Weight and Balance Table **N49827 Cessna 152**

	LOADING	WEIGHT lbs	MOMENT lbs-inch/1000
1	Basic Empty Weight Use data from the plane's current weight and balance sheet that includes unusable fuel and full oil	1173	35219.43
2	Useable Fuel (6lbs/Gallon) Standard Tanks 24.5 Gal Max		
	Reduced Fuel (as limited by maximum weight)		
3	Pilot and Passenger [cabin stations 33-41]		
4	Baggage and Equipment Area 1 [cabin stations 50-75] 120 lb Max Weight (120 lb max allowable combined weight in Areas 1 & 2)*		
5	Baggage and Equipment Area 2 [cabin stations 76-94] 40 lbs Max Weight (120 lb max allowable combined weight in Areas 1 & 2)*		
6	Ramp Weight and Moment**		
7	Fuel allowance for engine start, taxi, and runup		
8	TAKEOFF WEIGHT AND MOMENT (subtract 7 from 6)		
9	Locate the Center of Gravity on Figure 6.9. If this point falls within the envelope, loading is acceptable.		

*Max allowable combined weight capacity for baggage areas 1 and 2 is 120lbs **Max Total Takeoff Weight is 1670 lbs

_____ _____ _____

Student Name Flight Date and Time Instructor Name

Weight and Balance Calculation Instructions **N49827 Cessna 152**

1. The basic empty weight and moment provided are from the current weight and balance record.
2. Enter the weight of fuel for your flight based on gallons of fuel in the aircraft. Using the loading graph (Figure 6.7), find the weight of fuel value on the left side of the graph then follow the graph line across to the right until it intersects with the fuel line - - - as described in the code (legend). At the intersection of the fuel weight value and fuel chart line - - -, follow/draw a line on the graph straight down to find the fuel moment value. Multiply this number by 1000 to determine the moment (e.g. 147 intersects at 6.2 x 1000 = 6200). Enter the weight and moment values as useable fuel in row 2. Enter the fuel weight (e.g. 147 lbs) in column 1 and the moment (e.g. 6200) in column 2. Reduced fuel is used only when overweight. Speak to your instructor about this.
3. Using the loading graph (Figure 6.7), find the combined pilot and instructor (passenger) weight value on the left side of the graph then follow the graph line across to the right until it intersects with the pilot/passenger line ____ as described in the code (legend). At the intersection of the pilot/passenger weight value and pilot/passenger chart line ____, follow/draw a line on the graph straight down to find the pilot/passenger moment value. Multiply this number by 1000 to determine the moment (e.g. 270 intersects at 11 x 1000 = 11000). Enter the weight and moment values for pilot/passenger in row 3. Enter the pilot/passenger weight (e.g. 270 lbs) in column 1 and the moment (e.g. 11000) in column 2.
4. Using the loading graph (Figure 6.7), find the baggage Area 1 weight value on the left side of the graph then follow the graph line across to the right until it intersects with the baggage in Area 1 line __ __ as described in the code. At the intersection of the baggage in Area 1 weight value and baggage in Area 1 chart line __ __, follow/draw a line on the graph straight down to find the baggage in Area 1 moment value. Multiply this number by 1000 to determine the moment (e.g. 50 intersects at 3.4 x 1000 = 3400). Enter the weight and moment values for baggage in Area 1 in row 4. Enter the baggage in Area 1 weight (e.g. 50 lbs) in column 1 and the moment (e.g. 3400) in column 2.
5. Using the loading graph (Figure 6.7), find the baggage Area 2 weight value on the left side of the graph then follow the graph line across to the right until it intersects with the baggage in Area 2 line ……. as described in the code. At the intersection of the baggage in Area 2 weight value and baggage in Area 2 chart line ……., follow/draw a line on the graph straight down to find the baggage in Area 1 moment value. Multiply this number by 1000 to determine the moment (e.g. 25 intersects at 1.7 x 1000 = 1700). Enter the weight and moment values for baggage in Area 2 in row 5. Enter the baggage in Area 2 weight (e.g. 25 lbs) in column 1 and the moment (e.g. 1700) in column 2. Enter the weight of the baggage to be carried in Area 2.
6. Calculate the total of all weights in rows 1 to 5, column 1 and enter this value into the weight column in line 6 (e.g. 1665), then calculate the total of all moments in rows 1 to 5, column 2 (e.g. 57519.43) and enter this value into the moment column in Line 6; Ramp Weight and Moment. Total maximum weight for takeoff must not exceed 1670 lbs.
7. Determine the weight of fuel that will be used for engine start, taxi, and run-up. Enter the weight value in the weight column. Calculate the moment as you did in 2. table calculation for fuel and enter the moment value in the moment column for Line 7.
8. Calculate the total take-off weight by subtracting the value in line 7 from the value in line 6 (weight). Calculate the total take-off moment by subtracting the value in line 7 from the value in line 6 (moment). Using the graph (Figure 6.8), plot the weight and moment to ensure that they intersect within the center of gravity moment envelope. Enter these amounts in Row 8 columns 1 and 2.
9. Calculate the Center of Gravity (CofG) by dividing the total moment by the takeoff weight in Line 8. Enter this value into Line 9 on your table. This is the center of gravity for your departure. Using the Center of Gravity Limits Graph (Figure 6.9), plot the takeoff weight and CofG to ensure that your center of gravity limits are within the envelope.

Premier Avionics, LLC.

FAA AVIONICS CRS# 7PMR634B

Weight and Balance Installed Equipment Data

Tail Number: N49827
Make: Cessna
Model: 152
Aircraft Serial Number: 15281344

Date: 8/17/18
Work Order Number: 5437
Superceded Date: 3/27/86
Prepared By: Brian Paugh

	Weight	Arm	Moment	Useful Load
Previous Aircraft Empty Information:	1174.30	30.00	35209.00	495.70

Removed Equipment	Weight	Arm	Moment
IND-350 Nav Indicator, SN: 4338	1.00	15.50	15.50
AR-850 Encoder, SN: 44140	0.70	2.00	1.40
KMD150 Display, SN: 27101480	3.00	14.50	43.50
RT-359A Transponder, SN: 16140	2.00	12.00	24.00
VHF-251 Com, SN: 3724	3.40	11.50	39.10
VIR-351 Nav, SN: 21834	2.70	11.50	31.05
GPS Antenna	0.50	57.00	28.50

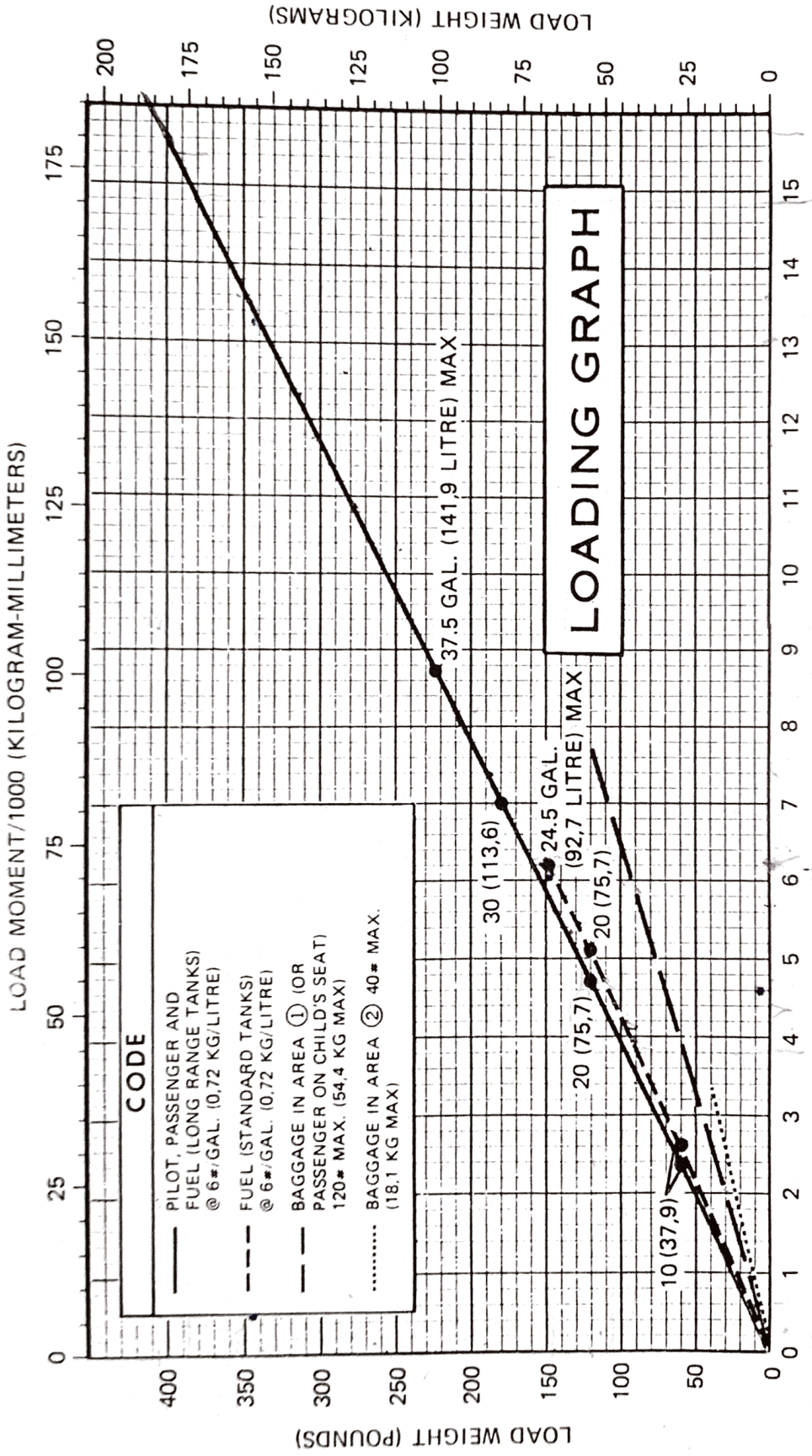
Installed Equipment	Weight	Arm	Moment
GNC255A Nav/Com, SN: 2A8020139	3.50	12.80	44.80
GI-106B Nav Indicator, SN: A18-11271	1.40	15.60	21.84
GTR225 Com, SN: 2A5006089	3.10	12.40	38.44
GTX335 Transponder, SN: 3EE421135	2.90	13.00	37.70
GA-35 GPS Antenna, SN: 143472	0.50	33.00	16.50
CI-121 Com Antenna, SN: 566128	0.60	57.00	34.20

New Empty Weight:	1173.00	**Pounds**
New C.G. (ARM):	30.03	**Inches**
New Moment:	35219.43	
New Useful Load:	497.00	**Pounds**

*** The above installation performed in accordance with manufacturers specifications and is approved for return to service.**
***Weight was calculated using the last weight and balance provided.**

Authorized Signature

Brian C. Paugh
Premier Avionics, LLC. * AVIONICS CRS # 7PMR634B



NOTES: Line representing adjustable seats shows the pilot or passenger center of gravity on adjustable seats positioned for an average occupant. Refer to the Loading Arrangements Diagram for forward and aft limits of occupant C.G. range.

Figure 6.7

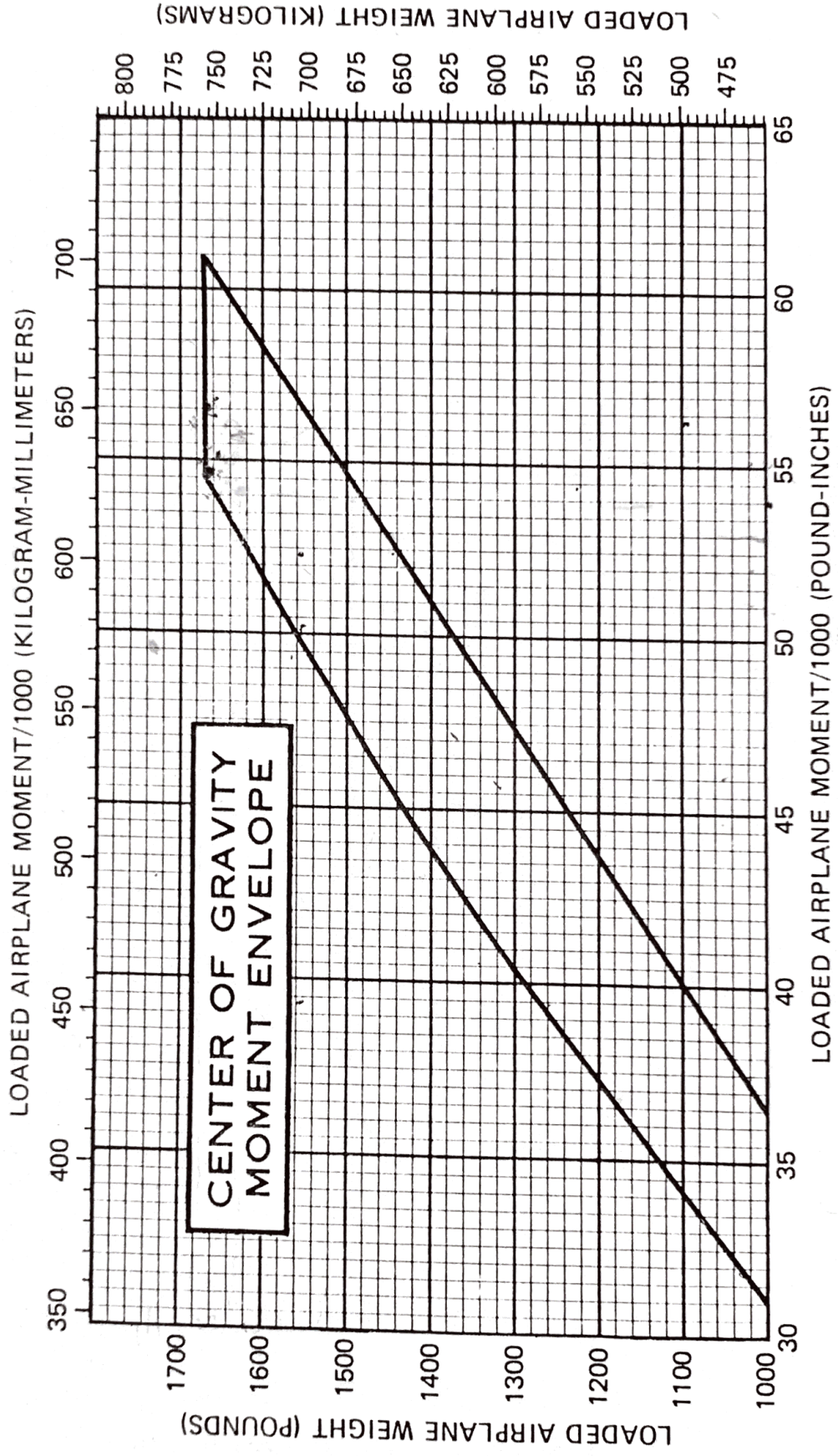

LOADED AIRPLANE WEIGHT (KILOGRAMS)
800
775
750
725
700
675
650
625
600
575
550
525
500
475
LOADED AIRPLANE MOMENT/1000 (KILOGRAM-MILLIMETERS)
350
400
450
500
550
600
650
700
CENTER OF GRAVITY
MOMENT ENVELOPE
LOADED AIRPLANE MOMENT/1000 (POUND-INCHES)
30
35
40
45
50
55
60
65
LOADED AIRPLANE WEIGHT (POUNDS)
1000
1100
1200
1300
1400
1500
1600
1700

Figure 6.8

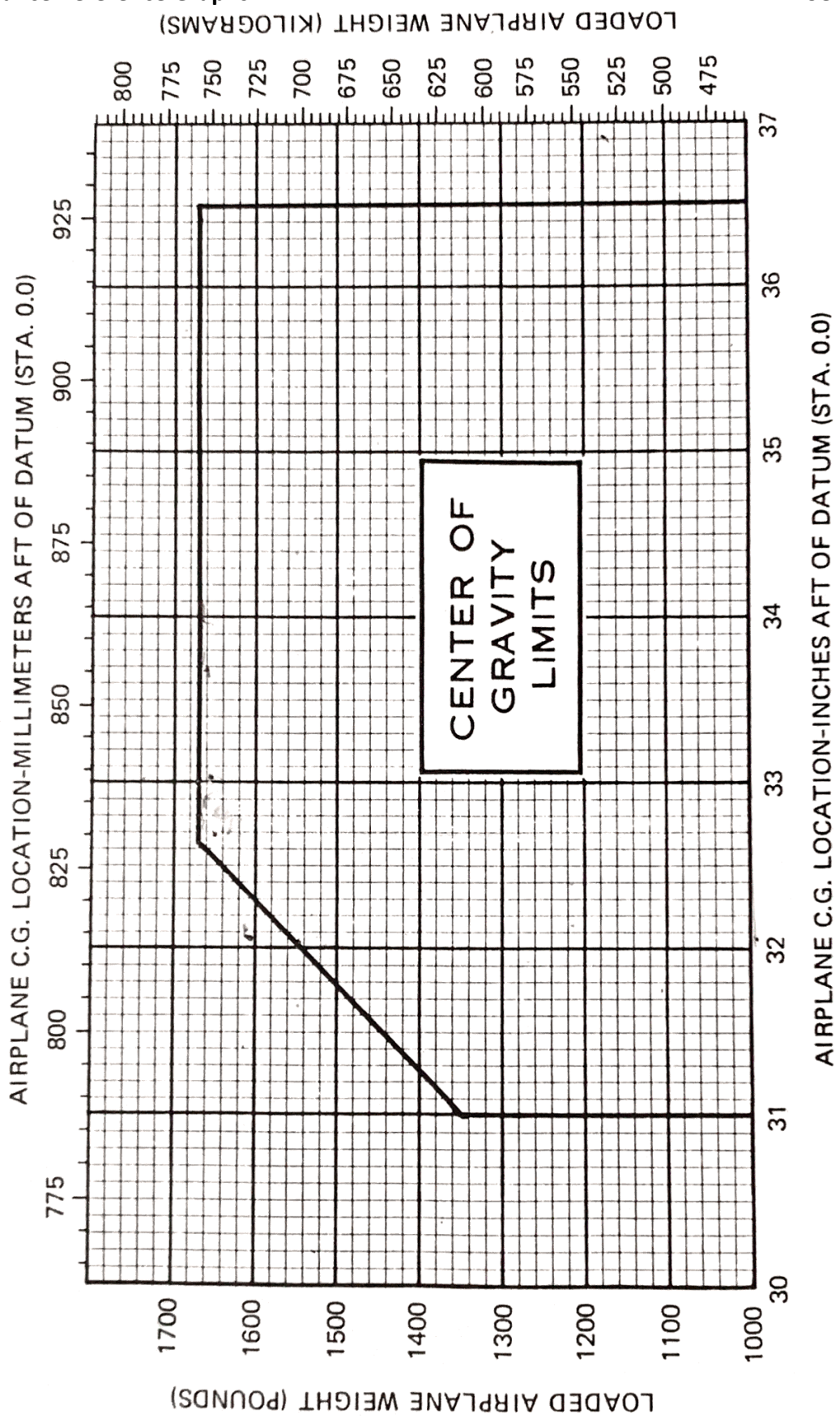

LOADED AIRPLANE WEIGHT (KILOGRAMS)
800
775
750
725
700
675
650
625
600
575
550
525
500
475
AIRPLANE C.G. LOCATION-MILLIMETERS AFT OF DATUM (STA. 0.0)
775
800
825
850
875
900
925
CENTER OF GRAVITY LIMITS
AIRPLANE C.G. LOCATION-INCHES AFT OF DATUM (STA. 0.0)
30
31
32
33
34
35
36
37
1000
1100
1200
1300
1400
1500
1600
1700
LOADED AIRPLANE WEIGHT (POUNDS)

Figure 6.9