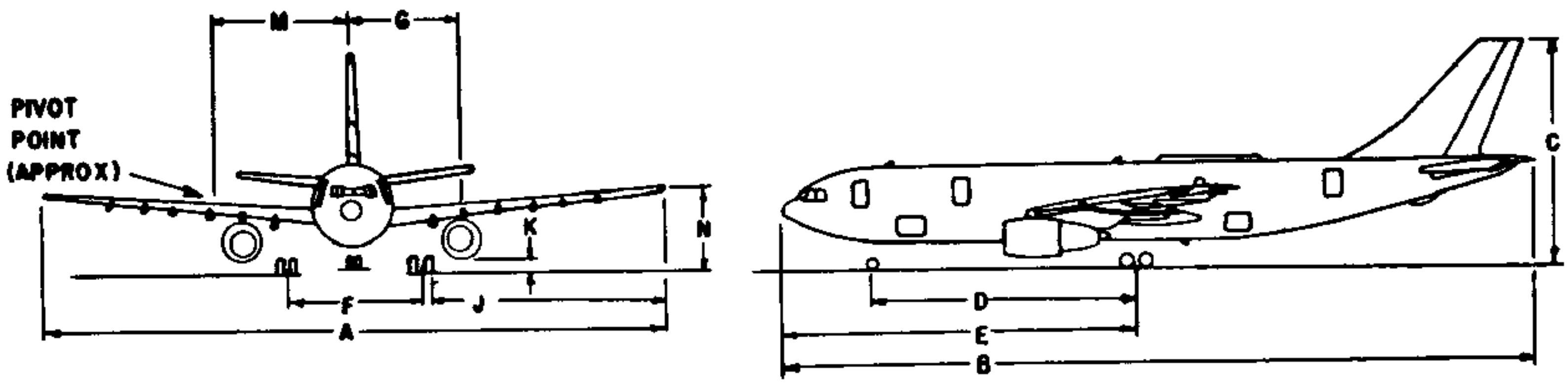
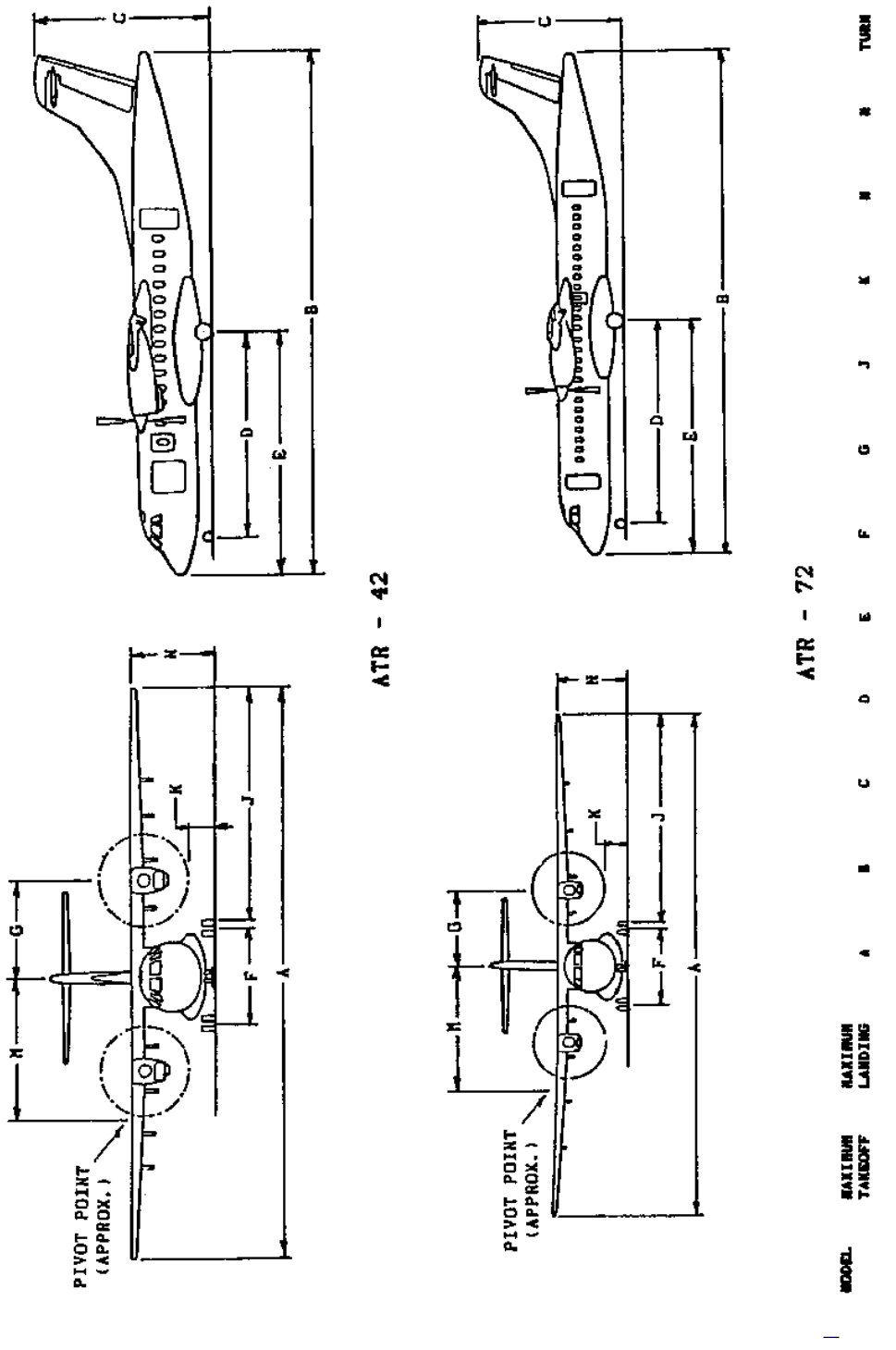


Figure A12-11. Airbus Industries A300, 310, and 320



MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
ATR-42 200	34,725 LB 15 751 KG	34,170 LB 15 499 KG	80'7" 24.56M	74'5" 22.68M	25'5" 7.75M	28'10" 8.79M	34'4" 10.46M	13'5" 4.09M	13'3" 4.04M	32'5" 9.88M	3'6" 1.07M	16'8" 5.08M	12'1" 3.68M	57'1" 17.40M
ATR-42 300	35,605 LB 16 150 KG	35,275 LB 16 000 KG	80'7" 24.56M	74'5" 22.68M	25'5" 7.75M	28'10" 8.79M	34'4" 10.46M	13'5" 4.09M	13'3" 4.04M	32'5" 9.88M	3'6" 1.07M	16'8" 5.08M	12'1" 3.68M	57'1" 17.40M
ATR-72	44,070 LB 19 990 KG	43,870 LB 19 899 KG	88'9" 27.05M	89'2" 27.18M	25'1" 7.65M	35'1" 10.69M	40'11" 12.47M	13'5" 4.09M	13'3" 4.04M	36'6" 11.13M	3'6" 1.07M	20'5" 6.22M	12'3" 3.73M	64'10" 19.76M

Figure A12-12. Avions de Transport Regional ATR-42 & -72

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	N	M	TURN RADIUS
10	18,740 LB 8 500 KG	17,640 LB 8 001 KG	42'11" 13.08M	45'6" 13.87M	15'1" 4.60M									
20	28,660 LB 13 000 KG	27,320 LB 12 392 KG	53'6" 16.31M	56'3" 17.14M	17'5" 5.31M	18'10" 5.74M		12'2" 3.71M	5'6" 1.68M	18'11" 5.77M	5'8" 1.72M	15'3" 4.65M	4'10" 1.47M	42'0" 12.80M
50	37,480 LB 17 001 KG	35,715 LB 16 200 KG	61'11" 18.87M	60'9" 18.52M	22'11" 6.98M	23'9" 7.24M		13'1" 3.99M						
200	30,650 LB 13 903 KG	28,800 LB 13 063 KG	53'6" 16.31M	56'3" 17.14M	17'5" 5.31M									
900	45,500 LB 20 638 KG	42,000 LB 19 051 KG	63'5" 19.33M	66'3" 20.19M	24'10" 7.57M									

NOTE: MODEL 50 HAS OPTIONAL MAXIMUM TAKEOFF WEIGHT OF 40,780 LB (18 497 KG).

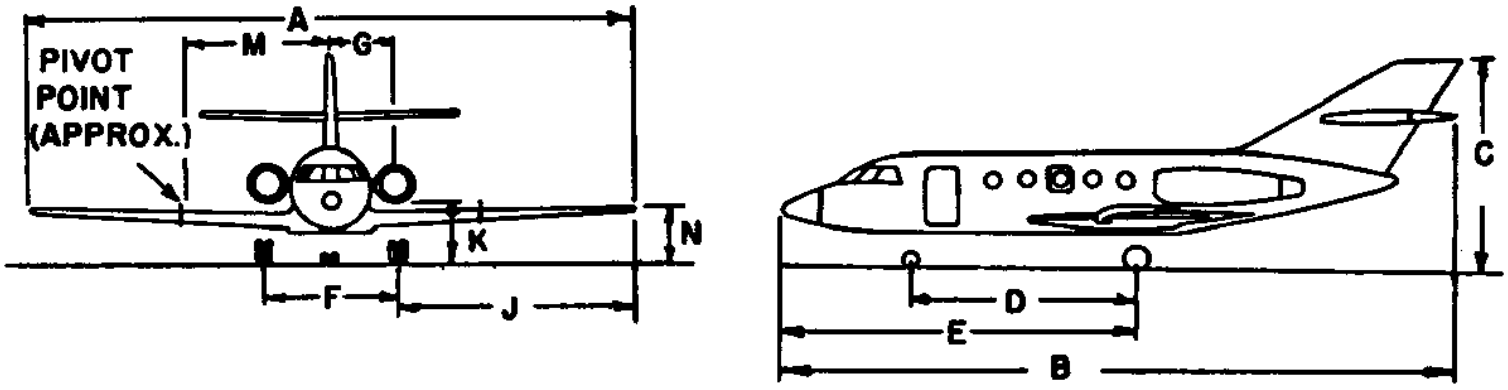
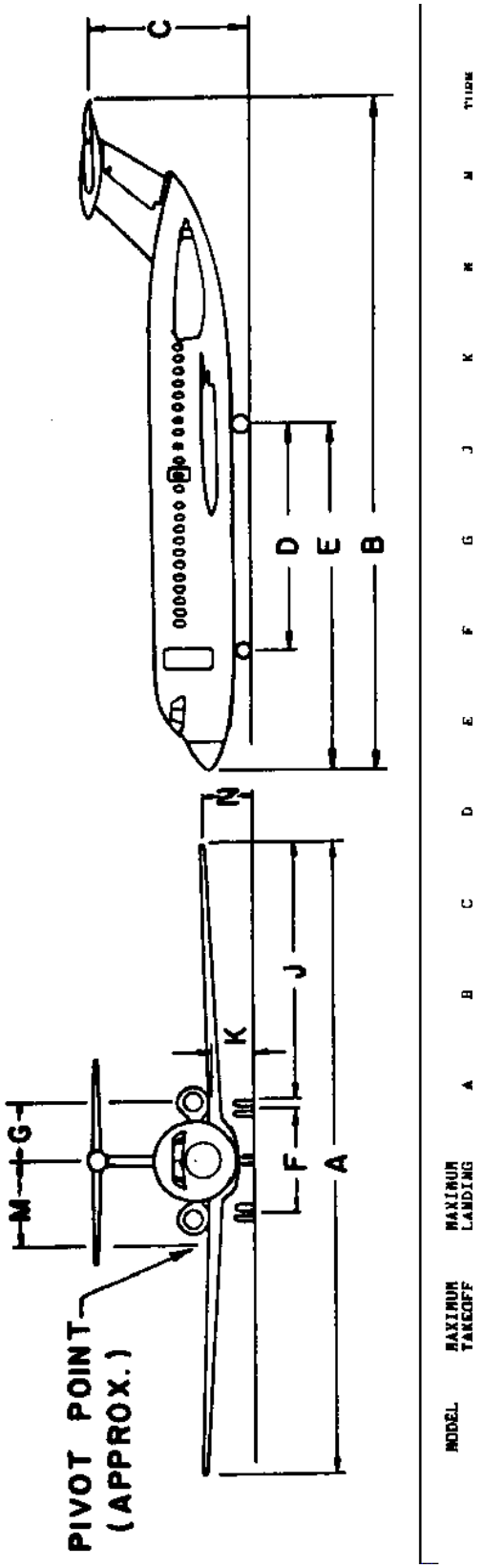


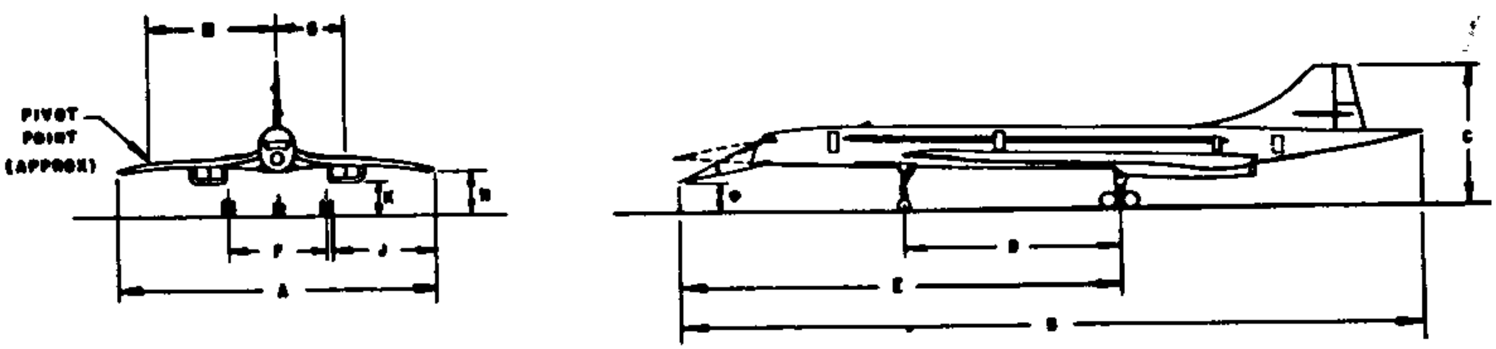
Figure A12-13. Avions Marcel Dassault Mystère 20 (Fan Jet Facon)



MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	TIRE RADIUS
200	79,000 LB 35 834 KG	69,000 LB 31 298 LB	88'6" 26.97M	93'6" 28.48M	24'6" 7.46M	33'1" 10.15M	48'5" 14.49M	14'3" 4.34M	8'2" 2.49M	35'9" 10.90M	6'7" 2.01M	7'8" 2.34M	7'4" 2.24M	52'6" 15.95M
400														
500	104,500 LB 47 400 KG	86,000 LB 39 009 KG	93'6" 28.49M	107'0" 32.61M	24'6" 7.46M	41'5" 12.35M	56'9" 17.30M	14'3" 4.34M	8'2" 2.49M	42'8" 13.00M	6'7" 2.01M	7'8" 2.34M	7'4" 2.24M	

SBS 400 HAS MAXIMUM (TAKEOFF) WEIGHT OF 87,000 LB (39 463 KG).
78,000 LB (35 380 KG).
(LANDING)

Figure A12-14. BAe 1-11



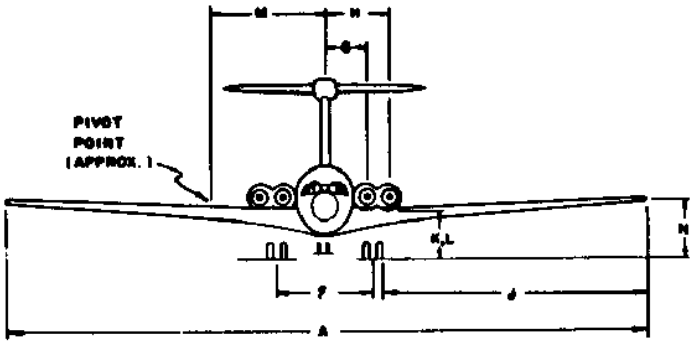
MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
CONCORDE	408,000 LB 185 066 KG	245,000 LB 111 130 KG	83'10" 25.55M	205'5" 62.61M	37'5" 11.40M	59'8" 18.19M	122'10" 37.44M	25'4" 7.72M	18'1" 5.51M	27'3" 8.31M	6'1" 1.85M	32'5" 9.88M	8'6" 2.59M	127'0" 38.71M

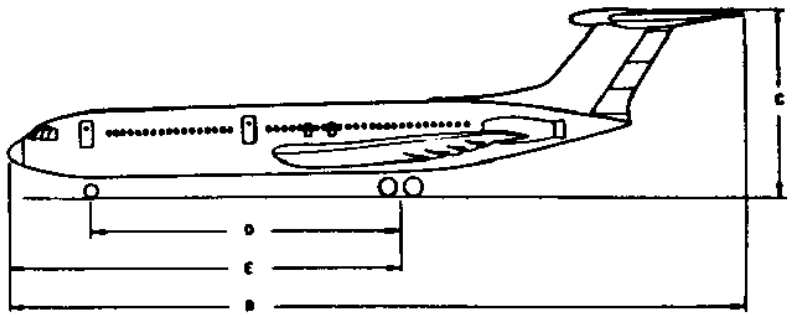
*TIP OF PROBE, NOSE FULLY LOWERED 8'6" (2.59M).

Error!Figure A12-15. B.A.C./SNIAS Concorde

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
VC-10 -1100	312,000 LB 141 521 KG	216,000 LB 97 976 KG	146'2" 44.60M	158'9" 48.39M	39'6" 12.04M	65'10" 20.06M								21'5" 6.53M
VC-10 -1150	335,100 LB 151 999 KG	237,000 LB 107 501 KG	146'2" 44.60M	171'8" 52.32M	39'6" 12.04M	72'1" 21.97M								21'5" 6.53M

SRS 1150 KNOWN AS VC-10 SUPER.





MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
745	64,500 LB 29 257 KG	57,500 LB 26 082 KG	93'9" 28.57M	81'10" 24.94M	26'9" 8.15M	25'3" 7.70M	35'8" 10.87M	23'10" 7.32M	12'9" 3.88M		33'9" 10.29M	1'1" 0.33M		20'10" 6.56M	8'7" 2.62M	67'8" 20.62M
810	72,500 LB 32 885 KG	62,000 LB 28 123 KG	94'0" 28.65M	85'8" 25.83M	26'10" 8.18M	29'1" 8.86M	39'6" 12.04M	23'10" 7.32M	12'9" 3.88M		33'9" 10.29M	1'1" 0.33M		24'5" 7.39M	8'7" 2.62M	71'3" 21.72M

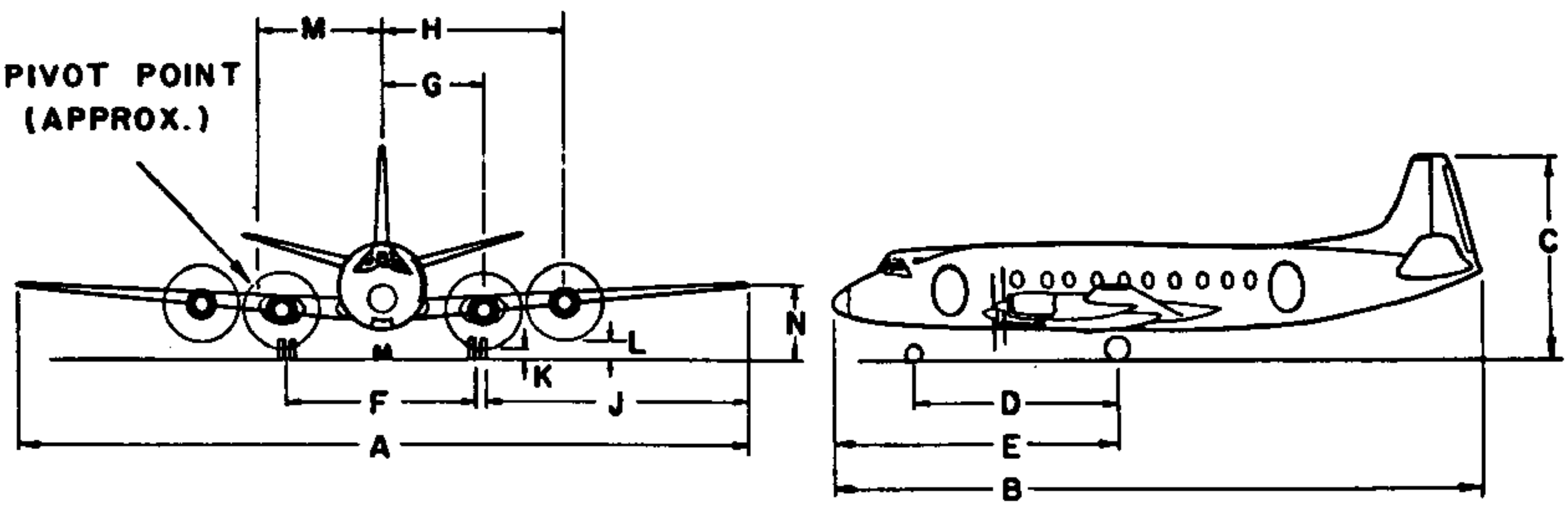


Figure A12-17. B.A.C./Vickers Viscount

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
1	14,000 LB 6 350 KG	13,300 LB 6 033 KG	54'5" 16.59M	46'1" 14.05M	12'11" 3.94M	22'6" 6.86M	28'8" 8.74M	16'10" 5.13M	4'10' 1.47M	18.1" 5.51M	2'11" 0.89M		4'6" 1.37M	

NOTE: FORWARD WING SPAN:
AFT POSITION 20'11" (6.38M).
FORWARD POSITION 24'11" (7.59M).

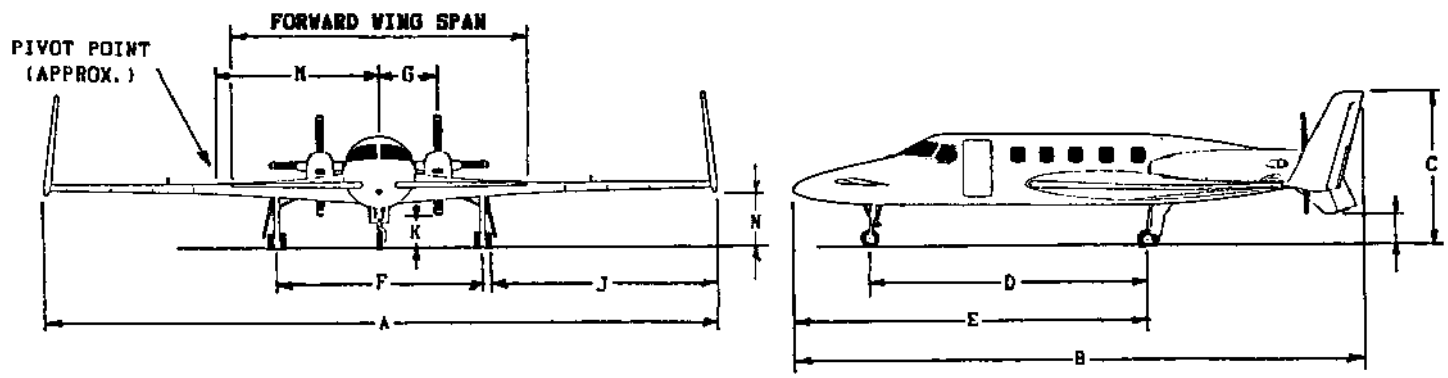
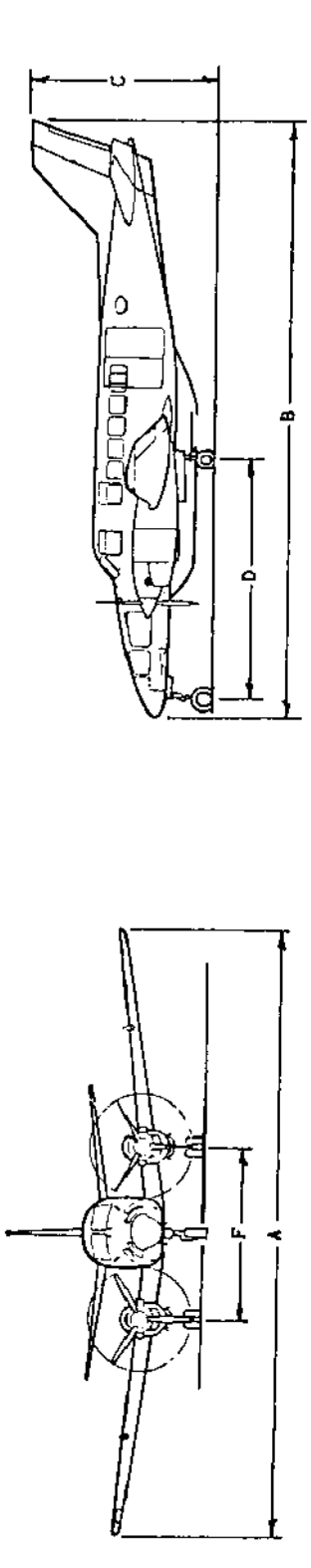
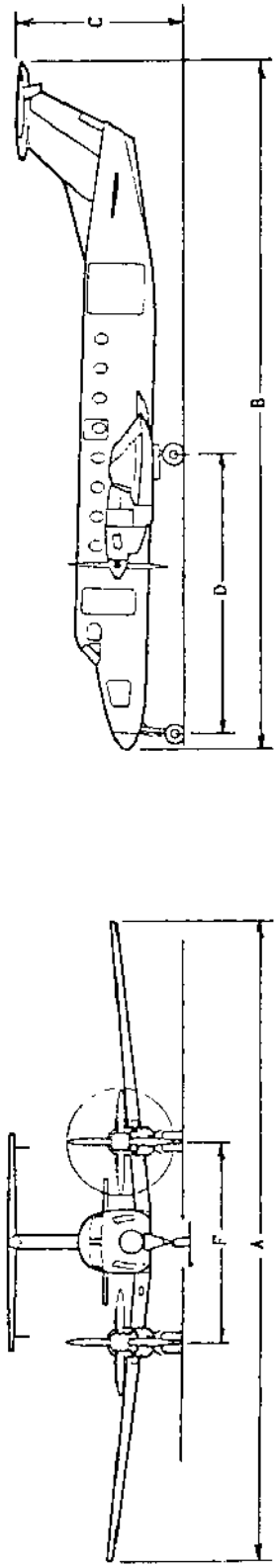


Figure A12-18. Beech Starship

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
C99	11,300 LB	11,300 LB	45'11"	44'7"	14'5"	18'0"	13'0"	17	40'0"
	5 126 KG	5 126 KG	14.00M	13.59M	4.39M	5.49M	3.97M		12.19M
1900	16,600 LB	16,100 LB	54'6"	57'10"	14'11"	23'10"	17'2"	19	39'4"
	7 530 KG	7 303 KG	16.61M	17.63M	4.55M	7.26M	5.23M		11.99M



C 99 AIRLINER



1900 AIRLINER

Figure A12-19. Beechcraft Airliner

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
A-90	9,650 LB 4 391 KG	9,500 LB 4 323 KG	50'3" 15.32M	36'6" 11.14M	14'8" 4.47M	12'4" 3.76M	12'9" 3.89M	8	
A-100	10,600 LB 4 823 KG	10 500 LB 4 778 KG	45'11" 14.00M	39'11" 12.18M	15'4" 4.67M	14'11" 4.55M	13'0" 3.97M	10	

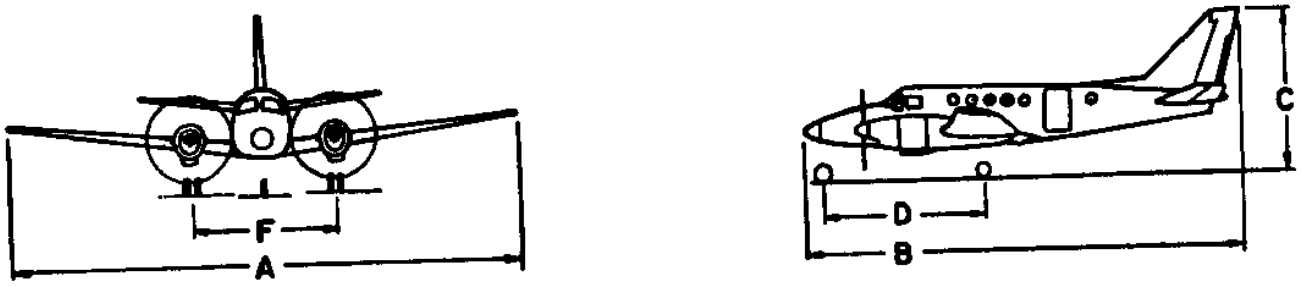


Figure A12-20. Beechcraft King Air

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
18	9,900 LB 4 500 KG	9,500 LB 4 323 KG	49'8" 15.14M	35'3" 10.74M	9'4" 2.87M	23'9" 7.24M	12'11" 3.94M	10	30'3" 9.53M
TURBO 18	10,280 LB 4 673 KG	9,775 LB 4 444 KG	46'0" 14.03M	37'5" 11.40M	9'7" 2.95M			12	
VOLPAR TURBOLINER	11,500 LB 5 324 KG	11,000 LB 5 000 KG	46'0" 14.03M	44'3" 13.49M	9'7" 2.95M			15	

NOTES: MODEL 18 HAS RECIPROCATING ENGINES.
TURBOPROP CONVERSIONS HAVE TRICYCLE LANDING GEAR.

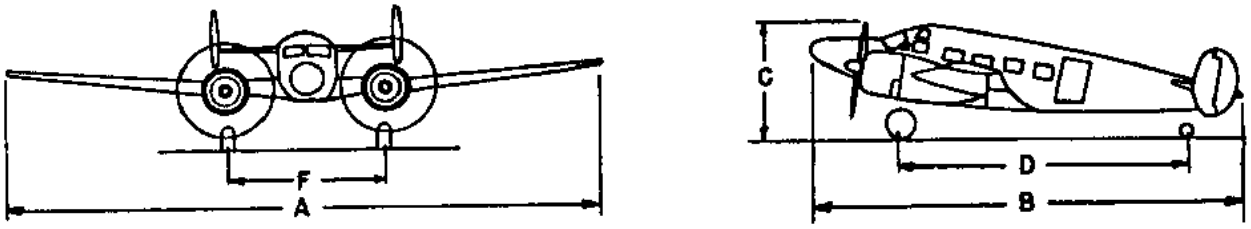


Figure A12-21. Beechcraft Model 18 and Conversions

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
A-65	7,700 LB 3 493 KG	7,350 LB 3 334 KG	45'11" 14.00M	35'6" 10.83M	14'3" 4.34M	12'4" 3.76M	12'9" 3.89M	6	29'4" 8.94M
B-80	8,800 LB 3 992 KG	8,800 LB 3 992 KG	50'3" 15.31M	35'6" 10.83M	14'3" 4.34M	12'4" 3.76M	12'9" 3.89M	8	29'4" 8.94M

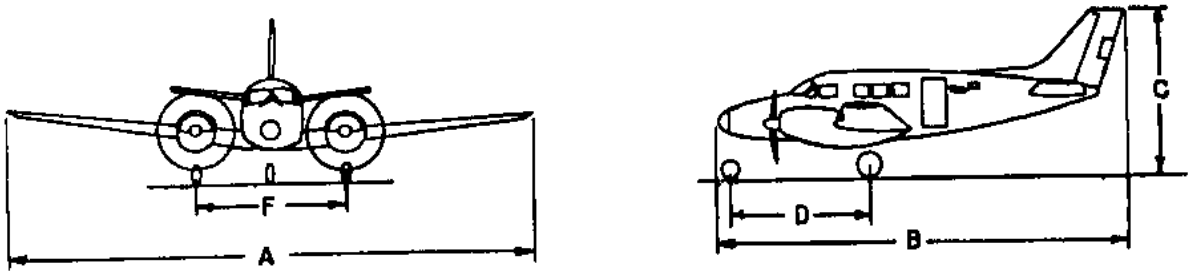
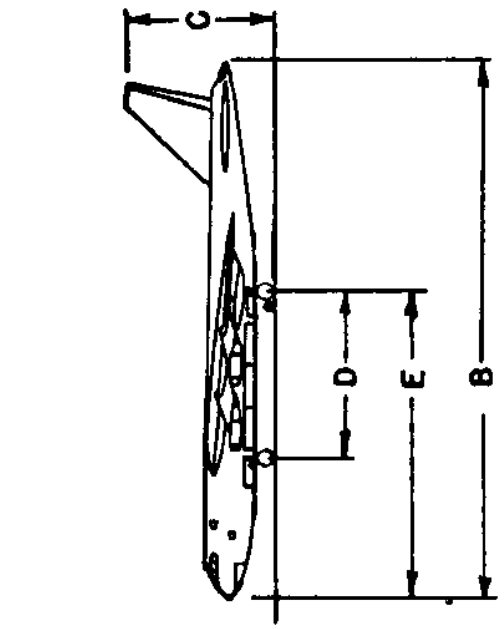


Figure A12-22. Beechcraft Queen Air

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	N	M	TURN RADIUS
STRATO-FORTRESS	488,000 LB 221 353 KG	450,000 LB 204 117 KG	185'0" 56.39M	156'7" 47.73M	40'10" 12.45M	49'9" 15.16M	89'10" 17.16M	11'4" 3.45M	32'2" 9.80M	60'0" 18.29M	86'2" 26.26M	6'4" 1.93M	4'8" 1.42M	39'0" 11.89M	5'6" 1.68M	132'0" 40.23M



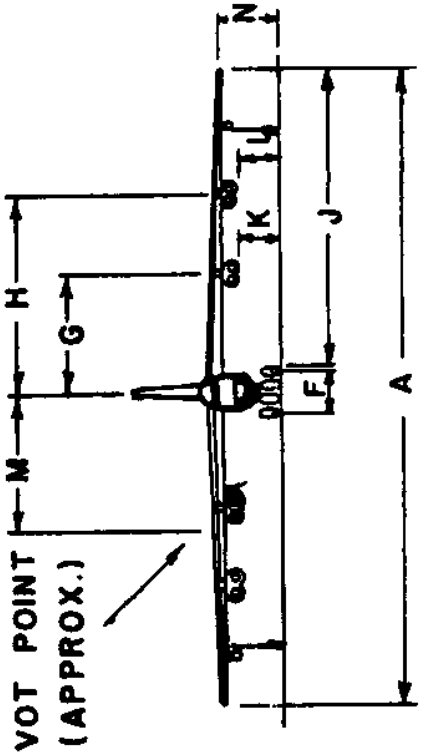


Figure A12-23. Boeing B-52 Stratofortress

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
STRATO-CRUISER	145,800 LB 66 134 KG	121,700 LB 55 202 KG	141'3" 43.05M	110'4" 33.63M	38'3" 11.65M	39'2" 11.93M	42'10" 13.06M	28'6" 8.70M	14'1" 4.29M	31'2" 9.50M	55'4" 16.87M	1'5" 0.43M	2'7" 0.79M	14'3" 4.34M		84'10" 25.86M

NOTE: OPTIONAL TAKEOFF WEIGHTS: 153,000 LB (69 400 KG) AND 175,000 LB (79 379 KG).

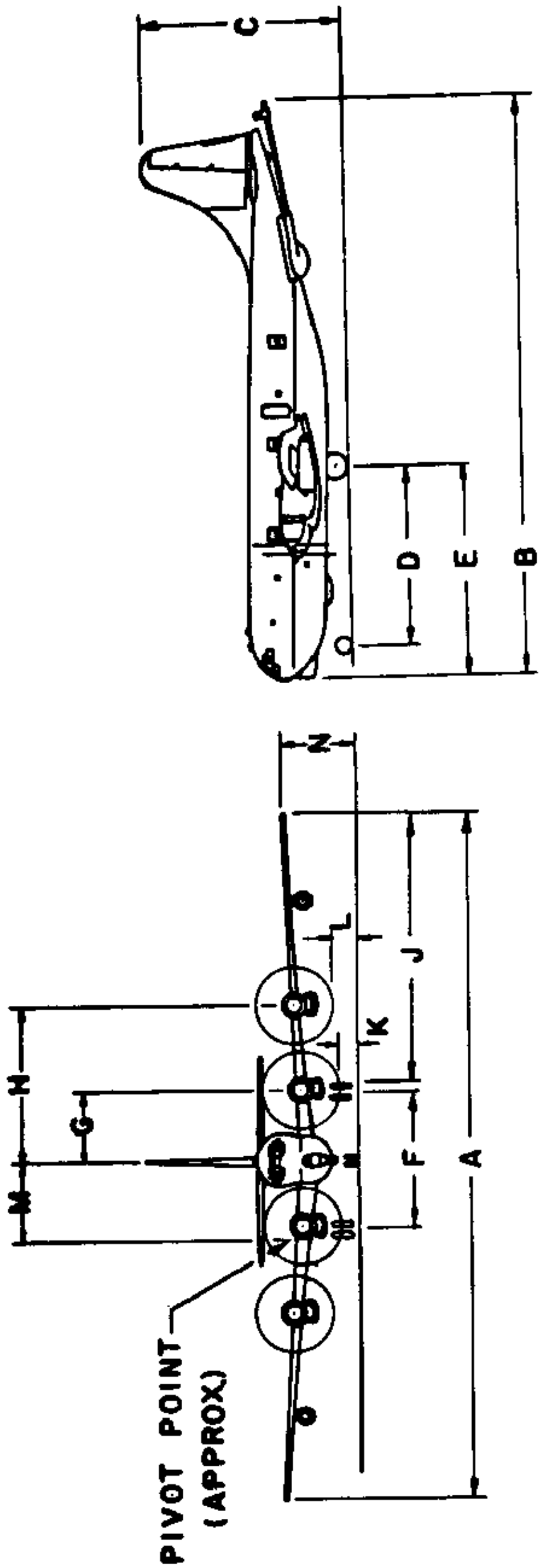


Figure A12-24. Boeing KC-97L

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
	301,600 LB 136 803 KG	185,000 LB 83 915 KG	130'10" 39.88M	136'3" 41.53M	38'5" 11.71M	45'8" 13.92M	63'1" 19.23M	22'1" 6.73M	27'2" 8.28M	46'1" 14.25M	51'11" 15.98M	2'4" 0.71M	4'8" 1.42M	36'7" 11.15M	12'4" 3.76M	107'0" 32.60M

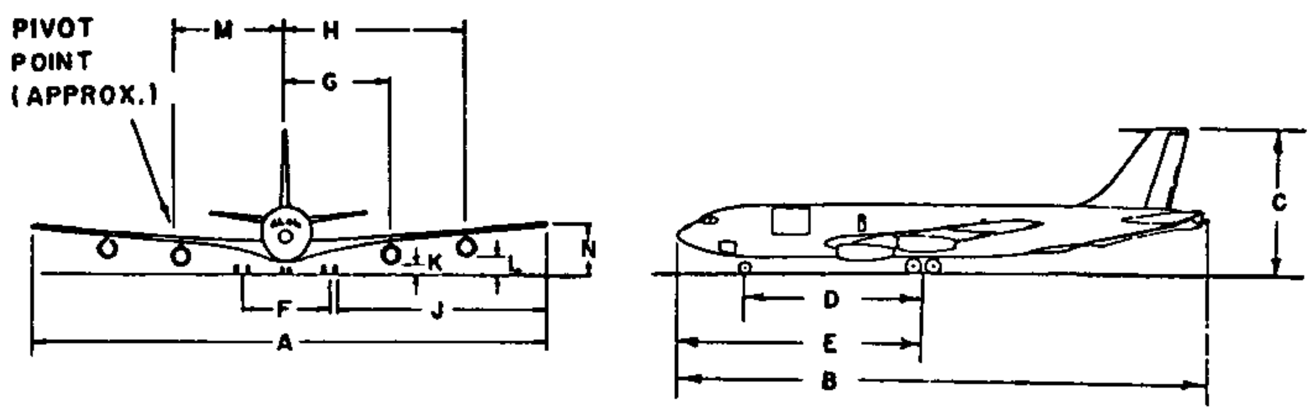


Figure A12-25. Boeing KC-135A

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
720	229,300 LB 104 009 KG	175,000 LB 79 379 KG	130'10" 39.88M	136'2" 41.50M	41'5" 12.62M	50'8" 15.44M	68'1" 20.75M	21'11" 6.67M	27'2" 8.28M	46'1" 14.05M	52'6" 16.00M	2'7" 0.79M	4'3" 1.30M	32'9" 9.98M	10'10" 3.30M	102'5" 31.22M
720B	234,300 LB 106 277 KG	175,000 LB 79 379 KG	130'10" 39.88M	136'9" 41.68M	41'2" 12.55M	50'8" 15.44M	68'1" 20.75M	21'11" 6.67M	27'2" 8.28M	46'1" 14.05M	52'6" 16.00M	2'1" 0.64M	3'9" 1.14M	32'9" 9.98M	10'10" 3.30M	102'5" 31.22M
707- 120B	257,340 LB 116 727 KG	190,000 LB 86 183 KG	130'10" 39.88M	145'1" 44.22M	41'8" 12.70M	52'4" 15.95M	69'9" 21.25M	22'1" 6.73M	27'2" 8.28M	46'1" 14.05M	52'3" 15.93M	2'4" 0.71M	4'2" 1.27M	36'7" 11.15M	11'7" 3.53M	107'0" 32.61M
707- 320/420	312,000 LB 141 521 LB	207,000 LB 93 894 KG	142'5" 43.41M	152'11" 46.61M	42'2" 12.85M	59'0" 17.98M	76'5" 23.28M	22'1" 6.73M	32'6" 9.91M	51'5" 15.67M	58'1" 17.70M	2'9" 0.84M	4'7" 1.40M	38'4" 11.68M	12'1" 3.68M	114'0" 34.75M
707- 320B,C	327,000 LB 148 325 KG	207,000 LB 93 894 KG	145'9" 44.42M	152'11" 46.61M	42'1" 12.83M	59'0" 17.98M	76'5" 23.28M	22'1" 6.73M	32'6" 9.91M	51'5" 15.67M	59'9" 18.21M	2'9" 0.84M	4'7" 1.40M	38'4" 11.68M	12'1" 3.68M	116'0" 35.36M

NOTE: OPTIONAL TAKEOFF AND LANDING WEIGHTS:

707 333,600 LB (151 318 KG) MAXIMUM TAKEOFF WEIGHT.
320B 215,000 LB (97 522 KG) MAXIMUM LANDING WEIGHT.

707 333,600 LB (151,318 KG) MAXIMUM TAKEOFF WEIGHT.
320C 247,000 LB (112 037 KG) MAXIMUM LANDING WEIGHT.

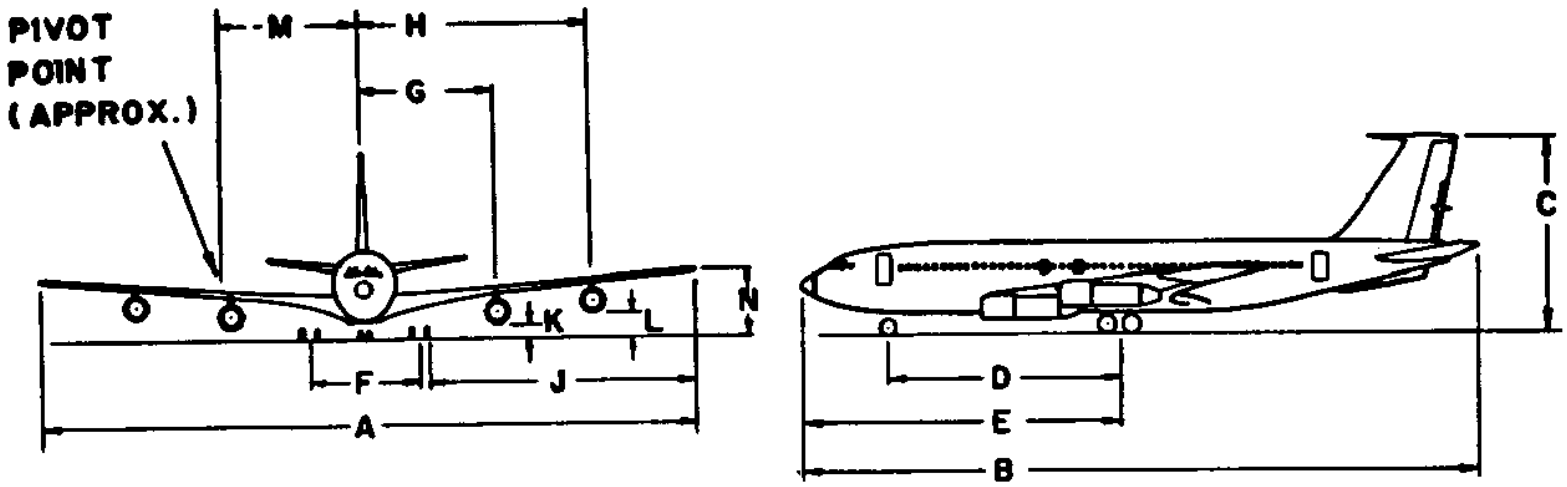


Figure A12-26. Boeing 707-720

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	P	TURN RADIUS
100	160,000 LB 72 575 KG	137,500 LB 62 369 KG	108'0" 32.92M	133'2" 40.59M	34'3" 10.44M	53'3" 16.23M	68'4" 20.83M	18'9" 5.72M	9'3" 2.82M	42'6" 12.95M	10'4" 3.15M	14'4" 4.37M	5'8" 1.72M	12'0" 3.66M	72'0" 21.95M
100-C	160,000 LB 72 575 KG	137,500 LB 62 369 KG	108'0" 32.92M	133'2" 40.59M	34'3" 10.44M	53'3" 16.23M	68'4" 20.83M	18'9" 5.72M	9'3" 2.82M	42'6" 12.95M	10'4" 3.15M	14'4" 4.37M	5'8" 1.72M	12'0" 3.66M	72'0" 21.95M
200	172,000 LB 78 018 KG	150,000 LB 68 039 KG	108'0" 32.92M	153'2" 46.68M	34'11" 10.65M	63'3" 19.28M	78'4" 23.88M	18'9" 5.72M	9'3" 2.82M	42'4" 12.90M	10'4" 3.15M	16'11" 5.16M	4'9" 1.44M	12'0" 3.66M	82'0" 24.99M

NOTE: OPTIONAL TAKEOFF AND LANDING WEIGHTS:

100	160,000 LB (72 575 KG)	169,000 LB (76 657 KG)	MAXIMUM TAKEOFF WEIGHT.		
	142,500 LB (64 637 KG)	142,500 LB (64 637 KG)	MAXIMUM LANDING WEIGHT.		
100C	160,000 LB (72 575 KG)	169,000 LB (76 657 KG)	MAXIMUM TAKEOFF WEIGHT.		
	140,000 LB (63 503 KG)	142,500 LB (64 637 KG)	MAXIMUM LANDING WEIGHT.		
200	184,800 LB (83 824 KG)	190,500 LB (86 409 KG)	197,000 LB (89 358 KG)	209,500 LB (95 028 KG)	MAXIMUM TAKEOFF WEIGHT.
	154,500 LB (70 080 KG)	154,500 LB (70 080 KG)	154,500 LB (70 080 KG)	161,000 LB (73 028 KG)	MAXIMUM LANDING WEIGHT.

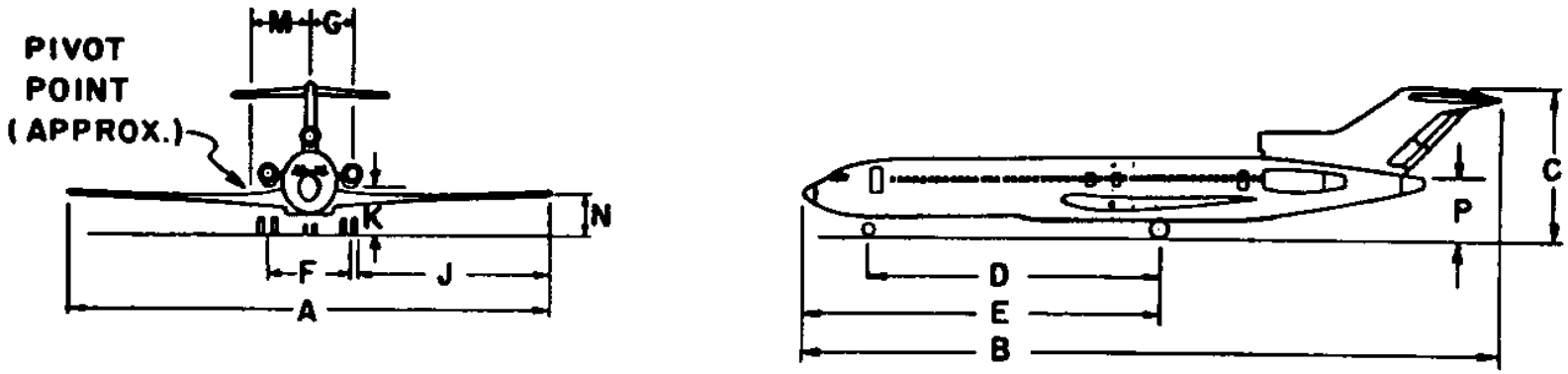


Figure A12-27. Boeing 727

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
100	97,000 LB 43 998 KG	89,700 LB 40 687 KG	93'0" 28.35M	94'0" 28.65M	37'2" 11.33M	34'4" 10.46M	47'4" 14.42M	17'2" 5.23M	15'10" 4.83M	36'1" 11.00M	1'8" 0.51M	9'2" 2.80M	10'0" 3.05M	57'2" 17.42M
200	100,000 LB 45 359 KG	95,000 LB 43 091 KG	93'0" 28.35M	100'2" 30.53M	37'3" 11.35M	37'4" 11.38M	50'4" 15.34M	17'2" 5.23M	15'10" 4.83M	36'1" 11.00M	1'8" 0.51M	10'0" 3.05M	10'0" 3.05M	58'2" 17.73M
300	124,500 LB 56 472 KG	114,000 LB 51 710 KG	94'9" 28.88M	109'7" 33.40M	36'7" 11.15M	40'10" 12.45M	54'0" 16.46M	17'2" 5.23M	15'10" 4.83M	36'11" 11.25M	1'6" 0.46M	11'0" 3.35M	10'0" 3.05M	64'0" 19.51M
400	138,500 LB 68 823 KG	121,000 LB 54 885 KG	94'9" 28.88M	119'7" 36.45M	36'7" 11.15M	46'10" 14.27M	60'0" 18.29M	17'2" 5.23M	15'10" 4.83M	36'11" 11.25M	1'6" 0.46M	12'6" 3.81M	10'0" 3.05M	68'4" 20.83M
500	115,500 LB 52 390 KG	110,000 LB 49 895 KG	94'9" 28.88M	101'9" 30.01M	36'7" 11.15M	36'4" 11.07M	49'6" 15.09M	17'2" 5.23M	15'10" 4.83M	36'11" 11.25M	1'6" 0.46M	9'8" 2.95M	10'0" 3.05M	60'7" 18.47M

NOTE: OPTIONAL TAKEOFF AND LANDING WEIGHTS.

100	103,000 LB (46 720 KG) 98,000 LB (44 452 KG)	110,000 LB (49 895 KG) MAXIMUM TAKEOFF WEIGHT. 99,000 LB (44 906 KG) MAXIMUM LANDING WEIGHT.			
200	103,000 LB (46 720 KG) 95,000 LB (43 091 KG)	109,000 LB (49 442 KG) 98,000 LB (44 452 KG)	110,000 LB (49 895 KG) 99,000 LB (44 906 KG)	115,500 LB (52 390 KG) MAXIMUM TAKEOFF WEIGHT. 103,000 LB (46 720 KG) MAXIMUM LANDING WEIGHT.	
200 CONV	109,000 LB (49 442 KG) 98,000 LB (44 452 KG)	110,000 LB (49 895 KG) 99,000 LB (44 906 KG)	110,000 LB (49 895 KG) 103,000 LB (46 720 KG)	115,500 LB (52 390 KG) 103,000 LB (46 720 KG)	115,500 LB (52 390 KG) MAXIMUM TAKEOFF WEIGHT. 103,000 LB (46 720 KG) MAXIMUM LANDING WEIGHT.
200 ADV C, QC	115,500 LB (52 390 KG) 103,000 LB (46 720 KG)	117,000 LB (53 070 KG) 105,000 LB (47 627 KG)	119,500 LB (54 204 KG) 105,000 LB (47 627 KG)	124,500 LB (56 472 KG) 107,000 LB (48 534 KG)	128,100 LB (58 105 KG) MAXIMUM TAKEOFF WEIGHT. 107,000 LB (48 534 KG) MAXIMUM LANDING WEIGHT.
300	130,000 LB (58 967 KG) 114,000 LB (51 710 KG)	135,000 LB (61 235 KG) 114,000 LB (51 710 KG)	137,000 LB (62 142 KG) 114,000 LB (51 710 KG)	138,500 LB (62 823 KG) MAXIMUM TAKEOFF WEIGHT. 115,800 LB (52 526 KG) MAXIMUM LANDING WEIGHT.	
400	142,500 LB (64 637 KG) 121,000 LB (54 885 KG)	150,000 LB (68 039 KG) 124,000 LB (56 245 KG)	142,500 LB (64 637 KG) 124,000 LB (56 245 KG)	150,000 LB (68 039 KG) MAXIMUM TAKEOFF WEIGHT. 124,000 LB (56 245 KG) MAXIMUM LANDING WEIGHT.	
500	124,500 LB (56 472 KG) 110,000 LB (49 895 KG)	133,500 LB (60 555 KG) 110,000 LB (49 895 KG)	124,500 LB (56 472 KG) 110,000 LB (49 895 KG)	133,500 LB (60 555 KG) MAXIMUM TAKEOFF WEIGHT. 110,000 LB (49 895 KG) MAXIMUM LANDING WEIGHT.	

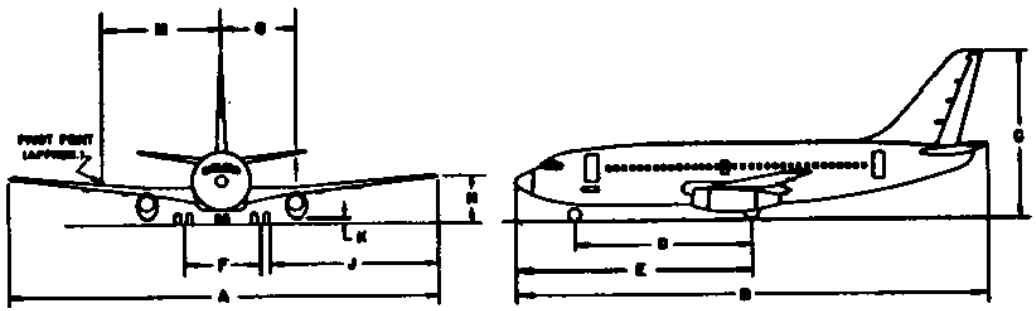


Figure A12-28. Boeing 737

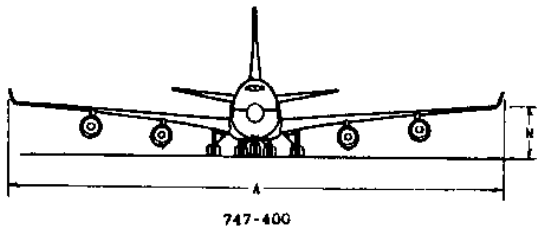
MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
100B 200B, C 300PASS	SEE NOTE	SEE NOTE	195'8" 59.64M	231'10" 70.66M	64'3" 19.58M	84'0" 25.60M	109'5" 33.35M	36'1" 11.00M	39'9" 12.12M	69'10" 21.29M	77'3" 23.55M	3'9" 1.14M	4'11" 1.50M	40'0" 12.19M	17'7" 5.36M	151'0" 46.02M
200C 200F CARGO	SEE NOTE	SEE NOTE	195'8" 59.64M	231'10" 70.66M	64'8" 19.71M	84'0" 25.60M	109'5" 33.35M	36'1" 11.00M	39'9" 12.12M	69'10" 21.29M	77'3" 23.55M	3'9" 1.14M	6'0" 1.83M	40'0" 12.19M	17'7" 5.36M	151'0" 46.02M
SP	SEE NOTE	SEE NOTE	195'8" 59.64M	184'9" 56.31M	65'10" 20.07M	87'4" 20.52M	92'9" 28.27M	36'1" 11.00M	39'2" 11.94M	69'6" 21.18M	77'4" 23.57M	3'7" 1.09M	5'7" 1.70M	40'0" 12.19M	17'2" 5.23M	151'0" 46.02M
400	SEE NOTE	SEE NOTE	213'0" 64.92M	231'10" 70.66M	64'3" 19.58M	84'0" 25.60M	109'5" 33.35M	36'1" 11.00M	39'2" 11.94M	69'6" 21.18M	85'10" 26.16M	3'9" 1.14M	6'0" 1.83M	40'0" 12.19M	16'9" 5.11M	159'0" 48.46M

NOTE: OPTIONAL TAKEOFF AND LANDING WEIGHTS. S64-585 DENOTES STANDARD AND OPTIONAL WEIGHT IN THOUSANDS OF POUNDS.

100/100B	710,000 LB	750,000 LB	*735,000 LB	#571,000 LB	#600,000 LB	MAXIMUM TAKEOFF WEIGHT.
*100SF	564,000 LB	585,000 LB	*564,000 LB	#564,000 LB	#564,000 LB	MAXIMUM LANDING WEIGHT.
#100B SR						
200B	775,000 LB	785,000 LB	800,000 LB	823,000 LB	833,000 LB	MAXIMUM TAKEOFF WEIGHT.
	564,000 LB	564,000 LB	585,000 LB	630,000 LB	630,000 LB	MAXIMUM LANDING WEIGHT.
200B	775,000 LB	785,000 LB	800,000 LB	820,000 LB	833,000 LB	MAXIMUM TAKEOFF WEIGHT.
COMBI	585-630 LB	630,000 LB	630,000 LB	630,000 LB	630,000 LB	MAXIMUM LANDING WEIGHT.
200C F	775,000 LB	800,000 LB	*785,000 LB	*820,000 LB	*833,000 LB	MAXIMUM TAKEOFF WEIGHT.
*200C C	630,000 LB	630,000 LB	*630,000 LB	*630,000 LB	*630,000 LB	MAXIMUM LANDING WEIGHT.
200F	775,000 LB	785,000 LB	800,000 LB	823,000 LB	833,000 LB	MAXIMUM TAKEOFF WEIGHT.
CARGO	630,000 LB	630,000 LB	630,000 LB	630,000 LB	630,000 LB	MAXIMUM LANDING WEIGHT.
300	710,000 LB	735,000 LB	750,000 LB	*520,000 LB	*600,000 LB	MAXIMUM TAKEOFF WEIGHT.
*300 SR	564,000 LB	564,000 LB	564,000 LB	*515,000 LB	*535,000 LB	MAXIMUM LANDING WEIGHT.
300/200B	775,000 LB	785,000 LB	800,000 LB	820,000 LB	833,000 LB	MAXIMUM TAKEOFF WEIGHT.
	574-630 LB	574-630 LB	574-630 LB	574-630 LB	574-640 LB	MAXIMUM LANDING WEIGHT.
300	775,000 LB	785,000 LB	800,000 LB	820,000 LB	833,000 LB	MAXIMUM TAKEOFF WEIGHT.
COMBI	605-630 LB	605-630 LB	605-630 LB	605-630 LB	605-630 LB	MAXIMUM LANDING WEIGHT.
SP	630,000 LB	660,000 LB	670,000 LB	690,000 LB	696,000 LB	MAXIMUM TAKEOFF WEIGHT.
	450-465 LB	450-465 LB	450-465 LB	450-465 LB	450-465 LB	MAXIMUM LANDING WEIGHT.
400	800,000 LB	800,000 LB	833,000 LB	833,000 LB	850-870 LB	MAXIMUM TAKEOFF WEIGHT.
	574-585 LB	630,000 LB	574-585 LB	630,000 LB	630,000 LB	MAXIMUM LANDING WEIGHT.

METRIC CONVERSION TABLE

POUNDS	KILOGRAMS	POUNDS	KILOGRAMS
450,000	204 117	690,000	312 979
465,000	210 920	696,000	315 700
515,000	233 600	710,000	322 051
520,000	235 868	735,000	333 390
535,000	242 672	750,000	340 194
564,000	255 826	775,000	351 534
571,000	250 001	785,000	356 070
574,000	260 362	800,000	362 874
585,000	265 352	820,000	371 946
600,000	272 155	823,000	373 307
605,000	274 423	833,000	377 842
630,000	285 763	850,000	385 554
660,000	299 371	870,000	394 625
670,000	303 907		



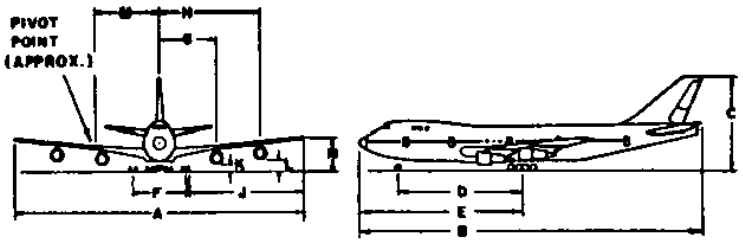


Figure A12-29. Boeing 747

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
757-200 -200PF	SEE NOTE	SEE NOTE	124'10" 38.05M	155'3" 47.32M	45'1" 13.74M	60'0" 18.29M	79'4" 24.18M	24'0" 7.32M	21'3" 6.48M	48'2" 14.68M	2'5" 0.74M	35'0" 10.67M	15'4" 4.67M	98'0" 29.87M

NOTE: OPTIONAL TAKEOFF AND LANDING WEIGHTS.

757-200 RB211 -535C -535E4 -535E4B PW2037 PW2040	220,000 LB (99 790 KG)	230,000 LB (104 326 KG)	240,000 LB (108 862 KG)	250,000 LB (113 398 KG)	255,000 LB (115 666 KG)*	MAXIMUM TAKEOFF WEIGHT.
	198,000 LB (89 811 KG)	198,000 LB (89 811 KG)	198,000 LB (89 811 KG)	198,000 LB (89 811 KG)	210,000 LB (95 254 KG)	MAXIMUM LANDING WEIGHT.

757 -200PF	250,000 LB (113 398 KG)	255,000 LB (115 666 KG)*	MAXIMUM TAKEOFF WEIGHT.
	210,000 LB (95 254 KG)	210,000 LB (95 254 KG)	MAXIMUM LANDING WEIGHT.

* 255,500 LB (115 893 KG) FOR AIRPORT ALTITUDES BELOW 1,500 FT.

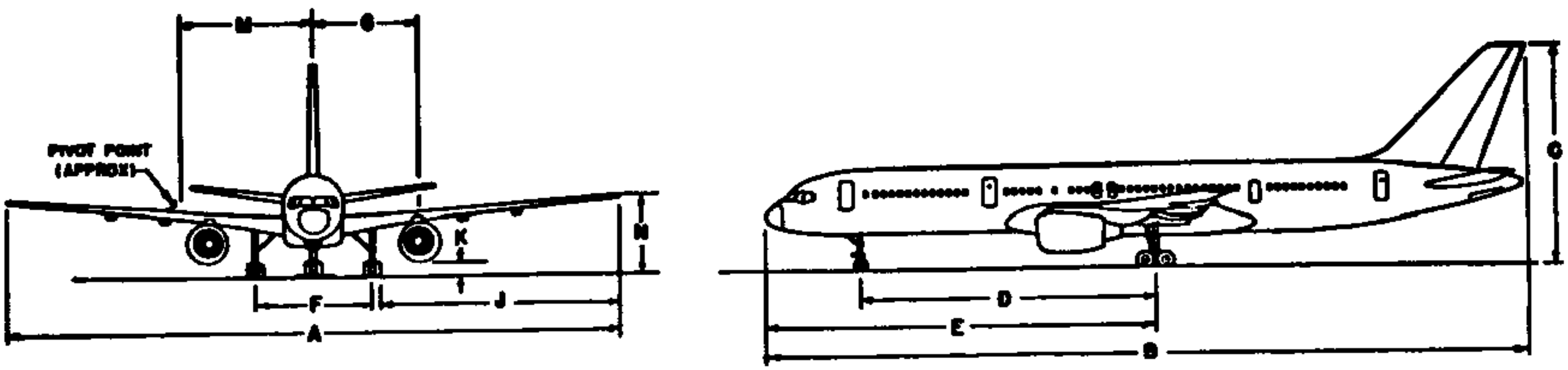


Figure A12-30. Boeing 757

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
200	282,000 LB 127 913 KG	257,000 LB 116 573 KG	156'1" 47.57M	159'2" 48.51M	52'11" 16.13M	64'7" 19.69M	79'6" 24.23M	30'6" 9.30M	26'0" 7.92M	60'1" 18.31M	2'8" 0.81M	36'0" 10.97M	16'3" 4.95M	117'0" 35.66M
200ER	335,000 LB 151 953 KG	278,000 LB 126 099 KG	156'1" 47.57M	159'2" 48.51M	52'11" 16.13M	64'7" 19.69M	79'6" 24.23M	30'6" 9.30M	26'0" 7.92M	60'1" 18.31M	2'8" 0.81M	36'0" 10.97M	16'3" 4.95M	117'0" 35.66M
300	345,000 LB 156 489 KG	300,000 LB 136 078 KG	156'1" 47.57M	180'3" 54.94M	52'7" 16.03M	74'8" 22.76M	89'7" 27.31M	30'6" 9.30M	26'0" 7.92M	60'1" 18.31M	2'10" 0.86M	41'0" 12.50M	16'1" 4.90M	123'0" 37.49M
300ER	380,000 LB 172 365 KG	300,000 LB 136 078 KG	156'1" 47.57M	180'3" 54.94M	52'7" 16.03M	74'8" 22.76M	89'7" 27.31M	30'6" 9.30M	26'0" 7.92M	60'1" 18.31M	2'10" 0.86M	41'0" 12.50M	16'1" 4.90M	123'0" 37.49M

NOTE: OPTIONAL TAKEOFF AND LANDING WEIGHTS:

200	300,000 LB (136 078 KG) 270,000 LB (122 470 KG)	310,000 LB (140 614 KG) 270,000 LB (122 470 KG)	315,000 LB (142 882 KG) 272,000 LB (123 377 KG)	MAXIMUM TAKEOFF WEIGHT. MAXIMUM LANDING WEIGHT.
200ER	345,000 LB (156 489 KG) 278,000 LB (126 099 KG)	351,000 LB (159 211 KG) 278,000 LB (126 099 KG)	380,000 LB (172 365 KG) 285,000 LB (129 274 KG)	387,000 LB (175 540 KG) MAXIMUM TAKEOFF WEIGHT. 285,000 LB (129 274 KG) MAXIMUM LANDING WEIGHT.
300	350,000 LB (158 757 KG) 300,000 LB (136 078 KG)	MAXIMUM TAKEOFF WEIGHT. MAXIMUM LANDING WEIGHT.		
300ER	387,000 LB (175 540 KG) 300,000 LB (136 078 KG)	400,000 LB (181 437 KG) 320,000 LB (145 150 KG)	407,000 LB (184 612 KG) 320,000 LB (145 150 KG)	MAXIMUM TAKEOFF WEIGHT. MAXIMUM LANDING WEIGHT.

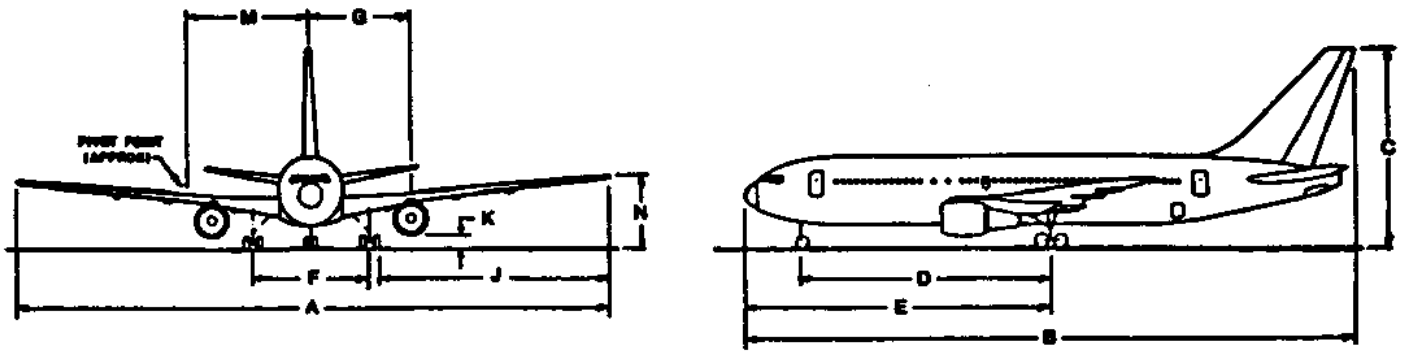
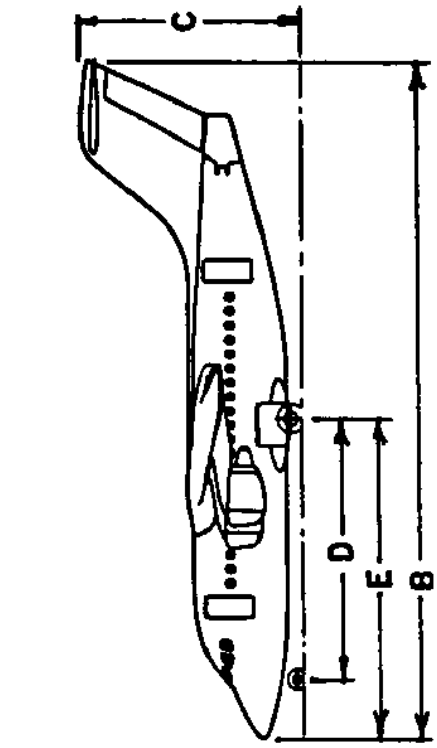


Figure A12-31. Boeing 767

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
100	74,600 LB 33 838 KG	71,800 LB 32 591 KG	86'5" 26.34M	85'10" 26.16M	28'3" 8.61M	33'1" 10.08M	40'7" 12.37M	15'6" 4.72M	13'7" 4.14M	22'4" 6.81M	33'8" 10.26M	5'0" 1.52M	4'8" 1.42M	15'6" 4.72M	13'11" 4.24M	37'10" 11.53M
200	88,250 LB 40 030 KG	77,000 LB 34 927 KG	86'5" 26.34M	93'8" 28.55M	28'3" 8.61M	36'9" 11.20M	44'2" 13.46M	15'6" 4.72M	13'7" 4.14M	22'4" 6.81M	33'8" 10.26M	5'0" 1.52M	4'7" 1.40M	15'6" 4.72M	13'11" 4.24M	41'2" 12.55M
300	104,000 LB 47 174 KG	90,000 LB 40 823 KG	86'5" 26.34M	104'2" 31.75M	28'1" 8.56M	36'9" 11.20M	48'10" 14.88M	15'6" 4.72M	13'7" 4.14M	22'4" 6.81M	33'8" 10.26M	5'0" 1.52M	4'7" 1.40M	15'6" 4.72M	13'11" 4.24M	46'8" 14.22M



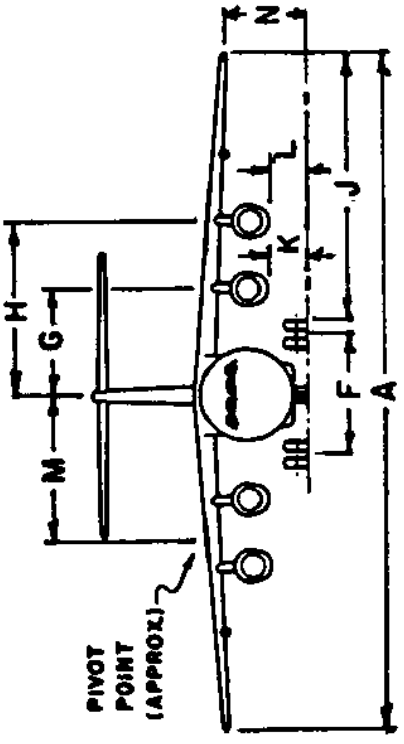


Figure A12-32. British Aerospace 146

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
44D4	210,000 LB 95 254 KG	165,000 LB 74 843 KG	142'4" 43.38M	136'10" 41.71M	38'5" 11.71M	49'11" 15.21M	62'8" 19.10M	31'0" 9.45M	15'6" 4.72M	31'8" 9.65M	53'11" 16.43M	1'2" 0.36M	1'8" 0.51M		10'3" 3.12M	113'0" 34.44M
44-6	205,000 LB 92 986 KG	165,000 LB 74 843 KG	142'4" 43.38M	136'10" 41.71M	38'5" 11.71M	49'11" 15.21M	62'8" 19.10M	31'0" 9.45M	15'6" 4.72M	31'8" 9.65M	53'11" 16.43M	1.2" 0.36M	1'8" 0.51M		10'3" 3.12M	113'0" 34.44M
44-J	210,000 LB 95 254 KG	175,000 LB 79 379 KG	142'4" 43.38M	152'0" 46.33M	38'5" 11.71M	60'0" 18.29M	72'9" 22.17M	31'0" 9.45M	15'6" 4.72M	31'8" 9.65M	53'11" 16.43M	1'2" 0.36M	1'8" 0.51M		10'3" 3.12M	

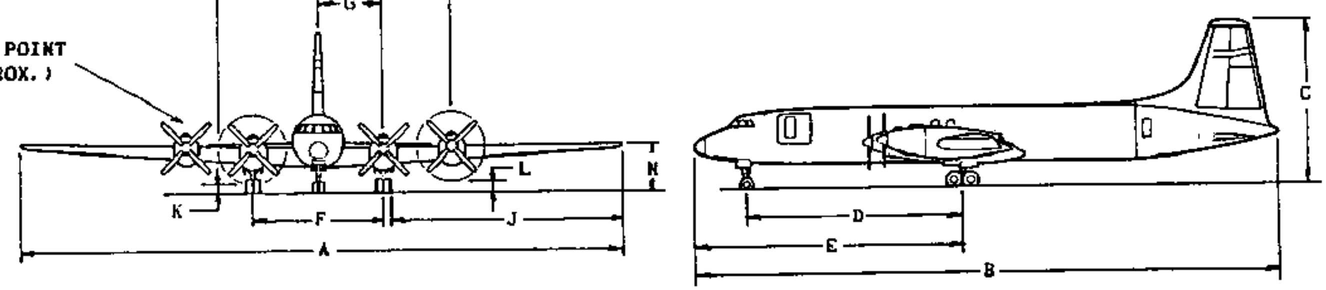


Figure A12-33. Canadiar CL-44

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	N	TURN RADIUS
66	58,156 LB 26 379 KG	53,000 LB 24 040 KG	105'4" 32.11M	81'6" 24.84M	29'2" 8.89M	26'2" 7.98M	35'3" 10.74M	25'0" 7.62M	12'6" 3.81M	39'0" 11.89M	1'0" 0.30M	13'0" 3.96M	65'0" 19.81M

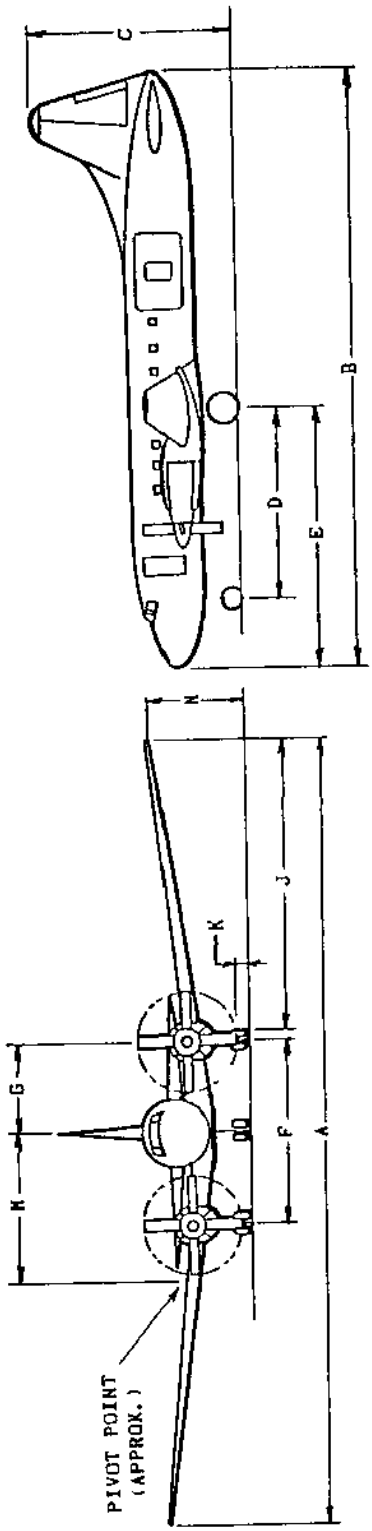


Figure A12-34. Canadiar CL-66

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
I	11,850 LB 5 375 KG	11,350 LB 5 148 KG	47'1" 14.35M	43'6" 13.26M	14'4" 4.37M	15'2" 4.62M		12'7" 3.84M		14'11" 4.55M				
II	13,300 LB 6 033 KG	12,700 LB 5 761 KG	51'8" 15.75M	47'2" 14.38M	15'0" 4.57M									
S/II	15,100 LB 6 849 KG	14,400 LB 6 532 KG	52'2" 15.90M	47'2" 14.38M	15'0" 4.57M									
III	22,000 LB 9 979 KG	20,000 LB 9 072 KG	53'6" 16.31M	55'6" 16.92M	16'10" 5.13M									
V	16,100 LB 7 303 KG		52'2" 15.90M	49'11" 14.91M	15'0" 4.57M									

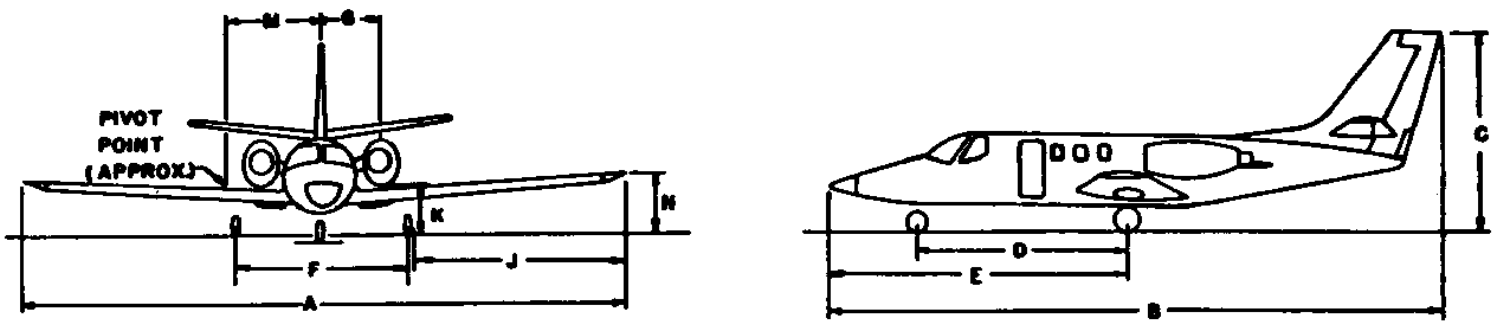


Figure A12-35. Cessna Citation

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
C-212 200	16,976 LB 7 700 KG	16,424 LB 7 450 KG	62'3" 18.97M	49'10" 15.19M	20'8" 6.30M	17'10" 5.44M		10'2" 3.10M	8'8" 2.64M	26'1" 7.95M	4'2" 1.27M		9'2" 2.79M	49'2" 14.99M
235	31,752 LB 14 402 KG	31,311 LB 14 202 KG	84'8" 25.81M	70'3" 21.41M	26'10" 8.18M	22'8" 6.91M		12'10" 3.91M	11'6" 3.51M	35'11" 10.95M	5'2" 1.57M			

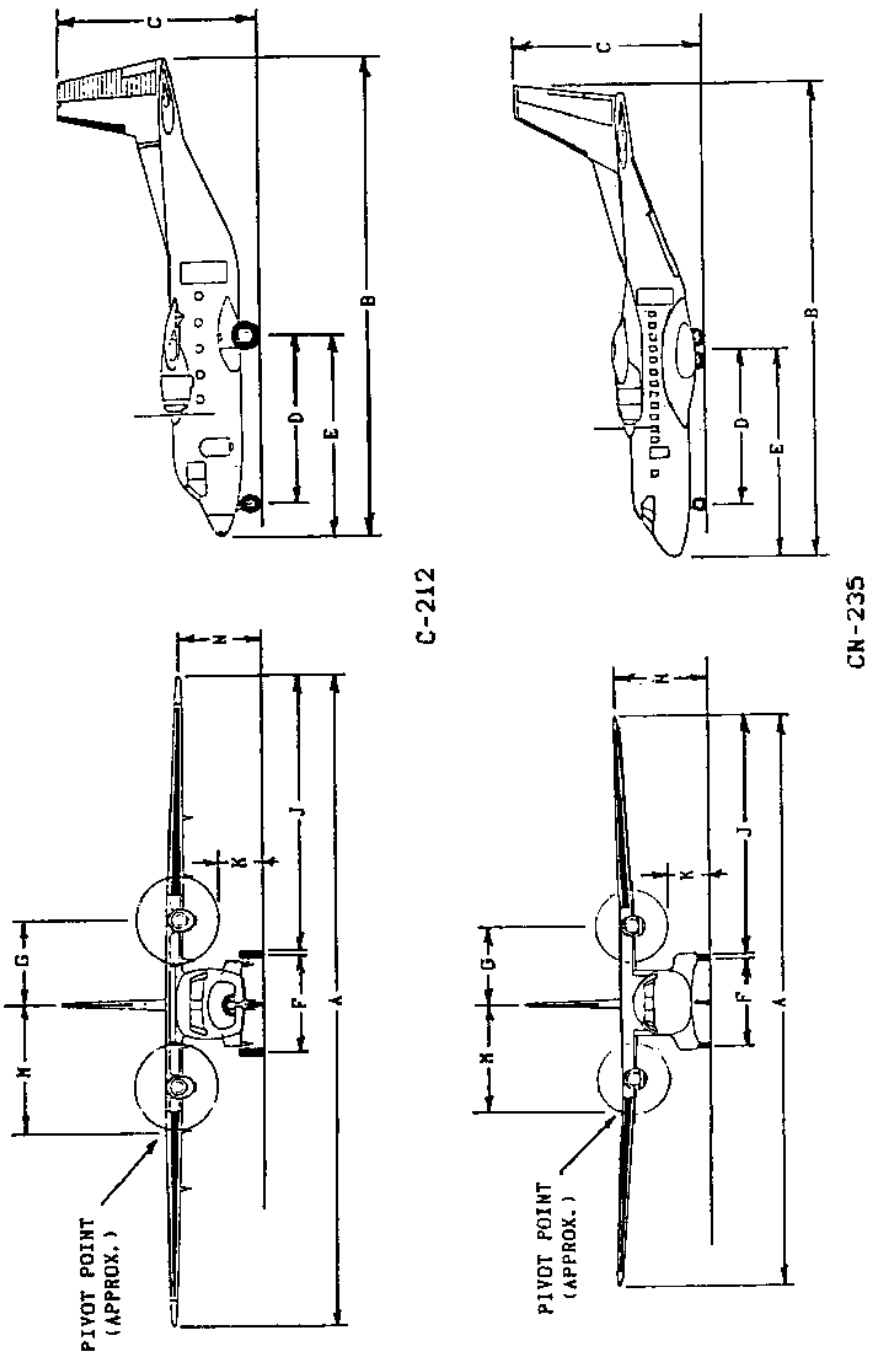
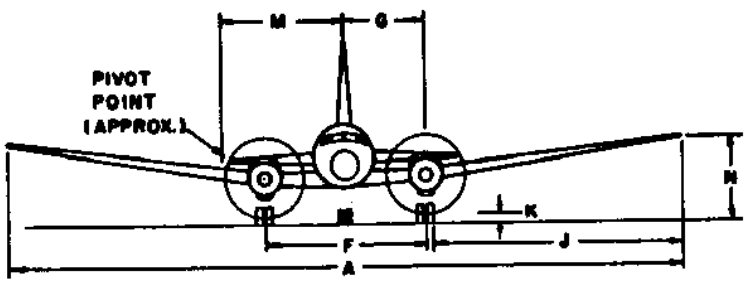


Figure A12-36. Construcciones Aeronauticas CASA C-212 and 235

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
240	41,790 LB 18 956 KG	39,800 LB 18 053 KG	91'9" 27.97M	74'8" 22.76M	26'11" 8.20M	24'10" 7.57M	32'9" 9.98M	25'0" 7.62M	12'6" 3.81M	32'2" 9.80M	1'0" 0.31M	14'8" 4.47M	9'0" 2.74M	60'6" 18.44M
340	49,100 LB 22 271 KG	46,500 LB 21 092 KG	105'4" 32.18M	81'6" 24.84M	28'2" 8.59M	26'2" 7.98M	34'1" 10.39M	25'0" 7.62M	12'6" 3.81M	38'7" 11.76M	1'0" 0.31M	14'8" 4.47M	11'0" 3.35M	67'4" 20.52M
440	49,100 LB 22 271 KG	47,650 LB 21 614 KG	105'4" 32.18M	81'6" 24.84M	28'2" 8.59M	26'2" 7.98M	36'5" 11.10M	25'0" 7.62M	12'6" 3.81M	38'7" 11.76M	1'0" 0.31M	14'8" 4.47M	11'0" 3.35M	67'4" 20.52M
580	54,600 LB 24 766 KG	52,000 LB 23 587 KG	105'4" 32.18M	81'6" 24.84M	29'2" 8.89M	26'2" 7.98M	36'5" 11.10M	25'0" 7.62M	12'6" 3.81M	38'7" 11.76M	1'0" 0.31M	14'8" 4.47M	11'0" 3.35M	67'4" 20.52M
600	46,200 LB 20 956 KG	44,000 LB 19 958 KG	91'9" 27.97M	74'8" 22.76M	26'11" 8.20M	24'10" 7.57M	32'9" 9.98M	25'0" 7.62M	12'6" 3.81M	32'2" 9.80M	1'3" 0.38M	14'8" 4.47M	9'0" 2.74M	60'6" 18.44M
640	55,000 LB 24 948 KG	52,500 LB 23 814 KG	105'4" 32.18M	81'6" 24.84M	28'2" 8.59M	26'2" 7.98M	36'5" 11.10M	25'0" 7.62M	12'6" 3.81M	38'7" 11.76M	1'1" 0.33M	14'8" 4.47M	11'0" 3.35M	67'4" 20.52M

NOTE; MODELS 240, 340, 440 HAVE RECIPROCATING ENGINES. ALL OTHERS HAVE TURBOPROP ENGINES.



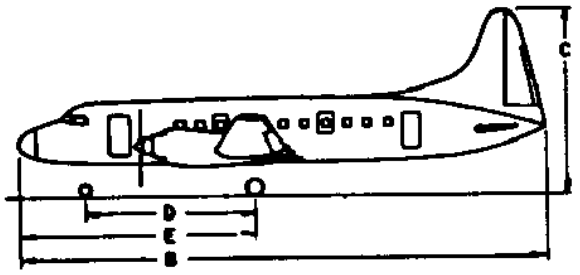
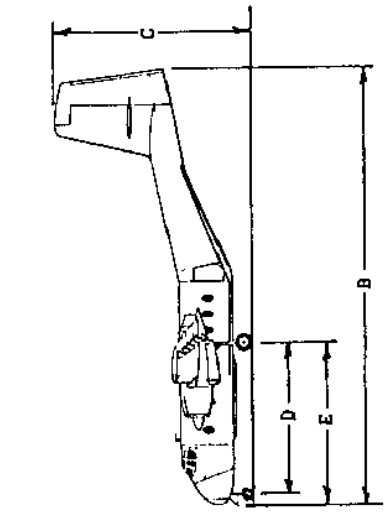


Figure A12-37. Convair-liner and Turboprop Conversions

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
CARIBOU	28,500 LB 12 927 KG	28,500 LB 12 927 KG	95'7" 29.13M	72'7" 22.12M	31'10" 9.70M			23'1" 7.04M		35'3" 10.74M				



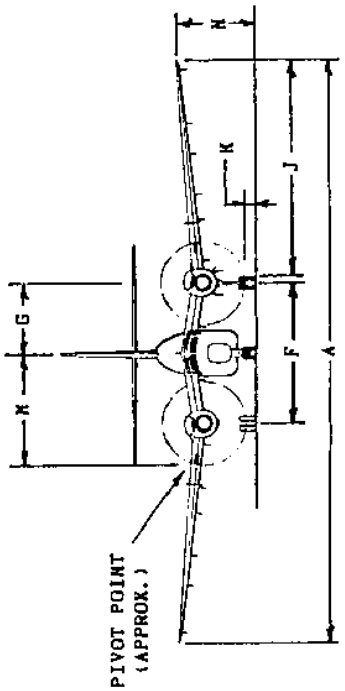
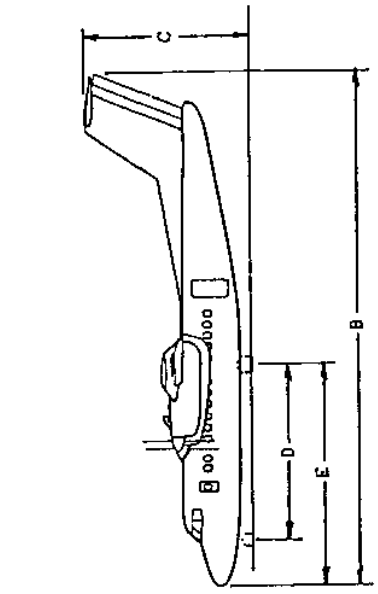
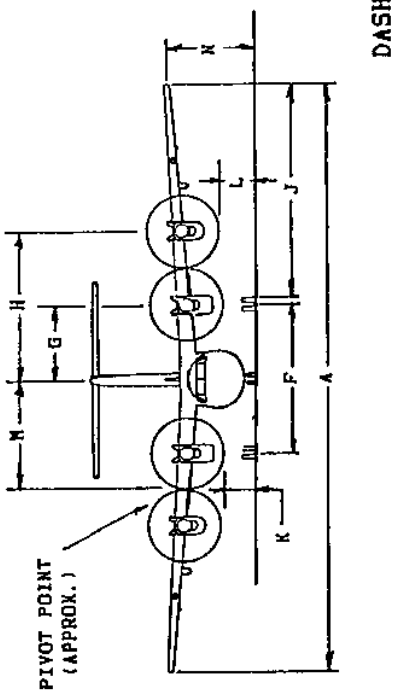


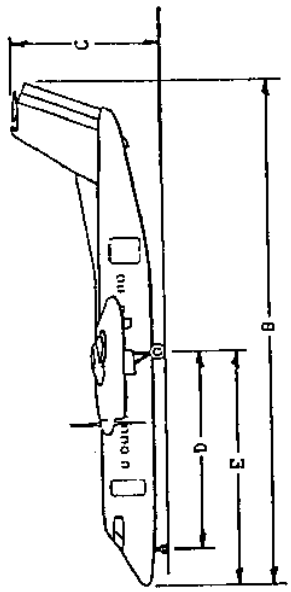
Figure A12-38. De Havilland Canada C-7 Caribou

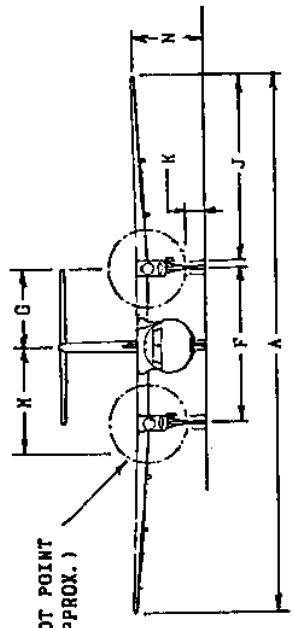
MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
DASH 7	43,000 LB 19 504 KG	41,000 LB 18 597 KG	93'0" 28.35M	80'8" 24.59M	26'2" 7.98M	27'6" 8.38M		23'6" 7.16M		33'8" 10.26M	5'3" 1.60M		14'2" 4.32M	
DASH 8 100	34,500 LB 15 649 KG	33,900 LB 15 377 KG	90'0" 27.43M	84'3" 25.68M	24'7" 7.49M	32'2" 9.80M		25'10" 7.87M	12'11" 3.94M		3'1" 0.94M		11'11" 3.63M	
DASH 8 300	41,100 LB 18 643 KG	40,000 LB 18 144 KG	90'0" 27.43M	84'3" 25.68M	24'7" 7.49M	32'2" 9.80M		25'10" 7.87M	12'11" 3.94M		3'1" 0.94M		11'11" 3.63M	





DASH 7

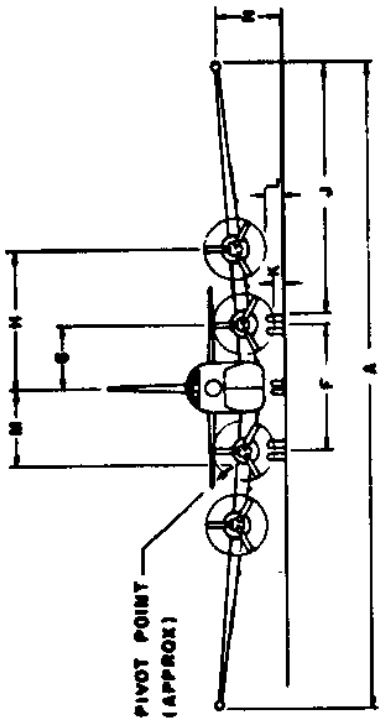




DASH 8

Figure A12-39. De Havilland Canada DASH 7 & DASH 8

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
GOLDE-MASTER	175,000 LB 79 379 KG	110,000 LB 49 895 KG	174'2" 53.10M	130'5" 39.77M	48'4" 14.72M	37'3" 11.35M		34'2" 10.41M		17'1" 5.21M		3'0" 0.91M				



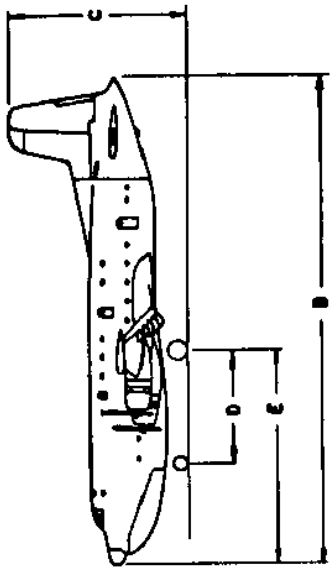


Figure A12-40. Douglas C-124 Globemaster

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
TWIN OTTER	12,500 LB 5 670 KG	12,300 LB 5 579 KG	65'0" 19.81M	51'8" 15.75M	19'6" 5.94M	14'9" 4.50M	12'6" 3.81M	21	48'0" 14.63M

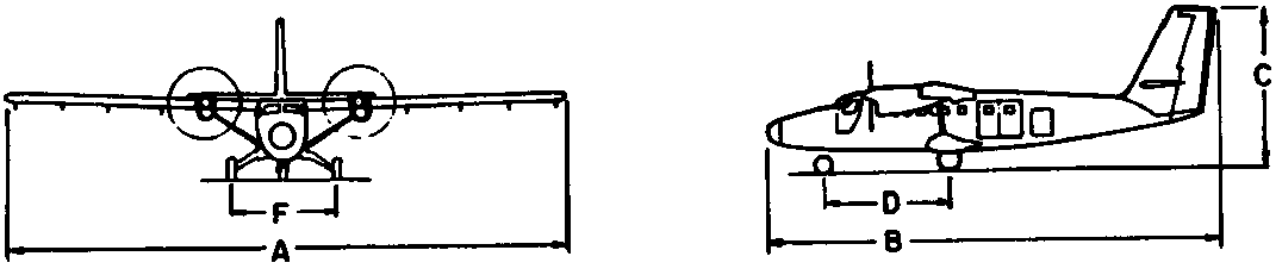
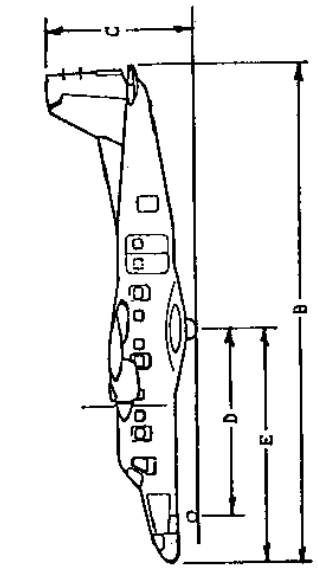


Figure A12-41. De Havilland Canada DHC-6 Twin Otter

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	N	M	TURN RADIUS
228-201	13,183 LB 5 980 KG	13,007 LB 5 900 KG	55'8" 16.97M	54'4" 16.56M	15'11" 4.85M	20'8" 6.30M	25'5" 7.75M	10'10" 3.30M	7'10" 2.39M	21'11" 6.68M	3'6" 1.07M	21'4" 6.50M	6'3" 1.91M	48'6" 14.78M
228-202	13,669 LB 6 200 KG	13,007 LB 5 900 KG	55'8" 16.97M	54'4" 16.56M	15'11" 4.85M	20'8" 6.30M	25'5" 7.75M	10'10" 3.30M	7'10" 2.39M	21'11" 6.68M	3'6" 1.07M	21'4" 6.50M	6'3" 1.91M	48'6" 14.78M



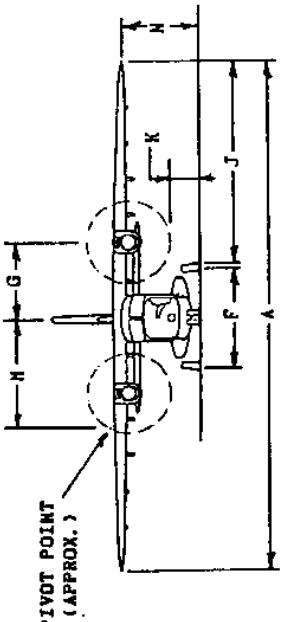
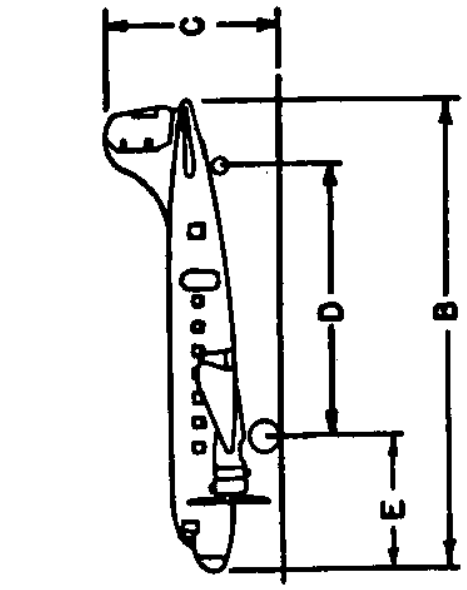


Figure A12-42. Dornier Gmb H

Figure A12-42. Dornier Gmb H

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	N	M	TURN RADIUS
DC-3	25,200 LB 11 431 KG	25,200 LB 11 431 KG	95'0" 28.96M	64'6" 19.66M	23'6" 7.16M	37'11" 11.56M	18'6" 5.64M	18'6" 5.64M	9'3" 2.82M	37'7" 11.46M	1'4" 0.41M	9'3" 2.82M	9'4" 2.84M	57'3" 17.45M



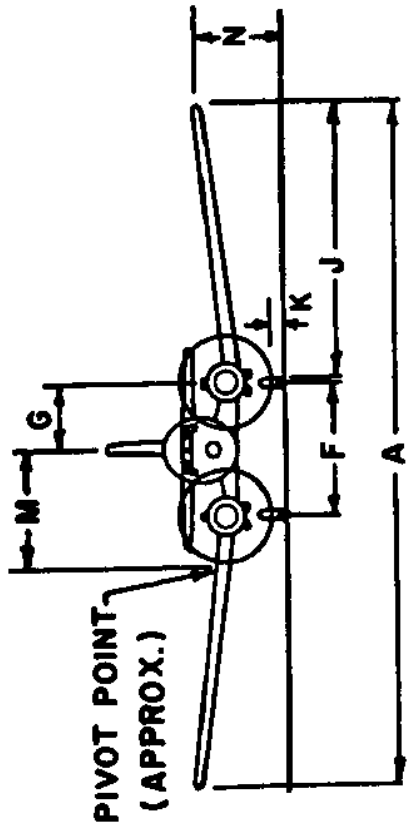
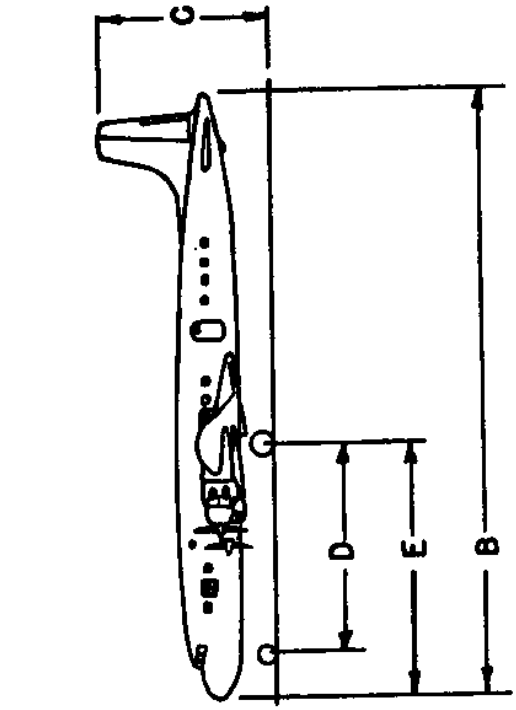


Figure A12-43. Douglas DC-3

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	N	N	TURN RADIUS
DC-4	73,000 LB 33 112 KG	63,500 LB 28 803 KG	117'6" 35.81M	93'11" 28.62M	27'11" 8.51M	27'5" 8.36M	36'0" 10.98M	24'8" 7.52M	12'4" 3.76M	26'4" 8.03M	44'7" 13.59M	2'2" 0.66M	3'9" 1.14M	13'9" 4.19M	13'6" 4.11M	86'2" 26.26M
DC-6	104,000 LB 47 174 KG	86,200 LB 39 100 KG	117'6" 35.81M	105'7" 32.18M	29'3" 8.92M	36'2" 11.02M	44'9" 13.64M	24'8" 7.52M	12'4" 3.76M	26'4" 8.03M	44'7" 13.59M	1'11" 0.58M	3'6" 1.07M	13'11" 4.24M	13'6" 4.11M	72'8" 22.15M
DC-7	143,000 LB 64 864 KG	111,000 LB 50 349 KG	127'6" 38.86M	112'3" 34.21M	31'8" 9.65M	39'6" 12.04M	48'1" 14.66M	34'8" 10.57M	17'4" 5.28M	31'4" 9.55M	44'7" 13.59M	1'3" 0.38M	3'10" 0.87M	17'4" 5.28M	13'6" 4.11M	81'1" 24.71M

NOTE: MODEL DC-4 HAS ROUNDED VERTICAL STABILIZER AND CIRCULAR CABIN WINDOWS.



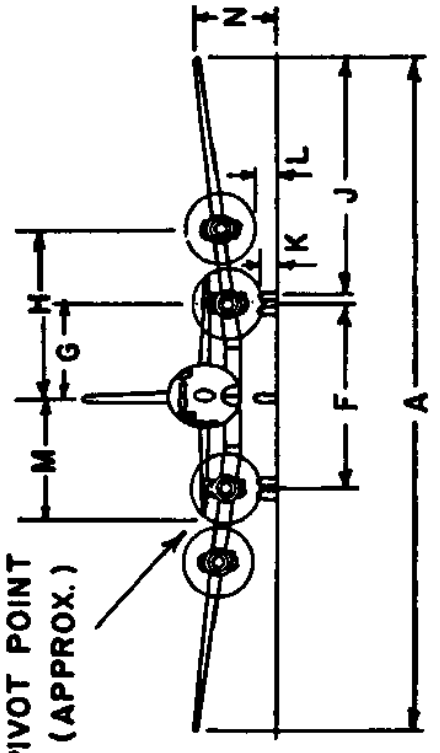


Figure A12-44. Douglas DC-4/6/7

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
EMB-110P1	12,500 LB 5 670 KG	12,500 LB 5 670 KG	50'3" 15.32M	49'6" 15.09M	16'6" 5.03M	16'2" 4.93M	23'8" 7.21M	16'3" 4.95M	7'11" 2.41M	16'9" 5.11M	0'10" 0.25M	16'6" 5.03M	6'7" 2.01M	47'7" 14.50M
EMB-110P1/41	13,007 LB 5 900 KG	12,566 LB 5 700 KG												
EMB-110P2	12,500 LB 5 670 KG	12,500 LB 5 670 KG												
EMB-110P2/41	13,007 LB 5 900 KG	12,599 LB 5700 KG												

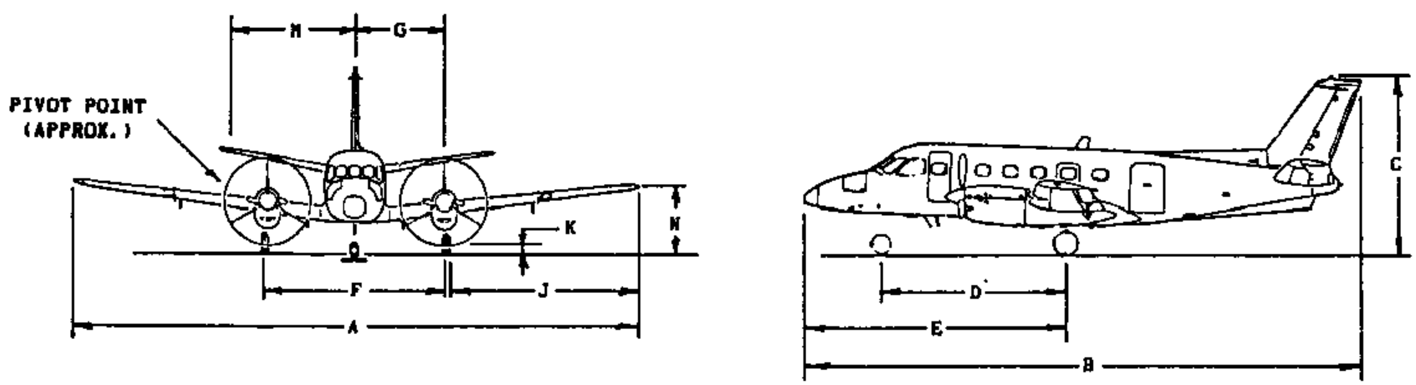


Figure A12-45. Embraer EmB 110

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
EMB 120	11,500 LB 5 216 KG	11,250 LB 5 103 KG	64'11" 19.79M	65'7" 19.99M	20'10" 6.35M	22'11" 6.99M		21'7" 21.58M	10'10" 3.30M	20'6" 6.25M	1'9" 0.53M	21'8" 6.60M		51'8" 15.75M

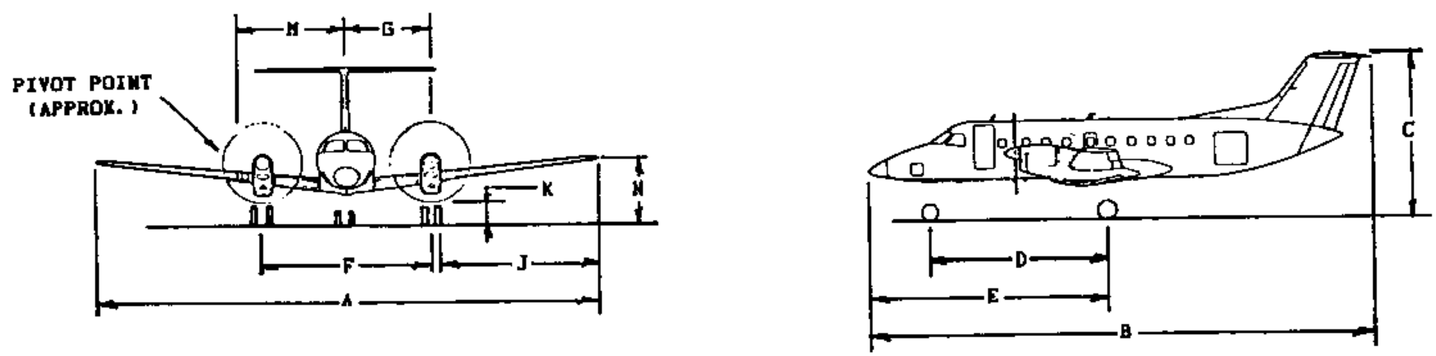
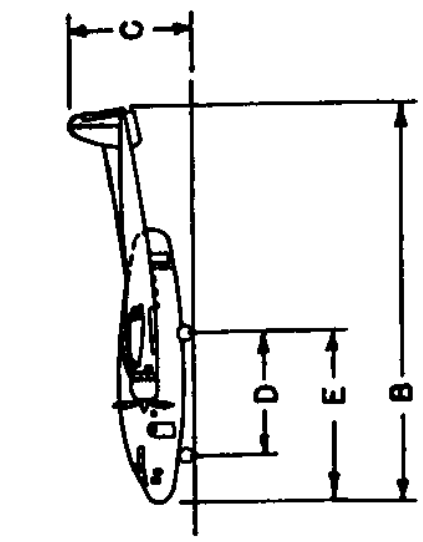


Figure A12-46. Embraer EmB 120

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
FLYING BOXCAR	77,000 LB 34 927 KG	72,700 LB 32 976 KG	109'3" 33.32M	86'6" 26.38M	27'6" 8.38M			29'2" 8.89M		38'4" 11.68M	3'0" 0.91M		15'0" 4.56M	70'0" 21.34M



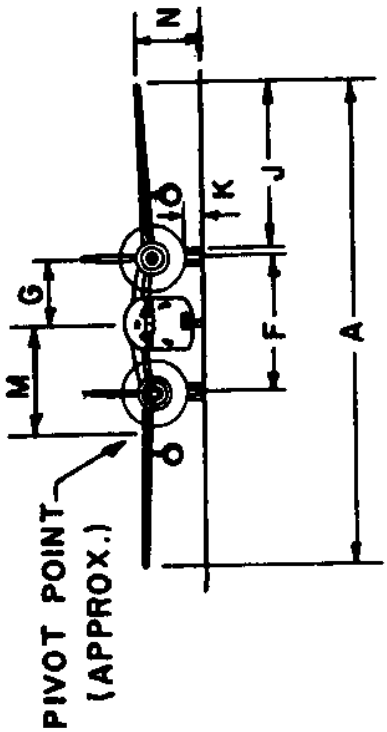
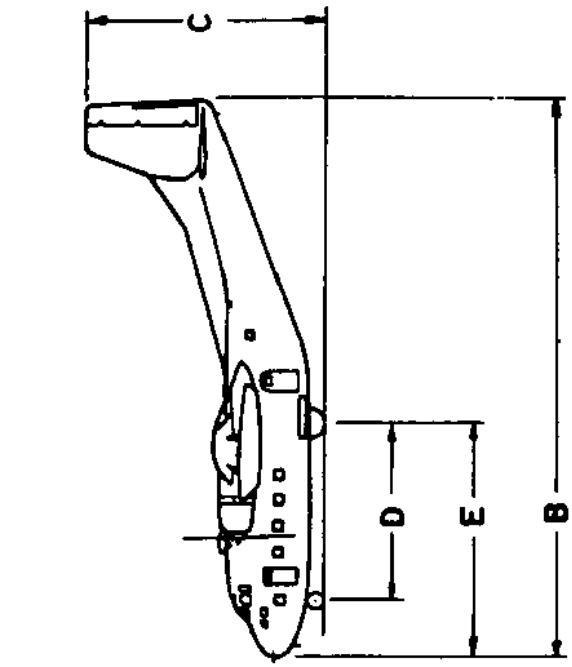


Figure A12-47. Fairchild C-119K Flying Boxcar

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	N	M	TURN RADIUS
PROVIDER	60,000 LB 27 216 KG	54,000 LB 24 494 KG	110'0" 33.52M	76'3" 23.24M	34'6" 10.52M			12'1" 3.68M	14'10" 4.52M	48'0" 14.63M	3'8" 1.12M	14'10" 4.52M	14'0" 4.27M	70'0" 21.34M



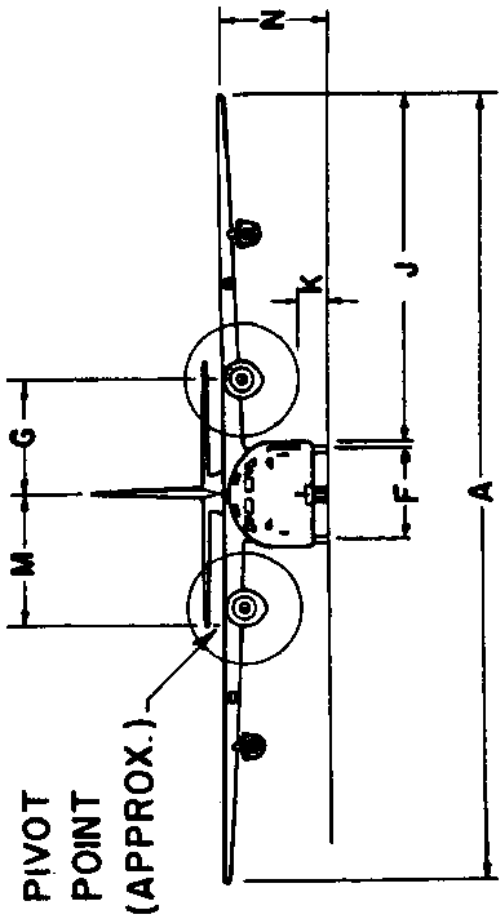


Figure A12-48. Fairchild C-123K Provider

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
F-27, B	40,500 LB 18 370 KG	38,500 LB 17 463 KG	95'2" 29.52M	77'2" 23.52M	27'6" 8.38M	28'8" 8.73M	34'6" 10.52M	23'8" 7.22M	11'10" 3.61M	34'6" 10.52M	2'10" 0.87M	16'6" 5.03M	11'10" 3.61M	64'0" 19.51M
FH-227, C, E	43,500 LB 19 731 KG	43,000 LB 19 504 KG	95'2" 29.01M	83'1" 25.32M	27'6" 8.38M	34'7" 10.55M	40'3" 12.27M	23'8" 7.22M	11'10" 3.61M	34'9" 10.59M	3'2" 0.97M	12'4" 3.76M	11'10" 3.61M	59'7" 18.16M

NOTE: F-27A, J HAVE MAXIMUM (TAKEOFF) WEIGHT OF 42,000 LB (19 051 KG).
(LANDING) 40,000 LB (18 144 KG).

FH-227B, D HAVE MAXIMUM (TAKEOFF) WEIGHT OF 45,500 LB (20 638 KG).
(LANDING) 45,000 LB (20 412 KG).

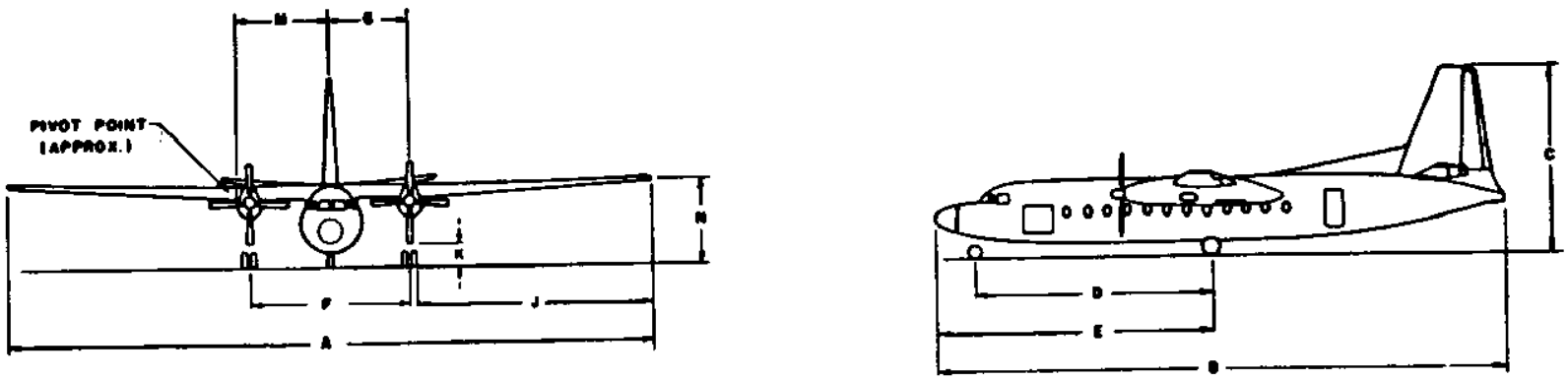
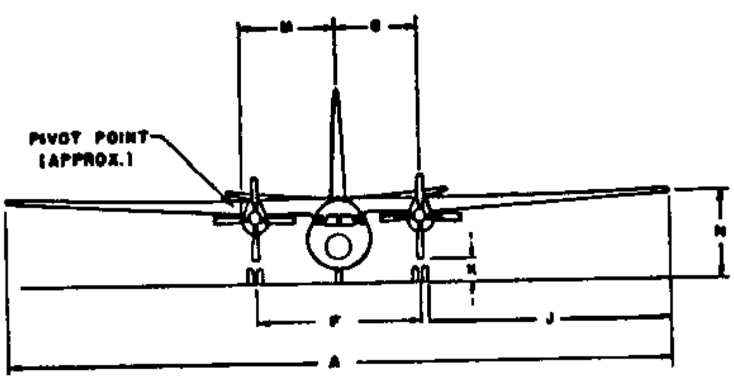


Figure A12-49. Fairchild F-27

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	NOTE	TURN RADIUS
100	40,500 LB 18 370 KG	40,000 LB 18 144 KG	95'2" 29.01M	77'2" 23.52M	27'11" 8.51M	28'8" 8.74M		23'8" 7.21M							
200, 400, 600	45,000 LB 20 412 KG	41,000 LB 18 597 KG	95'2" 29.01M	77'4" 23.57M	28'8" 8.74M	28'8" 8.74M	34'6" 10.52M	23'8" 7.21M	11'10" 3.61M	34'7" 10.54M		12'2" 3.71M	11'11" 3.63M	28'2" 8.59M	58'1" 17.70M
500	45,000 LB 20 412 KG	42,000 LB 19 051 KG	95'2" 29.01M	82'3" 25.07M	29'3" 8.92M	31'11" 9.73M	37'9" 11.51M	23'8" 7.21M	11'10" 3.61M	34'7" 10.54M		13'7" 4.14M	12'2" 3.71M	28'2" 8.59M	59'5" 18.11M

NOTE: CENTERLINE OF FUSELAGE TO CENTERLINE OF PYLON TANKS IF INSTALLED.



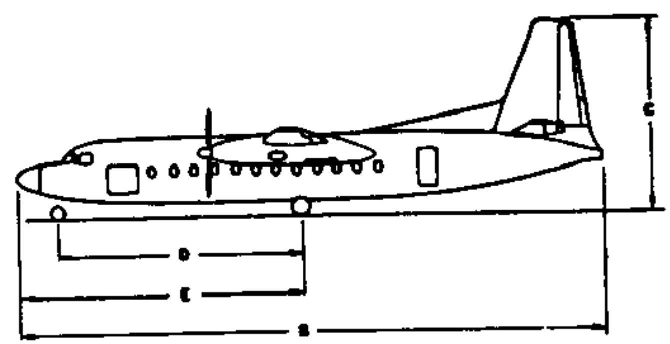


Figure A12-50. Fokker F-27

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	N	M	TURN RADIUS
1000	65,000 LB 29 484 KG	59,000 LB 26 762 KG	77'4" 23.57M	89'11" 27.42M	27'10" 8.48M	29'3" 8.89M		16'7" 5.11M	8'6" 2.59M	28'10" 8.78M	5'2" 1.60M	8.3" 2.51M	7'9" 2.37M	50'0" 15.24M
2000	65,000 LB 29 484 KG	59,000 LB 26 762 KG	77'4" 23.57M	97'2" 29.62M	27'10" 8.48M	33'11" 10.34M		16'7" 5.11M						
3000	73,000 LB 33 112 KG	64,000 LB 29 030 KG	82'3" 25.07M	89'11" 27.41M	27'10" 8.48M	29'3" 8.89M		16'7" 5.11M						
4000	73,000 LB 33 112 KG	66,500 LB 30 164 KG	82'3" 25.07M	97'2" 29.62M	27'10" 8.48M	33'11" 10.34M		16'7" 5.11M						
5000	70,800 LB 32 114 KG	64,000 LB 29 030 KG	82'3" 25.07M	89'11" 27.41M	27'10" 8.48M	29'3" 8.89M		16'7" 5.11M						
6000	73,000 LB 33 112 KG	66,500 LB 30 164 KG	82'3" 25.07M	97'2" 29.62M	27'10" 8.48M	33'11" 10.34M	46'4" 14.12M	16'7" 5.11M						

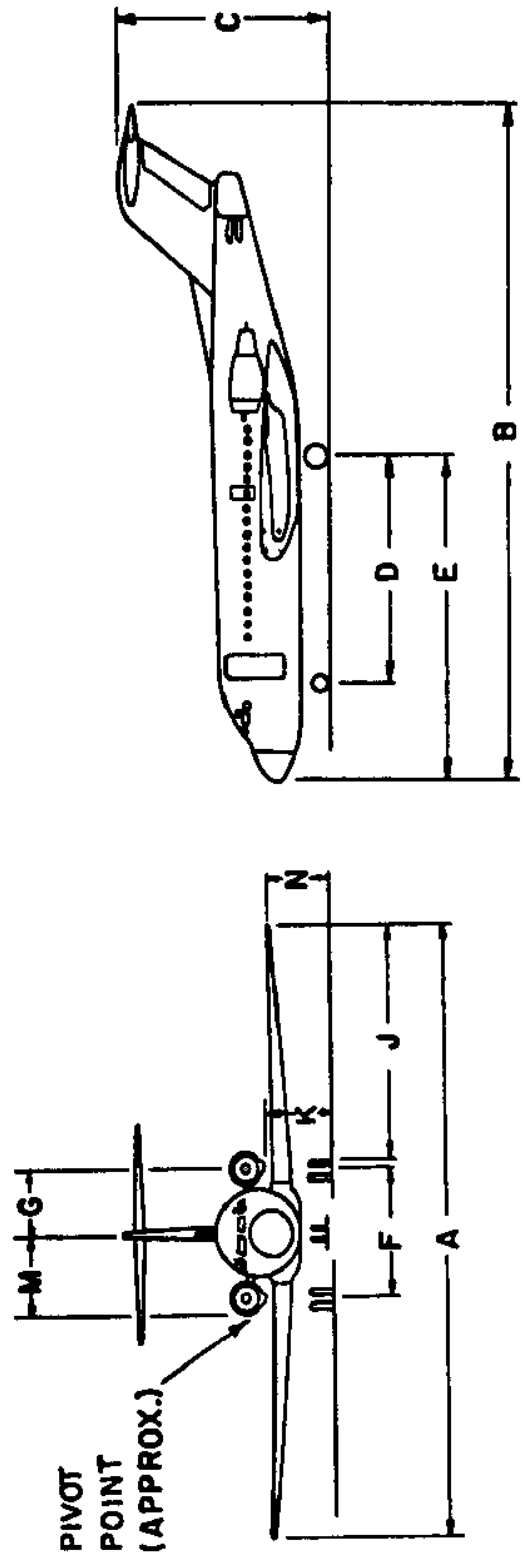


Figure A12-51. Fokker F-28

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
24	13,000 LB	11,880 LB	35'7"	43'3"	12'7"	16'2"	21'9"	8'3"	3'8"	12'9"	4'10"	16'0"	3'3"	34'0"
24A, F	5 897 KG	5 389 KG	10.85M	13.18M	3.84M	4.98M	6.63M	2.51M	1.12M	3.89M	1.49M	4.88M	0.99M	10.36M
25	15,000 LB	13,300 LB	35'7"	47'7"	12'7"	16'2"	26'0"	8'3"	3'8"	13'1"	4'10"	16'0"	3'3"	34'0"
25B, C, D	6 804 KG	6 033 KG	10.85M	14.50M	3.84M	4.98M	7.92M	2.51M	1.12M	3.99M	1.49M	4.88M	0.99M	10.36M
25G	16,300 LB	13,700 LB	35'7"	47'7"	12'4"	17'3"	27'1"	8'3"	3'8"	14'4"	4'10"		3'6"	
	7 394 KG	6 214 KG	10.85M	14.50M	3.76M	5.26M	8.25M	2.51M	1.12M	4.26M	1.49M		1.07M	
28/29	15,000 LB		43'9"	47.7"	12'4"									
	6 804 KG		13.34M	14.50M	3.76M									
35/36	17,000 LB	13,300 LB	38'1"	48'8"	12'4"									
	7 711 KG	6 033 KG	11.61M	14.83M	3.76M									
35A/36A	18,300 LB	15,300 LB	39'6"	48'8"	12'4"									
	8 301 KG	6 940 KG	12.07M	14.83M	3.76M									
55/56	21,500 LB	18,000 LB	43'9"	55'1"	14'8"									
55C, ER, LR	9 752 KG	8 165 KG	13.34M	16.79M	4.47M									

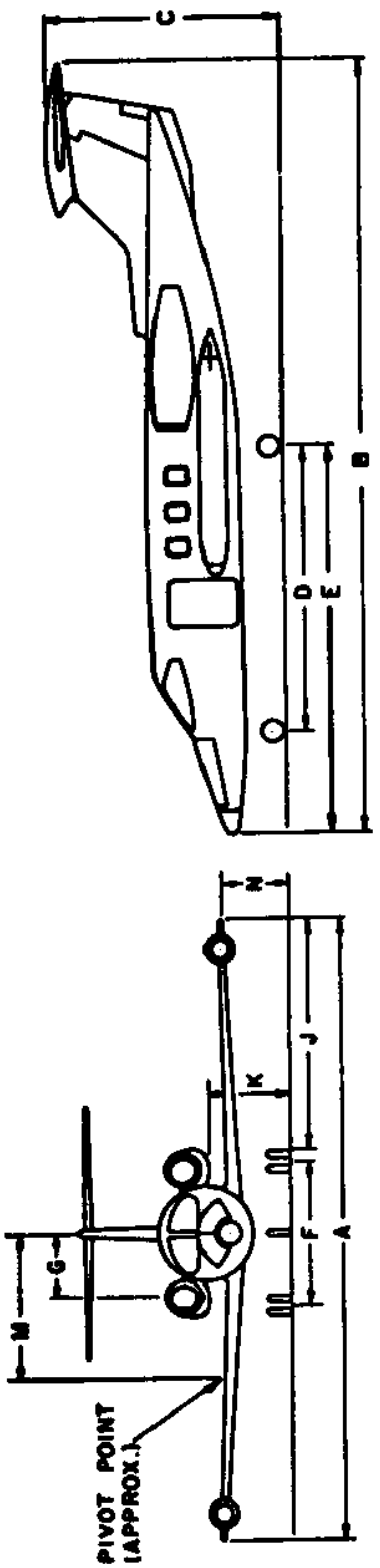


Figure A12-52. Gates Learjet

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
880	184,500 LB	137,000 LB	120'0"	129'4"	36'0"	53'1"	64'10"	18'10"	22'2"	41'4"	49'3"	2'8"	3'11"	19'5"	10'11"	84'0"
	83 688 KG	62 142 KG	36.58M	39.42M	10.97M	16.18M	19.76M	5.74M	6.76M	12.60M	15.01M	0.81M	1.19M	5.52M	3.33M	25.60M
990	246,200 LB	202,000 LB	120'0"	139'2"	39'6"	57'3"	68'11"	19'11"	22'2"	41'4"	48'10"	2'9"	4'0"	29'3"	12'9"	93'8"
	111 674 KG	91 626 KG	36.58M	42.42M	12.04M	17.45M	21.01M	6.07M	6.76M	12.60M	14.88M	0.84M	1.22M	8.92M	3.89M	28.55M

NOTE: OPTIONAL TAKEOFF AND LANDING WEIGHTS.

880 193,500 LB (88 770 KG) MAXIMUM TAKEOFF WEIGHT.
155,000 LB (70 307 KG) MAXIMUM LANDING WEIGHT.

990 255,000 LB (115 666 KG) MAXIMUM TAKEOFF WEIGHT.

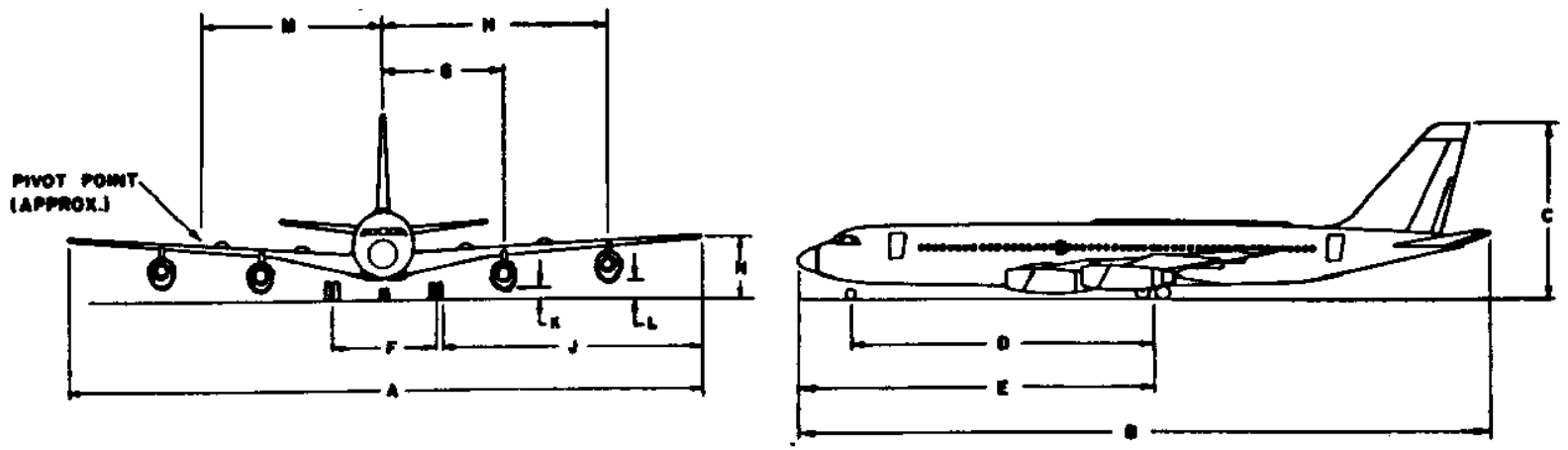


Figure A12-53. General Dynamics/Convair 880/990

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
G-159C	33,600 LB 15 241 KG	30,400 LB 13 789 KG	78'4" 23.88M	75'4" 22.96M	23'0" 7.01M	19'10" 6.04M	26'8" 8.11M	24'7" 7.47M	12'1" 3.68M	25'6" 7.77M	1'6" 0.45M	12'1" 3.68M	8'8" 2.65M	51'7" 15.67M

NOTE: OPTIONAL MAXIMUM (TAKEOFF) WEIGHT 36,000 LB (16 329 KG).
(LANDING) 34,285 LB (15 551 KG).

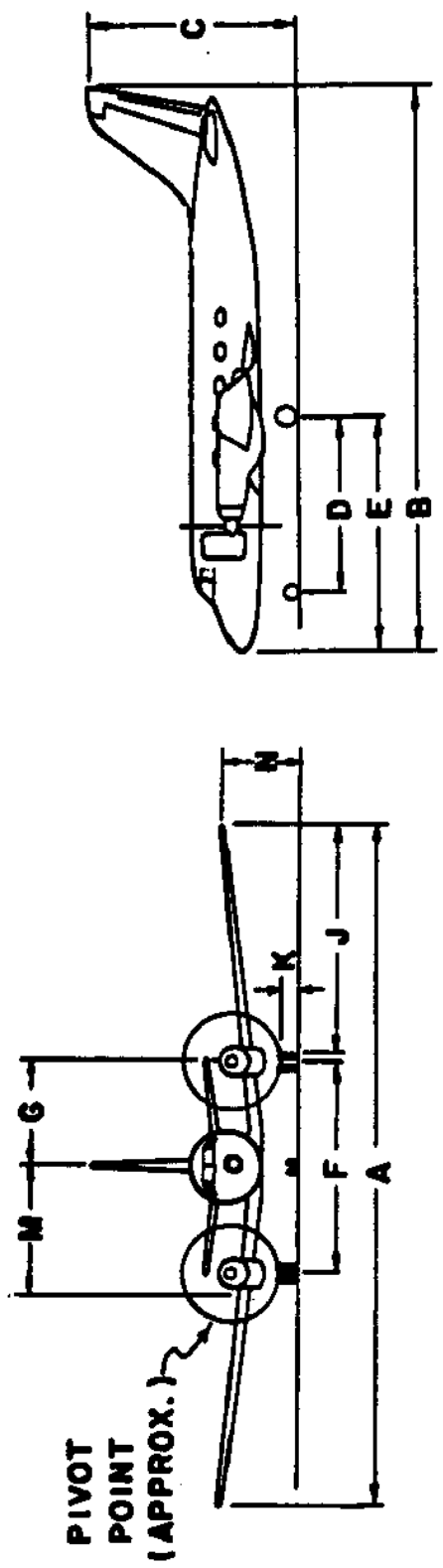


Figure A12-54. Grumman Gulfstream I

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
II	65,300 LB 29 620 KG	58,500 LB 26 535 KG	68'10" 20.98M	79'11" 24.36M	24'6" 7.47M	33'4" 10.16M	40'5" 12.32M	13'8" 4.15M	6'3" 1.91M	26'8" 8.11M	8'10" 2.69M	6'9" 2.07M	6'0" 1.83M	45'0" 13.72M
II-TT	65,300 LB 29 620 KG		71'8" 21.84M	79'11" 24.36M	24'6" 7.47M									
III	69,700 LB 31 615 KG	58,500 LB 26 535 KG	77'10" 23.72M	83'1" 25.32M	24'5" 7.44M									47'6" 14.48M
IV	71,780 LB 32 559 KG	58,500 LB 26 535 KG	77'10" 23.72M	87'10" 26.77M	24'5" 7.44M									48'2" 14.68M

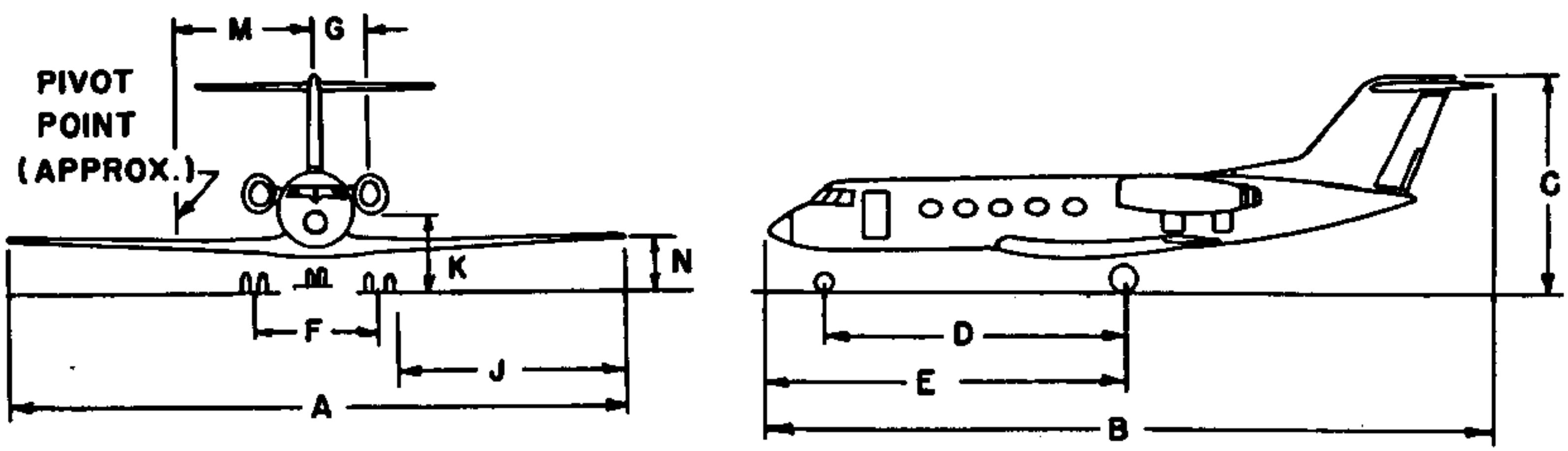
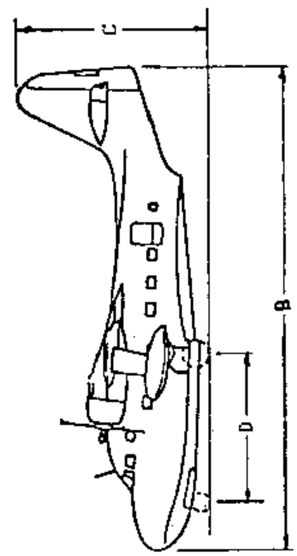


Figure A12-55. Grumman Gulfstream II

BUILDER	MODEL	NAME	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	DRAFT	NUMBER SEATS	TURN RADIUS
GRUMMAN	G-64/ G-111	ALBATROSS	31,150 LB 14 129 KG	31,150 LB 14 129 KG	96'8" 29.46M	62'10" 19.15M	25'10" 7.87M	17'6" 5.33M	17'8" 5.38M	3'6" 1.07M	28	



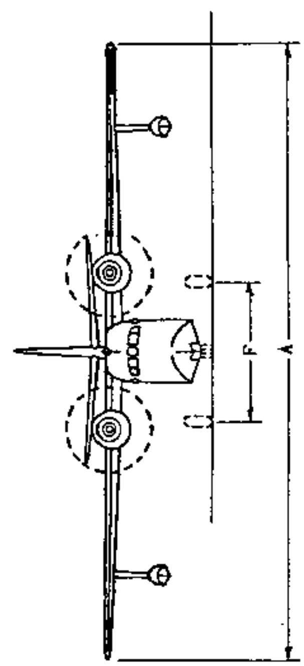


Figure A12-56. Grumman G-64/G-III

BUILDER	MODEL	NAME	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	DRAFT	NUMBER SEATS	TURN RADIUS
GRUMMAN	G-73	MALLARD	12,750 LB 5 783 KG	12,750 LB 5 783 KG	66'8" 20.32M	48'4" 14.73M	18'9" 5.72M	14'10" 4.52M	12'10" 3.91M		10	

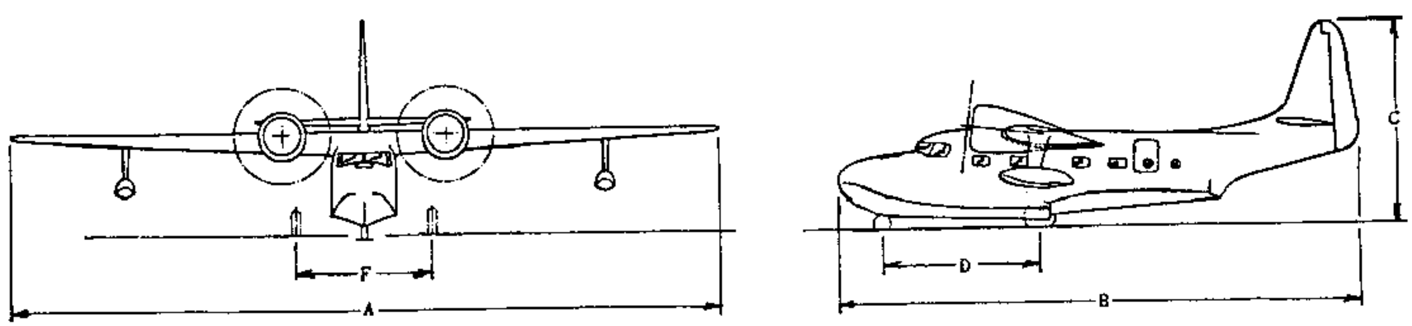
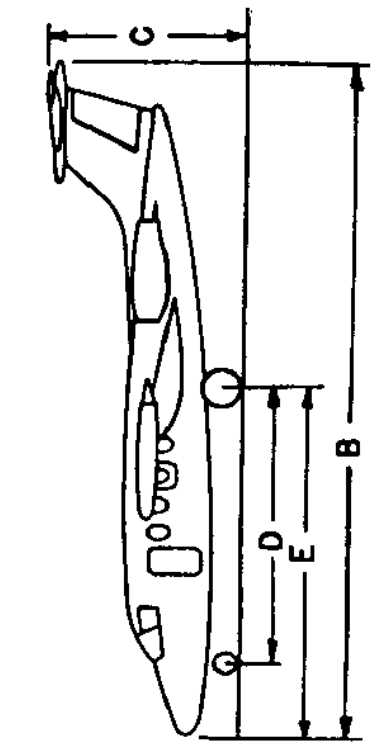


Figure A12-57. Grumman G-73

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
HFB-320	20,280 LB 9 199 KG	19,400 LB 8 800 KG	47'6" 14.48M	54'6" 16.61M	16'2" 4.93M	22'1" 6.73M	28'2" 8.58M	7'9" 2.39M	4'8" 1.42M	19'7" 5.97M	5'11" 1.80M	8'3" 2.51M	7'3" 2.21M	29'5" 8.94M



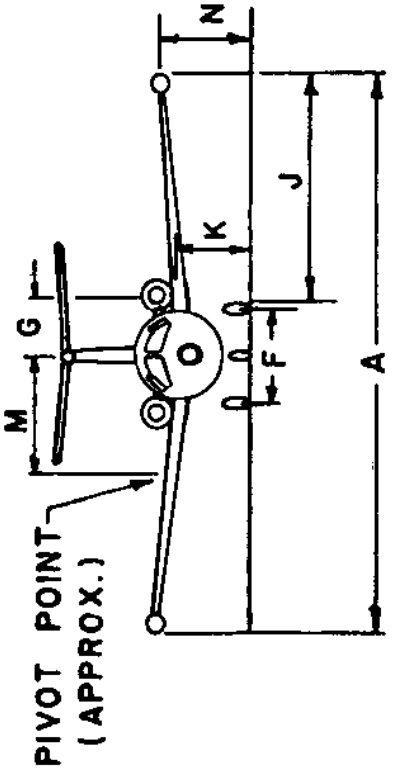


Figure A12-58. Hamburger-Flugzeubau HFB-320 Hansa

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
DH.104	8,950 LB 4 060 KG	8,500 LB 3 856 KG	57'0" 17.61M	39'3" 11.97M	13'4" 4.07M		13'8" 4.17M	9	35'4" 10.83M

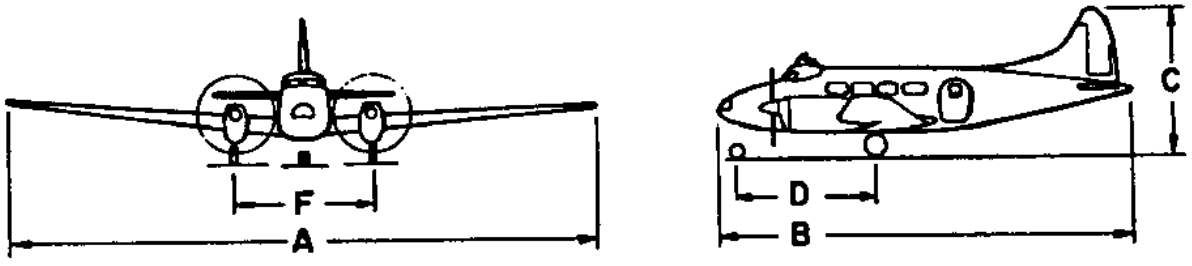


Figure A12-59. Hawker Siddeley DH. 104 Dove

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
DH.114	13,500 LB 6 123 KG	13,150 LB 5 965 KG	71'6" 21.79M	48'6" 14.78M	15'7" 4.75M	14'5" 4.39M		16'8" 5.14M			15'0" 4.57M					

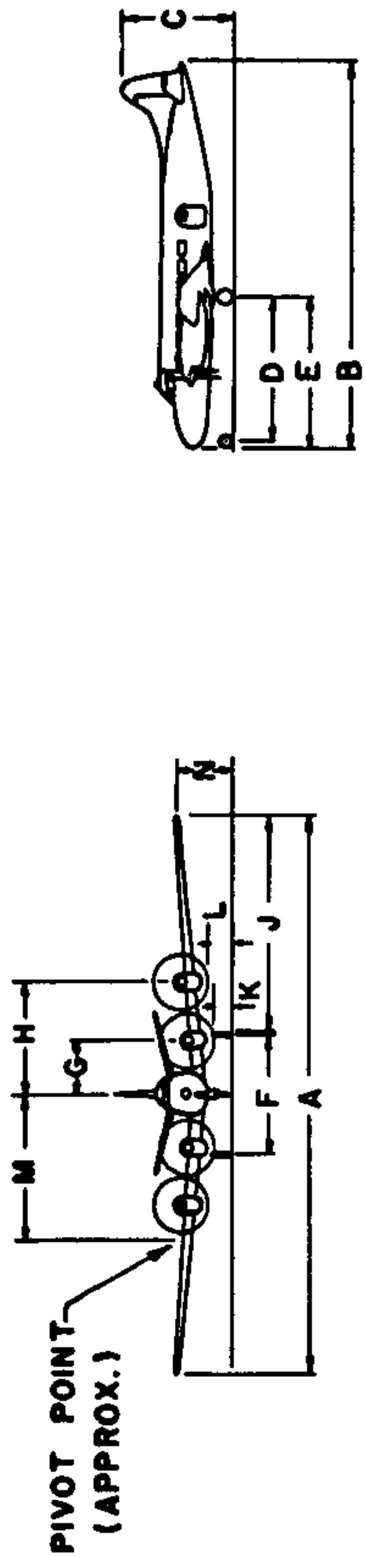


Figure A12-60. Hawker Siddeley DH. 114 Heron

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
400A	23,300 LB 10 569 KG	20,000 LB 9 072 KG	47'0" 14.33M	47'5" 14.45M	16'6" 5.08M	18'9" 5.72M	26'3" 8.00M	9'2" 2.79M	4'2" 1.27M	18'7" 5.66M	4'9" 1.45M	19'0" 5.79M	4'4" 1.32M	43'0" 13.11M
600A	25,000 LB 11 340 KG	22,000 LB 9 979 KG	47'0" 14.33M	50'6" 15.39M	17'3" 5.26M									
700A	24,200 LB 10 977 KG	22,000 LB 9 979 KG	47'0" 14.33M	50'8" 15.44M	17'7" 5.36M									
800A	27,400 LB 12 428 KG	23,350 LB 10 591 KG	51'5" 15.67M	51'2" 15.60M	17'6" 5.33M									

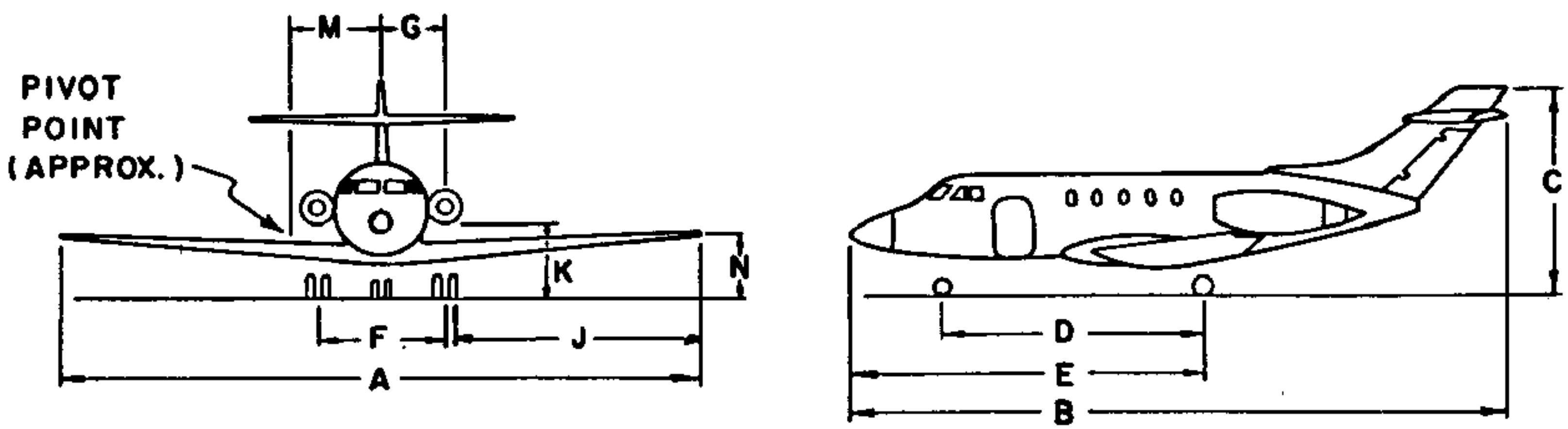
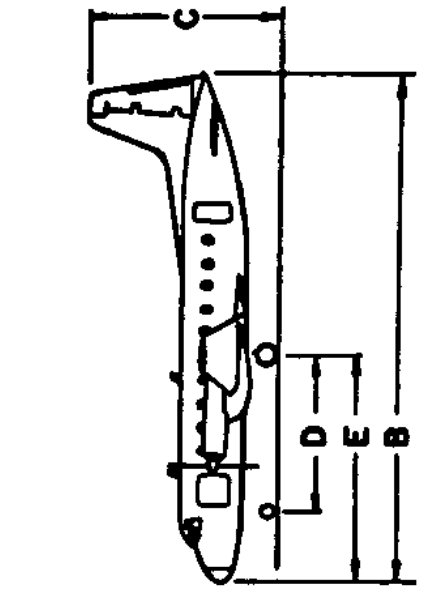


Figure A12-61. Hawker Siddeley HS-125

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	N	M	TURN RADIUS
2A	44,490 LB 20 180 KG	42,100 LB 19 096 KG	98'6" 30.02M	67'0" 20.49M	24'10" 7.63M	20'8" 6.32M		24'9" 7.60M		35'11" 10.95M	2'0" 0.61M			59'0" 17.98M
2B	46,500 LB 21 092 KG		102'6" 31.24M	67'0" 20.49M	24'10" 7.63M									



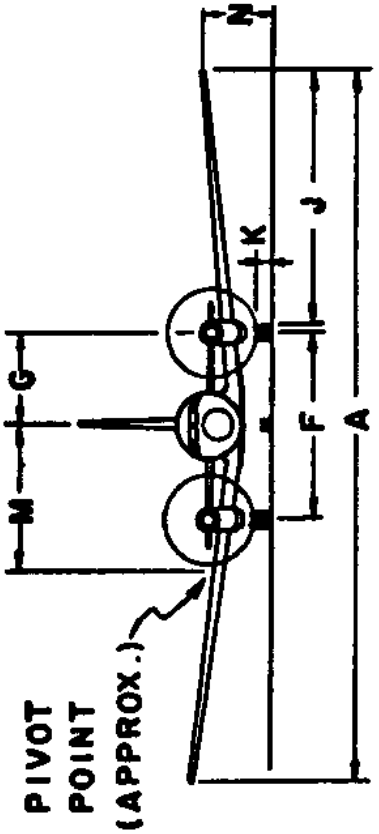


Figure A12-62. Hawker Siddeley HS-748

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
Il-62	357,000 LB 161 932 KG	252,000 LB 114 305 KG	141'9" 43.20M	174'4" 53.13M	40'6" 12.34M	80'5" 24.57M		22'4" 6.80M			58'0" 17.76M					

NOTE: OPTIONAL TAKEOFF WEIGHT 367,760 LB (166 813 KG).

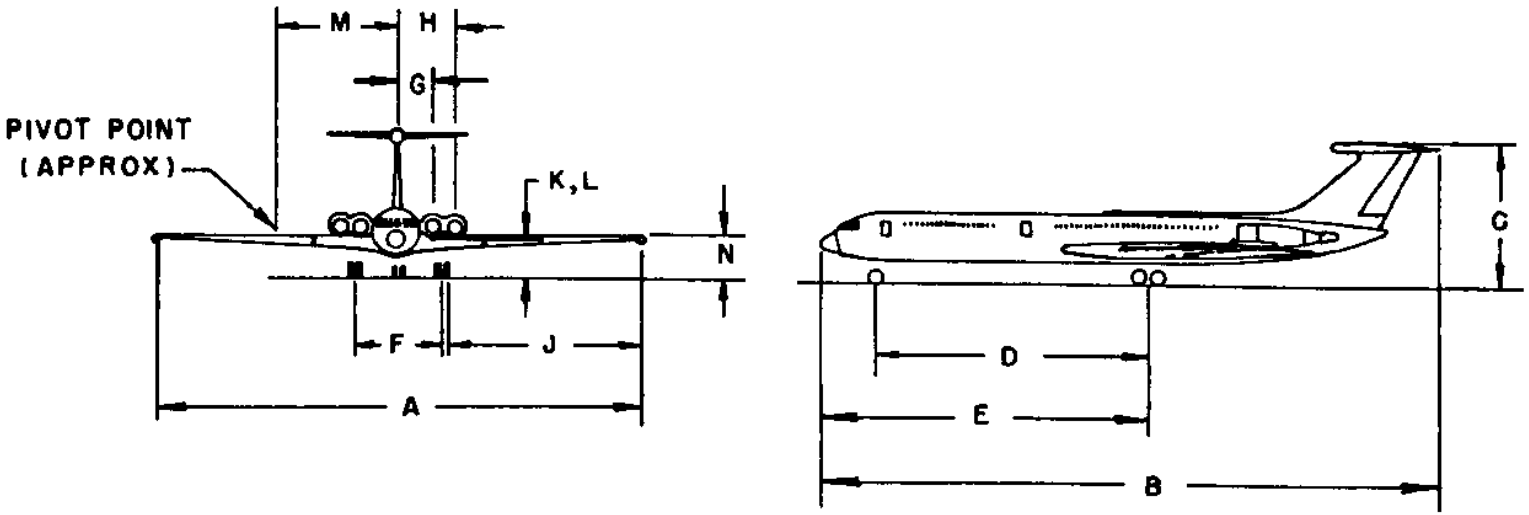


Figure A12-63. Ilyushin IL-62

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
1121	16,800 LB 7 620 KG	16,000 LB 7 257 KG	43'4" 13.21M	50'5" 15.37M	15'9" 4.80M	23'9" 7.24M		11'2" 3.40M	3'4" 1.02M	15'9" 4.80M	5'2" 1.60M	23'8" 7.21M	4'11" 1.50M	45'5" 13.84M
1123	20,500 LB 9 299 KG	19,000 LB 8 618 KG	43'4" 13.21M	52'3" 15.93M	15'9" 4.80M	23'9" 7.24M		12'0" 3.66M	3'4" 1.02M	15'9" 4.80M	5'2" 1.60M			
1124	22,850 LB 10 365 KG	19,000 LB 8 618 KG	44'10" 13.67M	52'3" 15.93M	15'10" 4.83M	25'7" 7.80M	28'5" 8.66M	11'0" 3.35M	4'2" 1.27M	16'10" 5.13M	4'3" 1.30M		4'0" 1.22M	
1124A	23,500 LB 10 659 KG	19,000 LB 8 618 KG	44'10" 13.67M	52'3" 15.93M	15'10" 4.83M	25'7" 7.80M	28'5" 8.66M	11'0" 3.35M	4'2" 1.27M	16'10" 5.13M	4'3" 1.30M		4'0" 1.22M	
1125	23,500 LB 10 659 KG	20,700 LB 9 389 KG	52'6" 16.05M	55'7" 16.94M	18'2" 5.54M	24'1" 7.34M	30'9" 9.37M	9'1" 2.77M	4'4" 1.32M	21'1" 6.43M	7'0" 2.13M		3'10" 1.17M	

NOTE: MODEL 1121 FORMERLY PRODUCED BY NORTH AMERICAN ROCKWELL AS "JET COMMANDER."

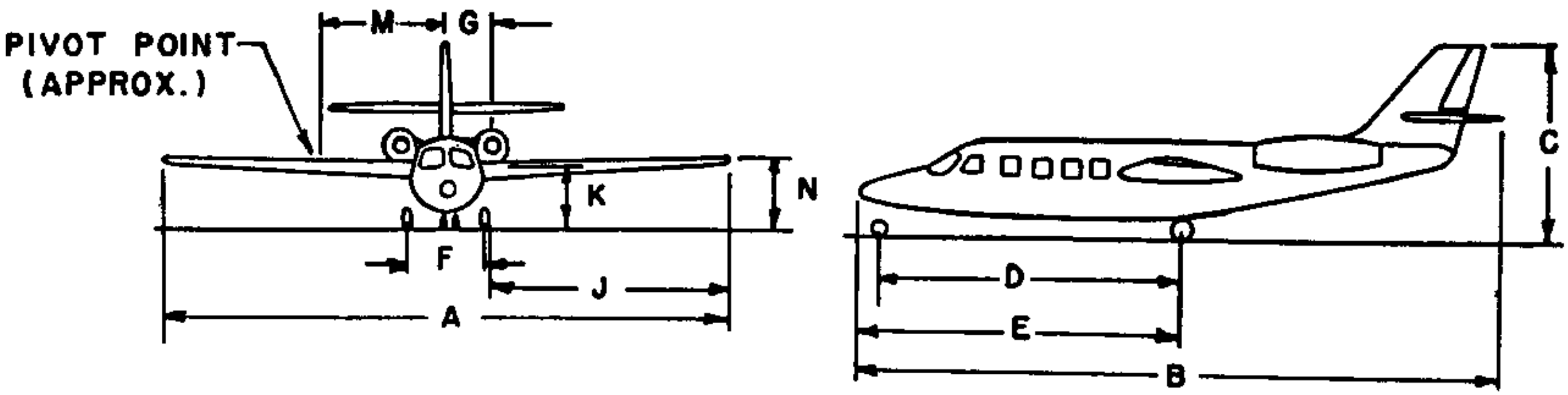


Figure A12-64. Israel Aircraft Industries Westwind

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
749A	107,000 LB 48 534 KG	89,500 LB 40 597 KG	123'0" 37.49M	95'2" 29.01M	22'5" 6.83M	33'0" 10.06M	39'3" 11.96M	28'0" 8.53M	14'0" 4.27M	29'10" 9.09M	45'5" 13.84M	1'9" 0.53M	3'11" 1.19M	31'1" 9.47M	15'11" 4.85M	92'7" 28.22M
1049	120,000 LB 54 431 KG	101,500 LB 46 040 KG	123'0" 37.49M	113'7" 34.62M	24'10" 7.57M	43'7" 13.28M	49'11" 15.21M	28'0" 8.53M	14'0" 4.27M	29'10" 9.09M	45'5" 13.84M	1'9" 0.53M	3'11" 1.19M	26'0" 7.92M	16'3" 4.95M	87'6" 20.07M
1649A	160,000 LB 72 575 KG	123,000 LB 55 792 KG	150'0" 45.72M	116'2" 35.41M	23'5" 7.14M	45'7" 13.89M	54'4" 16.56M	38'5" 11.71M	19'2" 5.84M	37'4" 11.38M	53'10" 16.41M	1'5" 0.44M	3'7" 1.09M	28'4" 8.64M	16'11" 5.16M	103'5" 32.13M

NOTE: MODEL 1049C HAS MAXIMUM (TAKEOFF) WEIGHT OF 137,500 LB (62 369 KG).
(LANDING) 113,000 LB (51 256 KG).

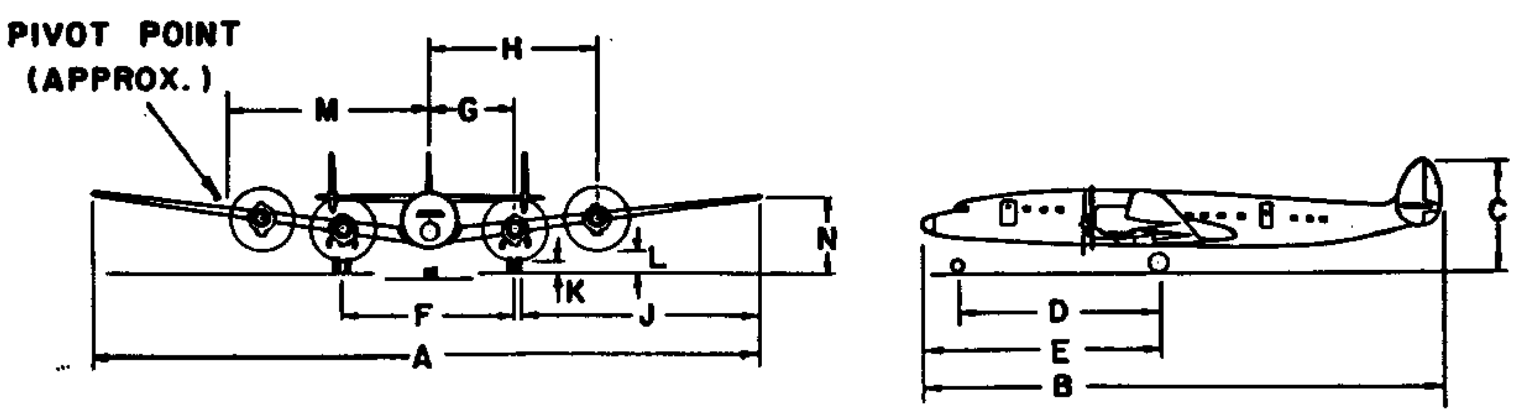


Figure A12-65. Lockheed Constellation and Super Constellation

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
C-5B	769,000 LB 348 813 KG	635,850 LB 288 417 KG	222'8" 67.87M	247'10" 75.54M	65'1" 19.84M	82'1" 25.02M	116'11" 35.64M	37'5" 11.40M	39'8" 12.09M	61'11" 18.87M	92'8" 28.25M	10'9" 3.28M	7'11" 2.41M	38'4" 11.68M	13'7" 4.14M	162'6" 49.53M

NOTE: OPTIONAL TAKEOFF WEIGHT 837,000 LB (379 657 KG).

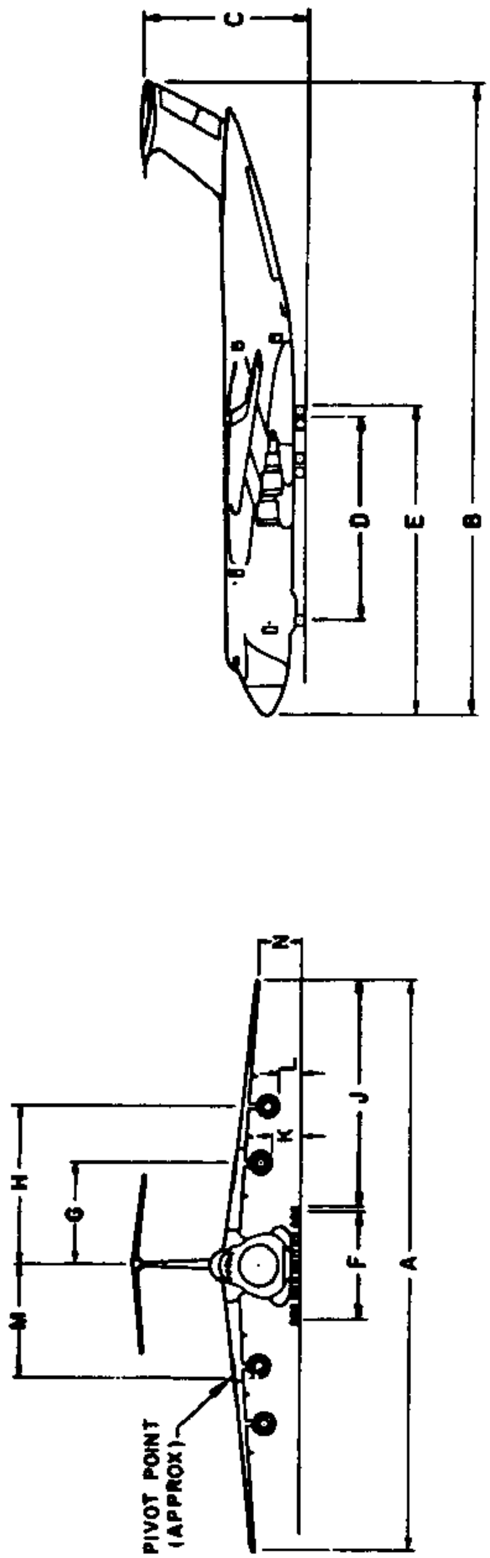


Figure A12-66. Lockheed C-5B Galaxy

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
C-141A	316,600 LB 143 607 KG	316,100 LB 143 381 KG	159'11" 48.74M	145'0" 44.19M	39'4" 11.99M	55'0" 16.76M	60'7" 18.46M	17'6" 5.34M	23'9" 7.24M	38'4" 11.68M	70'0" 21.34M	3'11" 1.19M	3'4" 1.01M	10'0" 3.05M	6'0" 1.83M	92'0" 28.04M
C-141B	343,000 LB 155 582 KG		159'11" 48.74M	168'4" 51.31M	39'4" 11.99M											

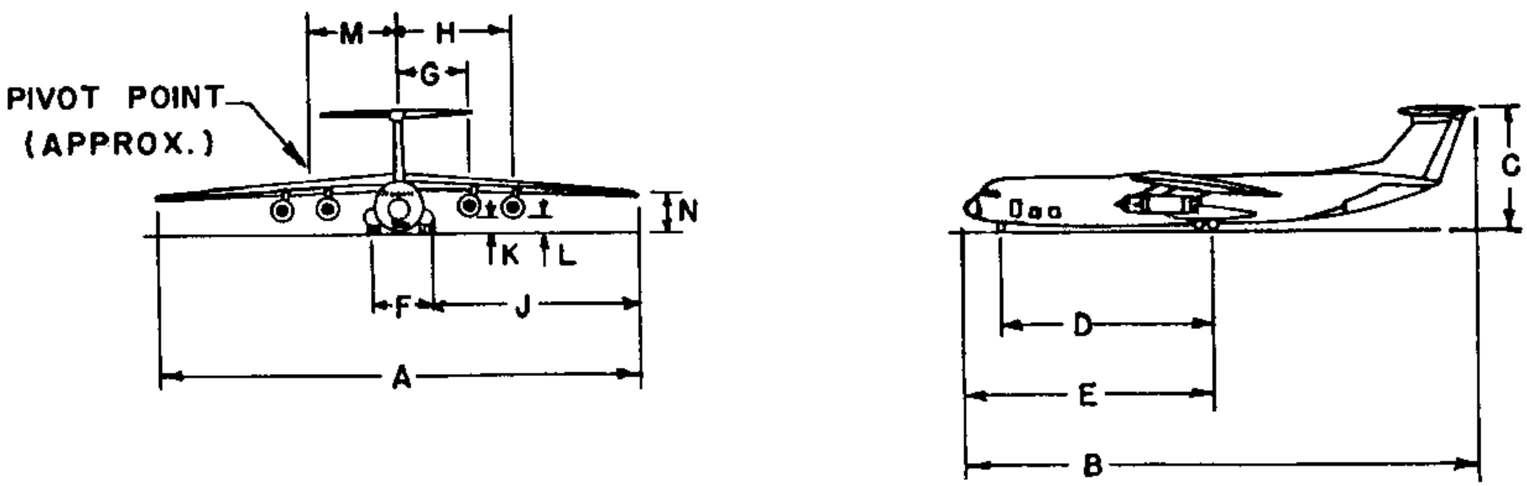
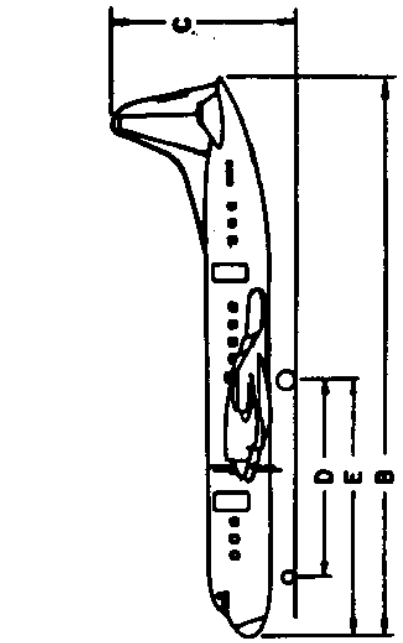


Figure A12-67. Lockheed C-141 Starlifter

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	N	M	TURN RADIUS
L-188	116,000 LB 52 617 KG	95,650 LB 43 386 KG	99'0" 29'91M	104'7" 31.88M	33'8" 10.26M	37'0" 11.27M	48'3" 14.71M	31'2" 9.50M	15'7" 4.75M	29'9" 9.07M	37'9" 9.98M	1'3" 0.33M	2'6" 0.76M	15'7" 4.75M	10'11" 3.33M	65'1" 19.84M



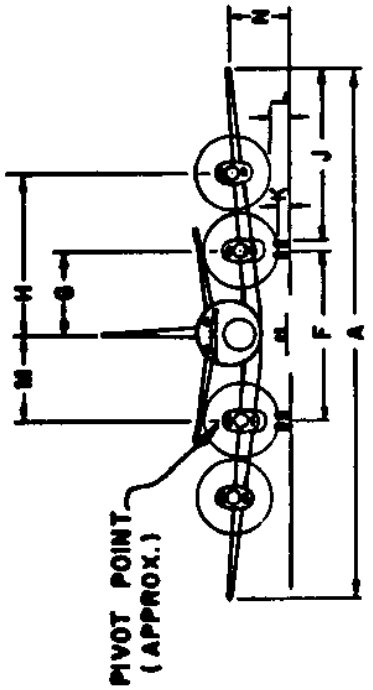


Figure A12-68. Lockheed L-188 Electra II

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
L-100-20	155,000 LB 70 307 KG	130,000 LB 58 967 KG	132'7" 40.41M	106'1" 32.33M	39'4" 11.98M	37'1" 11.30M	48'7" 14.80M	14'3" 4.34M	16'9" 5.11M	33'4" 10.16M	57'5" 17.50M	5'11" 1.80M	6'11" 2.11M	12'0" 3.65M	15'4" 4.67M	88'0" 26.82M
L-100-30	155,000 LB 70 307 KG	135,000 LB 61 235 KG	132'7" 40.41M	112'9" 34.36M	39'2" 11.93M	40'5" 12.31M	51'11" 15.81M	14'3" 4.34M	16'9" 5.11M	33'4" 10.16M	57'5" 17.50M	5'11" 1.80M	6'11" 2.11M	14'0" 4.27M	15'3" 4.64M	90'0" 27.43M
C-130H	175,000 LB 79 379 KG	155,000 LB 70 307 KG	132'7" 40.41M	97'9" 29.79M	39'5" 12.01M	32'1" 9.78M	43'7" 13.28M	14'3" 4.34M	16'9" 5.11M	33'4" 10.16M	58'4" 17.78M	5'8" 1.73M			13'8" 4.17M	85'0" 25.91M

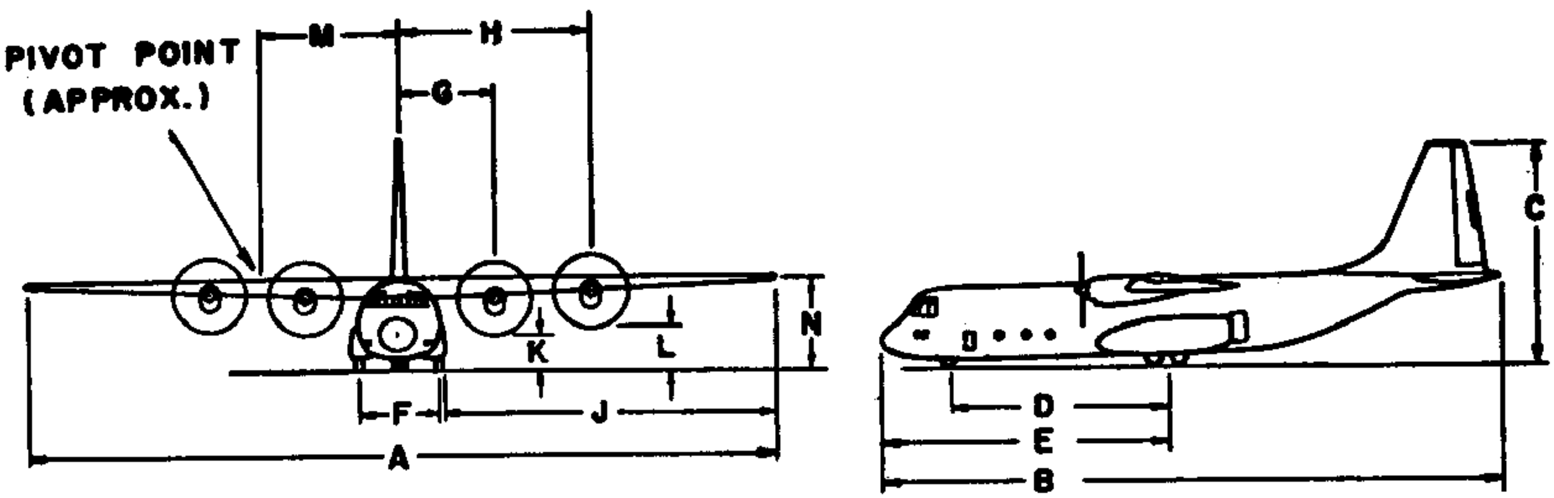


Figure A12-69. Lockheed L-100 Hercules

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	N	N	P	TURN RADIUS
1	430,000 LB 195 045 KG	358,000 LB 162 386 KG	155'4" 47.35M	177'8" 54.15M	55'10" 17.02M	70'0" 21.34M	99'9" 30.40M	36'0" 10.97M	34'10" 10.62M	56'8" 17.27M	2'11" 0.89M	38'10" 11.84M	16'1" 4.90M	18'9" 5.72M	121'3" 36.96M
100	466,000 LB 211 374 KG	368,000 LB 166 922 KG	155'4" 47.35M	177'8" 54.15M	55'10" 17.02M	70'0" 21.34M	99'9" 30.40M	36'0" 10.97M	34'10" 10.62M	56'8" 17.27M	2'11" 0.89M	38'10" 11.84M	16'1" 4.90M	18'9" 5.72M	121'3" 36.96M
200	466,000 LB 211 374 KG	368,000 LB 166 922 KG	155'4" 47.35M	177'8" 54.15M	55'10" 17.02M	70'0" 21.34M	99'9" 30.40M	36'0" 10.97M	34'10" 10.62M	56'8" 17.27M	2'11" 0.89M	38'10" 11.84M	16'1" 4.90M	18'9" 5.72M	121'3" 36.96M
500	496 000 LB 224 982 KG	368,000 LB 166 922 KG	155'4" 47.35M	164'2" 50.04M	55'10" 17.02M	61'8" 18.80M	91'5" 27.86M	36'0" 10.97M	34'10" 10.62M	56'8" 17.27M	2'11" 0.89M	34'0" 10.36M	16'10" 5.13M	20'0" 6.10M	116'10" 35.61M
500 EX. WING	496,000 LB 224 982 KG	368,000 LB 166 922 KG	164'4" 50.09M	164'2" 50.04M	55'10" 17.02M	61'8" 18.80M	91'5" 27.86M	36'0" 10.97M	34'10" 10.62M	61'2" 18.64M	2'11" 0.89M	34'0" 10.36M	16'10" 5.13M	20'0" 6.10M	122'0" 37.19M

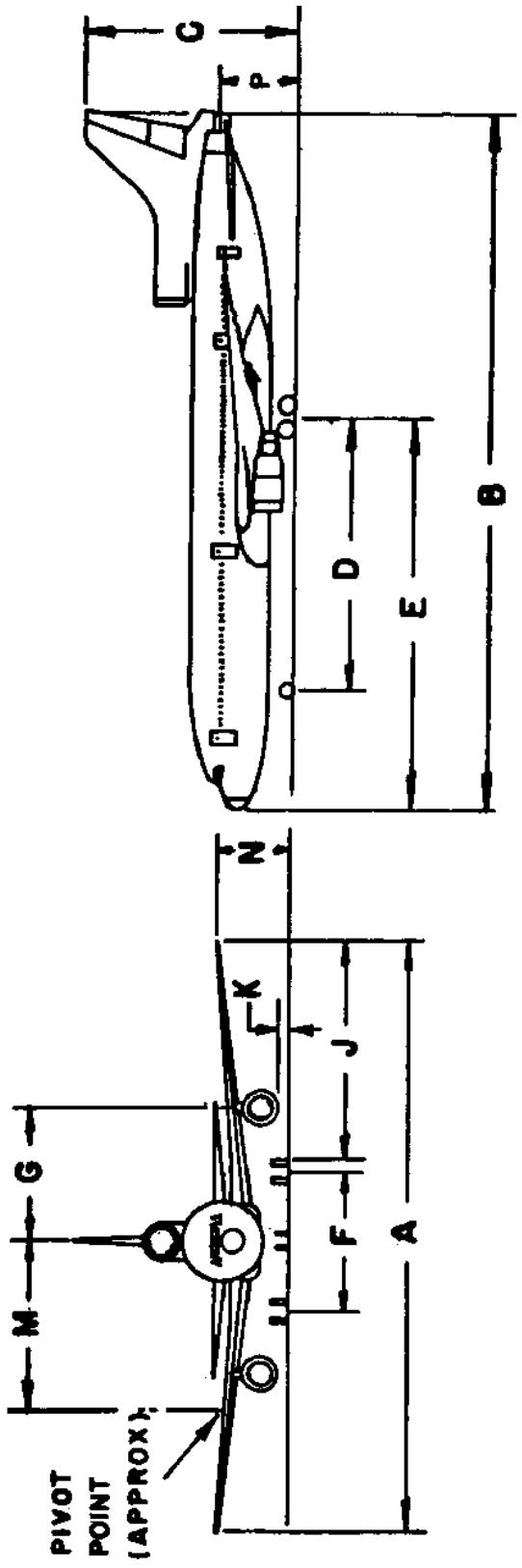
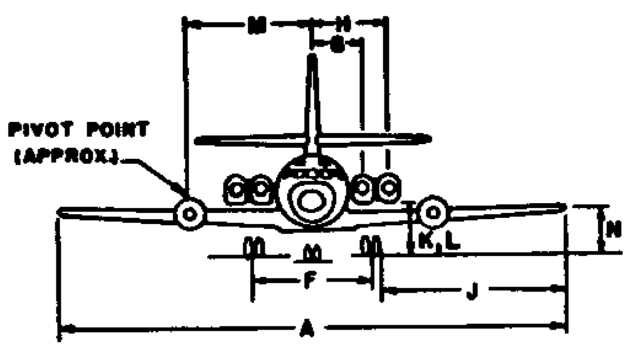


Figure A12-70. Lockheed L-1011 Tristar

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
1329	42,000 LB 19 501 KG	35,000 LB 15 876 KG	54'5" 16.29M	60'5" 18.42M	20'5" 6.22M	20'7" 6.28M	34'11" 10.65M	12'4" 3.76M	5'7" 1.71M	7'11" 2.42M	19'4" 5.90M	5'2" 1.60M	5'2" 1.60M	7'2" 2.19M	4'5" 1.34M	43'4" 13.21M

JETSTAR II HAS OPTIONAL MAXIMUM (TAKEOFF) WEIGHT OF 43,750 LB (19 845 KG).
(LANDING) 36,000 LB (16 329 KG).



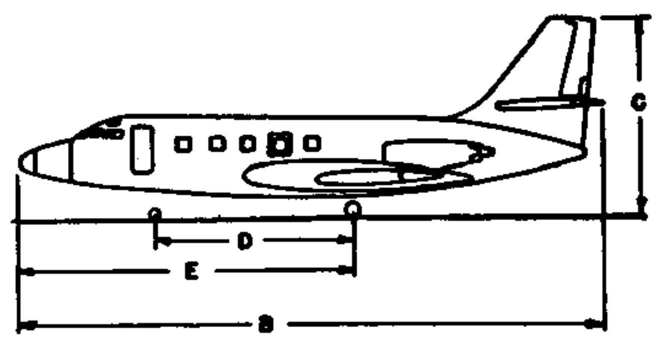


Figure A12-71. Lockheed L-1329 Jetstar

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
404	44,900 LB 20 366 KG	43,000 LB 19 504 KG	93'4" 28.45M	74'7" 22.73M	28'8" 8.24M	22'5" 6.83M	32'3" 9.83M	25'0" 7.62M	12'6" 3.81M	32'8" 9.96M	0'11" 0.28M	12'6" 3.81M	12'6" 3.81M	59'2" 18.03M

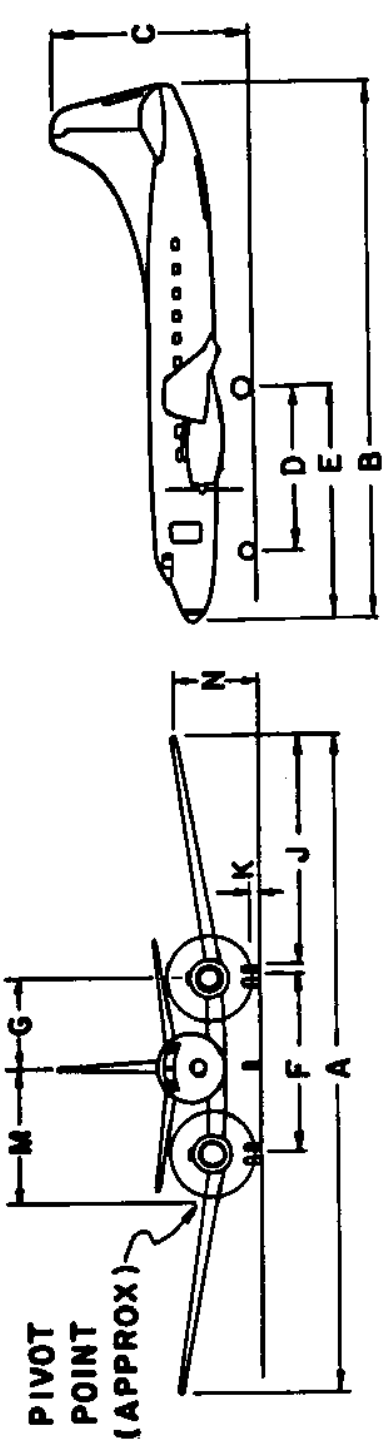


Figure A12-72. Martin 404

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
20, 30, 40	315,000 LB 142 884 KG	207,000 LB 93 895 KG	142'5" 43.41M	150'9" 45.95M	43'4" 13.21M	57'6" 17.53M	73'5" 22.38M	20'10" 6.35M	25'9" 7.85M	44'7" 13.59M	58'10" 17.93M	4'0" 1.22M	5'5" 1.63M	21'1" 6.43M	15'3" 4.65M	96'10" 29.51M
55	325,000 LB 147 420 KG	217,000 LB 98 431 KG	142'5" 43.41M	150'9" 45.95M	43'4" 13.21M	57'6" 17.53M	73'5" 22.38M	20'10" 6.35M	25'9" 7.85M	44'7" 13.59M	58'10" 17.93M	3'1" 0.94M	4'7" 1.40M	21'1" 6.43M	15'3" 4.65M	96'10" 29.51M
55F	325,000 LB 147 420 KG	240,000 LB 108 864 KG	142'5" 43.41M	150'9" 45.95M	43'4" 13.21M	57'6" 17.53M	73'5" 22.38M	20'10" 6.35"	25'9" 7.85M	44'7" 13.59M	58'10" 17.93M	3'1" 0.94M	4'7" 1.40M	21'1" 6.43M	15'3" 4.65M	96'10" 29.51M
61 71	325,000 LB 147 420 KG	240,000 LB 108 864 KG	142'5" 43.41M	187'5" 57.12M	43'0" 13.11M	77'6" 23.62M	93'5" 28.47M	20'10" 6.35M	25'9" 7.85M	44'7" 13.59M	58'10" 17.93M	3'3" 0.99M	4'7" 1.40M	27'0" 8.23M	15'1" 4.60M	106'11" 32.59M
61F 71CF	328,000 LB 148 781 KG	258,000 LB 117 029 KG	142'5" 43.41M	187'5" 57.12M	43'0" 13.11M	77'6" 23.62M	93'5" 28.47M	20'10" 6.35M	25'9" 7.85M	44'7" 13.59M	58'10" 17.93M	3'3" 0.99M	4'7" 1.40M	27'0" 8.23M	15'1" 4.60M	106'11" 32.59M
62, 72, 72AF	350,000 LB 158 760 KG	240,000 LB 108 864 KG	148'5" 45.24M	157'6" 48.00M	43'5" 13.23M	60'10" 18.54M	76'9" 23.39M	20'10" 6.35M	25'9" 7.85M	44'7" 13.59M	61'8" 18.80M	2'7" 0.79M	4'2" 1.27M	39'4" 11.99M	15'6" 4.72M	116'5" 35.48M
62F 72CF	350,000 LB 158 760 KG	250,000 LB 113 400 KG	148'5" 45.24M	157'6" 48.00M	43'5" 13.23M	60'10" 18.54M	76'9" 23.39M	20'10" 6.35M	25'9" 7.85M	44'7" 13.59M	61'8" 18.80M	2'7" 0.79M	4'2" 1.27M	39'4" 11.99M	15'6" 4.72M	116'5" 35.48M
63 73	355,000 LB 161 028 KG	258,000 LB 117 029 KG	148'5" 45.24M	187'5" 57.12M	43'0" 13.11M	77'6" 23.62M	93'5" 28.47M	20'10" 6.35M	25'9" 7.85M	44'7" 13.59M	61'8" 18.80M	2'7" 0.79M	4'2" 1.27M	38'10" 11.84M	15'4" 4.67M	116'1" 35.38M
63F, 73CF 73AF	355,000 LB 161 028 KG	275,000 LB 124 740 KG	148'5" 45.24M	187'5" 57.12M	43'0" 13.11M	77'6" 23.62M	93'5" 28.47M	20'10" 6.35M	25'9" 7.85M	44'7" 13.59M	61'8" 18.80M	2'7" 0.79M	4'2" 1.27M	38'10M 11.84M	15'4" 4.67M	116'1" 35.38M

NOTE: OPTIONAL TAKEOFF AND LANDING WEIGHTS:

72 335,000 LB (151 953 KG) MAXIMUM TAKEOFF WEIGHT.
240,000 LB (108 864 KG) MAXIMUM LANDING WEIGHT.

72AF 335,000 LB (151 953 KG) MAXIMUM TAKEOFF WEIGHT.
250,000 LB (113 400 KG) MAXIMUM LANDING WEIGHT.

NOTE: REDUCE NACELLE CLEARANCE DIMENSION (K AND L) BY 10 INCHES (0.25M) FOR DC-8-70 SERIES AIRCRAFT.

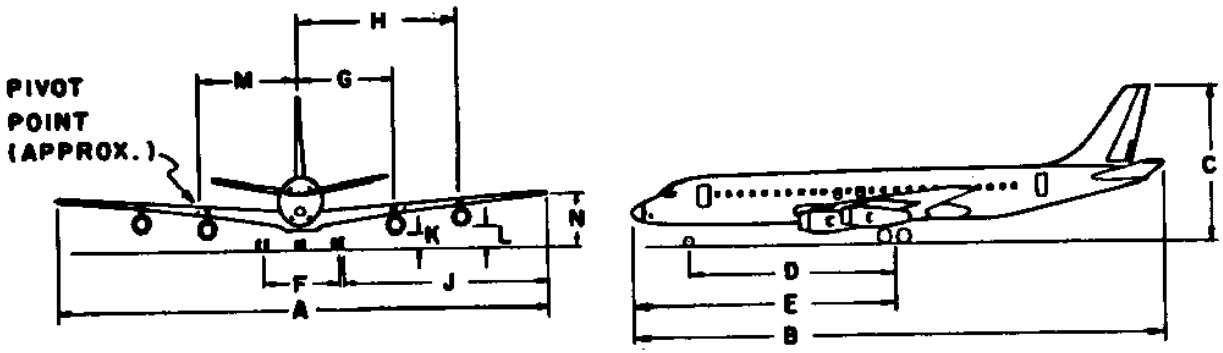
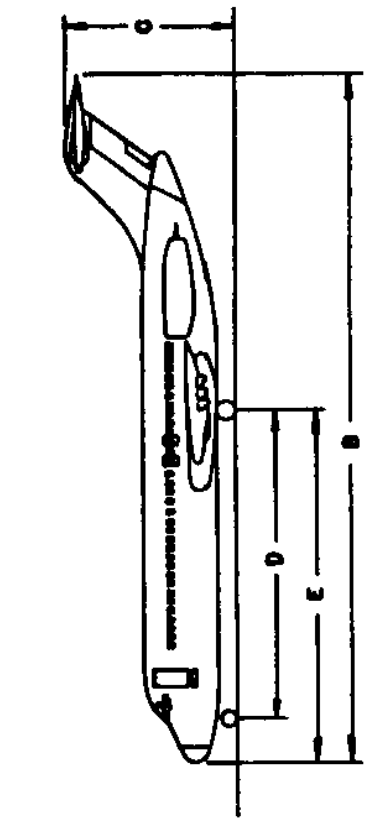


Figure A12-73. McDonnell-Douglas DC-8

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
15	90,700 LB 41 141 KG	81,700 LB 37 058 KG	89'5" 27.25M	104'5" 31.83M	27'7" 8.41M	43'8" 13.31M	51'4" 15.64M	16'4" 4.98M	8'11" 2.72M	35'0" 10.67M	6'5" 1.96M	8'6" 2.59M	7'2" 2.18M	59'7" 18.16M
15F	90,700 LB 41 141 KG	81,700 LB 37 058 KG	89'5" 27.25M	104'5" 31.83M	27'7" 8.41M	43'8" 13.31M	51'4" 15.64M	16'4" 4.98M	8'11" 2.72M	35'0" 10.67M	6'5" 1.96M	8'6" 2.59M	7'2" 2.18M	59'7" 18.16M
21	98,000 LB 44 452 KG	95,300 LB 43 227 KG	93'4" 28.45M	104'5" 31.83M	27'5" 8.36M	43'8" 13.31M	51'4" 15.64M	16'4" 4.98M	8'11" 2.72M	36'10" 11.23M	6'5" 1.96M	8'6" 2.59M	7'3" 2.21M	59'6" 18.14M
32	110,000 LB 49 895 KG	99,000 LB 44 906 KG	93'4" 28.45M	119'4" 36.37M	27'9" 8.46M	53'2" 16.21M	60'9" 18.52M	16'4" 4.98M	8'11" 2.72M	36'10" 11.23M	6'5" 1.96M	10'4" 3.15M	7'3" 2.21M	65'2" 19.86M
33F	110,000 LB 49 895 KG	99,000 LB 44 906 KG	93'4" 28.45M	119'4" 36.37M	27'9" 8.46M	53'2" 16.21M	60'9" 18.52M	16'4" 4.98M	8'11" 2.72M	36'10" 11.23M	6'5" 1.96M	10'4" 3.15M	7'3" 2.21M	65'2" 19.86M
41	114,000 LB 51 710 KG	102,000 LB 46 266 KG	93'4" 28.45M	125'7" 38.28M	28'5" 8.66M	56'2" 17.12M	63'8" 19.41M	16'0" 4.88M	8'11" 2.72M	37'0" 11.28M	6'11" 2.11M	10'11" 3.33M	7'2" 2.18M	68'6" 20.88M
51	121,000 LB 54 885 KG	110,000 LB 49 895 KG	93'4" 28.45M	133'7" 40.72M	28'9" 8.76M	60'11" 18.57M	68'6" 20.88M	16'0" 4.88M	8'11" 2.72M	37'0" 11.28M	6'10" 2.08M	11'10" 3.61M	7'1" 2.16M	71'10" 21.89M
81,82, 83,88	SEE NOTE	SEE NOTE	107'10" 32.87M	147'10" 45.06M	30'3" 9.22M	72'5" 22.07M	80'0" 24.38M	16'8" 5.08M	8'11" 2.72M	43'9" 13.34M	7'6" 2.29M	14'0" 4.27M	8'7" 2.62M	81'2" 24.74M
87	SEE NOTE	SEE NOTE	107'10" 32.87M	130'5" 39.75M	31'2" 9.50M	62'11" 19.18M	70'6" 21.49M	16'8" 5.08M	8'11" 2.72M	43'9" 13.34M	7'6" 2.29M	12'2" 3.71M	8'8" 2.64M	71'7" 21.82M

NOTE: TAKEOFF AND LANDING WEIGHTS:

81	140,000 LB (63 503 KG) MAXIMUM TAKEOFF WEIGHT.	88	149,500 LB (67 812 KG) MAXIMUM TAKEOFF WEIGHT.
	128,000 LB (58 060 KG) MAXIMUM LANDING WEIGHT.		130,000 LB (58 967 KG) MAXIMUM LANDING WEIGHT.
82	149,500 LB (67 812 KG) MAXIMUM TAKEOFF WEIGHT.	87	149,500 LB (67 812 KG) MAXIMUM TAKEOFF WEIGHT.
	130,000 LB (58 967 KG) MAXIMUM LANDING WEIGHT.		130,000 LB (58 967 KG) MAXIMUM LANDING WEIGHT.
83	160,000 LB (72 575 KG) MAXIMUM TAKEOFF WEIGHT.	87	140,000 LB (63 503 KG) MAXIMUM TAKEOFF WEIGHT.
	139,500 LB (63 276 KG) MAXIMUM LANDING WEIGHT.		128,000 LB (58 060 KG) MAXIMUM LANDING WEIGHT.



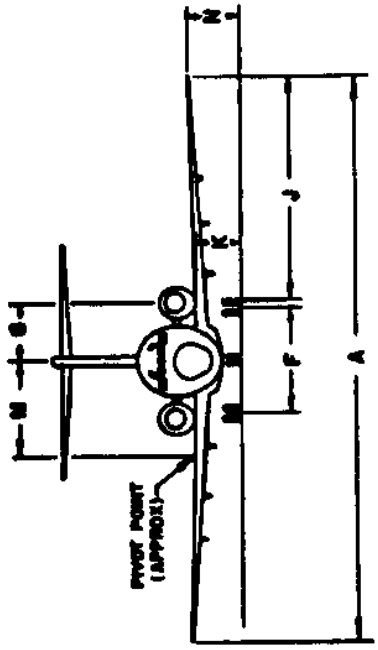


Figure A12-74. McDonnell-Douglas DC-9 and MD-80

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	P	TURN RADIUS
10	443,000 LB	363,500 LB	155'4"	182'3"	58'5"	72'5"	100'4"	35'0"	26'10"	57'1"	2'9"	39'0"	14'5"	29'7"	121'8"
	200 941 KG	164 881 KG	47.35M	55.55M	17.81M	22.07M	30.58M	10.67M	8.18M	17.40M	0.84M	11.89M	4.32M	9.02M	37.08M
30	590,000 LB	411,000 LB	165'4"	181'7"	58'7"	72'5"	100'4"	35'0"	26'10"	62'1"	2'10"	37'2"	14'4"	29'6"	125'4"
	267 620 KG	186 426 KG	50.39M	55.35M	17.86M	22.07M	30.58M	10.67M	8.18M	18.92M	0.86M	11.33M	4.37M	8.99M	38.20M
40	555,000 LB	403,000 LB	165'4"	182'3"	58'7"	72'5"	100'4"	35'0"	26'10"	62'1"	2'10"	37'2"	14'4"	29'6"	125'4"
	251 744 KG	182 798 KG	50.39M	55.55M	17.86M	22.07M	30.58M	10.67M	8.18M	18.92M	0.86M	11.33M	4.37M	8.99M	38.20M
MC-10A	590,000 LB	436,000 LB	165'4"	181'7"	58'7"	72'5"	100'4"	35'0"	26'10"	62'1"	2'10"	37'2"	14'4"	29'6"	125'4"
	267 620 KG	197 766 KG	50.39M	55.35M	17.86M	22.07M	30.58M	10.67M	8.18M	18.92M	0.86M	11.33M	4.37M	8.99M	38.20M

NOTE: TAKEOFF AND LANDING WEIGHTS:

10CF 440,000 LB (199 581 KG) MAXIMUM TAKEOFF WEIGHT.
363,500 LB (164 881 KG) MAXIMUM LANDING WEIGHT.

15 455,000 LB (206 384 KG) MAXIMUM TAKEOFF WEIGHT.
363,500 LB (164 881 KG) MAXIMUM LANDING WEIGHT.

30CF 580,000 LB (263 084 KG) MAXIMUM TAKEOFF WEIGHT.
436,000 LB (197 766 KG) MAXIMUM LANDING WEIGHT.

40CF 555,000 LB (251 744 KG) MAXIMUM TAKEOFF WEIGHT.
411,000 LB (186 426 KG) MAXIMUM LANDING WEIGHT.

DC-10-10CF HAS SAME DIMENSIONS AS MODEL 10.
DC-10-15 HAS SAME DIMENSIONS AS MODEL 10.
DC-10-30CF HAS SAME DIMENSIONS AS MODEL 30.

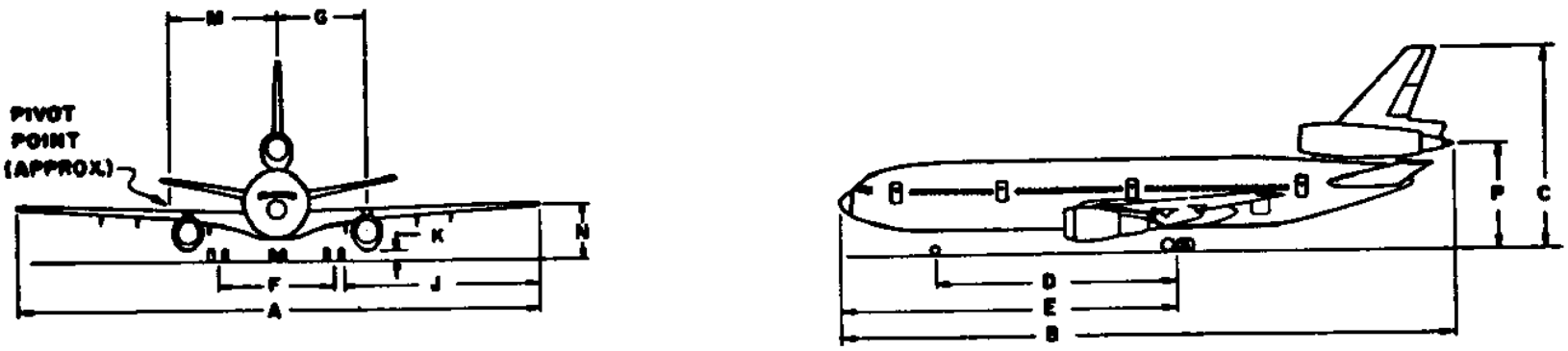


Figure A12-75. McDonnell-Douglas DC-10

	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	P	TURN RADIUS
11	602,500 LB 273 289 KG	430,000 LB 195 045 KG	169'10" 51.77M	SEE NOTE	57'9" 17.60M	80'9" 24.61M	108'9" 33.15M	35'0" 10.67M	26'10" 8.18M	64'4" 19.61M	3'1" 0.94M	29'7" 9.02M	SEE NOTE	29'2" 8.89M	135'8" 41.35M
11 COMBI	602,500 LB 273 289 KG	458,000 LB 207 745 KG	169'10" 51.77M	SEE NOTE	57'9" 17.60M	80'9" 24.61M	108'9" 33.15M	35'0" 10.67M	26'10" 8.18M	64'4" 19.61M	3'1" 0.94M	29'7" 9.02M	SEE NOTE	29'2" 8.89M	135'8" 41.35M
11F	602,500 LB 273 289 KG	471,500 LB 213 869 KG	169'10" 51.77M	SEE NOTE	57'9" 17.60M	80'9" 24.61M	108'9" 33.15M	35'0" 10.67M	26'10" 8.18M	64'4" 19.61M	3'1" 0.94M	29'7" 9.02M	SEE NOTE	29'2" 8.89M	135'8" 41.35M

NOTE: OPTIONAL MAXIMUM TAKEOFF WEIGHT: 605,500 LB (274 650 KG).

"B" 201' 4" (61.37M) WITH CF6-802CD1F ENGINES.
"B" 200'11" (61.24M) WITH PW 4360 ENGINES.

"N" TOP OF WINGLET 23'5" (7.14M).
"N" BOTTOM OF WINGLET 13'9" (4.19M).

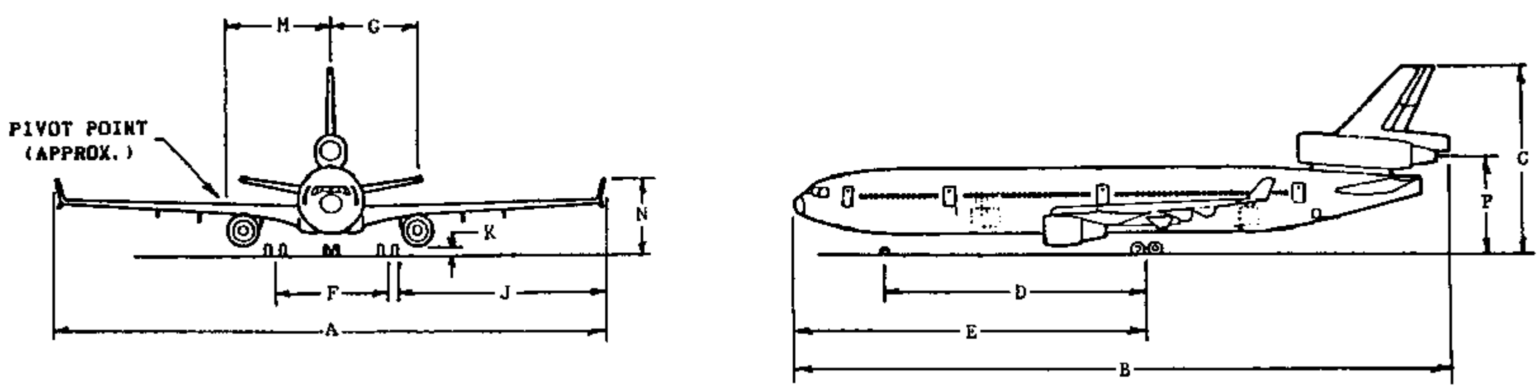


Figure A12-76. McDonnell-Douglas MD-11

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
MU-2M MARQUISE	11,575 LB 5 250 KG	10,260 LB 4 654 KG	39'2" 11.94M	39'6" 12.04M	13'8" 4.17M	14'5" 4.39M	7'11" 2.41M	7	
MU-2P SOLITAIRE	10,470 LB 4 749 KG		39'2" 11.94M	33'3" 10.13M	12'11" 3.94M			9	

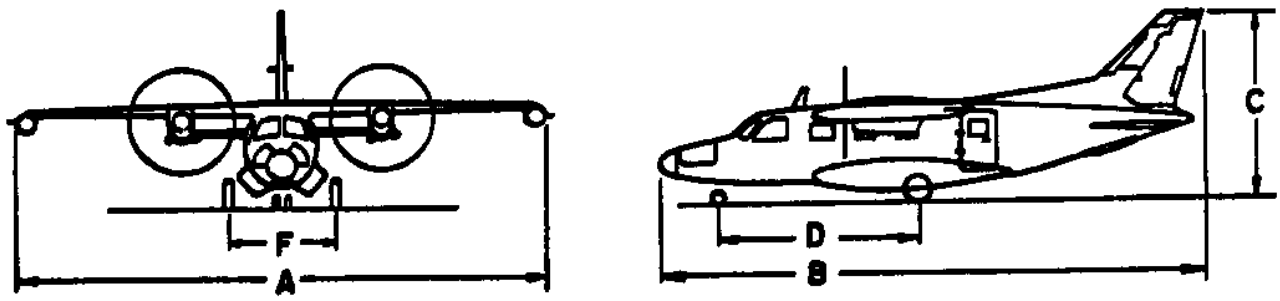


Figure A12-77. Mitsubishi MU-2

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	X	M	N	TURN RADIUS
YS-11A	54,010 LB 24 499KG	52,910 LB 24 000 KG	105'0" 32.00M	86'4" 26.31M	29'6" 8.99M	31'3" 9.53M		28'3" 8.61M		37'8" 11.38M				

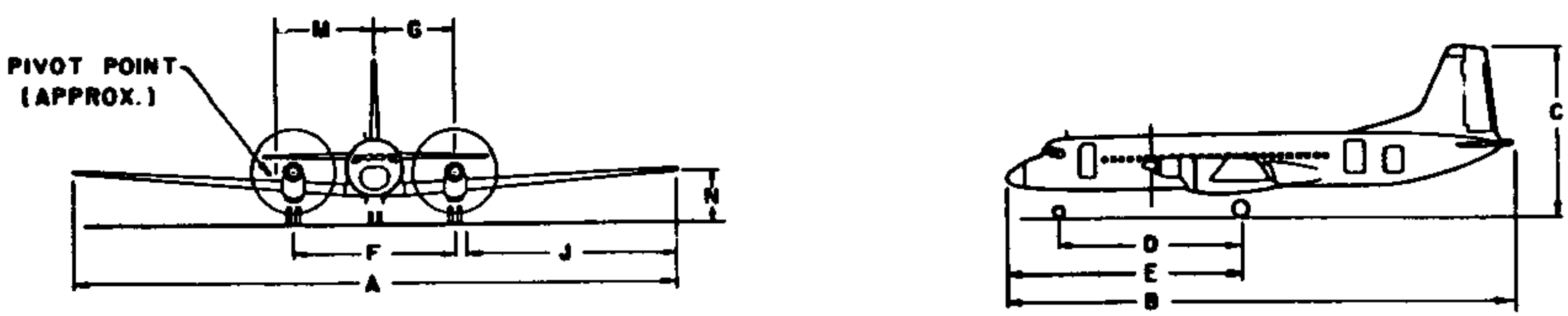
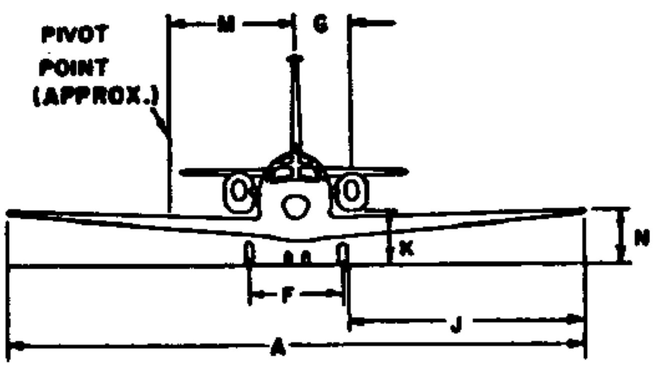


Figure A12-78. Nihon/N.A.M.C. YS-11A

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	M	N	TURN RADIUS
40	18,650 LB 8 459 KG	17,500 LB 7 938 KG	44'6" 13.56M	43'9' 13.34M	16'0" 4.88M	14'6" 4.42M	22'9" 6.93M	7'3" 2.21M	4'6" 1.37M	18'4" 5.59M	3'10" 1.16M	17'8" 5.38M	3'8" 1.12M	43'6" 13.26M
60	20,000 LB 9 072 KG	17,500 LB 7 938 KG	44'6" 13.56M	48'4" 14.73M	16'0" 4.88M	15'11" 4.85M	24'1" 7.34M	7'3" 2.21M	4'6" 1.37M	18'4" 5.59M	3'10" 1.16M		3'8" 1.12M	
70, 75A	21,000 LB 9 525 KG	18,500 LB 8 391 KG	44'6" 13.56M	47'2" 14.40M	17'3" 5.24M	15'10" 4.81M		8'4" 2.54M	4'6" 1.37M		3'6" 1.05M		3'7" 1.08M	

NOTE: MODEL 75A HAS MAXIMUM (TAKEOFF) WEIGHT OF 23,300 LB (10 569 KG).
(LANDING) 22,000 LB (9 979 KG).



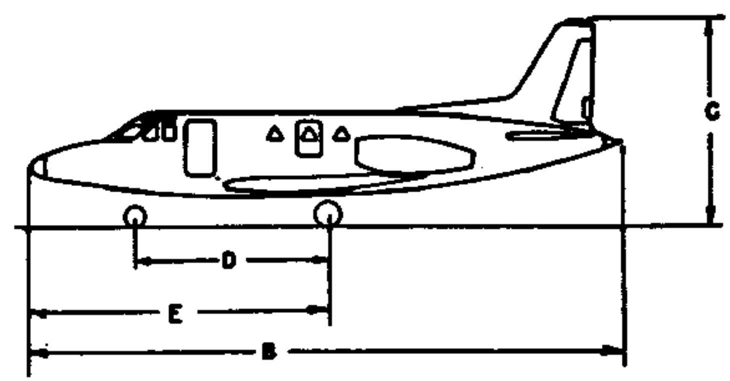


Figure A12-79. Rockwell International NA-265 Sabreliner

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	J	K	N	TURN RADIUS
SF 340	27,275 LB 12 372 KG	26,500 LB 12 020 KG	70'4" 21.44M	64'8" 19.71M	22'6" 6.86M	23'5" 7.14M	30'0" 9.14M	22'0" 6.71M	10'10" 3.30M	23'3" 7.09M	1'11" 0.58M	18'8" 5.69M	8'4" 2.54M

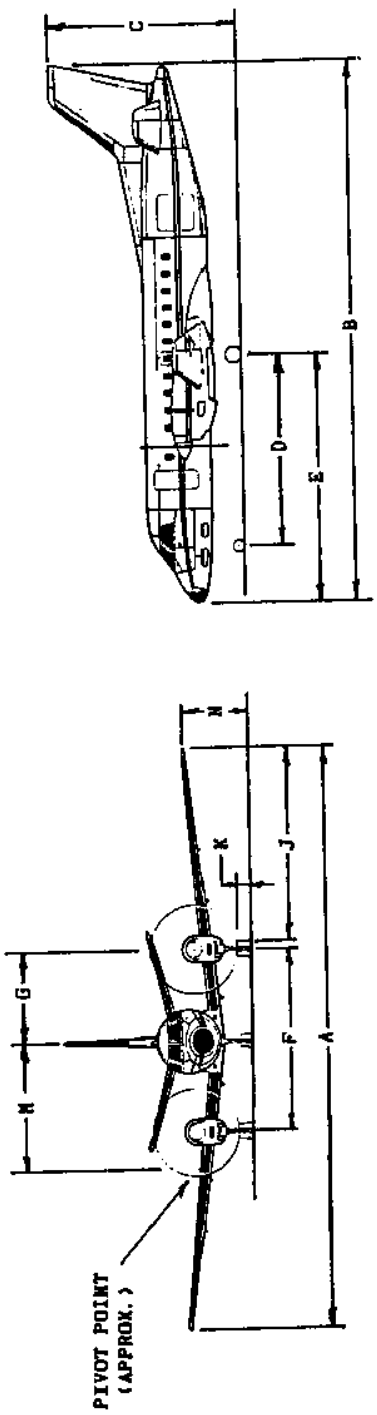
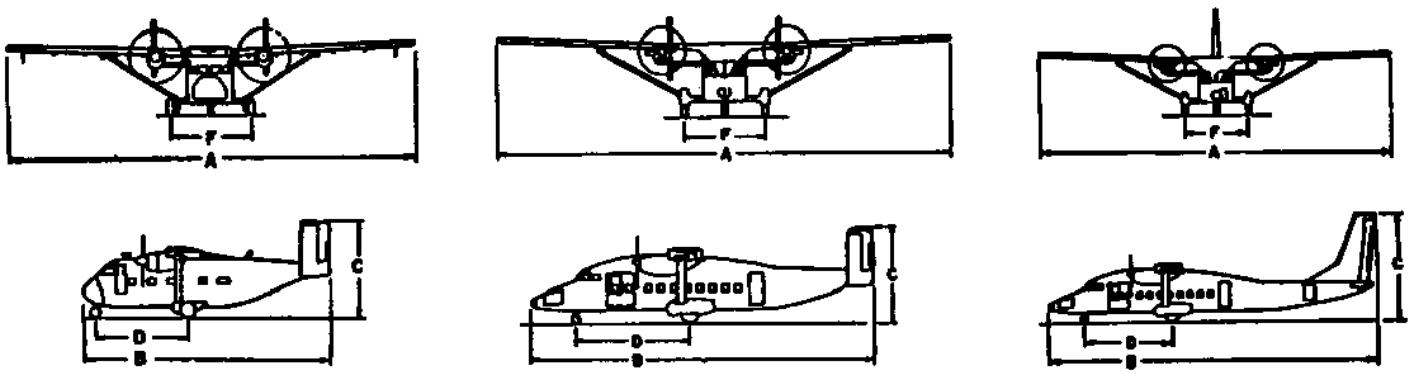


Figure A12-80. SAAB SF 340

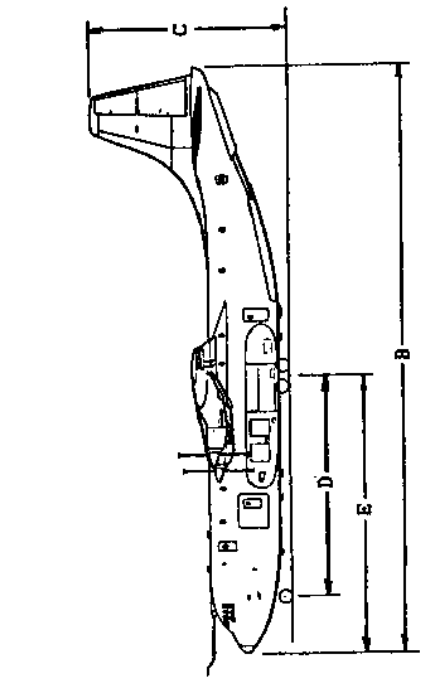
MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
SC.7	12,500 LB 5 688 KG	12,500 LB 5,688 KG	64'11" 19.79M	40'1" 12.22M	15'0" 4.57M	14'10" 4.52M	13'10" 4.22M	21	
SC.7 -3M	13,700 LB 6 214 KG	13,500 LB 6 123 KG	64'11" 19.79M	40'1" 12.22M	15'0" 4.57M	14'10" 4.52M	13'10" 4.22M	22	
SC.7 -3M	14,500 LB 6 577 KG	13,500 LB 6 123 KG	64'11" 19.79M	40'1" 12.22M	15'0" 4.57M	14'10" 4.52M	13'10" 4.22M	22	
330	22,600 LB 10 251 KG	22,300 LB 10 115 KG	74'8" 22.76M	58'0" 17.68M	16'3" 4.95M	20'2" 6.15M	13'11" 4.24M	30	53'10" 16.41M
330 -200	22,900 LB 10 387 KG	22,600 LB 10 251 KG	74'8" 22.76M	58'0" 17.68M	16'3" 4.95M	20'2" 6.15M	13'11" 4.24M	30	53'10" 16.41M
360	26,453 LB 11 999 KG	26,100 LB 11 839 KG	74'10" 22.81M	70'10" 21.59M	23'8" 7.21M	23'2" 7.06M	13'11" 4.24M	36	53'10" 16.41M



SC.7-3M 330 360

Figure A12-81. Short Brothers

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	E	F	G	H	J	K	L	M	N	TURN RADIUS
BELFAST	230,000 LB 104 326 KG	215,000 LB 97 522 KG	158'10" 48.41M	136'5" 41.58M	47'0" 14.33M	48'11" 14.66M		19'4" 5.89M								



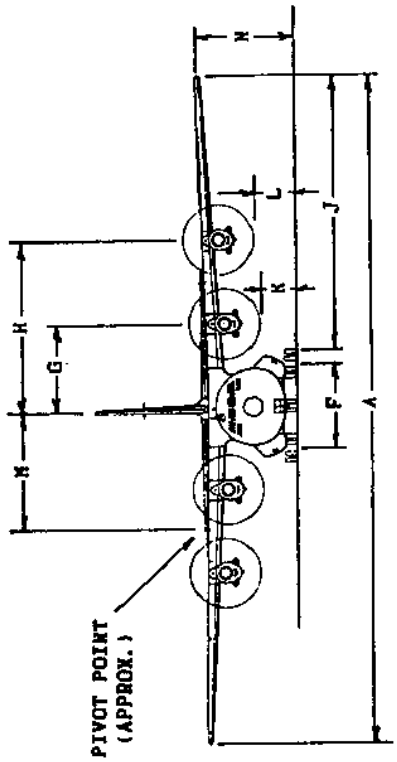


Figure A12-82. Shorts SC. 5/10 Belfast

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
IIB	10,000 LB 4 536 KG	9,300 LB 4 218 KG	45'11" 14.00M	40'1" 12.22M	14'4" 4.36M		15'0" 4.57M	8	
III	12,500 LB 5 670 KG	11,500 LB 5 216 KG	46'3" 14.10M	42'2" 12.85M	16'8" 5.08M		15'0" 4.57M	8	
IV	12,500 LB 5 670 KG	11,500 LB 5 216 KG	46'3" 14.10M	59'5" 18.11M	16'8" 5.08M	19'2" 5.84M	15'0" 4.57M	12	
IVC	14,500 LB 6 577 KG	14,000 LB 6 350 KG	57'0" 17.37M	59'5" 18.11M	16'8" 5.08M			12	

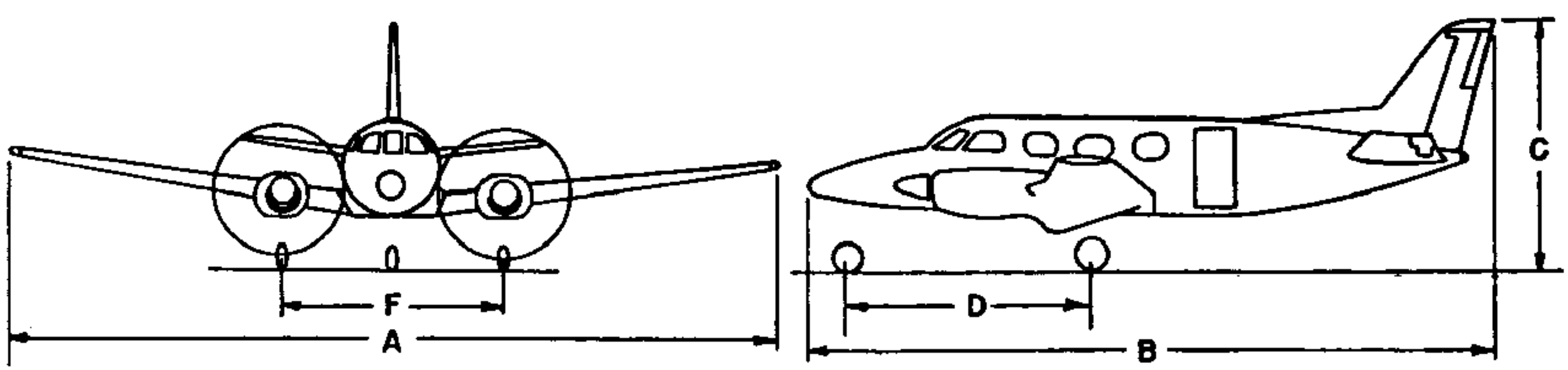
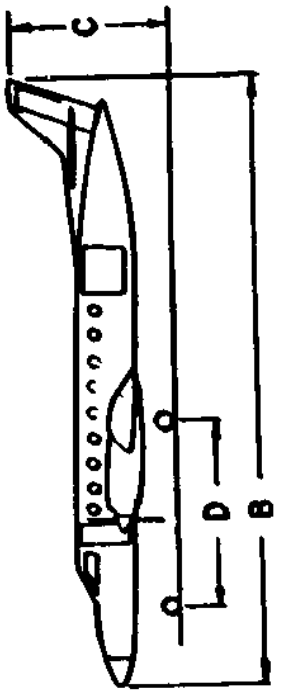


Figure A12-83. Swearingen Merlin

MODEL	MAXIMUM TAKEOFF WEIGHT	MAXIMUM LANDING WEIGHT	A	B	C	D	F	NUMBER SEATS	TURN RADIUS
II	12,500 LB 5 670 KG	12,500 LB 5 670 KG	46'3" 14.10M	59'5" 18.11M	16'8" 5.08M	19'2" 5.84M	15'0" 4.57M	22	
IIA	13,230 LB 6 001 KG	13,000 LB 5 897 KG	46'3" 14.10M	59'5" 18.11M	16'8" 5.08M				
III	14,500 LB 6 577 KG	14,000 LB 6 350 KG	57'0" 17.37M	59'5" 18.11M	16'8" 5.08M				
IIIH	16,000 LB 7 257 KG	15,500 LB 7 031 KG	57'0" 17.37M	59'5" 18.11M	16'8" 5.08M				
V	16,500 LB 7 484 KG	15,675 LB 7 110 KG							



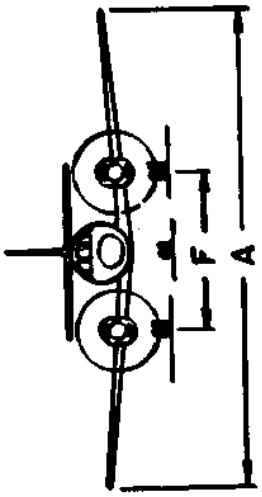


Figure A12-84. Swearingen Metro

Appendix 13. AIRPLANES ARRANGED BY AIRPLANE MANUFACTURER AND AIRPORT REFERENCE CODE

Section 1. Alphabetical Listing (U.S. customary units)

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
Aeritalia G-222	B-III	109		93.8	74.4	32.0	61,700
Aerocom Skyliner	A-II	88		54.0	54.3	16.5	12,500
Aerospatiale C 160 Trans.	C-IV	124		131.3	106.3	38.7	108,596
Aerospatiale NORD-262	B-II	96		71.9	63.3	20.4	23,480
Aerospatiale SE 210 Carav.	C-III	127		112.5	105.0	28.6	114,640
Aerospatiale SN 601 Corv.	B-I	118		42.2	45.4	13.9	14,550
Ahrens AR 404	B-II	98		66.0	52.7	19.0	18,500
AIDC/CAF XC-2	A-III	86		81.7	65.9	25.3	27,500
Airbus A-300-600	C-IV	135		147.1	177.5	54.7	363,763
Airbus A-300-B4	C-IV	132		147.1	175.5	55.5	330,700
Airbus A-310-300	C-IV	125		144.1	153.2	52.3	330,693
Airbus A-320-100	C-III	138		111.3	123.3	39.1	145,505
Air-Metal AM-C 111	B-II	96		63.0	55.2	21.0	18,629
AJI Hustler 400	B-I	98		28.0	34.8	9.8	6,000
Antonov AN-10	C-IV	126		124.8	121.4	32.2	121,500
Antonov AN-12	C-IV	127		124.8	109.0	34.6	121,500
Antonov AN-124	C-VI	124		232.0	223.0	66.2	800,000
Antonov AN-14	A-II	52		72.1	37.2	15.2	7,607
Antonov AN-22	C-V	140	*	211.0	167.0	41.2	500,000
Antonov AN-24	B-III	119		95.8	77.2	27.3	46,305
Antonov AN-26	C-III	121		95.8	78.1	28.1	52,920
Antonov AN-28	A-II	88		72.1	42.6	16.1	12,350
Antonov AN-30	B-III	112		96.4	80.1	27.3	51,040
Antonov AN-72	A-III	89	*	84.7	84.7	27.0	66,000
AW.650 Argosy 220	C-III	123		115.0	86.8	27.0	93,000
AW.660 Argosy C.Mk.1	B-III	113		115.0	89.1	27.0	97,000
BAC 111-200	C-III	129		88.5	93.5	24.5	79,000
BAC 111-300	C-III	128		88.5	93.5	24.5	88,500
BAC 111-400	C-III	137		88.5	93.5	24.5	87,000
BAC 111-475	C-III	135		93.5	93.5	24.5	98,500
BAC 111-500	D-III	144		93.5	107.0	24.5	104,500
BAC/Aerospatiale Concord	D-III	162		83.8	205.4	37.4	408,000
BAe 146-100	B-III	113		86.4	85.8	28.3	74,600
BAe 146-200	B-III	117		86.4	93.7	28.3	88,250
BAe 146-300	C-III	121		86.4	104.2	28.1	104,000
BAe Jetstream 31	B-II	99		52.0	47.2	17.5	14,550
Beech Airliner 1900-C	B-II	120	*	54.5	57.8	14.9	16,600
Beech Airliner C99	B-I	107		45.9	44.6	14.4	11,300
Beech Baron 58	B-I	96		37.8	29.8	9.8	5,500
Beech Baron 58P	B-I	101		37.8	29.8	9.1	6,200
Beech Baron 58TC	B-I	101		37.8	29.8	9.1	6,200
Beech Baron B55	A-I	90		37.8	28.0	9.1	5,100
Beech Baron E55	A-I	88		37.8	29.0	9.1	5,300
Beech Bonanza A36	A-I	72		33.5	27.5	8.6	3,650

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
Beech Bonanza B36TC	A-I	75		37.8	27.5	8.6	3,850
Beech Bonanza F33A	A-I	70		33.5	26.7	8.2	3,400
Beech Bonanza V35B	A-I	70		33.5	26.4	6.6	3,400
Beech Duchess 76	A-I	76		38.0	29.0	9.5	3,900
Beech Duke B60	B-I	98		39.2	33.8	12.3	6,775
Beech E18S	A-II	87		49.7	35.2	9.5	9,300
Beech King Air B100	B-I	111		45.8	39.9	15.3	11,800
Beech King Air C90-1	B-II	100		50.2	35.5	14.2	9,650
Beech King Air F90	B-I	108		45.9	39.8	15.1	10,950
Beech Sierra 200-B24R	A-I	70		32.8	25.7	8.2	2,750
Beech Skipper 77	A-I	63		30.0	24.0	6.9	1,675
Beech Sundowner 180-C23	A-I	68		32.8	25.7	8.2	2,450
Beech Super King Air B200	B-II	103		54.5	43.8	15.0	12,500
BN-2A Mk.3 Trislander	A-II	65		53.0	45.7	14.2	10,000
Boeing 707-100	C-IV	139		130.8	145.1	41.7	257,340
Boeing 707-200	D-IV	145		130.8	145.1	41.7	257,340
Boeing 707-320	C-IV	139		142.4	152.9	42.2	312,000
Boeing 707-320B	C-IV	136		145.8	152.9	42.1	336,600
Boeing 707-420	C-IV	132		142.4	152.9	42.2	312,000
Boeing 720	C-IV	133		130.8	136.2	41.4	229,300
Boeing 720B	C-IV	137		130.8	136.8	41.2	234,300
Boeing 727-100	C-III	125		108.0	133.2	34.3	169,000
Boeing 727-200	C-III	138		108.0	153.2	34.9	209,500
Boeing 737-100	C-III	137		93.0	94.0	37.2	110,000
Boeing 737-200	C-III	137		93.0	100.2	37.3	115,500
Boeing 737-300	C-III	137		94.8	109.6	36.6	135,000
Boeing 737-400	C-III	139		94.8	119.6	36.6	150,000
Boeing 737-500	C-III	140	*	94.8	101.8	36.6	133,500
Boeing 747-100	D-V	152		195.7	231.8	64.3	600,000
Boeing 747-200	D-V	152		195.7	231.8	64.7	833,000
Boeing 747-300SR	D-V	141		195.7	231.8	64.3	600,000
Boeing 747-400	D-V	154		213.0	231.8	64.3	870,000
Boeing 747-SP	C-V	140		195.7	184.8	65.8	696,000
Boeing 757	C-IV	135		124.8	155.3	45.1	255,000
Boeing 767-200	C-IV	130		156.1	159.2	52.9	315,000
Boeing 767-300	C-IV	130		156.1	180.3	52.6	350,000
Boeing 777	D-IV	145		155.0	181.5	44.8	380,000
Boeing B-52	D-V	141	*	185.0	157.6	40.8	488,000
Boeing C97 Stratocruiser	B-IV	105		141.3	110.3	38.3	145,800
Boeing E-3	C-IV	137		145.9	153.0	42.0	325,000
Boeing E-4 (747-200)	D-V	152		195.7	231.8	64.7	833,000
Boeing YC-14	A-IV	89		129.0	131.7	48.3	216,000
Bristol Brittania 300/310	B-IV	117		142.3	124.2	37.5	185,000
Canadair CL-44	C-IV	123		142.3	136.8	38.4	210,000
Canadair CL-600	C-II	125		61.8	68.4	20.7	41,250
Casa C-207A Azor	B-III	102		91.2	68.4	25.4	36,400
Casa C-212-200 Aviocar	A-II	81		62.3	49.8	20.7	16,976
Cessna Citation I	B-I	108		47.1	43.5	14.3	11,850
Cessna Citation II	B-II	108		51.7	47.2	15.0	13,300
Cessna Citation III	B-II	114		53.5	55.5	16.8	22,000
Cessna-150	A-I	55		32.7	23.8	8.0	1,600

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
Cessna-177 Cardinal	A-I	64		35.5	27.2	8.5	2,500
Cessna-402 Businessliner	B-I	95		39.8	36.1	11.6	6,300
Cessna-404 Titan	B-I	92		46.3	39.5	13.2	8,400
Cessna-414 Chancellor	B-I	94		44.1	36.4	11.5	6,785
Cessna-421 Golden Eagle	B-I	96		41.7	36.1	11.6	7,450
Cessna-441 Conquest	B-II	100		49.3	39.0	13.1	9,925
Convair 240	B-III	107		91.8	74.7	26.9	41,790
Convair 340	B-III	104		105.3	81.5	28.2	49,100
Convair 440	B-III	106		105.3	81.5	28.2	49,100
Convair 580	B-III	107		105.3	81.5	29.2	54,600
Dassault 1150 Atlantic	C-IV	130	*	122.7	104.2	37.2	100,000
Dassault 941	A-II	59		76.7	77.9	30.7	58,400
Dassault FAL-10	B-I	104		42.9	45.5	15.1	18,740
Dassault FAL-20	B-II	107		53.5	56.3	17.4	28,660
Dassault FAL-200	B-II	114		53.5	56.3	17.4	30,650
Dassault FAL-50	B-II	113		61.9	60.8	22.9	37,480
Dassault FAL-900	B-II	100		63.4	66.3	24.8	45,500
Dassault Mercure	B-III	117		100.2	114.3	37.3	124,500
DHC-2 Beaver	A-I	50		48.0	30.3	9.0	5,100
DHC-4 Caribou	A-III	77		95.6	72.6	31.8	28,500
DHC-5D Buffalo	B-III	91		96.0	79.0	28.7	49,200
DHC-6-300 Twin Otter	A-II	75		65.0	51.7	19.5	12,500
DHC-7 Dash 7-100	A-III	83		93.0	80.7	26.2	43,000
DHC-8 Dash 8-300	A-III	90		90.0	84.3	24.6	41,100
DH.104 Dove 8	A-II	84		57.0	39.2	13.3	8,950
DH.106 Comet 4C	B-III	108		115.0	118.0	29.5	162,000
DH.114 Heron 2	A-II	85		71.5	48.5	15.6	13,500
Dornier DO 28D-2	A-II	74		51.0	37.4	12.8	8,855
Dornier LTA	A-II	74	*	58.4	54.4	18.2	15,100
Embraer-110 Bandeirante	B-II	92		50.3	49.5	16.5	13,007
Embraer-121 Xingu	B-I	92		47.4	40.2	15.9	12,500
Embraer-326 Xavante	B-I	102		35.6	34.9	12.2	11,500
Embraer-820 Navajo Chief	A-I	74		40.7	34.6	13.0	7,000
Fairchild C-119	C-III	122		109.3	86.5	27.5	77,000
Fairchild C-121	A-III	88		110.0	75.8	34.1	60,000
Fairchild FH-227 B,D	B-III	105		95.2	83.1	27.5	45,500
Fairchild F-27 A,J	B-III	109		95.2	77.2	27.5	42,000
FMA IA-50 Guarni II	B-II	101		64.1	48.8	19.1	15,700
Fokker F-27-500	B-III	102		95.2	82.3	29.3	45,000
Fokker F-28-1000	B-II	119		77.3	89.9	27.8	65,000
Fokker F-28-2000	B-II	119		77.3	97.2	27.8	65,000
Fokker F-28-3000	C-III	121		82.3	89.9	27.8	73,000
Fokker F-28-4000	C-III	121		82.3	97.2	27.8	73,000
Fokker F-28-6000	B-III	113		82.3	97.2	27.8	73,000
Foxjet ST-600-8	B-I	97		31.6	31.8	10.2	4,550
GAC-100	A-II	86		70.0	67.3	24.9	28,900
Gates Learjet 24	C-I	128		35.6	43.3	12.6	13,000
Gates Learjet 25	C-I	137		35.6	47.6	12.6	15,000
Gates Learjet 28/29	B-I	120		43.7	47.6	12.3	15,000
Gates Learjet 35A/36A	D-I	143		39.5	48.7	12.3	18,300
Gates Learjet 54-55-56	C-I	128		43.7	55.1	14.7	21,500

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
General Dynamics 880	D-IV	155		120.0	129.3	36.0	193,500
General Dynamics 990	D-IV	156		120.0	139.2	39.5	255,000
Grumman Gulfstream I	B-II	113		78.3	75.3	23.0	36,000
Grumman Gulfstream II	D-II	141		68.8	79.9	24.5	65,300
Grumman Gulfstream III	C-II	136		77.8	83.1	24.4	68,700
Grumman Gulfstream II-TT	D-II	142		71.7	79.9	24.5	65,300
Grumman Gulfstream IV	D-II	145		77.8	87.8	24.4	71,780
Hamilton Westwind II STD	B-I	96		46.0	45.0	9.2	12,495
HFB-320 Hansa	C-I	125		47.5	54.5	16.2	20,280
Hindustan HS.748-2	B-III	94		98.4	67.0	24.8	44,402
HP Herald	A-III	88		94.8	75.5	24.1	43,000
HS 125 Series 400A	C-I	124		47.0	47.4	16.5	23,300
HS 125 Series 600A	C-I	125		47.0	50.5	17.2	25,000
HS 125 Series 700A	C-I	125		47.0	50.7	17.6	24,200
HS.121 Trident 1E	C-III	137		95.0	114.8	27.0	135,500
HS.121 Trident 2E	C-III	138		98.0	114.8	27.0	144,000
HS.121 Trident 3B	D-III	143		98.0	131.2	28.3	150,000
HS.121 Trident Super 3B	D-III	146		98.0	131.2	28.3	158,000
HS.748 Series 2A	B-III	94		98.5	67.0	24.8	44,490
HS.780 Andover C.Mk.1	B-III	100		98.2	78.0	30.1	50,000
HS.801 Nimrod MR Mk.2	C-III	125	*	114.8	126.8	29.7	177,500
IAI 1121 Jet Comdr.	C-I	130		43.3	50.4	15.8	16,800
IAI Arava-201	A-II	81		68.6	42.7	17.1	15,000
IAI-1124 Westwind	C-I	129		44.8	52.3	15.8	23,500
Ilyushin Il-12	A-III	78		104.0	70.0	30.5	38,000
Ilyushin Il-18	B-IV	103		122.7	117.8	33.3	134,640
Ilyushin Il-62	D-IV	152		141.8	174.3	40.5	363,760
Ilyushin Il-76	B-IV	119		165.7	152.8	48.4	374,785
Ilyushin Il-86	D-IV	141		157.7	195.3	51.8	454,150
Kawasaki C-1	B-III	118	*	100.4	95.1	32.9	85,320
Lapan XT-400	A-I	75		47.9	33.5	14.1	5,555
Learfan 2100	A-I	86		39.3	40.6	12.2	7,400
LET L-410 UVP-E	A-II	81		65.5	47.5	19.1	14,109
Lockheed 100-20 Hercules	C-IV	137		132.6	106.1	39.3	155,000
Lockheed 100-30 Hercules	C-IV	129		132.6	112.7	39.2	155,000
Lockheed 1011-1	C-IV	138		155.3	177.7	55.8	430,000
Lockheed 1011-100	C-IV	140		155.3	177.7	55.8	466,000
Lockheed 1011-200	C-IV	140		155.3	177.7	55.8	466,000
Lockheed 1011-250	D-IV	144		155.3	177.7	55.8	496,000
Lockheed 1011-500	D-IV	144		155.3	164.2	55.8	496,000
Lockheed 1011-500 Ex. Wing	D-IV	148		164.3	164.2	55.8	496,000
Lockheed 1011-600	C-IV	140	*	142.8	141.0	53.0	264,000
Lockheed 1049 Constellat'n	B-IV	113		123.0	113.6	24.8	137,500
Lockheed 1329 JetStar	C-II	132		54.4	60.4	20.4	43,750
Lockheed 1649 Constellat'n	A-IV	89		150.0	116.2	23.4	160,000
Lockheed 188 Electra	C-III	123		99.0	104.6	33.7	116,000
Lockheed 400	C-IV	121	*	119.7	97.8	38.1	84,000
Lockheed 749 Constellat'n	B-IV	93		123.0	95.2	22.4	107,000
Lockheed C-141A Starlifter	C-IV	129		159.9	145.0	39.3	316,600
Lockheed C-141B Starlifter	C-IV	129		159.9	168.3	39.3	343,000
Lockheed C-5B Galaxy	C-VI	135		222.7	247.8	65.1	837,000

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
Lockheed P-3 Orion	C-III	134		99.7	116.8	33.8	135,000
Lockheed SR-71 Blackbird	E-II	180		55.6	107.4	18.5	170,000
MAI-QSTOL	A-III	85		100.3	98.4	32.8	85,300
Marshall (Shorts) Belfast	C-IV	126		158.8	136.4	47.0	230,000
Martin-404	B-III	98		93.3	74.6	28.7	44,900
MDC-C-133	C-V	128		179.7	157.5	48.2	300,000
MDC-DC-10-10	C-IV	136		155.3	182.3	58.4	443,000
MDC-DC-10-30	D-IV	151		165.3	181.6	58.6	590,000
MDC-DC-10-40	D-IV	145		165.4	182.3	58.6	555,000
MDC-DC-3	A-III	72		95.0	64.5	23.5	25,200
MDC-DC-4	B-III	95		117.5	93.9	27.9	73,000
MDC-DC-6A/B	B-III	108		117.5	105.6	29.3	104,000
MDC-DC-7	B-IV	110		127.5	112.3	31.7	143,000
MDC-DC-8-10	C-IV	131		142.4	150.8	43.3	276,000
MDC-DC-8-20/30/40	C-IV	133		142.4	150.8	43.3	315,000
MDC-DC-8-50	C-IV	137		142.4	150.8	43.3	325,000
MDC-DC-8-61	D-IV	142		142.4	187.4	43.0	325,000
MDC-DC-8-62	C-IV	124		148.4	157.5	43.4	350,000
MDC-DC-8-63	D-IV	147		148.4	187.4	43.0	355,000
MDC-DC-9-10/15	C-III	134		89.4	104.4	27.6	90,700
MDC-DC-9-20	C-III	124		93.3	104.4	27.4	98,000
MDC-DC-9-30	C-III	127		93.3	119.3	27.8	110,000
MDC-DC-9-40	C-III	129		93.3	125.6	28.4	114,000
MDC-DC-9-50	C-III	132		93.3	133.6	28.8	121,000
MDC-DC-9-80	C-III	132		107.8	147.8	30.3	140,000
MDC-DC-9-82	C-III	135		107.8	147.8	30.3	149,500
MDC-MD-11	D-IV	155		169.8	201.3	57.8	602,500
Mitsubishi Diamond MU-300	B-I	100		43.5	48.4	13.8	15,730
Mitsubishi Marquise MU-2N	A-I	88		39.2	39.5	13.7	11,575
Mitsubishi MU-2G	B-I	119		39.2	39.5	13.8	10,800
Mitsubishi Solitaire MU-2P	A-I	87		39.2	33.3	12.9	10,470
Nihon YS-11	B-III	98		105.0	86.3	29.5	54,010
Nomad N 22B	A-II	69		54.0	41.2	18.1	8,950
Nomad N 24A	A-II	73		54.2	47.1	18.2	9,400
Partenavia P.68B Victor	A-I	73		39.3	35.6	11.9	6,283
Piaggio PD-808	B-I	117		43.3	42.2	15.8	18,300
Piaggio P-166 Portofino	A-I	82		47.2	39.0	16.4	9,480
Pilatus PC-6 Porter	A-II	57		49.7	37.4	10.5	4,850
Piper 31-310 Navajo	B-I	100		40.7	32.7	13.0	6,200
Piper 400LS Cheyenne	B-I	110		47.7	43.4	17.0	12,050
Piper 60-602P Aerostar	B-I	94		36.7	34.8	12.1	6,000
PZL-AN-2	A-II	54		59.8	41.9	13.1	12,125
PZL-AN-28	A-II	85		72.4	42.9	16.1	14,330
PZL-M-15 Belphegor	A-II	62		73.6	41.9	17.6	12,465
Rockwell 690A Turbo Comdr.	B-I	97		46.5	44.3	14.9	10,300
Rockwell 840	B-II	98		52.1	42.9	14.9	10,325
Rockwell 980	C-II	121		52.1	42.9	14.9	10,325
Rockwell B-1	D-IV	165	*	137.0	147.0	34.0	477,000
Rockwell Sabre 40	B-I	120		44.5	43.8	16.0	18,650
Rockwell Sabre 60	B-I	120		44.5	48.3	16.0	20,000
Rockwell Sabre 65	B-II	105		50.5	46.1	16.0	24,000

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
Rockwell Sabre 75A	C-I	137		44.5	47.2	17.2	23,300
Rockwell Sabre 80	C-II	128		50.4	47.2	17.3	24,500
Shorts 330	B-II	96		74.7	58.0	16.2	22,900
Shorts 360	B-II	104		74.8	70.8	23.7	26,453
Swearingen Merlin 3B	B-I	105		46.2	42.2	16.7	12,500
Swearingen Metro	B-I	112		46.2	59.4	16.7	12,500
Tupolev TU-114	C-IV	132	*	167.6	177.5	50.0	361,620
Tupolev TU-124	C-III	132	*	83.8	100.3	50.0	80,482
Tupolev TU-134	D-III	144		95.2	121.5	30.0	103,600
Tupolev TU-144	E-III	178		94.8	212.6	42.2	396,000
Tupolev TU-154	D-IV	145		123.3	157.2	37.4	216,050
VFW-Fokker 614	B-II	111		70.5	67.5	25.6	44,000
Vickers Vanguard 950	B-IV	119		118.0	122.9	34.9	146,500
Vickers VC-10-1100	C-IV	128		146.2	158.7	39.5	312,000
Vickers VC-10-1150	C-IV	138		146.2	171.7	39.5	335,100
Vickers VC-2-810/840	C-III	122		94.0	85.7	26.8	72,500
Volpar Turbo 18	B-I	100		46.0	37.4	9.6	10,280
Yakovlev YAK-40	C-III	128	*	82.2	65.9	21.3	35,275
Yakovlev YAK-42	C-III	128	*	112.2	119.3	32.2	117,950
Yunshu-11	A-II	80	*	55.7	39.4	15.1	7,150

* Approach speeds estimated.

Section 2. Alphabetical Listing (SI units)

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
Aeritalia G-222	B-III	109		28.6	22.7	9.8	27,987
Aerocom Skyliner	A-II	88		16.5	16.6	5.0	5,670
Aerospatiale C 160 Trans.	C-IV	124		40.0	32.4	11.8	49,258
Aerospatiale NORD-262	B-II	96		21.9	19.3	6.2	10,650
Aerospatiale SE 210 Carav.	C-III	127		34.3	32.0	8.7	52,000
Aerospatiale SN 601 Corv.	B-I	118		12.9	13.8	4.2	6,600
Ahrens AR 404	B-II	98		20.1	16.1	5.8	8,391
AIDC/CAF XC-2	A-III	86		24.9	20.1	7.7	12,474
Airbus A-300-600	C-IV	135		44.8	54.1	16.7	165,000
Airbus A-300-B4	C-IV	132		44.8	53.5	16.9	150,003
Airbus A-310-300	C-IV	125		43.9	46.7	15.9	150,000
Airbus A-320-100	C-III	138		33.9	37.6	11.9	66,000
Air-Metal AM-C 111	B-II	96		19.2	16.8	6.4	8,450
AJI Hustler 400	B-I	98		8.5	10.6	3.0	2,722
Antonov AN-10	C-IV	126		38.0	37.0	9.8	55,111
Antonov AN-12	C-IV	127		38.0	33.2	10.5	55,111
Antonov AN-124	C-VI	124		70.7	68.0	20.2	362,874
Antonov AN-14	A-II	52		22.0	11.3	4.6	3,450
Antonov AN-22	C-V	140	*	64.3	50.9	12.6	226,796
Antonov AN-24	B-III	119		29.2	23.5	8.3	21,004
Antonov AN-26	C-III	121		29.2	23.8	8.6	24,004
Antonov AN-28	A-II	88		22.0	13.0	4.9	5,602
Antonov AN-30	B-III	112		29.4	24.4	8.3	23,151
Antonov AN-72	A-III	89	*	25.8	25.8	8.2	29,937
AW.650 Argosy 220	C-III	123		35.1	26.5	8.2	42,184
AW.660 Argosy C.Mk.1	B-III	113		35.1	27.2	8.2	43,998
BAC 111-200	C-III	129		27.0	28.5	7.5	35,834
BAC 111-300	C-III	128		27.0	28.5	7.5	40,143
BAC 111-400	C-III	137		27.0	28.5	7.5	39,463
BAC 111-475	C-III	135		28.5	28.5	7.5	44,679
BAC 111-500	D-III	144		28.5	32.6	7.5	47,400
BAC/Aerospatiale Concord	D-III	162		25.5	62.6	11.4	185,066
BAe 146-100	B-III	113		26.3	26.2	8.6	33,838
BAe 146-200	B-III	117		26.3	28.6	8.6	40,030
BAe 146-300	C-III	121		26.3	31.8	8.6	47,174
BAe Jetstream 31	B-II	99		15.8	14.4	5.3	6,600
Beech Airliner 1900-C	B-II	120	*	16.6	17.6	4.5	7,530
Beech Airliner C99	B-I	107		14.0	13.6	4.4	5,126
Beech Baron 58	B-I	96		11.5	9.1	3.0	2,495
Beech Baron 58P	B-I	101		11.5	9.1	2.8	2,812
Beech Baron 58TC	B-I	101		11.5	9.1	2.8	2,812
Beech Baron B55	A-I	90		11.5	8.5	2.8	2,313
Beech Baron E55	A-I	88		11.5	8.8	2.8	2,404
Beech Bonanza A36	A-I	72		10.2	8.4	2.6	1,656
Beech Bonanza B36TC	A-I	75		11.5	8.4	2.6	1,746
Beech Bonanza F33A	A-I	70		10.2	8.1	2.5	1,542
Beech Bonanza V35B	A-I	70		10.2	8.0	2.0	1,542
Beech Duchess 76	A-I	76		11.6	8.8	2.9	1,769
Beech Duke B60	B-I	98		11.9	10.3	3.7	3,073

Aircraft	Airport Reference Code	Appch Speed Knots	Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
Beech E18S	A-II	87	15.1	10.7	2.9	4,218
Beech King Air B100	B-I	111	14.0	12.2	4.7	5,352
Beech King Air C90-1	B-II	100	15.3	10.8	4.3	4,377
Beech King Air F90	B-I	108	14.0	12.1	4.6	4,967
Beech Sierra 200-B24R	A-I	70	10.0	7.8	2.5	1,247
Beech Skipper 77	A-I	63	9.1	7.3	2.1	760
Beech Sundowner 180-C23	A-I	68	10.0	7.8	2.5	1,111
Beech Super King Air B200	B-II	103	16.6	13.4	4.6	5,670
BN-2A Mk.3 Trislander	A-II	65	16.2	13.9	4.3	4,536
Boeing 707-100	C-IV	139	39.9	44.2	12.7	116,727
Boeing 707-200	D-IV	145	39.9	44.2	12.7	116,727
Boeing 707-320	C-IV	139	43.4	46.6	12.9	141,521
Boeing 707-320B	C-IV	136	44.4	46.6	12.8	152,679
Boeing 707-420	C-IV	132	43.4	46.6	12.9	141,521
Boeing 720	C-IV	133	39.9	41.5	12.6	104,009
Boeing 720B	C-IV	137	39.9	41.7	12.6	106,277
Boeing 727-100	C-III	125	32.9	40.6	10.5	76,657
Boeing 727-200	C-III	138	32.9	46.7	10.6	95,028
Boeing 737-100	C-III	137	28.3	28.7	11.3	49,895
Boeing 737-200	C-III	137	28.3	30.5	11.4	52,390
Boeing 737-300	C-III	137	28.9	33.4	11.2	61,235
Boeing 737-400	C-III	139	28.9	36.5	11.2	68,039
Boeing 737-500	C-III	140 *	28.9	31.0	11.2	60,555
Boeing 747-100	D-V	152	59.6	70.7	19.6	272,155
Boeing 747-200	D-V	152	59.6	70.7	19.7	377,842
Boeing 747-300SR	D-V	141	59.6	70.7	19.6	272,155
Boeing 747-400	D-V	154	64.9	70.7	19.6	394,625
Boeing 747-SP	C-V	140	59.6	56.3	20.1	315,700
Boeing 757	C-IV	135	38.0	47.3	13.7	115,666
Boeing 767-200	C-IV	130	47.6	48.5	16.1	142,882
Boeing 767-300	C-IV	130	47.6	55.0	16.0	158,757
Boeing 777	D-IV	145	47.2	55.3	13.7	172,365
Boeing B-52	D-V	141 *	56.4	48.0	12.4	221,353
Boeing C97 Stratocruiser	B-IV	105	43.1	33.6	11.7	66,134
Boeing E-3	C-IV	137	44.5	46.6	12.8	147,418
Boeing E-4 (747-200)	D-V	152	59.6	70.7	19.7	377,842
Boeing YC-14	A-IV	89	39.3	40.1	14.7	97,976
Bristol Brittania 300/310	B-IV	117	43.4	37.9	11.4	83,915
Canadair CL-44	C-IV	123	43.4	41.7	11.7	95,254
Canadair CL-600	C-II	125	18.8	20.8	6.3	18,711
Casa C-207A Azor	B-III	102	27.8	20.8	7.7	16,511
Casa C-212-200 Aviocar	A-II	81	19.0	15.2	6.3	7,700
Cessna Citation I	B-I	108	14.4	13.3	4.4	5,375
Cessna Citation II	B-II	108	15.8	14.4	4.6	6,033
Cessna Citation III	B-II	114	16.3	16.9	5.1	9,979
Cessna-150	A-I	55	10.0	7.3	2.4	726
Cessna-177 Cardinal	A-I	64	10.8	8.3	2.6	1,134
Cessna-402 Businessliner	B-I	95	12.1	11.0	3.5	2,858
Cessna-404 Titan	B-I	92	14.1	12.0	4.0	3,810
Cessna-414 Chancellor	B-I	94	13.4	11.1	3.5	3,078
Cessna-421 Golden Eagle	B-I	96	12.7	11.0	3.5	3,379

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
Cessna-441 Conquest	B-II	100		15.0	11.9	4.0	4,502
Convair 240	B-III	107		28.0	22.8	8.2	18,956
Convair 340	B-III	104		32.1	24.8	8.6	22,271
Convair 440	B-III	106		32.1	24.8	8.6	22,271
Convair 580	B-III	107		32.1	24.8	8.9	24,766
Dassault 1150 Atlantic	C-IV	130	*	37.4	31.8	11.3	45,359
Dassault 941	A-II	59		23.4	23.7	9.4	26,490
Dassault FAL-10	B-I	104		13.1	13.9	4.6	8,500
Dassault FAL-20	B-II	107		16.3	17.2	5.3	13,000
Dassault FAL-200	B-II	114		16.3	17.2	5.3	13,903
Dassault FAL-50	B-II	113		18.9	18.5	7.0	17,001
Dassault FAL-900	B-II	100		19.3	20.2	7.6	20,638
Dassault Mercure	B-III	117		30.5	34.8	11.4	56,472
DHC-2 Beaver	A-I	50		14.6	9.2	2.7	2,313
DHC-4 Caribou	A-III	77		29.1	22.1	9.7	12,927
DHC-5D Buffalo	B-III	91		29.3	24.1	8.7	22,317
DHC-6-300 Twin Otter	A-II	75		19.8	15.8	5.9	5,670
DHC-7 Dash 7-100	A-III	83		28.3	24.6	8.0	19,504
DHC-8 Dash 8-300	A-III	90		27.4	25.7	7.5	18,643
DH.104 Dove 8	A-II	84		17.4	11.9	4.1	4,060
DH.106 Comet 4C	B-III	108		35.1	36.0	9.0	73,482
DH.114 Heron 2	A-II	85		21.8	14.8	4.8	6,123
Dornier DO 28D-2	A-II	74		15.5	11.4	3.9	4,017
Dornier LTA	A-II	74	*	17.8	16.6	5.5	6,849
Embraer-110 Bandeirante	B-II	92		15.3	15.1	5.0	5,900
Embraer-121 Xingu	B-I	92		14.4	12.3	4.8	5,670
Embraer-326 Xavante	B-I	102		10.9	10.6	3.7	5,216
Embraer-820 Navajo Chief	A-I	74		12.4	10.5	4.0	3,175
Fairchild C-119	C-III	122		33.3	26.4	8.4	34,927
Fairchild C-121	A-III	88		33.5	23.1	10.4	27,216
Fairchild FH-227 B,D	B-III	105		29.0	25.3	8.4	20,638
Fairchild F-27 A,J	B-III	109		29.0	23.5	8.4	19,051
FMA IA-50 Guarni II	B-II	101		19.5	14.9	5.8	7,121
Fokker F-27-500	B-III	102		29.0	25.1	8.9	20,412
Fokker F-28-1000	B-II	119		23.6	27.4	8.5	29,484
Fokker F-28-2000	B-II	119		23.6	29.6	8.5	29,484
Fokker F-28-3000	C-III	121		25.1	27.4	8.5	33,112
Fokker F-28-4000	C-III	121		25.1	29.6	8.5	33,112
Fokker F-28-6000	B-III	113		25.1	29.6	8.5	33,112
Foxjet ST-600-8	B-I	97		9.6	9.7	3.1	2,064
GAC-100	A-II	86		21.3	20.5	7.6	13,109
Gates Learjet 24	C-I	128		10.9	13.2	3.8	5,897
Gates Learjet 25	C-I	137		10.9	14.5	3.8	6,804
Gates Learjet 28/29	B-I	120		13.3	14.5	3.7	6,804
Gates Learjet 35A/36A	D-I	143		12.0	14.8	3.7	8,301
Gates Learjet 54-55-56	C-I	128		13.3	16.8	4.5	9,752
General Dynamics 880	D-IV	155		36.6	39.4	11.0	87,770
General Dynamics 990	D-IV	156		36.6	42.4	12.0	115,666
Grumman Gulfstream I	B-II	113		23.9	23.0	7.0	16,329
Grumman Gulfstream II	D-II	141		21.0	24.4	7.5	29,620
Grumman Gulfstream III	C-II	136		23.7	25.3	7.4	31,162

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
Grumman Gulfstream II-TT	D-II	142		21.9	24.4	7.5	29,620
Grumman Gulfstream IV	D-II	145		23.7	26.8	7.4	32,559
Hamilton Westwind II STD	B-I	96		14.0	13.7	2.8	5,668
HFB-320 Hansa	C-I	125		14.5	16.6	4.9	9,199
Hindustan HS.748-2	B-III	94		30.0	20.4	7.6	20,140
HP Herald	A-III	88		28.9	23.0	7.3	19,504
HS 125 Series 400A	C-I	124		14.3	14.4	5.0	10,569
HS 125 Series 600A	C-I	125		14.3	15.4	5.2	11,340
HS 125 Series 700A	C-I	125		14.3	15.5	5.4	10,977
HS.121 Trident 1E	C-III	137		29.0	35.0	8.2	61,462
HS.121 Trident 2E	C-III	138		29.9	35.0	8.2	65,317
HS.121 Trident 3B	D-III	143		29.9	40.0	8.6	68,039
HS.121 Trident Super 3B	D-III	146		29.9	40.0	8.6	71,668
HS.748 Series 2A	B-III	94		30.0	20.4	7.6	20,180
HS.780 Andover C.Mk.1	B-III	100		29.9	23.8	9.2	22,680
HS.801 Nimrod MR Mk.2	C-III	125	*	35.0	38.6	9.1	80,513
IAI 1121 Jet Comdr.	C-I	130		13.2	15.4	4.8	7,620
IAI Arava-201	A-II	81		20.9	13.0	5.2	6,804
IAI-1124 Westwind	C-I	129		13.7	15.9	4.8	10,659
Ilyushin Il-12	A-III	78		31.7	21.3	9.3	17,237
Ilyushin Il-18	B-IV	103		37.4	35.9	10.1	61,072
Ilyushin Il-62	D-IV	152		43.2	53.1	12.3	164,999
Ilyushin Il-76	B-IV	119		50.5	46.6	14.8	170,000
Ilyushin Il-86	D-IV	141		48.1	59.5	15.8	205,999
Kawasaki C-1	B-III	118	*	30.6	29.0	10.0	38,701
Lapan XT-400	A-I	75		14.6	10.2	4.3	2,520
Learfan 2100	A-I	86		12.0	12.4	3.7	3,357
LET L-410 UVP-E	A-II	81		20.0	14.5	5.8	6,400
Lockheed 100-20 Hercules	C-IV	137		40.4	32.3	12.0	70,307
Lockheed 100-30 Hercules	C-IV	129		40.4	34.4	11.9	70,307
Lockheed 1011-1	C-IV	138		47.3	54.2	17.0	195,045
Lockheed 1011-100	C-IV	140		47.3	54.2	17.0	211,374
Lockheed 1011-200	C-IV	140		47.3	54.2	17.0	211,374
Lockheed 1011-250	D-IV	144		47.3	54.2	17.0	224,982
Lockheed 1011-500	D-IV	144		47.3	50.0	17.0	224,982
Lockheed 1011-500 Ex. Wing	D-IV	148		50.1	50.0	17.0	224,982
Lockheed 1011-600	C-IV	140	*	43.5	43.0	16.2	119,748
Lockheed 1049 Constellat'n	B-IV	113		37.5	34.6	7.6	62,369
Lockheed 1329 JetStar	C-II	132		16.6	18.4	6.2	19,845
Lockheed 1649 Constellat'n	A-IV	89		45.7	35.4	7.1	72,575
Lockheed 188 Electra	C-III	123		30.2	31.9	10.3	52,617
Lockheed 400	C-IV	121	*	36.5	29.8	11.6	38,102
Lockheed 749 Constellat'n	B-IV	93		37.5	29.0	6.8	48,534
Lockheed C-141A Starlifter	C-IV	129		48.7	44.2	12.0	143,607
Lockheed C-141B Starlifter	C-IV	129		48.7	51.3	12.0	155,582
Lockheed C-5B Galaxy	C-VI	135		67.9	75.5	19.8	379,657
Lockheed P-3 Orion	C-III	134		30.4	35.6	10.3	61,235
Lockheed SR-71 Blackbird	E-II	180		16.9	32.7	5.6	77,111
MAI-QSTOL	A-III	85		30.6	30.0	10.0	38,691
Marshall (Shorts) Belfast	C-IV	126		48.4	41.6	14.3	104,326
Martin-404	B-III	98		28.4	22.7	8.7	20,366

Aircraft	Airport Reference Code	Appch Speed Knots	Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
MDC-C-133	C-V	128	54.8	48.0	14.7	136,078
MDC-DC-10-10	C-IV	136	47.3	55.6	17.8	200,941
MDC-DC-10-30	D-IV	151	50.4	55.4	17.9	267,619
MDC-DC-10-40	D-IV	145	50.4	55.6	17.9	251,744
MDC-DC-3	A-III	72	29.0	19.7	7.2	11,431
MDC-DC-4	B-III	95	35.8	28.6	8.5	33,112
MDC-DC-6A/B	B-III	108	35.8	32.2	8.9	47,174
MDC-DC-7	B-IV	110	38.9	34.2	9.7	64,864
MDC-DC-8-10	C-IV	131	43.4	46.0	13.2	125,191
MDC-DC-8-20/30/40	C-IV	133	43.4	46.0	13.2	142,882
MDC-DC-8-50	C-IV	137	43.4	46.0	13.2	147,418
MDC-DC-8-61	D-IV	142	43.4	57.1	13.1	147,418
MDC-DC-8-62	C-IV	124	45.2	48.0	13.2	158,757
MDC-DC-8-63	D-IV	147	45.2	57.1	13.1	161,025
MDC-DC-9-10/15	C-III	134	27.2	31.8	8.4	41,141
MDC-DC-9-20	C-III	124	28.4	31.8	8.4	44,452
MDC-DC-9-30	C-III	127	28.4	36.4	8.5	49,895
MDC-DC-9-40	C-III	129	28.4	38.3	8.7	51,710
MDC-DC-9-50	C-III	132	28.4	40.7	8.8	54,885
MDC-DC-9-80	C-III	132	32.9	45.0	9.2	63,503
MDC-DC-9-82	C-III	135	32.9	45.0	9.2	67,812
MDC-MD-11	D-IV	155	51.8	61.4	17.6	273,289
Mitsubishi Diamond MU-300	B-I	100	13.3	14.8	4.2	7,135
Mitsubishi Marquise MU-2N	A-I	88	11.9	12.0	4.2	5,250
Mitsubishi MU-2G	B-I	119	11.9	12.0	4.2	4,899
Mitsubishi Solitaire MU-2P	A-I	87	11.9	10.1	3.9	4,749
Nihon YS-11	B-III	98	32.0	26.3	9.0	24,499
Nomad N 22B	A-II	69	16.5	12.6	5.5	4,060
Nomad N 24A	A-II	73	16.5	14.4	5.5	4,264
Partenavia P.68B Victor	A-I	73	12.0	10.9	3.6	2,850
Piaggio PD-808	B-I	117	13.2	12.9	4.8	8,301
Piaggio P-166 Portofino	A-I	82	14.4	11.9	5.0	4,300
Pilatus PC-6 Porter	A-II	57	15.1	11.4	3.2	2,200
Piper 31-310 Navajo	B-I	100	12.4	10.0	4.0	2,812
Piper 400LS Cheyenne	B-I	110	14.5	13.2	5.2	5,466
Piper 60-602P Aerostar	B-I	94	11.2	10.6	3.7	2,722
PZL-AN-2	A-II	54	18.2	12.8	4.0	5,500
PZL-AN-28	A-II	85	22.1	13.1	4.9	6,500
PZL-M-15 Belphegor	A-II	62	22.4	12.8	5.4	5,654
Rockwell 690A Turbo Comdr.	B-I	97	14.2	13.5	4.5	4,672
Rockwell 840	B-II	98	15.9	13.1	4.5	4,683
Rockwell 980	C-II	121	15.9	13.1	4.5	4,683
Rockwell B-1	D-IV	165 *	41.8	44.8	10.4	216,364
Rockwell Sabre 40	B-I	120	13.6	13.4	4.9	8,459
Rockwell Sabre 60	B-I	120	13.6	14.7	4.9	9,072
Rockwell Sabre 65	B-II	105	15.4	14.1	4.9	10,886
Rockwell Sabre 75A	C-I	137	13.6	14.4	5.2	10,569
Rockwell Sabre 80	C-II	128	15.4	14.4	5.3	11,113
Shorts 330	B-II	96	22.8	17.7	4.9	10,387
Shorts 360	B-II	104	22.8	21.6	7.2	11,999
Swearingen Merlin 3B	B-I	105	14.1	12.9	5.1	5,670

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
Swearingen Metro	B-I	112		14.1	18.1	5.1	5,670
Tupolev TU-114	C-IV	132	*	51.1	54.1	15.2	164,028
Tupolev TU-124	C-III	132	*	25.5	30.6	15.2	36,506
Tupolev TU-134	D-III	144		29.0	37.0	9.1	46,992
Tupolev TU-144	E-III	178		28.9	64.8	12.9	179,623
Tupolev TU-154	D-IV	145		37.6	47.9	11.4	97,999
VFW-Fokker 614	B-II	111		21.5	20.6	7.8	19,958
Vickers Vanguard 950	B-IV	119		36.0	37.5	10.6	66,451
Vickers VC-10-1100	C-IV	128		44.6	48.4	12.0	141,521
Vickers VC-10-1150	C-IV	138		44.6	52.3	12.0	151,999
Vickers VC-2-810/840	C-III	122		28.7	26.1	8.2	32,885
Volpar Turbo 18	B-I	100		14.0	11.4	2.9	4,663
Yakovlev YAK-40	C-III	128	*	25.1	20.1	6.5	16,000
Yakovlev YAK-42	C-III	128	*	34.2	36.4	9.8	53,501
Yunshu-11	A-II	80	*	17.0	12.0	4.6	3,243

* Approach speeds estimated.

Section 3. Listing Small Airplanes by Airport Reference Code (U.S. customary units)

Aircraft	Airport Reference Code	Appch Speed Knots	Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
Beech Baron B55	A-I	90	37.8	28.0	9.1	5,100
Beech Baron E55	A-I	88	37.8	29.0	9.1	5,300
Beech Bonanza A36	A-I	72	33.5	27.5	8.6	3,650
Beech Bonanza B36TC	A-I	75	37.8	27.5	8.6	3,850
Beech Bonanza F33A	A-I	70	33.5	26.7	8.2	3,400
Beech Bonanza V35B	A-I	70	33.5	26.4	6.6	3,400
Beech Duchess 76	A-I	76	38.0	29.0	9.5	3,900
Beech Sierra 200-B24R	A-I	70	32.8	25.7	8.2	2,750
Beech Skipper 77	A-I	63	30.0	24.0	6.9	1,675
Beech Sundowner 180-C23	A-I	68	32.8	25.7	8.2	2,450
Cessna-150	A-I	55	32.7	23.8	8.0	1,600
Cessna-177 Cardinal	A-I	64	35.5	27.2	8.5	2,500
DHC-2 Beaver	A-I	50	48.0	30.3	9.0	5,100
Embraer-820 Navajo Chief	A-I	74	40.7	34.6	13.0	7,000
Lapan XT-400	A-I	75	47.9	33.5	14.1	5,555
Learfan 2100	A-I	86	39.3	40.6	12.2	7,400
Mitsubishi Marquise MU-2N	A-I	88	39.2	39.5	13.7	11,575
Mitsubishi Solitaire MU-2P	A-I	87	39.2	33.3	12.9	10,470
Partenavia P.68B Victor	A-I	73	39.3	35.6	11.9	6,283
Piaggio P-166 Portofino	A-I	82	47.2	39.0	16.4	9,480
AJI Hustler 400	B-I	98	28.0	34.8	9.8	6,000
Beech Airliner C99	B-I	107	45.9	44.6	14.4	11,300
Beech Baron 58	B-I	96	37.8	29.8	9.8	5,500
Beech Baron 58P	B-I	101	37.8	29.8	9.1	6,200
Beech Baron 58TC	B-I	101	37.8	29.8	9.1	6,200
Beech Duke B60	B-I	98	39.2	33.8	12.3	6,775
Beech King Air B100	B-I	111	45.8	39.9	15.3	11,800
Beech King Air F90	B-I	108	45.9	39.8	15.1	10,950
Cessna Citation I	B-I	108	47.1	43.5	14.3	11,850
Cessna-402 Businessliner	B-I	95	39.8	36.1	11.6	6,300
Cessna-404 Titan	B-I	92	46.3	39.5	13.2	8,400
Cessna-414 Chancellor	B-I	94	44.1	36.4	11.5	6,785
Cessna-421 Golden Eagle	B-I	96	41.7	36.1	11.6	7,450
Embraer-121 Xingu	B-I	92	47.4	40.2	15.9	12,500
Embraer-326 Xavante	B-I	102	35.6	34.9	12.2	11,500
Foxjet ST-600-8	B-I	97	31.6	31.8	10.2	4,550
Hamilton Westwind II STD	B-I	96	46.0	45.0	9.2	12,495
Mitsubishi MU-2G	B-I	119	39.2	39.5	13.8	10,800
Piper 31-310 Navajo	B-I	100	40.7	32.7	13.0	6,200
Piper 400LS Cheyenne	B-I	110	47.7	43.4	17.0	12,050
Piper 60-602P Aerostar	B-I	94	36.7	34.8	12.1	6,000
Rockwell 690A Turbo Comdr.	B-I	97	46.5	44.3	14.9	10,300
Swearingen Merlin 3B	B-I	105	46.2	42.2	16.7	12,500
Swearingen Metro	B-I	112	46.2	59.4	16.7	12,500
Volpar Turbo 18	B-I	100	46.0	37.4	9.6	10,280
Aerocom Skyliner	A-II	88	54.0	54.3	16.5	12,500
Antonov AN-14	A-II	52	72.1	37.2	15.2	7,607
Antonov AN-28	A-II	88	72.1	42.6	16.1	12,350
Beech E18S	A-II	87	49.7	35.2	9.5	9,300

Aircraft	Airport Reference Code	Appch Speed Knots	Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
BN-2A Mk.3 Trislander	A-II	65	53.0	45.7	14.2	10,000
DHC-6-300 Twin Otter	A-II	75	65.0	51.7	19.5	12,500
DH.104 Dove 8	A-II	84	57.0	39.2	13.3	8,950
Dornier DO 28D-2	A-II	74	51.0	37.4	12.8	8,855
Nomad N 22B	A-II	69	54.0	41.2	18.1	8,950
Nomad N 24A	A-II	73	54.2	47.1	18.2	9,400
Pilatus PC-6 Porter	A-II	57	49.7	37.4	10.5	4,850
PZL-AN-2	A-II	54	59.8	41.9	13.1	12,125
PZL-M-15 Belphegor	A-II	62	73.6	41.9	17.6	12,465
Yunshu-11	A-II	80 *	55.7	39.4	15.1	7,150
Beech King Air C90-1	B-II	100	50.2	35.5	14.2	9,650
Beech Super King Air B200	B-II	103	54.5	43.8	15.0	12,500
Cessna-441 Conquest	B-II	100	49.3	39.0	13.1	9,925
Rockwell 840	B-II	98	52.1	42.9	14.9	10,325
Rockwell 980	C-II	121	52.1	42.9	14.9	10,325

* Approach speeds estimated.

Section 4. Listing Large Airplanes by Airport Reference Code (U.S. customary units)

Aircraft	Airport Reference Code	Appch Speed Knots	Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
Aerospatiale SN 601 Corv.	B-I	118	42.2	45.4	13.9	14,550
Dassault FAL-10	B-I	104	42.9	45.5	15.1	18,740
Gates Learjet 28/29	B-I	120	43.7	47.6	12.3	15,000
Mitsubishi Diamond MU-300	B-I	100	43.5	48.4	13.8	15,730
Piaggio PD-808	B-I	117	43.3	42.2	15.8	18,300
Rockwell Sabre 40	B-I	120	44.5	43.8	16.0	18,650
Rockwell Sabre 60	B-I	120	44.5	48.3	16.0	20,000
Gates Learjet 24	C-I	128	35.6	43.3	12.6	13,000
Gates Learjet 25	C-I	137	35.6	47.6	12.6	15,000
Gates Learjet 54-55-56	C-I	128	43.7	55.1	14.7	21,500
HFB-320 Hansa	C-I	125	47.5	54.5	16.2	20,280
HS 125 Series 400A	C-I	124	47.0	47.4	16.5	23,300
HS 125 Series 600A	C-I	125	47.0	50.5	17.2	25,000
HS 125 Series 700A	C-I	125	47.0	50.7	17.6	24,200
IAI 1121 Jet Comdr.	C-I	130	43.3	50.4	15.8	16,800
IAI-1124 Westwind	C-I	129	44.8	52.3	15.8	23,500
Rockwell Sabre 75A	C-I	137	44.5	47.2	17.2	23,300
Gates Learjet 35A/36A	D-I	143	39.5	48.7	12.3	18,300
Casa C-212-200 Aviocar	A-II	81	62.3	49.8	20.7	16,976
Dassault 941	A-II	59	76.7	77.9	30.7	58,400
DH.114 Heron 2	A-II	85	71.5	48.5	15.6	13,500
Dornier LTA	A-II	74 *	58.4	54.4	18.2	15,100
GAC-100	A-II	86	70.0	67.3	24.9	28,900
IAI Arava-201	A-II	81	68.6	42.7	17.1	15,000
LET L-410 UVP-E	A-II	81	65.5	47.5	19.1	14,109
PZL-AN-28	A-II	85	72.4	42.9	16.1	14,330

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
Aerospatiale NORD-262	B-II	96		71.9	63.3	20.4	23,480
Ahrens AR 404	B-II	98		66.0	52.7	19.0	18,500
Air-Metal AM-C 111	B-II	96		63.0	55.2	21.0	18,629
BAe Jetstream 31	B-II	99		52.0	47.2	17.5	14,550
Beech Airliner 1900-C	B-II	120	*	54.5	57.8	14.9	16,600
Cessna Citation II	B-II	108		51.7	47.2	15.0	13,300
Cessna Citation III	B-II	114		53.5	55.5	16.8	22,000
Dassault FAL-20	B-II	107		53.5	56.3	17.4	28,660
Dassault FAL-200	B-II	114		53.5	56.3	17.4	30,650
Dassault FAL-50	B-II	113		61.9	60.8	22.9	37,480
Dassault FAL-900	B-II	100		63.4	66.3	24.8	45,500
Embraer-110 Bandeirante	B-II	92		50.3	49.5	16.5	13,007
FMA IA-50 Guarni II	B-II	101		64.1	48.8	19.1	15,700
Fokker F-28-1000	B-II	119		77.3	89.9	27.8	65,000
Fokker F-28-2000	B-II	119		77.3	97.2	27.8	65,000
Grumman Gulfstream I	B-II	113		78.3	75.3	23.0	36,000
Rockwell Sabre 65	B-II	105		50.5	46.1	16.0	24,000
Shorts 330	B-II	96		74.7	58.0	16.2	22,900
Shorts 360	B-II	104		74.8	70.8	23.7	26,453
VFW-Fokker 614	B-II	111		70.5	67.5	25.6	44,000
Canadair CL-600	C-II	125		61.8	68.4	20.7	41,250
Grumman Gulfstream III	C-II	136		77.8	83.1	24.4	68,700
Lockheed 1329 JetStar	C-II	132		54.4	60.4	20.4	43,750
Rockwell Sabre 80	C-II	128		50.4	47.2	17.3	24,500
Grumman Gulfstream II	D-II	141		68.8	79.9	24.5	65,300
Grumman Gulfstream II-TT	D-II	142		71.7	79.9	24.5	65,300
Grumman Gulfstream IV	D-II	145		77.8	87.8	24.4	71,780
Lockheed SR-71 Blackbird	E-II	180		55.6	107.4	18.5	170,000
AIDC/CAF XC-2	A-III	86		81.7	65.9	25.3	27,500
Antonov AN-72	A-III	89	*	84.7	84.7	27.0	66,000
DHC-4 Caribou	A-III	77		95.6	72.6	31.8	28,500
DHC-7 Dash 7-100	A-III	83		93.0	80.7	26.2	43,000
DHC-8 Dash 8-300	A-III	90		90.0	84.3	24.6	41,100
Fairchild C-121	A-III	88		110.0	75.8	34.1	60,000
HP Herald	A-III	88		94.8	75.5	24.1	43,000
Ilyushin Il-12	A-III	78		104.0	70.0	30.5	38,000
MAI-QSTOL	A-III	85		100.3	98.4	32.8	85,300
MDC-DC-3	A-III	72		95.0	64.5	23.5	25,200
Aeritalia G-222	B-III	109		93.8	74.4	32.0	61,700
Antonov AN-24	B-III	119		95.8	77.2	27.3	46,305
Antonov AN-30	B-III	112		96.4	80.1	27.3	51,040
AW.660 Argosy C.Mk.1	B-III	113		115.0	89.1	27.0	97,000
BAe 146-100	B-III	113		86.4	85.8	28.3	74,600
BAe 146-200	B-III	117		86.4	93.7	28.3	88,250
Casa C-207A Azor	B-III	102		91.2	68.4	25.4	36,400
Convair 240	B-III	107		91.8	74.7	26.9	41,790
Convair 340	B-III	104		105.3	81.5	28.2	49,100
Convair 440	B-III	106		105.3	81.5	28.2	49,100
Convair 580	B-III	107		105.3	81.5	29.2	54,600
Dassault Mercure	B-III	117		100.2	114.3	37.3	124,500
DHC-5D Buffalo	B-III	91		96.0	79.0	28.7	49,200

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
DH.106 Comet 4C	B-III	108		115.0	118.0	29.5	162,000
Fairchild FH-227 B,D	B-III	105		95.2	83.1	27.5	45,500
Fairchild F-27 A,J	B-III	109		95.2	77.2	27.5	42,000
Fokker F-27-500	B-III	102		95.2	82.3	29.3	45,000
Fokker F-28-6000	B-III	113		82.3	97.2	27.8	73,000
Hindustan HS.748-2	B-III	94		98.4	67.0	24.8	44,402
HS.748 Series 2A	B-III	94		98.5	67.0	24.8	44,490
HS.780 Andover C.Mk.1	B-III	100		98.2	78.0	30.1	50,000
Kawasaki C-1	B-III	118	*	100.4	95.1	32.9	85,320
Martin-404	B-III	98		93.3	74.6	28.7	44,900
MDC-DC-4	B-III	95		117.5	93.9	27.9	73,000
MDC-DC-6A/B	B-III	108		117.5	105.6	29.3	104,000
Nihon YS-11	B-III	98		105.0	86.3	29.5	54,010
Aerospatiale SE 210 Carav.	C-III	127		112.5	105.0	28.6	114,640
Airbus A-320-100	C-III	138		111.3	123.3	39.1	145,505
Antonov AN-26	C-III	121		95.8	78.1	28.1	52,920
AW.650 Argosy 220	C-III	123		115.0	86.8	27.0	93,000
BAC 111-200	C-III	129		88.5	93.5	24.5	79,000
BAC 111-300	C-III	128		88.5	93.5	24.5	88,500
BAC 111-400	C-III	137		88.5	93.5	24.5	87,000
BAC 111-475	C-III	135		93.5	93.5	24.5	98,500
BAe 146-300	C-III	121		86.4	104.2	28.1	104,000
Boeing 727-100	C-III	125		108.0	133.2	34.3	169,000
Boeing 727-200	C-III	138		108.0	153.2	34.9	209,500
Boeing 737-100	C-III	137		93.0	94.0	37.2	110,000
Boeing 737-200	C-III	137		93.0	100.2	37.3	115,500
Boeing 737-300	C-III	137		94.8	109.6	36.6	135,000
Boeing 737-400	C-III	139		94.8	119.6	36.6	150,000
Boeing 737-500	C-III	140	*	94.8	101.8	36.6	133,500
Fairchild C-119	C-III	122		109.3	86.5	27.5	77,000
Fokker F-28-3000	C-III	121		82.3	89.9	27.8	73,000
Fokker F-28-4000	C-III	121		82.3	97.2	27.8	73,000
HS.121 Trident 1E	C-III	137		95.0	114.8	27.0	135,500
HS.121 Trident 2E	C-III	138		98.0	114.8	27.0	144,000
HS.801 Nimrod MR Mk.2	C-III	125	*	114.8	126.8	29.7	177,500
Lockheed 188 Electra	C-III	123		99.0	104.6	33.7	116,000
Lockheed P-3 Orion	C-III	134		99.7	116.8	33.8	135,000
MDC-DC-9-10/15	C-III	134		89.4	104.4	27.6	90,700
MDC-DC-9-20	C-III	124		93.3	104.4	27.4	98,000
MDC-DC-9-30	C-III	127		93.3	119.3	27.8	110,000
MDC-DC-9-40	C-III	129		93.3	125.6	28.4	114,000
MDC-DC-9-50	C-III	132		93.3	133.6	28.8	121,000
MDC-DC-9-80	C-III	132		107.8	147.8	30.3	140,000
MDC-DC-9-82	C-III	135		107.8	147.8	30.3	149,500
Tupolev TU-124	C-III	132	*	83.8	100.3	50.0	80,482
Vickers VC-2-810/840	C-III	122		94.0	85.7	26.8	72,500
Yakovlev YAK-40	C-III	128	*	82.2	65.9	21.3	35,275
Yakovlev YAK-42	C-III	128	*	112.2	119.3	32.2	117,950
BAC 111-500	D-III	144		93.5	107.0	24.5	104,500
BAC/Aerospatiale Concord	D-III	162		83.8	205.4	37.4	408,000
HS.121 Trident 3B	D-III	143		98.0	131.2	28.3	150,000

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
HS.121 Trident Super 3B	D-III	146		98.0	131.2	28.3	158,000
Tupolev TU-134	D-III	144		95.2	121.5	30.0	103,600
Tupolev TU-144	E-III	178		94.8	212.6	42.2	396,000
Boeing YC-14	A-IV	89		129.0	131.7	48.3	216,000
Lockheed 1649 Constellat'n	A-IV	89		150.0	116.2	23.4	160,000
Boeing C97 Stratocruiser	B-IV	105		141.3	110.3	38.3	145,800
Bristol Brittania 300/310	B-IV	117		142.3	124.2	37.5	185,000
Ilyushin Il-18	B-IV	103		122.7	117.8	33.3	134,640
Ilyushin Il-76	B-IV	119		165.7	152.8	48.4	374,785
Lockheed 1049 Constellat'n	B-IV	113		123.0	113.6	24.8	137,500
Lockheed 749 Constellat'n	B-IV	93		123.0	95.2	22.4	107,000
MDC-DC-7	B-IV	110		127.5	112.3	31.7	143,000
Vickers Vanguard 950	B-IV	119		118.0	122.9	34.9	146,500
Aerospatiale C 160 Trans.	C-IV	124		131.3	106.3	38.7	108,596
Airbus A-300-600	C-IV	135		147.1	177.5	54.7	363,763
Airbus A-300-B4	C-IV	132		147.1	175.5	55.5	330,700
Airbus A-310-300	C-IV	125		144.1	153.2	52.3	330,693
Antonov AN-10	C-IV	126		124.8	121.4	32.2	121,500
Antonov AN-12	C-IV	127		124.8	109.0	34.6	121,500
Boeing 707-100	C-IV	139		130.8	145.1	41.7	257,340
Boeing 707-320	C-IV	139		142.4	152.9	42.2	312,000
Boeing 707-320B	C-IV	136		145.8	152.9	42.1	336,600
Boeing 707-420	C-IV	132		142.4	152.9	42.2	312,000
Boeing 720	C-IV	133		130.8	136.2	41.4	229,300
Boeing 720B	C-IV	137		130.8	136.8	41.2	234,300
Boeing 757	C-IV	135		124.8	155.3	45.1	255,000
Boeing 767-200	C-IV	130		156.1	159.2	52.9	315,000
Boeing 767-300	C-IV	130		156.1	180.3	52.6	350,000
Boeing E-3	C-IV	137		145.9	153.0	42.0	325,000
Canadair CL-44	C-IV	123		142.3	136.8	38.4	210,000
Dassault 1150 Atlantic	C-IV	130	*	122.7	104.2	37.2	100,000
Lockheed 100-20 Hercules	C-IV	137		132.6	106.1	39.3	155,000
Lockheed 100-30 Hercules	C-IV	129		132.6	112.7	39.2	155,000
Lockheed 1011-1	C-IV	138		155.3	177.7	55.8	430,000
Lockheed 1011-100	C-IV	140		155.3	177.7	55.8	466,000
Lockheed 1011-200	C-IV	140		155.3	177.7	55.8	466,000
Lockheed 1011-600	C-IV	140	*	142.8	141.0	53.0	264,000
Lockheed 400	C-IV	121	*	119.7	97.8	38.1	84,000
Lockheed C-141A Starlifter	C-IV	129		159.9	145.0	39.3	316,600
Lockheed C-141B Starlifter	C-IV	129		159.9	168.3	39.3	343,000
Marshall (Shorts) Belfast	C-IV	126		158.8	136.4	47.0	230,000
MDC-DC-10-10	C-IV	136		155.3	182.3	58.4	443,000
MDC-DC-8-10	C-IV	131		142.4	150.8	43.3	276,000
MDC-DC-8-20/30/40	C-IV	133		142.4	150.8	43.3	315,000
MDC-DC-8-50	C-IV	137		142.4	150.8	43.3	325,000
MDC-DC-8-62	C-IV	124		148.4	157.5	43.4	350,000
Tupolev TU-114	C-IV	132	*	167.6	177.5	50.0	361,620
Vickers VC-10-1100	C-IV	128		146.2	158.7	39.5	312,000
Vickers VC-10-1150	C-IV	138		146.2	171.7	39.5	335,100
Boeing 707-200	D-IV	145		130.8	145.1	41.7	257,340
Boeing 777	D-IV	145		155.0	181.5	44.8	380,000

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Feet	Length Feet	Tail Height Feet	Maximum Takeoff Lbs
General Dynamics 880	D-IV	155		120.0	129.3	36.0	193,500
General Dynamics 990	D-IV	156		120.0	139.2	39.5	255,000
Ilyushin Il-62	D-IV	152		141.8	174.3	40.5	363,760
Ilyushin Il-86	D-IV	141		157.7	195.3	51.8	454,150
Lockheed 1011-250	D-IV	144		155.3	177.7	55.8	496,000
Lockheed 1011-500	D-IV	144		155.3	164.2	55.8	496,000
Lockheed 1011-500 Ex. Wing	D-IV	148		164.3	164.2	55.8	496,000
MDC-DC-10-30	D-IV	151		165.3	181.6	58.6	590,000
MDC-DC-10-40	D-IV	145		165.4	182.3	58.6	555,000
MDC-DC-8-61	D-IV	142		142.4	187.4	43.0	325,000
MDC-DC-8-63	D-IV	147		148.4	187.4	43.0	355,000
MDC-MD-11	D-IV	155		169.8	201.3	57.8	602,500
Rockwell B-1	D-IV	165	*	137.0	147.0	34.0	477,000
Tupolev TU-154	D-IV	145		123.3	157.2	37.4	216,050
Antonov AN-22	C-V	140	*	211.0	167.0	41.2	500,000
Boeing 747-SP	C-V	140		195.7	184.8	65.8	696,000
MDC-C-133	C-V	128		179.7	157.5	48.2	300,000
Boeing 747-100	D-V	152		195.7	231.8	64.3	600,000
Boeing 747-200	D-V	152		195.7	231.8	64.7	833,000
Boeing 747-300SR	D-V	141		195.7	231.8	64.3	600,000
Boeing 747-400	D-V	154		213.0	231.8	64.3	870,000
Boeing B-52	D-V	141	*	185.0	157.6	40.8	488,000
Boeing E-4 (747-200)	D-V	152		195.7	231.8	64.7	833,000
Antonov AN-124	C-VI	124		232.0	223.0	66.2	800,000
Lockheed C-5B Galaxy	C-VI	135		222.7	247.8	65.1	837,000

* Approach speeds estimated.

Section 5. Listing Small Airplanes by Airport Reference Code (SI units)

Aircraft	Airport Reference Code	Appch Speed Knots	Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
Beech Baron B55	A-I	90	11.5	8.5	2.8	2,313
Beech Baron E55	A-I	88	11.5	8.8	2.8	2,404
Beech Bonanza A36	A-I	72	10.2	8.4	2.6	1,656
Beech Bonanza B36TC	A-I	75	11.5	8.4	2.6	1,746
Beech Bonanza F33A	A-I	70	10.2	8.1	2.5	1,542
Beech Bonanza V35B	A-I	70	10.2	8.0	2.0	1,542
Beech Duchess 76	A-I	76	11.6	8.8	2.9	1,769
Beech Sierra 200-B24R	A-I	70	10.0	7.8	2.5	1,247
Beech Skipper 77	A-I	63	9.1	7.3	2.1	760
Beech Sundowner 180-C23	A-I	68	10.0	7.8	2.5	1,111
Cessna-150	A-I	55	10.0	7.3	2.4	726
Cessna-177 Cardinal	A-I	64	10.8	8.3	2.6	1,134
DHC-2 Beaver	A-I	50	14.6	9.2	2.7	2,313
Embraer-820 Navajo Chief	A-I	74	12.4	10.5	4.0	3,175
Lapan XT-400	A-I	75	14.6	10.2	4.3	2,520
Learfan 2100	A-I	86	12.0	12.4	3.7	3,357
Mitsubishi Marquise MU-2N	A-I	88	11.9	12.0	4.2	5,250
Mitsubishi Solitaire MU-2P	A-I	87	11.9	10.1	3.9	4,749
Partenavia P.68B Victor	A-I	73	12.0	10.9	3.6	2,850
Piaggio P-166 Portofino	A-I	82	14.4	11.9	5.0	4,300
AJI Hustler 400	B-I	98	8.5	10.6	3.0	2,722
Beech Airliner C99	B-I	107	14.0	13.6	4.4	5,126
Beech Baron 58	B-I	96	11.5	9.1	3.0	2,495
Beech Baron 58P	B-I	101	11.5	9.1	2.8	2,812
Beech Baron 58TC	B-I	101	11.5	9.1	2.8	2,812
Beech Duke B60	B-I	98	11.9	10.3	3.7	3,073
Beech King Air B100	B-I	111	14.0	12.2	4.7	5,352
Beech King Air F90	B-I	108	14.0	12.1	4.6	4,967
Cessna Citation I	B-I	108	14.4	13.3	4.4	5,375
Cessna-402 Businessliner	B-I	95	12.1	11.0	3.5	2,858
Cessna-404 Titan	B-I	92	14.1	12.0	4.0	3,810
Cessna-414 Chancellor	B-I	94	13.4	11.1	3.5	3,078
Cessna-421 Golden Eagle	B-I	96	12.7	11.0	3.5	3,379
Embraer-121 Xingu	B-I	92	14.4	12.3	4.8	5,670
Embraer-326 Xavante	B-I	102	10.9	10.6	3.7	5,216
Foxjet ST-600-8	B-I	97	9.6	9.7	3.1	2,064
Hamilton Westwind II STD	B-I	96	14.0	13.7	2.8	5,668
Mitsubishi MU-2G	B-I	119	11.9	12.0	4.2	4,899
Piper 31-310 Navajo	B-I	100	12.4	10.0	4.0	2,812
Piper 400LS Cheyenne	B-I	110	14.5	13.2	5.2	5,466
Piper 60-602P Aerostar	B-I	94	11.2	10.6	3.7	2,722
Rockwell 690A Turbo Comdr.	B-I	97	14.2	13.5	4.5	4,672
Swearingen Merlin 3B	B-I	105	14.1	12.9	5.1	5,670
Swearingen Metro	B-I	112	14.1	18.1	5.1	5,670
Volpar Turbo 18	B-I	100	14.0	11.4	2.9	4,663
Aerocom Skyliner	A-II	88	16.5	16.6	5.0	5,670
Antonov AN-14	A-II	52	22.0	11.3	4.6	3,450
Antonov AN-28	A-II	88	22.0	13.0	4.9	5,602
Beech E18S	A-II	87	15.1	10.7	2.9	4,218

Aircraft	Airport Reference Code	Appch Speed Knots	Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
BN-2A Mk.3 Trislander	A-II	65	16.2	13.9	4.3	4,536
DHC-6-300 Twin Otter	A-II	75	19.8	15.8	5.9	5,670
DH.104 Dove 8	A-II	84	17.4	11.9	4.1	4,060
Dornier DO 28D-2	A-II	74	15.5	11.4	3.9	4,017
Nomad N 22B	A-II	69	16.5	12.6	5.5	4,060
Nomad N 24A	A-II	73	16.5	14.4	5.5	4,264
Pilatus PC-6 Porter	A-II	57	15.1	11.4	3.2	2,200
PZL-AN-2	A-II	54	18.2	12.8	4.0	5,500
PZL-M-15 Belphegor	A-II	62	22.4	12.8	5.4	5,654
Yunshu-11	A-II	80 *	17.0	12.0	4.6	3,243
Beech King Air C90-1	B-II	100	15.3	10.8	4.3	4,377
Beech Super King Air B200	B-II	103	16.6	13.4	4.6	5,670
Cessna-441 Conquest	B-II	100	15.0	11.9	4.0	4,502
Rockwell 840	B-II	98	15.9	13.1	4.5	4,683
Rockwell 980	C-II	121	15.9	13.1	4.5	4,683

* Approach speeds estimated.

Section 6. Listing Large Airplanes by Airport Reference Code (SI units)

Aircraft	Airport Reference Code	Appch Speed Knots	Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
Aerospatiale SN 601 Corv.	B-I	118	12.9	13.8	4.2	6,600
Dassault FAL-10	B-I	104	13.1	13.9	4.6	8,500
Gates Learjet 28/29	B-I	120	13.3	14.5	3.7	6,804
Mitsubishi Diamond MU-300	B-I	100	13.3	14.8	4.2	7,135
Piaggio PD-808	B-I	117	13.2	12.9	4.8	8,301
Rockwell Sabre 40	B-I	120	13.6	13.4	4.9	8,459
Rockwell Sabre 60	B-I	120	13.6	14.7	4.9	9,072
Gates Learjet 24	C-I	128	10.9	13.2	3.8	5,897
Gates Learjet 25	C-I	137	10.9	14.5	3.8	6,804
Gates Learjet 54-55-56	C-I	128	13.3	16.8	4.5	9,752
HFB-320 Hansa	C-I	125	14.5	16.6	4.9	9,199
HS 125 Series 400A	C-I	124	14.3	14.4	5.0	10,569
HS 125 Series 600A	C-I	125	14.3	15.4	5.2	11,340
HS 125 Series 700A	C-I	125	14.3	15.5	5.4	10,977
IAI 1121 Jet Comdr.	C-I	130	13.2	15.4	4.8	7,620
IAI-1124 Westwind	C-I	129	13.7	15.9	4.8	10,659
Rockwell Sabre 75A	C-I	137	13.6	14.4	5.2	10,569
Gates Learjet 35A/36A	D-I	143	12.0	14.8	3.7	8,301
Casa C-212-200 Aviocar	A-II	81	19.0	15.2	6.3	7,700
Dassault 941	A-II	59	23.4	23.7	9.4	26,490
DH.114 Heron 2	A-II	85	21.8	14.8	4.8	6,123
Dornier LTA	A-II	74 *	17.8	16.6	5.5	6,849
GAC-100	A-II	86	21.3	20.5	7.6	13,109
IAI Arava-201	A-II	81	20.9	13.0	5.2	6,804
LET L-410 UVP-E	A-II	81	20.0	14.5	5.8	6,400
PZL-AN-28	A-II	85	22.1	13.1	4.9	6,500

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
Aerospatiale NORD-262	B-II	96		21.9	19.3	6.2	10,650
Ahrens AR 404	B-II	98		20.1	16.1	5.8	8,391
Air-Metal AM-C 111	B-II	96		19.2	16.8	6.4	8,450
BAe Jetstream 31	B-II	99		15.8	14.4	5.3	6,600
Beech Airliner 1900-C	B-II	120	*	16.6	17.6	4.5	7,530
Cessna Citation II	B-II	108		15.8	14.4	4.6	6,033
Cessna Citation III	B-II	114		16.3	16.9	5.1	9,979
Dassault FAL-20	B-II	107		16.3	17.2	5.3	13,000
Dassault FAL-200	B-II	114		16.3	17.2	5.3	13,903
Dassault FAL-50	B-II	113		18.9	18.5	7.0	17,001
Dassault FAL-900	B-II	100		19.3	20.2	7.6	20,638
Embraer-110 Bandeirante	B-II	92		15.3	15.1	5.0	5,900
FMA IA-50 Guarni II	B-II	101		19.5	14.9	5.8	7,121
Fokker F-28-1000	B-II	119		23.6	27.4	8.5	29,484
Fokker F-28-2000	B-II	119		23.6	29.6	8.5	29,484
Grumman Gulfstream I	B-II	113		23.9	23.0	7.0	16,329
Rockwell Sabre 65	B-II	105		15.4	14.1	4.9	10,886
Shorts 330	B-II	96		22.8	17.7	4.9	10,387
Shorts 360	B-II	104		22.8	21.6	7.2	11,999
VFW-Fokker 614	B-II	111		21.5	20.6	7.8	19,958
Canadair CL-600	C-II	125		18.8	20.8	6.3	18,711
Grumman Gulfstream III	C-II	136		23.7	25.3	7.4	31,162
Lockheed 1329 JetStar	C-II	132		16.6	18.4	6.2	19,845
Rockwell Sabre 80	C-II	128		15.4	14.4	5.3	11,113
Grumman Gulfstream II	D-II	141		21.0	24.4	7.5	29,620
Grumman Gulfstream II-TT	D-II	142		21.9	24.4	7.5	29,620
Grumman Gulfstream IV	D-II	145		23.7	26.8	7.4	32,559
Lockheed SR-71 Blackbird	E-II	180		16.9	32.7	5.6	77,111
AIDC/CAF XC-2	A-III	86		24.9	20.1	7.7	12,474
Antonov AN-72	A-III	89	*	25.8	25.8	8.2	29,937
DHC-4 Caribou	A-III	77		29.1	22.1	9.7	12,927
DHC-7 Dash 7-100	A-III	83		28.3	24.6	8.0	19,504
DHC-8 Dash 8-300	A-III	90		27.4	25.7	7.5	18,643
Fairchild C-121	A-III	88		33.5	23.1	10.4	27,216
HP Herald	A-III	88		28.9	23.0	7.3	19,504
Ilyushin Il-12	A-III	78		31.7	21.3	9.3	17,237
MAI-QSTOL	A-III	85		30.6	30.0	10.0	38,691
MDC-DC-3	A-III	72		29.0	19.7	7.2	11,431
Aeritalia G-222	B-III	109		28.6	22.7	9.8	27,987
Antonov AN-24	B-III	119		29.2	23.5	8.3	21,004
Antonov AN-30	B-III	112		29.4	24.4	8.3	23,151
AW.660 Argosy C.Mk.1	B-III	113		35.1	27.2	8.2	43,998
BAe 146-100	B-III	113		26.3	26.2	8.6	33,838
BAe 146-200	B-III	117		26.3	28.6	8.6	40,030
Casa C-207A Azor	B-III	102		27.8	20.8	7.7	16,511
Convair 240	B-III	107		28.0	22.8	8.2	18,956
Convair 340	B-III	104		32.1	24.8	8.6	22,271
Convair 440	B-III	106		32.1	24.8	8.6	22,271
Convair 580	B-III	107		32.1	24.8	8.9	24,766
Dassault Mercure	B-III	117		30.5	34.8	11.4	56,472
DHC-5D Buffalo	B-III	91		29.3	24.1	8.7	22,317

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
DH.106 Comet 4C	B-III	108		35.1	36.0	9.0	73,482
Fairchild FH-227 B,D	B-III	105		29.0	25.3	8.4	20,638
Fairchild F-27 A,J	B-III	109		29.0	23.5	8.4	19,051
Fokker F-27-500	B-III	102		29.0	25.1	8.9	20,412
Fokker F-28-6000	B-III	113		25.1	29.6	8.5	33,112
Hindustan HS.748-2	B-III	94		30.0	20.4	7.6	20,140
HS.748 Series 2A	B-III	94		30.0	20.4	7.6	20,180
HS.780 Andover C.Mk.1	B-III	100		29.9	23.8	9.2	22,680
Kawasaki C-1	B-III	118	*	30.6	29.0	10.0	38,701
Martin-404	B-III	98		28.4	22.7	8.7	20,366
MDC-DC-4	B-III	95		35.8	28.6	8.5	33,112
MDC-DC-6A/B	B-III	108		35.8	32.2	8.9	47,174
Nihon YS-11	B-III	98		32.0	26.3	9.0	24,499
Aerospatiale SE 210 Carav.	C-III	127		34.3	32.0	8.7	52,000
Airbus A-320-100	C-III	138		33.9	37.6	11.9	66,000
Antonov AN-26	C-III	121		29.2	23.8	8.6	24,004
AW.650 Argosy 220	C-III	123		35.1	26.5	8.2	42,184
BAC 111-200	C-III	129		27.0	28.5	7.5	35,834
BAC 111-300	C-III	128		27.0	28.5	7.5	40,143
BAC 111-400	C-III	137		27.0	28.5	7.5	39,463
BAC 111-475	C-III	135		28.5	28.5	7.5	44,679
BAe 146-300	C-III	121		26.3	31.8	8.6	47,174
Boeing 727-100	C-III	125		32.9	40.6	10.5	76,657
Boeing 727-200	C-III	138		32.9	46.7	10.6	95,028
Boeing 737-100	C-III	137		28.3	28.7	11.3	49,895
Boeing 737-200	C-III	137		28.3	30.5	11.4	52,390
Boeing 737-300	C-III	137		28.9	33.4	11.2	61,235
Boeing 737-400	C-III	139		28.9	36.5	11.2	68,039
Boeing 737-500	C-III	140	*	28.9	31.0	11.2	60,555
Fairchild C-119	C-III	122		33.3	26.4	8.4	34,927
Fokker F-28-3000	C-III	121		25.1	27.4	8.5	33,112
Fokker F-28-4000	C-III	121		25.1	29.6	8.5	33,112
HS.121 Trident 1E	C-III	137		29.0	35.0	8.2	61,462
HS.121 Trident 2E	C-III	138		29.9	35.0	8.2	65,317
HS.801 Nimrod MR Mk.2	C-III	125	*	35.0	38.6	9.1	80,513
Lockheed 188 Electra	C-III	123		30.2	31.9	10.3	52,617
Lockheed P-3 Orion	C-III	134		30.4	35.6	10.3	61,235
MDC-DC-9-10/15	C-III	134		27.2	31.8	8.4	41,141
MDC-DC-9-20	C-III	124		28.4	31.8	8.4	44,452
MDC-DC-9-30	C-III	127		28.4	36.4	8.5	49,895
MDC-DC-9-40	C-III	129		28.4	38.3	8.7	51,710
MDC-DC-9-50	C-III	132		28.4	40.7	8.8	54,885
MDC-DC-9-80	C-III	132		32.9	45.0	9.2	63,503
MDC-DC-9-82	C-III	135		32.9	45.0	9.2	67,812
Tupolev TU-124	C-III	132	*	25.5	30.6	15.2	36,506
Vickers VC-2-810/840	C-III	122		28.7	26.1	8.2	32,885
Yakovlev YAK-40	C-III	128	*	25.1	20.1	6.5	16,000
Yakovlev YAK-42	C-III	128	*	34.2	36.4	9.8	53,501
BAC 111-500	D-III	144		28.5	32.6	7.5	47,400
BAC/Aerospatiale Concord	D-III	162		25.5	62.6	11.4	185,066
HS.121 Trident 3B	D-III	143		29.9	40.0	8.6	68,039

Aircraft	Airport Reference Code	Appch Speed Knots		Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
HS.121 Trident Super 3B	D-III	146		29.9	40.0	8.6	71,668
Tupolev TU-134	D-III	144		29.0	37.0	9.1	46,992
Tupolev TU-144	E-III	178		28.9	64.8	12.9	179,623
Boeing YC-14	A-IV	89		39.3	40.1	14.7	97,976
Lockheed 1649 Constellat'n	A-IV	89		45.7	35.4	7.1	72,575
Boeing C97 Stratocruiser	B-IV	105		43.1	33.6	11.7	66,134
Bristol Brittania 300/310	B-IV	117		43.4	37.9	11.4	83,915
Ilyushin Il-18	B-IV	103		37.4	35.9	10.1	61,072
Ilyushin Il-76	B-IV	119		50.5	46.6	14.8	170,000
Lockheed 1049 Constellat'n	B-IV	113		37.5	34.6	7.6	62,369
Lockheed 749 Constellat'n	B-IV	93		37.5	29.0	6.8	48,534
MDC-DC-7	B-IV	110		38.9	34.2	9.7	64,864
Vickers Vanguard 950	B-IV	119		36.0	37.5	10.6	66,451
Aerospatiale C 160 Trans.	C-IV	124		40.0	32.4	11.8	49,258
Airbus A-300-600	C-IV	135		44.8	54.1	16.7	165,000
Airbus A-300-B4	C-IV	132		44.8	53.5	16.9	150,003
Airbus A-310-300	C-IV	125		43.9	46.7	15.9	150,000
Antonov AN-10	C-IV	126		38.0	37.0	9.8	55,111
Antonov AN-12	C-IV	127		38.0	33.2	10.5	55,111
Boeing 707-100	C-IV	139		39.9	44.2	12.7	116,727
Boeing 707-320	C-IV	139		43.4	46.6	12.9	141,521
Boeing 707-320B	C-IV	136		44.4	46.6	12.8	152,679
Boeing 707-420	C-IV	132		43.4	46.6	12.9	141,521
Boeing 720	C-IV	133		39.9	41.5	12.6	104,009
Boeing 720B	C-IV	137		39.9	41.7	12.6	106,277
Boeing 757	C-IV	135		38.0	47.3	13.7	115,666
Boeing 767-200	C-IV	130		47.6	48.5	16.1	142,882
Boeing 767-300	C-IV	130		47.6	55.0	16.0	158,757
Boeing E-3	C-IV	137		44.5	46.6	12.8	147,418
Canadair CL-44	C-IV	123		43.4	41.7	11.7	95,254
Dassault 1150 Atlantic	C-IV	130	*	37.4	31.8	11.3	45,359
Lockheed 100-20 Hercules	C-IV	137		40.4	32.3	12.0	70,307
Lockheed 100-30 Hercules	C-IV	129		40.4	34.4	11.9	70,307
Lockheed 1011-1	C-IV	138		47.3	54.2	17.0	195,045
Lockheed 1011-100	C-IV	140		47.3	54.2	17.0	211,374
Lockheed 1011-200	C-IV	140		47.3	54.2	17.0	211,374
Lockheed 1011-600	C-IV	140	*	43.5	43.0	16.2	119,748
Lockheed 400	C-IV	121	*	36.5	29.8	11.6	38,102
Lockheed C-141A Starlifter	C-IV	129		48.7	44.2	12.0	143,607
Lockheed C-141B Starlifter	C-IV	129		48.7	51.3	12.0	155,582
Marshall (Shorts) Belfast	C-IV	126		48.4	41.6	14.3	104,326
MDC-DC-10-10	C-IV	136		47.3	55.6	17.8	200,941
MDC-DC-8-10	C-IV	131		43.4	46.0	13.2	125,191
MDC-DC-8-20/30/40	C-IV	133		43.4	46.0	13.2	142,882
MDC-DC-8-50	C-IV	137		43.4	46.0	13.2	147,418
MDC-DC-8-62	C-IV	124		45.2	48.0	13.2	158,757
Tupolev TU-114	C-IV	132	*	51.1	54.1	15.2	164,028
Vickers VC-10-1100	C-IV	128		44.6	48.4	12.0	141,521
Vickers VC-10-1150	C-IV	138		44.6	52.3	12.0	151,999
Boeing 707-200	D-IV	145		39.9	44.2	12.7	116,727
Boeing 777	D-IV	145		47.2	55.3	13.7	172,365

Aircraft	Airport Reference Code	Appch Speed Knots	Wingspan Meters	Length Meters	Tail Height Meters	Maximum Takeoff Kg
General Dynamics 880	D-IV	155	36.6	39.4	11.0	87,770
General Dynamics 990	D-IV	156	36.6	42.4	12.0	115,666
Ilyushin Il-62	D-IV	152	43.2	53.1	12.3	164,999
Ilyushin Il-86	D-IV	141	48.1	59.5	15.8	205,999
Lockheed 1011-250	D-IV	144	47.3	54.2	17.0	224,982
Lockheed 1011-500	D-IV	144	47.3	50.0	17.0	224,982
Lockheed 1011-500 Ex. Wing	D-IV	148	50.1	50.0	17.0	224,982
MDC-DC-10-30	D-IV	151	50.4	55.4	17.9	267,619
MDC-DC-10-40	D-IV	145	50.4	55.6	17.9	251,744
MDC-DC-8-61	D-IV	142	43.4	57.1	13.1	147,418
MDC-DC-8-63	D-IV	147	45.2	57.1	13.1	161,025
MDC-MD-11	D-IV	155	51.8	61.4	17.6	273,289
Rockwell B-1	D-IV	165 *	41.8	44.8	10.4	216,364
Tupolev TU-154	D-IV	145	37.6	47.9	11.4	97,999
Antonov AN-22	C-V	140 *	64.3	50.9	12.6	226,796
Boeing 747-SP	C-V	140	59.6	56.3	20.1	315,700
MDC-C-133	C-V	128	54.8	48.0	14.7	136,078
Boeing 747-100	D-V	152	59.6	70.7	19.6	272,155
Boeing 747-200	D-V	152	59.6	70.7	19.7	377,842
Boeing 747-300SR	D-V	141	59.6	70.7	19.6	272,155
Boeing 747-400	D-V	154	64.9	70.7	19.6	394,625
Boeing B-52	D-V	141 *	56.4	48.0	12.4	221,353
Boeing E-4 (747-200)	D-V	152	59.6	70.7	19.7	377,842
Antonov AN-124	C-VI	124	70.7	68.0	20.2	362,874
Lockheed C-5B Galaxy	C-VI	135	67.9	75.5	19.8	379,657

* Approach speeds estimated.

Appendix 14. DECLARED DISTANCES

1. APPLICATION. The use of declared distances for airport design shall be limited to cases of existing constrained airports where it is impracticable to provide the runway safety area (RSA), the runway object free area (ROFA), or the runway protection zone (RPZ) in accordance with the design standards in chapters 2 and 3.

a. This appendix, by treating the airplane's runway performance distances independently, provides an alternative airport design methodology by declaring distances to satisfy the airplane's takeoff run, takeoff distance, accelerate-stop distance, and landing distance requirements. The declared distances are takeoff run available (TORA), takeoff distance available (TODA), accelerate-stop distance available (ASDA), and landing distance available (LDA) which when treated independently may include clearway and stopway and may limit runway use. This alternative design methodology may affect the beginning and ending of the RSA, ROFA, RPZ, and primary surface.

b. Where declared distances differ, the primary surface extends 200 feet (60 m) beyond each end of the runway or the far end of each TODA whichever is further to protect departures to the extent of the 14 CFR Part 77 approach surface for that runway end i.e. 20:1, 34:1, and 50:1 originating at or beyond the end of TODA.

2. BACKGROUND. In applying declared distances in airport design, it is helpful to understand the relationship between airplane certification, aircraft operating rules, airport data, and airport design.

a. Airplane certification provides the airplane's performance distances. The performance speeds, e.g., V_1, takeoff decision speed, V_{LOF}, lift-off speed, V_2, takeoff safety speed, V_{SO}, stalling speed or the minimum steady flight speed in the landing configuration, and the following distances to achieve or decelerate from these speeds are established by the manufacturer and confirmed during certification testing for varying climatological conditions, operating weights, etc.

(1) Takeoff run - the distance to accelerate from brake release to lift-off, plus safety factors.

(2) Takeoff distance - the distance to accelerate from brake release past lift-off to start of takeoff climb, plus safety factors.

(3) Accelerate-stop distance - the distance to accelerate from brake release to V_1 and then decelerate to a stop, plus safety factors.

(4) Landing distance - the distance from the threshold to complete the approach, touchdown, and decelerate to a stop, plus safety factors.

b. Aircraft operating rules provide a minimum acceptable level of safety by controlling the airplane maximum operating weights by limiting the airplane's performance distances as follows:

(1) Takeoff run shall not exceed the length of runway.

(2) Takeoff distance shall not exceed the length of runway plus clearway.

(3) Accelerate-stop distance shall not exceed the length of runway plus stopway.

(4) Landing distance shall not exceed the length of runway.

c. Airport data provides the runway length and/or the following declared distance information for calculating maximum operating weights and/or operating capability.

(1) Takeoff run available (TORA) - the length of runway declared available and suitable for satisfying takeoff run requirements.

(2) Takeoff distance available (TODA) - the TORA plus the length of any remaining runway or clearway beyond the far end of the TORA available for satisfying takeoff distance requirements. The usable TODA length is controlled by obstacles present in the departure area vis-a-vis aircraft performance. As such, the usable TODA length is determined by the aircraft operator before each takeoff and requires knowledge of the location of each controlling obstacle in the departure area. Extending the usable TODA lengths requires the removal of existing objects limiting the usable TODA lengths.

(3) Accelerate-stop distance available (ASDA) - the length of runway plus stopway declared available and suitable for satisfying accelerate-stop distance requirements.

(4) Landing distance available (LDA) - the length of runway declared available and suitable for satisfying landing distance requirements.

3. FAA APPROVAL FOR APPLYING DECLARED DISTANCES IN AIRPORT DESIGN. The application of declared distances at a specific location requires prior FAA approval on a case-by-case basis. Approval is reflected on the FAA-approved Airport Layout Plan.

4. RUNWAY SAFETY AREA (RSA) AND RUNWAY OBJECT FREE AREA (ROFA) LENGTHS. The standard RSA length P in the following paragraphs is the length specified in tables 3-1, 3-2, and 3-3 for the RSA length beyond the runway ends. The standard ROFA length R in the following paragraphs is the length specified in tables 3-1, 3-2, and 3-3 for the ROFA length beyond the runway ends. The RSA and the ROFA shall extend for the full length of the runway plus the greater of the following lengths beyond the runway ends for takeoff and landing in both directions.

a. For takeoff.

(1) At the start of takeoff end of runway. The RSA and the ROFA need to extend behind the start of takeoff to continue the entrance taxiway safety area and taxiway object free area and/or provide an area for jet blast protection. The portion of runway behind the start of takeoff is unavailable and/or unsuitable for takeoff run, takeoff distance, and accelerate-stop distance computations.

(2) At the far end of runway with stopway. The RSA shall extend P and the ROFA shall extend R beyond the far end of stopway.

(3) At the far end of runway without stopway. The RSA shall extend P and the ROFA shall extend R beyond the far end of ASDA. The portion of runway beyond the ASDA is unavailable and/or unsuitable for accelerate-stop distance computations.

b. For landing.

(1) At the approach end of runway. The RSA shall extend P and the ROFA shall extend R before the threshold. The portion of runway behind the threshold is unavailable and/or unsuitable for landing distance computations.

(2) At the rollout end of runway. The RSA shall extend P and the ROFA shall extend R beyond the rollout end of LDA. The portion of runway beyond the LDA is unavailable and/or unsuitable for landing distance computations.

5. RUNWAY PROTECTION ZONE (RPZ) LOCATION AND SIZE. The RPZ function may be fulfilled by the RPZ beginning at a location other than 200 feet (60 m) beyond the end of the runway. When an RPZ begins at a location other than 200 feet (60 m) beyond the end of runway, two RPZs are required, i.e, a departure RPZ and an approach RPZ. The two RPZs normally overlap.

a. Approach RPZ. The approach RPZ shall begin 200 feet (60 m) before the threshold. Table 2-4 contains standard dimensions for approach RPZs. The portion of runway behind the threshold is unavailable and/or unsuitable for landing distance computations.

b. Departure RPZ. The departure RPZ shall begin 200 feet (60 m) beyond the far end of TORA. The portion of runway beyond the TORA is unavailable and/or unsuitable for takeoff run computations. The standard dimensions for departure RPZs are:

(1) Starting 200 feet (60 m) beyond the far end of TORA, 1,000 feet (300 m) long, 250 feet (75 m) wide, and at the far end of RPZ 450 feet (135 m) wide--for runways serving only small airplanes in Aircraft Approach Categories A and B.

(2) Starting 200 feet (60 m) beyond the far end of TORA, 1,000 feet (300 m) long, 500 feet (150 m) wide, and at the far end of RPZ 700 feet (210 m) wide--for runways serving large airplanes in Aircraft Approach Categories A and B.

(3) Starting 200 feet (60 m) beyond the far end of TORA, 1,700 feet (510 m) long, 500 feet (150 m) wide, and at the far end of RPZ 1,010 feet (303 m) wide--for runways serving Aircraft Approach Categories C and D.

6. CLEARWAY LOCATION. The clearway is located at the far end of TORA. The portion of runway extending into the clearway is unavailable and\or unsuitable for takeoff run and takeoff distance computations.

7. NOTIFICATION. The clearway and stopway lengths and the following declared distances shall be provided in the Airport/Facility Directory (and in the Aeronautical Information Publication (AIP), for international airports) for each operational direction:

a. The TORA -- the length of the runway less any length of runway unavailable and/or unsuitable for takeoff run computations. See figure A14-1.

b. The TODA -- the TORA plus the length of any remaining runway and/or clearway beyond the far end of the TORA. See figure A14-2.

c. The ASDA -- the length of the runway plus the length of any stopway beyond the far end of the runway less any length of runway and/or stopway unavailable and/or unsuitable for accelerate-stop distance computations. See figure A14-3.

d. The LDA -- the length of the runway less any length of runway unavailable and/or unsuitable for landing distance computations. See figure A14-4. **Note:** When the threshold is sited for small airplanes (see appendix 2, paragraphs 5a and 5b), report LDA as "LDA for airplanes of 12,500 pounds (5 700 kg) or less maximum certificated takeoff weight."

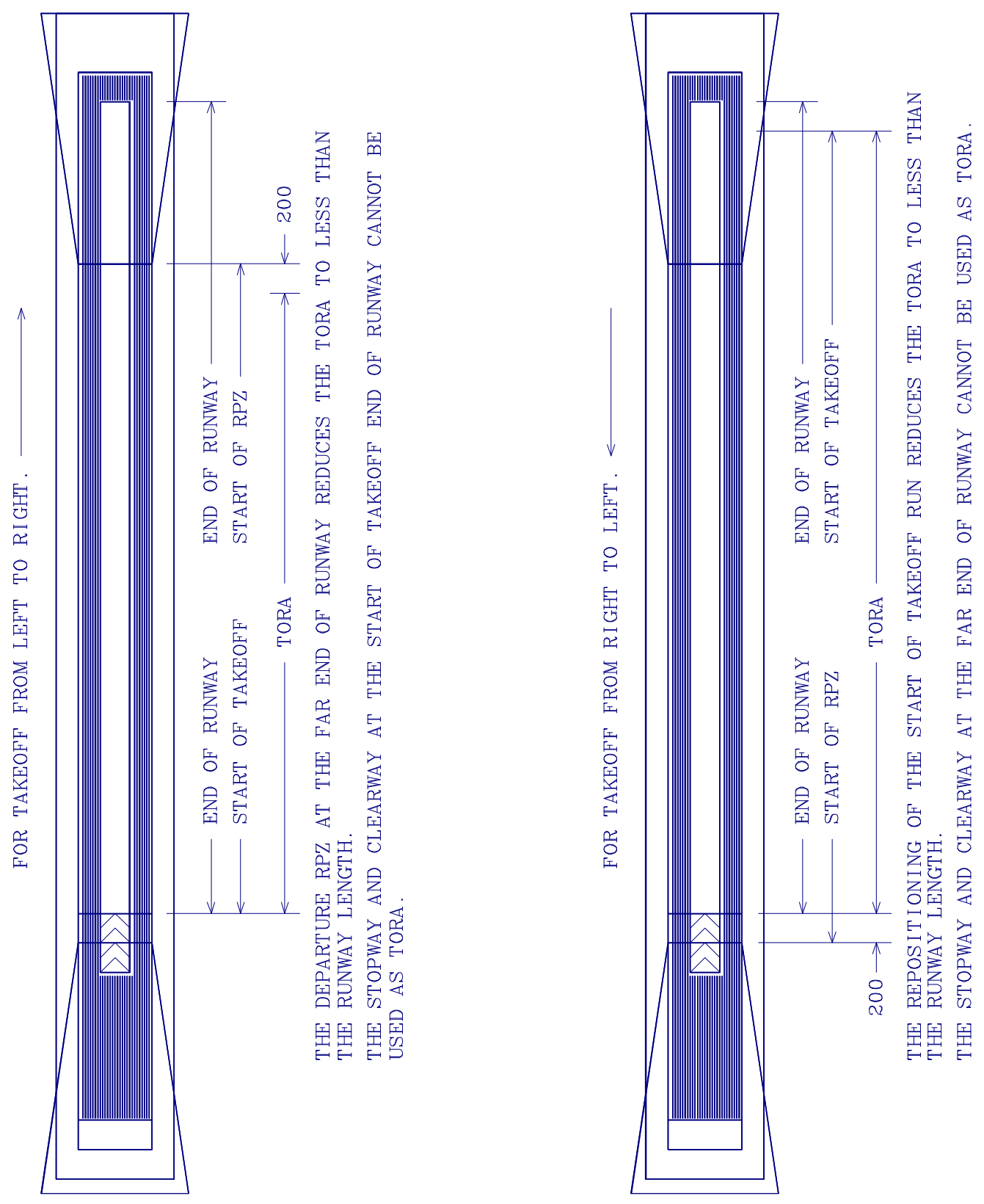


Figure A14-1. Takeoff run available (TORA)

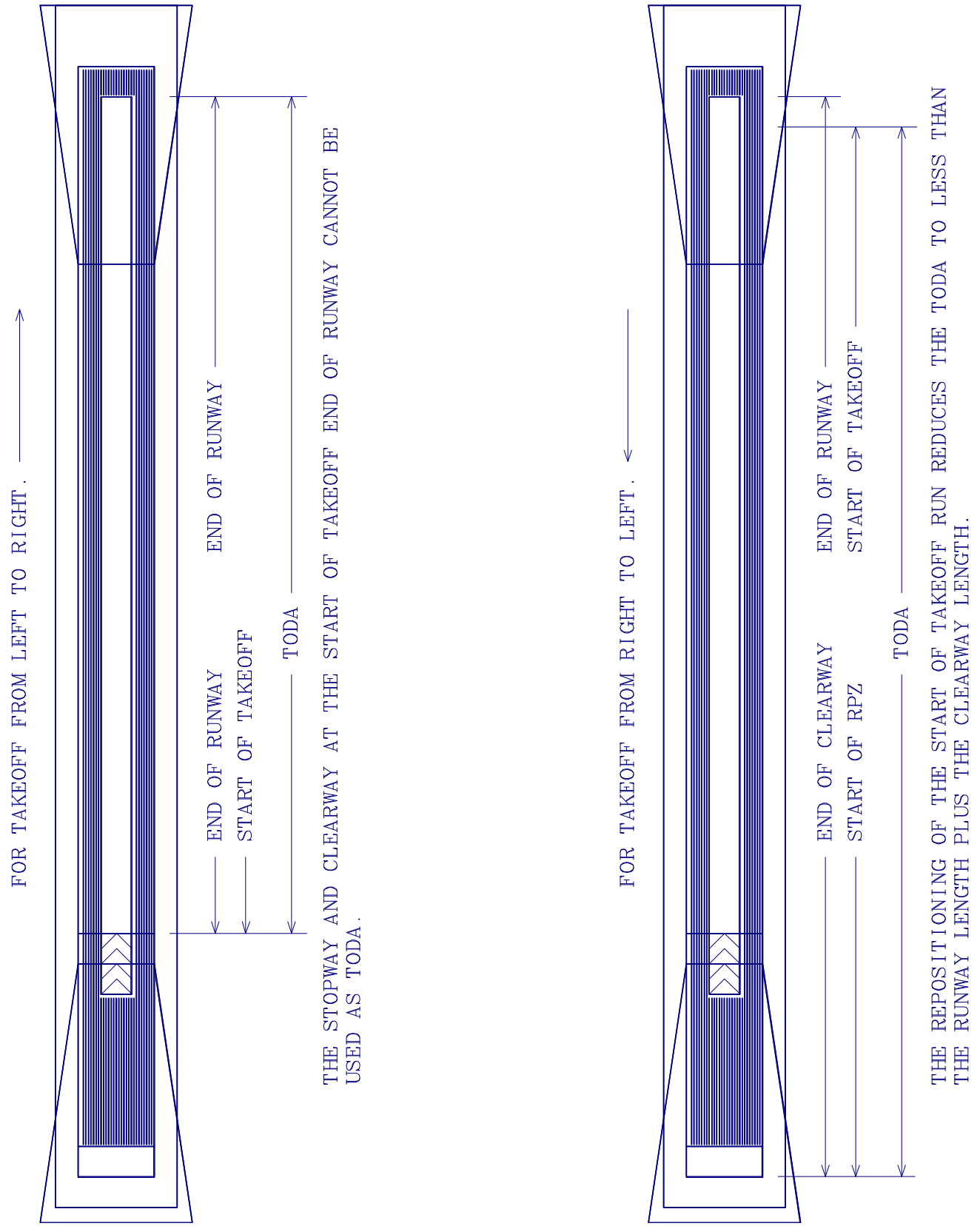


Figure A14-2. Takeoff distance available (TODA)

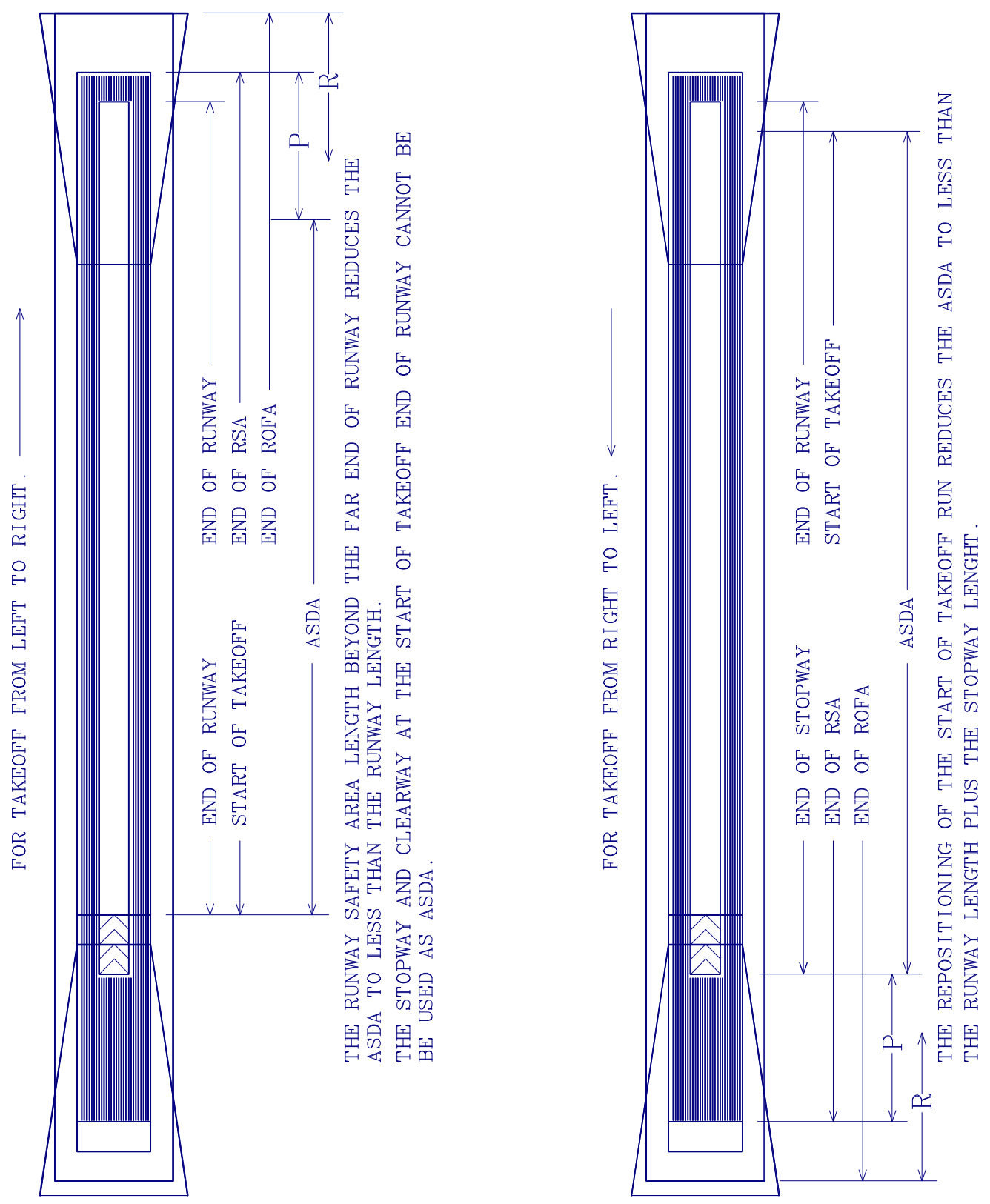


Figure A14-3. Accelerate-stop distance available (ASDA)

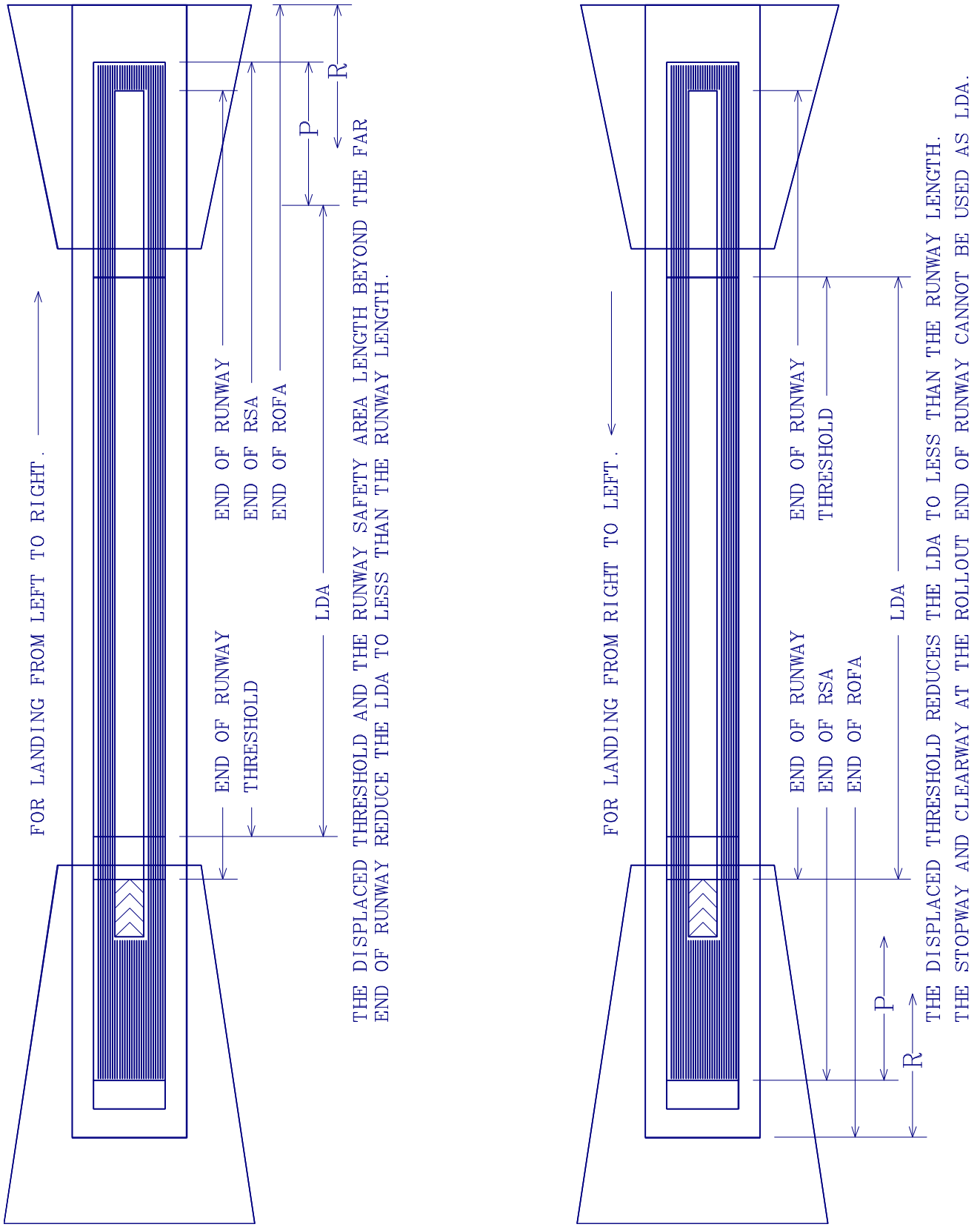


Figure A14-4. Landing distance available (LDA)

Example:

The following situation is for a runway which is to be extended to 7000 feet. The threshold at the 9 end is displaced 420 feet for obstructions in the approach. The runway safety area at the 27 end can only be extended to 375 feet beyond the runway end. By entering the following airport data into the Airport Design (for microcomputers) program, we find that the runway safety area at the Runway 27 end is 625 feet less than standard.

AIRPORT DESIGN AIRPLANE AND RUNWAY DATA

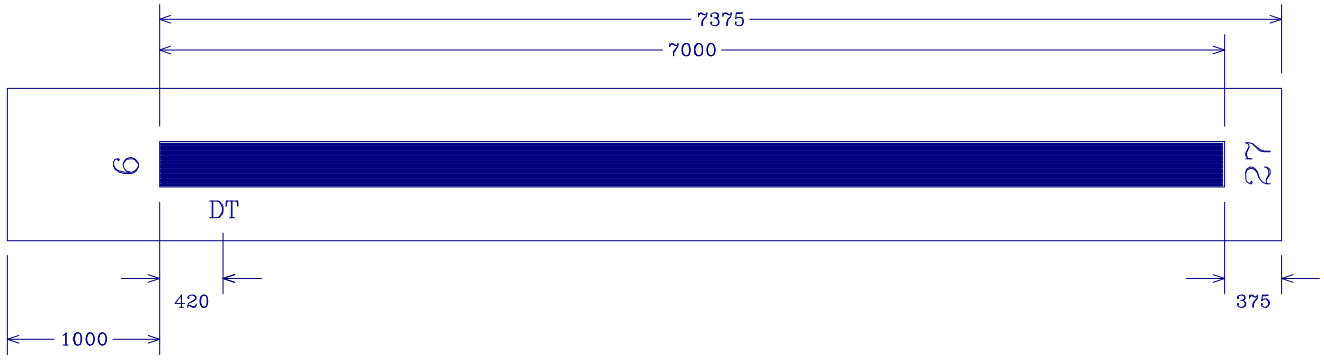
Aircraft Approach Categories C and D
Airplane Design Group III
Precision Instrument Runway

Runway 9/27 length	7000 feet
Stopway length at the far end of Runway 9	0 feet
Stopway length at the far end of Runway 27	0 feet
Clearway length at the far end of Runway 9	375 feet
Clearway length at the far end of Runway 27	0 feet
Runway safety area length beyond the far end of Runway 9	375 feet
Runway safety area length beyond the far end of Runway 27	1000 feet
Object free area length beyond the far end of Runway 9	375 feet
Object free area length beyond the far end of Runway 27	1000 feet
Distance from approach end of Runway 9 to the threshold	420 feet
Distance from approach end of Runway 27 to the threshold	0 feet
Distance from start end of Runway 9 to the start of takeoff	0 feet
Distance from start end of Runway 27 to the start of takeoff	0 feet
Distance from far end of Runway 9 to the start of clearway	0 feet
Distance from far end of Runway 27 to the start of clearway	0 feet
Distance from far end of Runway 9 to the start of departure RPZ	200 feet
Distance from far end of Runway 27 to the start of departure RPZ	200 feet

DECLARED DISTANCES

	Runway 9 (feet)	Runway 27 (feet)
Takeoff run available (TORA)	7000	7000
Takeoff distance available (TODA)	7375	7000
Accelerate-stop distance available (ASDA)	6375	7000
Landing distance available (LDA)	5955	7000

The runway safety area before RW 27 threshold is 625 feet less than standard.
The object free area before RW 27 threshold is 625 feet less than standard.



By displacing the threshold at the 27 end 625 feet and providing declared distances, the runway safety area length and runway object free area length standards can be satisfied. See figure A14-6.

Figure A14-5. Example of a runway extended to 7000 feet

AIRPORT DESIGN AIRPLANE AND RUNWAY DATA

Aircraft Approach Categories C and D
Airplane Design Group III
Precision Instrument Runway

Runway 9/27 length	7000 feet
Stopway length at the far end of Runway 9	0 feet
Stopway length at the far end of Runway 27	0 feet
Clearway length at the far end of Runway 9	375 feet
Clearway length at the far end of Runway 27	0 feet
Runway safety area length beyond the far end of Runway 9	375 feet
Runway safety area length beyond the far end of Runway 27	1000 feet
Object free area length beyond the far end of Runway 9	375 feet
Object free area length beyond the far end of Runway 27	1000 feet
Distance from approach end of Runway 9 to the threshold	420 feet
Distance from approach end of Runway 27 to the threshold	625 feet
Distance from start end of Runway 9 to the start of takeoff	0 feet
Distance from start end of Runway 27 to the start of takeoff	0 feet
Distance from far end of Runway 9 to the start of clearway	0 feet
Distance from far end of Runway 27 to the start of clearway	0 feet
Distance from far end of Runway 9 to the start of departure RPZ	200 feet
Distance from far end of Runway 27 to the start of departure RPZ	200 feet

DECLARED DISTANCES

	Runway 9 (feet)	Runway 27 (feet)
Takeoff run available (TORA)	7000	7000
Takeoff distance available (TODA)	7375	7000
Accelerate-stop distance available (ASDA)	6375	7000
Landing distance available (LDA)	5955	6375

RSA length limits RW 9 ASDA
ROFA length limits RW 9 ASDA
RSA length limits RW 9 LDA
ROFA length limits RW 9 LDA

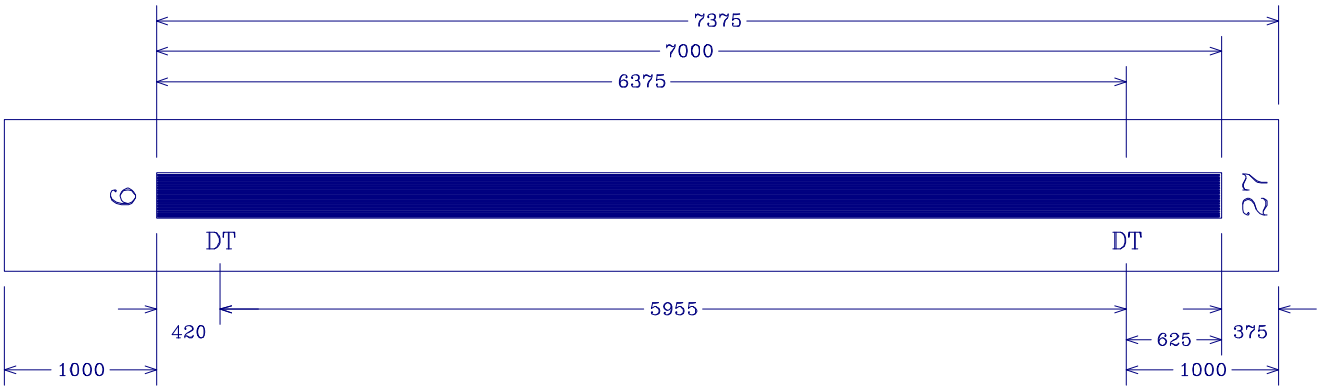


Figure A14-6. Example of a runway with threshold displaced for runway safety area

Appendix 15. TRANSFER OF ELECTRONIC DATA

1. INTRODUCTION. This appendix provides guidance for the preparation of Computer Aided Design and Drafting (CADD) drawings, databases, and photogrammetric data electronic files for electronic data transfer between the FAA, airport sponsors, and consultants. The objective of this guidance is to establish software-independent standards to encourage an open and free exchange of airport design related data without undue burden on airport sponsors or consultants. Reference to proprietary products is for information only and should not be considered as an endorsement or an intent to create a de facto standard.

2. BACKGROUND. Electronic data is used by the FAA, airport sponsors, and airport consultants for conducting airspace reviews, for developing Airport Layout Plans (ALPs), and for other airport data recording activities.

a. This data should be entered only once. Once entered, it should be reusable for multiple applications. Reasons historically advanced for reentering data include:

(1) Inaccessibility. *We don't have the data in our data bases. We can't get it in the right format for entry into our data base by scanning.* Most data in FAA, airport sponsors, and airport consultants data bases is or can be made available. Contact the sources.

(2) Insufficient Deliverable Information. *We can't read the data files. We don't have sufficient descriptive information for using the files.* Paragraph 9 provides guidance on the information about the deliverables, medium, and data files that should accompany the deliverables. Provide this information with each deliverable.

(3) Nonstandard Features and Objects Code. *We can't merge the data into our data base. The features and objects codes are incompatible.* Paragraph 8 provides the FAA standard code. It should be used to the extent practicable.

(4) Untranslatable Entities. *We can't translate the files. We lost most of the data in transition.* Paragraph 5 provides guidance on Autodesk AutoCAD DXF and Intergraph IGDS/MicroStation entities that traditionally have not translated well. Avoid these entities to the extent practicable.

b. The FAA obtains data from various sources and stores the data in a neutral database for FAA use and electronic transfer. Airport sponsors and consultants normally obtain and transfer electronic data in DXF or IGDS/MicroStation CADD files. The limitations in translation from one CADD format to another CADD format and from a CADD format to a neutral format, have restricted the useful data that could have been transferred between the FAA, airport sponsors, and consultants.

c. Successful transfer of data requires that the data format be acceptable for the recipient's use. To be able to use data provided by airport sponsors and consultants, the FAA has developed capability to translate DXF files to a database format and a limited capability with IGDS/MicroStation files. To be imported successfully into database, the data must be provided in a real coordinate system, both horizontal and vertical.

d. Translators available within the FAA will accept files in the DXF, the IGDS/MicroStation, or a format translatable to a database file format. Further, the FAA will provide this stored data to airport sponsors and consultants.

3. DEFINITIONS. As used in this publication:

a. The "classic" Airport Layout Plan (ALP) is the drawing on paper or vellum of an airport showing the layout of existing and proposed airport facilities. This drawing will have approval signatures affixed in the legend.

b. The "modern" Airport Layout Plan (ALP) is the electronic database of an airport containing the geographical data of existing and proposed airport facilities which can be analyzed with standard database routines, retrieved into reports, and displayed graphically to show the layout of existing and proposed airport facilities. This data base does not reflect approval signatures.

c. The "classic" satisfies the ALP approval and record keeping processes but not the requirements for electronic data transfer. To achieve satisfactory electronic data transfer we must go "modern".

4. APPLICATION. The FAA recognizes the use of CADD systems within the aviation community and the need for data transfer utilizing these systems.

a. Further, the FAA desires to promote on-going data transfer with airport sponsors and consultants. This AC, while not representing mandatory requirements, offers guidelines to facilitate the translation, conversion, and transfer of data.

b. To better manipulate the data, the FAA requests, except possibly for construction drawings, that the information be submitted in a set of files. The FAA uses this set of files to categorize data and facilitate data input into a database or drawing file for conversion into a database. The following are the recommended categories for the sets of files:

(1) Ground features and objects;

(2) Above-ground features and objects;

(3) Treetops;

(4) Contours;

(5) Control points;

(6) Text; and

(7) Listing.

5. CADD FILE DELIVERABLES. Drawings created in AutoCAD DXF and Intergraph IGDS/MicroStation can be converted as outlined below. This includes any symbols or

standards that are required for the project. To reduce problems in translation, airport sponsors and consultants can prepare a sample typical file and either check or have the potential recipient of the deliverables check for translation interface problems. If checked by the FAA, feasible alternatives to eliminate the problems will be suggested.

a. DXF Format (AutoCAD). DXF drawings can be translated to a database format with FAA developed translation software. Since AutoCAD is the dominant software which uses DXF format, the following information is provided for users of AutoCAD.

(1) AutoCAD Version 12. The translation software owned by the FAA accepts AutoCAD Version 12 and below.

(2) Entities to avoid. Avoid the following entities since they traditionally have not translated well:

(a) Doughnuts, Solids, and Tracers;

(b) Shapes;

(c) Text Justifications of A (align), F (fit), and M (middle);

(d) Plines;

(e) Point entities;

(f) Custom Fonts; and

(g) Special characters such as %%d, &&p, %%c, and %%%.

(3) Significant Digits. If DXFOUT is used, select 6 decimal places.

(4) Layers. FAA has the capability to map AutoCAD layers. However, the FAA translation software is limited to layer number 1 through 249. FAA desires to receive the data categorized by layers to facilitate the conversion. Paragraph 8 provides a list of element categories used to differentiate the information by relating the features or objects with a number and a description. The number can be referenced to a layer number and the description to a layer name if so used by the provider.

(5) Line Weights. The provider should assign the line weights to the AutoCAD drawings at plot time based on the AutoCAD color attribute. FAA requests that the provider put together a standard for color to pen assignment for submission to the FAA one time prior to the first delivery and adhere to this standard.

(6) Text. Only two text fonts can be used.

(a) Font TXT with Style TXT.

(b) Font SIMPLEX with STYLE SIMPLEX.

When text entities are entered, only baseline justification (left, center, and right) should be used. Aligned text (A), Fitted (F), or Middle text (M) should not be used. These justifications cause translation problems.

(7) Dimensions. In order to conform to translation dimensioning requirements, the provider should set the following dimensioning variables as shown:

(a) DIMTAD to ON;

(b) DINTIH to OFF;

(c) DIMTOH to OFF;

(d) DINBLK to NONE; and

(e) DIMTSZ to appropriate size of tick mark.

(8) Nested Blocks and XREF Files. The following items do not translate well; therefore, the consultants should do the following:

(a) Nested blocks should not be used.

(b) External reference files (XREF) are output to the DXF file by AutoCad as special blocks. If XREFs are used, special attention is required to XREFed files to avoid nested blocks. XREF files should be made a permanent part of the drawing file with XREF BIND, prior to exporting the file to DXF. An alternative would be to detach the XREF file, attach the file as a standard block and explode the newly attached block.

(c) All drawings should be created using model space.

(9) Filename. The provider must submit with each electronic deliverable an index relating filenames to actual drawing numbers.

(10) Translation Setup Checklist. The following actions are required before delivery:

(a) Remove all construction entities/layers and other unnecessary data from the drawing file (PURGE command).

(b) Produce file/layer naming index.

b. IGDS (Intergraph including MicroStation). The following is recommended for organizing Intergraph IGDS or MicroStation drawings for proper translation.

(1) Entities to avoid. Avoid the following entities since they traditionally have not translated well:

(a) Symbols. These are entities which are entered as a single text character with special IGDS fonts 85 through 126. Because these are stored simply as text in the IGDS file, they translate only as text. The provider should instead use cells in all cases where symbols might otherwise be used.

(b) Infinite Lines. Most translation does not support infinite lines. Use normal fixed-length line segments.

(c) Stacked Fractions.

(d) Custom Line Fonts.

(2) Coordinate Setup. Intergraph uses an integer-based method of string coordinate data based on user-defined "Working Units" or "units of resolution". This limits the range of X and Y coordinates which can be stored in the "Design Plane". The provider must define the Master and Sub Unit readouts to FT (') for Master, and IN (") for Sub Units, as appropriate. Unless these readouts and the Working Units are correctly defined, translation software cannot determine the true X Y coordinates representation.

(3) Standard Symbols. All of the standard symbols that appear in the IGDS drawings should be created and inserted as Cells.

(4) Text. The provider should only use "Font 50" font.

(5) Dimensions. Since IGDS stores Dimensions as a text and lines, translation of IGDS Dimensions will not be a problem. The provider can simply select from the menu the appropriate IGDS dimensioning commands which produce the AEC dimensioning with oblique strokes (tick marks).

(6) Filename. The provider must submit with each electronic deliverable an index relating filenames to actual drawing numbers.

(7) Reference Files. Most translation software does not support the concept of reference files. All reference files should be merged into the design file prior to submission. This can be accomplish by the following command sequence.

(a) Turn OFF all levels of the design file.

(b) Turn Locate ON for all reference files.

(c) Place CLIP fence around reference files.

(d) COPY fence into design file with zero displacement.

(e) DETACH all reference files.

(f) Turn ON all levels of the design file.

(8) Complex Elements. Complex elements 2, 7, 12, and 14 do not translate consistently. Drop these elements.

c. Application Programs. If the provider chooses to use any special application program, it is recommended that the program be customized to conform to the above translation guidelines. If the application program does not permit customization, the provider will have to review the Layers, Colors, Line Weights, and Text Styles/Fonts that the application program uses and develop a mapping strategy to produce database files. The provider will also need to check that the application program does not use any of the problem entities listed in "Entities to avoid" subsection above.

6. DATABASES DELIVERABLES. FAA can accept database information in ASCII format with a separator character between each field within each record. Any record length can be accepted as long as it is stated on the media and the record structures with field definitions are provided as part of the deliverables.

7. PHOTOGRAMMETRY DELIVERABLES. Electronic deliverables from a photogrammetric survey comprise a set of files depicting the geographical outlines, features, and objects of the photographed areas. These files are to present the raw information in a descriptive manner, ASCII format, in lieu of drawing-type binary data. To differentiate between life-cycle state of the data, such as "existing" or "proposed," the data should be provided in separate file sets and so noted. If separate file sets are not feasible, linetype and/or symbol designators should be specifically assigned for the life-cycle state and so noted in the listing file."

a. Subject to survey requirements, the recommended set of files is as follows:

(1) Ground Features and Objects. This file includes all features and objects found at ground elevation, such as roads, runways, ridges, peaks, valleys, catch-basins, tree/shrub outlines, individual elevation points, foundations (FAA and non-FAA), etc..

(2) Above-Ground Features and Objects. This file includes all data which is above ground elevation, except for tree data. The data includes house outlines, roof peak outlines, tanks, fences, chimneys, air vents, poles, FAA and non-FAA facilities such as NAVAIDS, and other elements where the elevation component is above the surrounding terrain.

(3) Treetops. This file includes representative treetop points within forested areas defined by tree outline, individual trees, shrubs, and associated greenery.

(4) Contours. This file includes all major and minor contour features.

(5) Control Points. This file includes the control survey points used in the photogrammetric interpretation.

(6) Text. If available, this file includes text information of a map product.

(7) Listing. This file is a listing defining the line type or string and symbol numbers used which should correspond to the respective FAA codes as outlined in paragraph 8.

b. The preferred format of these files is the standard plot file, such as Calcomp or HP, generated from the digitizing process to be used as input to a plotter system, or an output listing

file produced by the PTLIST program from a KORK System, or KLT/ATLAS System, or equivalent.

c. Typically, this plot file contains mapping parameters, such as scale and rotation, and defines the features/outlines by line type or string numbers, and objects as symbol numbers with their respective horizontal coordinates and elevation. Certain rules must be followed in order to assure the integrity of data during conversion and compilation on the CADD system. These rules are as follows:

(1) Each feature/outline, designated as a specific line type, and object, designated as a specific symbol, must be enclosed within a set of commands or ranges which define the start and continuing or end coordinates of the items. Typical set commands used in plot files are "pen up or start" to define the start and "pen down or quit" to define continuing and end point. A change in line type or symbol is permitted only with a "pen up" type command to flag the change.

(2) Coordinates are to be based on the respective State Plane Grid Projections with elevation based on mean sea level datum, either NAD-27 or NAD-83.

(3) Accuracy level of data is determined by the scale of the map being produced for the provider as part of the product, usually ± 1 foot in horizontal control with ± 6 inches in elevation.

(4) For tree/shrub outline, the horizontal coordinates shall be of the extreme edge point with the corresponding ground elevation (i.e. "drip line").

(5) For above ground data such as a building, the data shall define the perimeter of the feature. For roof peaks, the data shall define the peak line and orientation.

(6) For above ground data where the items lean from vertical, the horizontal coordinates shall be of the top of the item and the elevation shall be of the top,

(7) Additional ground spots with elevations should be included in the Ground Features and Objects file to define the ground elevation surrounding above ground data such as buildings, tanks, fences. etc.. These points, being ground reference, are not required to have the same horizontal coordinates as the above ground data but should be in as close proximity to the item as feasible.

(8) For ground and above ground data defining NAVAIDS and/or visual aids facilities (SYMBOLS above 135), the horizontal coordinates shall represent the geographic centroid of the facility with the elevation of the respective foundation.

8. FEATURES AND OBJECTS CODE. The following codes associate information from photogrammetry, database, and drawings. These codes are specific in order to develop a database with multiple applications. FAA requests, if possible, that these codes be incorporated in the project. However, FAA has developed an internal translator to convert a provider's listing to the FAA's listing.

a. The designator code LTP refers to Line type or a feature comprised of multi-points, whereas SYM refers to Symbols, Markers, or objects of a single point. The associated number represents a unique code and can also represent layers. The last column provides the description of the feature or object, and can be used for layer name convention.

b. The respective FAA codes are as follows:

LTP	1	PAVED ROAD
LTP	2	CURBED ROAD
LTP	3	FOOT PATH
LTP	4	PAVED DRIVEWAY
LTP	5	UNPAVED DRIVEWAY
LTP	6	PARKING SPACES
LTP	7	DIRT ROAD
LTP	8	PAVED PARKINGS
LTP	9	UNPAVED PARKINGS
LTP	10	MOTORCYCLE TRAIL
LTP	11	RAMPS/DOCKS
LTP	12	DEBRIS/RUINS
LTP	13	PATIO
LTP	14	DECK
LTP	15	ACTIVE RAILROAD
LTP	16	INACTIVE RAILROAD
LTP	20	SIDEWALKS
LTP	21	CONCRETE SLABS
LTP	22	PAVED SHOULDERS
LTP	23	UNPAVED SHOULDERS
LTP	24	TOWERS
LTP	25	LARGE SIGNS
LTP	26	DRAINAGE GATE
LTP	27	STEPS
LTP	28	BLEACHERS
LTP	36	BUILDING U/C
LTP	37	BUILDING
LTP	38	CROSS-HATCHING
LTP	39	BLDG FOUNDATION
LTP	40	HOUSE BLD
LTP	41	EQUIPMENT SHELTER
LTP	56	FUEL TANK
LTP	57	PIPELINE
LTP	58	TANK OR SILO
LTP	59	FUEL STORAGE BLDG
LTP	60	WOODEN FENCE
LTP	61	OBSCURED FENCE
LTP	62	BOULDERS
LTP	63	RECREATION EQUIP
LTP	64	STANDING WALL
LTP	65	METAL FENCE
LTP	66	STONE WALL
LTP	67	RETAINING WALL
LTP	68	GUARD RAIL
LTP	69	ROCK FACE
LTP	70	ROOF PEAK
LTP	71	FOOTBRIDGE
LTP	72	RAILROAD BRIDGE
LTP	73	ROAD/HWAY BRIDGE
LTP	74	RUNWAY CENTERLINE
LTP	75	RUNWAY EDGES
LTP	76	TAXIWAY CENTERLINE
LTP	77	TAXIWAY EDGES

LTP	78	AIRPORT APRONS
LTP	79	AIR. PVMT FILLET
LTP	80	TREE OUTLINE
LTP	81	SCRUB LINE
LTP	82	SHRUBS
LTP	83	GOLF GREENS
LTP	84	SAND TRAPS
LTP	86	HEDGES
LTP	86	ORCHARD
LTP	87	TREE NURSERY
LTP	97	WHARF/PIERS
LTP	98	DAM
LTP	99	CULVERTS
LTP	100	DRAINAGE DITCH
LTP	101	CANAL
LTP	102	STORM DRAIN
LTP	103	CREEK OR STREAM
LTP	104	RIVER
LTP	105	DRY DITCH
LTP	106	POOL
LTP	107	LAKE
LTP	108	SEAWALL
LTP	109	SEASHORE
LTP	110	SWAMP OUTLINE
LTP	120	CONTOUR LINE
LTP	121	INDEX CONTOUR
LTP	122	DEPRESSION CONTOUR
LTP	123	INDEX DEPRSS CONTR
LTP	124	DASHED CONTOUR
LTP	125	DASHED INDEX CONTOUR
LTP	126	DASHED DEPRSS CONTR
LTP	127	DASHED IDX DPS CONTR
LTP	128	RUNWAY NUMBERS
LTP	129	THRESHOLD MARKING
LTP	130	HOLD LINE
SYM	2	HOUSE TOP POINT
SYM	3	ROAD SIGN
SYM	6	TREETOP ELEV
SYM	7	MAIL BOX
SYM	9	FIRE HYDRANT
SYM	10	UNKNOWN OBJECT
SYM	11	SILL ELEV/DTM PTS
SYM	12	CATCH BASIN
SYM	13	MANHOLE
SYM	14	WATER GATE
SYM	15	GAS GATE
SYM	16	DROP INLET
SYM	17	CHIMNEY
SYM	18	AIR VENT
SYM	19	BUTTERFLY VALE
SYM	20	BORING HOLE
SYM	21	PROBE
SYM	22	TOWER SUPPORT
SYM	23	UTILITY POLE
SYM	24	SMALL POLE
SYM	25	AERIAL ANTENNA
SYM	26	LIGHT POLE
SYM	62	SIGN
SYM	81	IND. EVERGREEN
SYM	82	IND. DECIDUOUS TREE
SYM	83	SCRUB
SYM	84	INDIVIDUAL SHRUB
SYM	85	DENSE TREES
SYM	86	INDIVIDUAL TREE
SYM	87	STUMP
SYM	110	MARSH/SWAMPS
SYM	111	RAPIDS
SYM	118	HORIZONTAL POINT
SYM	119	VERTICAL POINT
SYM	121	BOUNDARY CORNER
SYM	122	FLAGPOLE
SYM	123	B-BALL HOOP
SYM	124	RESIDENTIAL LAMP
SYM	125	LAMP POLE
SYM	126	POST
SYM	127	TRAFFIC SIGNAL
SYM	128	PHONE BOOTH
SYM	129	R.R. SIGNAL
SYM	130	POLE
SYM	131	GAS PUMPS
SYM	132	HEAD STONES
SYM	133	ELEC. BOX/A.C.U.
SYM	134	TRAFFIC CNTRL BOX
SYM	135	R.R SWITCH BOX
SYM	136	WIND CONE
SYM	137	SEGMENTED CIRCLE
SYM	138	T/W EDGE ELEV LT
SYM	139	T/W EDGE INPVT LT
SYM	140	T/W CENTERLINE LT
SYM	141	T/W STOP BAR
SYM	142	R/W EDGE ELEV LT
SYM	143	R/W EDGE INPVT LT
SYM	144	R/W CENTERLINE LT
SYM	145	R/W THLD ELEV LT
SYM	146	R/W THLD INPVT LT
SYM	147	R/W TDZ INPVT LT
SYM	148	R/W HOLD BAR LT
SYM	151	ALS THLD ELEV BAR
SYM	152	ALS THLD INPVT BAR
SYM	153	ALS ELEV LIGHT BAR
SYM	154	ALS INPVT LIGHT BAR
SYM	158	VASI BOXES FDN
SYM	159	REAL LIGHTS FDN
SYM	160	LOCALIZER FDN
SYM	161	G/S ANTENNA FDN
SYM	162	G/S ANTENNA TOP
SYM	163	G/S MONITOR FDN
SYM	164	RVR TOWER CTR PT
SYM	165	VOR CENTER PT
SYM	166	ASR CENTER PT
SYM	167	ODALS
SYM	168	COMPASS CALIBRATION PAD

c. FAA recognizes that, during a project, new features or objects will be recognized. The provider should highlight these new features or objects in the submitted listing so that the FAA can assure capture during translation.

9. **MEDIA**. FAA can accept electronic deliverables on the following magnetic medium:

a. 5.25 inches, 1.2 MB, AEGIS or UNIX formatted floppy diskettes for reading on a HP/Apollo computer system.

b. 5.25 inch, 1.2 MB, or 3.5 inch, 1.44 MB, MS-DOS Version 3.0 or higher formatted floppy diskettes. Each file should consist of no more than 1 MB of information per file. Multi-files are preferred.

c. 1600 or 6250 BPI, 9 track tape reels, labeled or unlabeled, in ASCII, or EBCDIC. Records shall be 80 to 512 bytes long in no more than 2048 byte blocks written using a copy or equivalent command to produce files to be read on foreign systems. The recommended format for IGDS is 512 bytes record length with 2048 bytes block length.

d. 1/4 inch cartridge tape formatted for reading on a HP/Apollo computer running under the AEGIS or UNIX operating system.

e.In addition, each electronic deliverable shall be accompanied by a legible label affixed to the outside of each magnetic medium's protective case and a document that lists the files contained in that medium. The label shall bear the following:

(1) The name of the sender;

(2) The name of the intended recipient;

(3) A sender-unique identifier or title that can be used to reference the collective contents of the transmittal;

(4) Format descriptions necessary for reading the medium; and

(5) List file of the features and objects contained in the submittal.

(6) The contract or project number and/or name.

10. **FAA POINT OF CONTACT**. The FAA Airports Regional and/or District Office is the FAA point of contact dealing with the transfer of electronic data.

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Appendix 16. NEW INSTRUMENT APPROACH PROCEDURES

1. BACKGROUND. This appendix applies to the establishment of new authorized instrument approach procedures. A Global Positioning System (GPS) instrument procedure duplicating an existing authorized instrument procedure is not a new procedure.

a. FAA Order 8260.3, United States Standards for Terminal Instrument Procedures (TERPS), paragraph 122, includes minimum standards for the approval of an instrument approach procedure. These minimum standards include in part:

(1) The airport landing surface must be adequate to accommodate the aircraft which can be reasonably expected to use the procedure.

(2) The airport must have been found acceptable for IFR operations as a result of an Airport Airspace Analysis (AAA) conducted pursuant to FAA Order 7400.2, Procedures for Handling Airspace Matters.

b. This appendix identifies these airport landing surface requirements to assist airport sponsors in their evaluation and preparation of the airport landing surface to support new instrument approach procedures. It also lists the airport data provided by the procedure sponsor which the FAA needs to conduct the airport airspace analysis specified in FAA Order 7400.2.

c. FAA Order 7400.2 is in the process of being revised to include the content of this appendix in a revised streamlined AAA process.

d. FAA Order 8260.19, Flight Procedures and Airspace, is also in the process of being revised to include the content of this appendix as the minimum airport landing surface requirements which must be meet prior to the establishment of instrument approach procedures at a public use airport.

2. INTRODUCTION. For a runway to have a new authorized instrument approach procedure, the runway must have an instrument runway designation. Instrument runways are runway end specific. Their runway end designation is based on the findings of an AAA study (Refer to Order 7400.2.)

a. For airports with an FAA-approved ALP, the instrument runway designation for the desired minimums must be depicted on the FAA-approved ALP. If not depicted, a change to the ALP is required. As part of the ALP approval process, the FAA will conduct an AAA study to determine the runway's acceptability for the desired minimums.

b. For other airports, the FAA, with the airport data submitted by airport sponsors and/or others, will conduct an AAA study to determine the runway's acceptability for the desired minimums. This assistance by the sponsor in providing the required airport data is a prerequisite in obtaining a favorable determination. In may cases, this is the only data available to the FAA for conducting the AAA study.

3. ACTION. The airport landing surface must meet the standards specified in table A16-1 for each specified runway direction and have adequate airspace to support the instrument approach procedure. When requesting an instrument procedure, the sponsor of the instrument approach procedure must specify the runway direction for the procedure, the desired approach minimums for each runway direction, and whether circling approach procedures are desired, as well as provide the following airport data for each specific runway direction:

a. For airports with an FAA-approved ALP, provide a copy of the FAA-approved ALP and, if required, submit a change to the ALP.

b. For other airports, provide the airport data identified in table A16-2 for visibility minimums of $\geq$1 statue mile and a decision height (or minimum descent altitude) $\geq$400 feet. Use table A16-3 for lower minimums. Minimums of $\geq$1 statue mile and $\geq$400 feet are approach visibility minimums of greater than or equal to 1 statue mile and Decision Height or Minimum Descent Altitude above the Runway Touchdown Zone of greater than or equal to 400 feet.

Table A16-1. Instrument approach requirements

Minimums and Airport Features[1]	1/2-statute mile and 200 feet	3/4-mile statute and < 300 feet	3/4-statute mile and ≥ 300 feet	≥1-statute mile and ≥400 feet
Airport Layout Plan[2]	*Required*	*Required*	*Required*	*Required*
TERPS Para 332 surfaces	34:1 clear	20:1 clear	20:1 clear	NA
Minimum Runway Length	*4,200 ft (Paved)* *1 280 m (Paved)*	*3,500 ft (Paved)* *1 067 m (Paved)*	*3,500 ft (Paved)* *1 067 m (Paved)*	*2,400 ft* *732 m*
Runway Markings	*Precision*	*Precision*	*Nonprecision*	*Visual*[3]
Holding Position Signs & Markings (See AC 150/5340-1 and AC 150/5340-18)	*Required*	*Required*	*Required*	*Required*[3]
Runway Edge Lights[4]	*Medium Intensity Runway Lights*	*Medium Intensity Runway Lights*	*Medium Intensity Runway Lights*	*Low Intensity Runway Lights*
Parallel Taxiway[5]	*Required*	*Required*	Recommended	Recommended
Approach Lights	*MALSR*	Recommended[6]	Recommended[6]	Not Required
Obstacle Free Zone (OFZ)[7]	*<3/4-statute mile approach visibility minimums*	*≥3/4-statute mile approach visibility minimums*	*≥3/4-statute mile approach visibility minimums*	*≥3/4-statute mile approach visibility minimums*
Threshold Siting Criteria To Be Met[7]	*Appendix 2, Paragraph 5e Criteria*	*Appendix 2, Paragraph 5d Criteria*	*Appendix 2, Paragraph 5d Criteria*	*Appendix 2, Paragraph 5b & c Criteria*

1. Minimums are subject to the application of FAA Order 8260.3 (TERPS). For CAT II and CAT III, also refer to AC 120-28, Criteria for Approval of Category III Landing Weather Minima, and AC 120-29, Criteria for Approving Category I and Category II Landing Minima for FAR 121 Operators.

2. For airports not obligated by Federal agreement to maintaining a current Airport Layout Plan, an engineering drawing providing the information in table A16-2 for minimums of ≥1 statute mile and ≥ 400 feet and table A16-3 for lower minimums, reflecting compliance with the above criteria, is acceptable in lieu of an Airport Layout Plan.

3. Unpaved runways require case-by-case evaluation.

4. Runway edge lighting is required for night minimums. High intensity lights are required for RVR-based minimums.

5. A parallel taxiway must lead to the threshold and, with airplanes on centerline, keep the airplanes outside the OFZ.

6. To achieve lower visibility minimums based on credit for lighting, a SSALS, MALSR, or ALSF (or ALS for 1/2 mile visibility reduction), as specified by TERPS, is required.

7. Circling procedures to a secondary runway from the primary approach will not be authorized when the secondary runway does not meet threshold siting (reference Appendix 2) and OFZ (reference paragraph 306) criteria.

Table A16-2. Airport information for desired minimums of ≥ 1-statute mile and ≥ 400 feet

1. **Layout of Existing Facilities and Features**. Refer to figures 2-1 and A6-1.

a. **North Point** - Indicate both True and Magnetic North and the year of the declination. Orient drawing so that north is at the top of sheet. If this is not practicable, orient north so that it is to the left.

b. **Runway Details** - Include the following:

(1) Depict the length, width, and physical ends of runway and runway safety area.

(2) Note the runway end coordinates and elevation to accuracies described in Appendix 7.

(3) Note the length and width of the runway and the runway safety area.

(4) Depict the runway end numbers and show true bearing for each direction.

c. **Holding Position Signs and Markings** - Depict the holding position signs and markings distance from runway centerline. Use dimension lines.

d. **OFZ Details** - Depict the OFZ with dimensions and note "NO OFZ OBJECT PENETRATIONS" when no object, other than frangible NAVAIDS, penetrates the OFZ. Otherwise show the penetration(s) and indicate how it (they) will be eliminated. Paragraph 306 and Table A16-4 describe the OFZ.

e. **Threshold Details** - Depict thresholds with coordinates, elevation, displacement from runway end. Note "NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS" when no object penetrates the OFZ. Otherwise, show any object that penetrates this surface and note how it will be eliminated. Table A16-4 describes the threshold siting surface.

2. **Airport Data Table** - Refer to example in figure A6-1.

a. **Airport Elevation** - Include the airport elevation to an accuracy as described in Appendix 7.

b. **Airport Reference Point (ARP)** - Note the ultimate planned ARP location.

3. **Runway Data Table** - Refer to example in figure A6-1.

a. **Runway Marking** - Specify type of runway marking (Visual, Nonprecision, Precision, etc.).

b. **Runway Lighting** - Specify type of runway edge lighting (None, LIRL, MIRL, HIRL).

4. **Legend Table** - Refer to example in figure A6-1.

Table A16-3. Airport information for lower minimums

1. **Layout of Existing Facilities and Features.** Refer to figures 2-1 and A6-1.

   a. **North Point** - Indicate both True and Magnetic North and the year of the declination used. Orient drawing so that north is at the top of sheet. If this is not practicable, orient north so that it is to the left.

   b. **Runway Details** - Include the following:

      (1) Depict the length, width, and physical ends of runway and runway safety area.

      (2) Note the runway end coordinates and elevation to accuracies described in Appendix 7, as well as the elevation of the highest point in the first 3,000 feet (915 m) from the threshold.

      (3) Note the length and width of the runway and the runway safety area.

      (4) Depict the runway end numbers and show true bearing for each direction.

   c. **Holding Position Signs and Markings** - Depict the holding position signs and markings distance from runway centerline. Use dimension lines.

   d. **Taxiway Details** - Depict the taxiway centerline separation distance from runway centerline. Use dimension lines.

   e. **OFZ Details** - Depict the OFZ with dimensions. Note "NO OFZ OBJECT PENETRATIONS" when no objects other than frangible NAVAIDS penetrate the OFZ. Otherwise, show the penetrations and indicate how they will be eliminated. Paragraph 306 describes the OFZ.

   f. **Threshold Details** - Depict thresholds, with coordinates, elevation, displacement from runway end. Note "NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS" when no object penetrates the OFZ. Otherwise, show any object penetrating the threshold siting surface and note how it will be eliminated. Appendix 2, paragraph 5, describes the threshold siting surface.

2. **Airport Data Table** - Refer to example in figure A6-1.

   a. **Airport Elevation** - Include the airport elevation to an accuracy as described in Appendix 7.

   b. **Airport Reference Point (ARP)** - Note the ARP location based on ultimate planned airport configuration with latitude and longitude to the nearest second based on NAD 83.

3. **Runway Data Table** - Refer to example in figure A6-1.

   a. **Runway Marking** - Specify type of runway marking (Visual, Nonprecision, Precision, etc.).

   b. **Runway Lighting** - Specify type of runway edge lighting (None, LIRL, MIRL, HIRL).

   c. **Approach Lighting** - Specify type (None, ODALS, MALS, MALSR, etc.).

4. **Legend Table** - Refer to example in figure A6-1.

Table 16-4. OFZ and threshold siting surface for minimums of ≥ 1-statute mile and ≥400 feet

1. OFZ[1] - The OFZ is the airspace above a surface centered on runway centerline whose elevation at any point is the same as the elevation of the nearest point on the runway centerline. The runway OFZ extends 200 feet (60 m) beyond each end of the runway. Its width is:

a. 400 feet (120 m) for runways serving airplanes of more than 12,500 pounds (5 700 kg) maximum certificated takeoff weight, and

b. 250 feet (75 m) for runways serving airplanes of 12,500 pounds (5 700 kg) or less maximum certificated takeoff weight exclusively.

2. Threshold Siting Surface - The threshold siting surface starts at the threshold, at the threshold elevation, and slopes upward from the threshold at a slope 20 (horizontal) to 1 (vertical). In the plan view:

a. for runways serving airplanes of more than 12,500 pounds (5 700 kg) maximum certificated takeoff weight, the centerline of this surface extends 10,000 feet (3 000 m) along the extended runway centerline. This surface extends laterally 200 feet (60 m) on each side of the centerline at the threshold and increases in width to 500 feet (150 m) at a point 1,500 feet (450 m) from the threshold; thereafter, it extends laterally 500 feet (150 m) on each side of the centerline.

b. for runways serving airplanes of 12,500 pounds (5 700 kg) or less maximum certificated takeoff weight exclusively, the centerline of this surface extends 5,000 feet (1 530 m) along the extended runway centerline. This surface extends laterally 125 feet (38 m) on each side of the centerline at the threshold and increases in width to 350 feet (110 m) at a point 2,250 feet (690 m) from the threshold; thereafter, it extends laterally 350 feet (110 m) on each side of the centerline.

1. More information on OFZ criteria is found in Paragraph 306.

Appendix 17. ACRONYMS

The acronyms presented herein are intended for use with this publication only.

AAA	Airport Airspace Analysis
AC	Advisory Circular
AD	Airport Design
ADG	Airplane Design Group
AIP	Airport Improvement Program
ALP	Airport Layout Plan
ALS	Approach Lighting System
ARC	Airport Reference Code
ARP	Airport Reference Point
ASDA	Accelerate-Stop Distance Available
ASDE	Airport Surface Detection Equipment
ASR	Airport Surveillance Radar
ATC	Air Traffic Control
ATCT	Airport Traffic Control Tower
AWOS	Automated Weather Observing System
AZ	Azimuth
BRL	Building Restriction Line
CAT	Category
CFR	Code of Federal Regulation
CFW	Center Field Wind
CWY	Clearway
DME	Distance Measuring Equipment
DXF	AutoCAD Drawing Interchange file format
EDS	Environmental Data Service
EL	Elevation
FBO	Fixed Base Operator
GS	Glide Slope
GVGI	Generic Visual Slope Indicator
IFR	Instrument Flight Rules
IGES	Initial Graphics Exchange Specification file format
ILS	Instrument Landing System
IM	Inner Marker
IMC	Instrument Meteorological Conditions
LDA	Landing Distance Available
LDIN	Lead-In Lights
LIRS	Low Impact Resistant Supports
LOC	Localizer
MALS	Medium Intensity Approach Lighting System
MALSF	Medium Intensity Approach Lighting System with Sequenced Flashers
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
MLS	Microwave Landing System
MM	Middle Marker
MSL	Mean Sea Level
NAVAID	Navigational Aid
NCDC	National Climatic Data Center
NDB	Nondirectional Beacon
NP	Mon-Precision (Markings)
NTIS	National Technical Information Service
ODALS	Omnidirectional Approach Lighting System
OFA	Object Free Area
OFZ	Obstacle Free Zone
OM	Outer Marker
P	Precision (Markings)
PAPI	Precision Approach Path Indicator
RAIL	Runway Alignment Indicator Lights
ROFA	Runway Object Free Area
RPZ	Runway Protection Zone
RSA	Runway Safety Area
RVR	Runway Visual Range
RW	Runway
SWY	Stopway
TERPS	Terminal Instrument Procedures
TH	Threshold
TL	Taxilane
TODA	Takeoff Distance Available
TORA	Takeoff Run Available
TSA	Taxiway Safety Area
TVOR	Very High Frequency Omnirange located on an airport
TW	Taxiway
USGS	United States Geological Service
V	Visual (Markings)
V_1	Takeoff decision speed
V_2	Takeoff safety speed
VFR	Visual Flight Rules
V_{LOF}	Lift-off speed
V_{SO}	Stalling speed or the minimum steady flight speed in the landing configuration
VOR	Very High Frequency Omnirange

Appendix 18. INDEX