REPORT VB-168

AIRPLANE FLIGHT MANUAL

MODEL PA-28-160

SERIAL NOS. 1 THRU 4377

DUPLICATE

AIRPLANE FLIGHT MANUAL

MODEL PA-28-160

FAA APPROVED: Original signed by H.H. Slaughter *
H.H. Slaughter
Chief, Engineering & Manufacturing Branch
Region 2 -- Fort Worth, Texas

DATE: October 25, 1960

* FAA APPROVED: Gene Dearing For Retype Only.
Gene Dearing
Aerospace Engineer

DATE: August 12, 1964

Log of Revisions

REVISION NO.	PAGE	DESCRIPTION	APPROVED	DATE
1	2	Change Placard No. 3 to read: "MAXIMUM BAGGAGE 125 LBS."	J. A. Pagan for H. E. Waterman Supervisor SO-EMDO-42	8/29/62
2	2	1710 was 1700	J. A. Pagan SO-EMDO-42	4/11/63
3	2	Added to Placard No. 1: "NO ACROBATIC MANEUVERS INCLUDING SPINS, APPROVED".	J. A. Pagan for H. E. Waterman Supervisor SO-EMDO-42	8/1/63
4	1	Deleted Propeller Pitch Information. Added Static RPM Information.	J. A. Pagan for H. E. Waterman Supervisor SO-EMDO-42	5/25/64
5	2	Placards Section: Added Placard No. 4	H. E. Waterman Supervisor SO-EMDO-42	7/8/64
6	2	Added to Placard No. 3 "BAGGAGE, MAX. 200 LBS., SEE WEIGHT AND BALANCE DATA FOR BAGGAGE LOADINGS BETWEEN 150 LBS. and 200 LBS."	Robert H. Leduc for H. C. Faller Supervisor SO-EMDO-43	8/5/64
	1	Added Sensenich M74DMS		
7	3	Item 4 added to Procedures Section	H. C. Faller Supervisor SO-EMDO-43	10/20/64
8	1	Limitations Section: Revised Oil Temperature and Fuel Pressure Range	Robert H. Leduc for H. C. Faller Supervisor, SO-EMDO-43	6/23/65
9	3	Procedures Section Add Item 5		
	4	Added Page 4		
	2	Added Placard No. 5	H. C. Faller Supervisor SO-EMDO-43	5/20/66

FAA APPROVED 10/25/60

Log of Revisions

REVISION NO.	PAGE	DESCRIPTION	APPROVED	DATE
10	1	Revised Oil Temperature, Oil Pressure and Fuel Pressure Limitations		
	2, 3	Revised Placards No. 3 and No.4		
	4	Procedures Section: Added Item 6		
	5	Added Page 5	Hubert T. Herold for Henry C. Faller, Supervisor, SO-EMDO-43	7/15/66
11	2	Revised C. G. Range	H. C. Faller, Supervisor, SO-EMDO-43	9/25/67
12	1	Added Propeller Designation	H. C. Faller, Supervisor, SO-EMDO-43	6/24/68
13	Title	Allocated Piper Report No. VB-168 to this Manual. Added applicable Serial Nos. 1 thru 4377.	H. M. Toomey, Herb M. Toomey, FAA-DOA SO-1	11/14/68
14	1	Changed oil pressure gauge markings	Ward Evans	7-25-75

Piper Model PA-28-160
Normal Category Only

FAA Identification No. N5393W

Serial No. 28-461

AIRPLANE FLIGHT MANUAL

1. Limitations Section — The following limitations must be observed in the operation of this airplane:

Engine — Lycoming 0-320-D2A or 0-320-B2B

Engine Limits — For all operations 2700 rpm, 160 hp

Fuel — 91/96 minimum octane aviation fuel

Propeller — Sensenich M74DM or 74DM6 (S/N 1 to 1760A)
Sensenich M74DMS or 74DM6S5 (S/N 1761 and up)
Maximum diameter 74 inches. Minimum diameter 72-1/2 inches. Static RPM at maximum permissible throttle setting: Not over 2425, not under 2325. No additional tolerance permitted.

Power Instruments — Oil Temperature: GREEN arc (normal operating range) 120°F to 245°F; YELLOW arc (caution range) 60°F to 120°F; RED line (maximum) 245°F (S/N 1 to S/N 1760A)

Oil Temperature: GREEN arc (normal operating range) 75°F to 245°F; RED line (maximum) 245°F (S/N 1761 & up)

Oil Pressure: GREEN arc (normal operating range) 60 psi to 90 psi; YELLOW arc (caution range) 25 psi to 60 psi; RED line (minimum) 25 psi when installed or 60 psi when installed; RED line (maximum) 90 psi.

Fuel Pressure: GREEN arc (normal operating range) .5 psi to 5 psi; RED line (minimum) .5 psi; RED line (maximum) 5 psi (S/N 1 to S/N 1760A)

Fuel Pressure: GREEN arc (normal operating range) .5 psi to 8 psi; RED line (minimum) .5 psi; RED line (maximum) 8 psi (S/N 1761 & up)

Tachometer: GREEN arc (normal operating range) 500 to 2700 rpm; RED line (maximum continuous power) 2700 rpm.

Airspeed Limits (Calibrated Airspeed) (Miles per Hour)

Never exceed	171
Maximum structural cruise	140
Maneuvering	129
Flaps extended	115
Maximum positive load factor	3.8
Maximum negative load factor	No inverted maneuvers approved

Maximum Weight

2200 lbs.

C.G. Range

The datum used is 78.4 inches ahead of the wing leading edge at the intersection of the straight and tapered section.

Weight (Pounds)	Forward Limit (In. aft of datum)	Rearward Limit (In. aft of datum)
2200	89.2	95.9
1975	85.9	95.9
1650	84.0	95.9

Straight line variation between points given.

NOTE: It is the responsibility of the airplane owner and the pilot to insure that the airplane is properly loaded. See weight and balance section for proper loading instructions.

Maneuvers

No acrobatic maneuvers including spins approved.

Placards

1. On the instrument panel in full view of the pilot: "THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS. NO ACROBATIC MANEUVERS, INCLUDING SPINS, APPROVED."

2. At inside top rear corner of the door: "ENGAGE LATCH BEFORE FLIGHT."

3. On the inside of the baggage compartment door: "MAXIMUM BAGGAGE 125 LBS." (S/N 1 to 1760A) (MAXIMUM BAGGAGE MAY BE INCREASED TO 200 LBS. IN ACCORDANCE WITH PIPER SERVICE SPARES LETTER NO. 242) "BAGGAGE, MAXIMUM 200 LBS., SEE WEIGHT AND BALANCE DATA FOR BAGGAGE LOADINGS BETWEEN 150 LBS. AND 200 LBS." (S/N 1761 AND UP)

4. On the instrument panel in full view of the pilot when the oil cooler winterization kit is installed:
"OIL COOLER WINTERIZATION PLATE TO BE REMOVED WHEN AMBIENT TEMPERATURE EXCEEDS 50° F."

5. On the instrument panel in full view of the pilot when the autoflite is installed:
"FOR HEADING CHANGES: PRESS DISENGAGE SWITCH ON CONTROL WHEEL. CHANGE HEADING. RELEASE DISENGAGE SWITCH."

Airspeed Instrument	RED radial line	Never Exceed	171 mph (148 knots)
	YELLOW arc	Caution Range (Smooth Air Only)	140 to 171 mph (121 to 148 knots)
	GREEN arc	Normal Operating Range	64 to 140 mph (56 to 121 knots)
	WHITE arc	Flap Down Range	55 to 115 mph (48 to 100 knots)

2. Procedures Section

1. The stall warning system is inoperative with the master switch off.

2. Electric fuel pump must be on for both landing and takeoff.

3. Except as noted above, all operating procedures for this airplane are normal.

4. (Electric Pitch Trim Installation Only)

The following emergency information applies in case of electric pitch trim malfunction:

a. In case of malfunction, disengage electric pitch trim by pulling out circuit breaker on instrument panel.

b. In emergency, electric pitch trim may be overpowered using manual pitch trim.

c. In cruise configuration, malfunction results in 10° pitch change and 30 ft. altitude variation.

5. (Autoflite Installation Only)

The following emergency information applies in case of autoflite malfunction:

a. In case of malfunction PRESS disconnect switch on pilot's control wheel.

b. Rocker switch on instrument panel - OFF.

c. Unit may be overpowered manually.

d. In cruise configuration malfunction, 3 seconds delay results in 60^{o} bank, and 100 ft. altitude loss.

e. In approach configuration malfunction, 1 second delay results in 10^{o} bank and 0 ft. altitude loss.

6. (Autocontrol III Installation Only)

I Limitations:

Pilot off during takeoff and landing

II Procedures:

A. Normal Operation

Refers to Manufacturer's Operation Manual

B. Emergency

1. In case of malfunction, disengage manual controls.
2. In emergency, pilot may be overpowered manually.
3. In cruise configuration malfunction, 3 seconds delay results in 60^{o} bank and 100 ft. altitude loss.
4. In approach configuration malfunction, 1 second delay results in 10^{o} bank 0 ft. altitude loss.

3. Performance Section

The following performance figures were obtained during FAA type tests and may be realized under conditions indicated with the airplane and engine in good condition and with average piloting technique. All performance is given for 2200 pounds.

Loss of altitude during stalls varies from 125 to 200 feet, depending on configuration and power.

Stalling speeds, in MPH, power off, versus angle of bank (Calibrated Airspeed):

Angle of Bank	0	20	40	50	60
Flaps Up	64	66	73	80	91
Flaps Down	55	--	--	--	--

REPORT VB-169

EQUIPMENT LIST

MODEL PA-28-160

SERIAL NOS. 1 THRU 4377

Log of Revisions

REVISION NO.	PAGE	DESCRIPTION	APPROVED	DATE

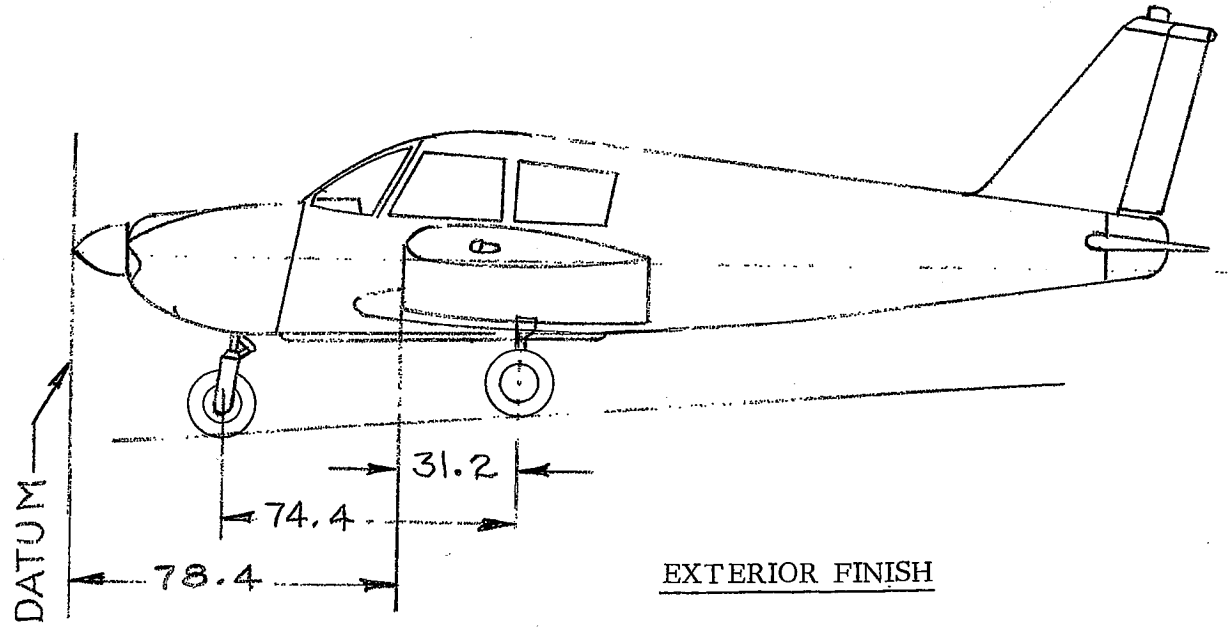
ACTUAL WEIGHT AND BALANCE

MODEL PA 28-160

SERIAL NUMBER 28- 461

CERTIFICATE NUMBER _____

DATE _____



EXTERIOR FINISH

Base Color _____

1st Trim Color _____

2nd Trim Color _____

Registration No. Color _____

_____ Type Finish _____

WEIGHT AND BALANCE

STANDARD EQUIPMENT LIST

MODEL PA 28-160

Check if Installed	ITEM	WEIGHT (LBS.)	ARM AFT DATUM (INCHES)	MOMENT (POUND-INCHES)
	Engine Accessories			
_____	Engine - Lycoming Model O-320-D2A	267.4	26.1	6979
_____	Fuel Pump, Electric Auxiliary, Bendix Model 478360	1.8	41.8	75
_____	Fuel Pump, Engine Driven, Lycoming Dwg. No. 73297, 74082, 75148 or 75246	1.6	41.3	66
_____	Oil Cooler, Piper Dwg. Harrison #C-8526250	2.6	18.1	47
_____	Filter, Fram Model CA-161 PL or AC No. A48C or Purolator AFP-2	.9	20.1	18
_____	Alternator, 35 Amp., Chrysler No. 2098615	12.5	19.0	238
_____	Alternator, 60 Amp., Chrysler No. 2642210 or 2642997	12.5	19.0	238
_____	Starter - Lycoming 74092 (Delco Remy 1109511)	* 18	19.5	351
_____	Starter - Lycoming 76211 (Prestolite MZ4206)	* 18	19.5	351
	Propeller and Propeller Accessories			
_____	Propeller, Sensenich M74DM or 74DM6	30.0	10.1	303
_____	Propeller, Sensenich M74DMS60 or 74DM6S5-0-60	34.0	8.8	299
_____	Spinner and Attachment Plates	2.0	8.0	16

* Included in Engine Weight

Check if Installed	ITEM	WEIGHT (LBS.)	ARM AFT DATUM (INCHES)	MOMENT (POUND-INCHES)
	Landing Gear and Brakes			
_____	Two Main Wheel Assemblies 6.00-6 (a) Cleveland Aircraft Products Wheel Assembly No. 40-28 Brake Assembly No. 30-18 (b) Two Main 4-Ply Rating Tires 6.00-6 with Regular Tubes	32.0	109.6	3507
_____	Two Main Wheel Assemblies (a) Cleveland Aircraft Products Wheel Assembly No. 40-86 Brake Assembly No. 30-55 (b) Two Main 4-Ply Rating Tires 6.00-6 with Regular Tubes	32.3	109.6	3540
_____	One Nose Wheel 6.00-6 (a) Cleveland Aircraft Products Wheel Assembly No. 38501 (Less Brake Drum) (b) One Nose Wheel 4-Ply Rating Tire 6.00-6 with Regular Tubes	14.0	34.3	480
	Electrical Equipment			
_____	Stall Warning Device, Safe Flight Inst. Corp. No. C52207-4	.2	80.2	16
_____	Voltage Regulator, Delco Remy. #118704	1.5	168.5	253
_____	Voltage Regulator, Chrysler No. 2098613	.5	57.8	29
_____	Voltage Regulator, Wico Elect. No. X-16300	.5	57.8	29
_____	Battery 12V., 25 A.H., Rebat Model S-25	21.5	160.9	3459

Check if Installed	ITEM	WEIGHT (LBS.)	ARM AFT DATUM (INCHES)	MOMENT (POUND-INCHES)
	Instruments			
_____	Compass - Airpath No. C2350-L41	.9	66.6	60
_____	Airspeed Indicator, PAC 63205	.6	67.7	41
_____	Tachometer, AC 1548302	.8	67.7	54
_____	Tachometer, Stewart Warner PAC 62177-2 or 62177-3	.7	67.7	47
_____	Altimeter, Aero Marine No. 522	1.4	66.8	94
_____	Engine Cluster, PAC 63922-2	.8	68.8	55
_____	Engine Cluster, PAC 63426	.8	68.8	55
_____	Engine Cluster, PAC 63426-2	.8	68.8	55
	Miscellaneous			
_____	Fwd. Seat Belts	1.0	86.9	87
_____	Aft Seat Belts	.8	123.0	98
_____	Flight Manual	_____	_____	_____
_____	Tow Bar	1.3	122.3	139
	TOTAL			
	AIRCRAFT EMPTY WEIGHT AS	_____	_____	_____
	(INCLUDES ITEMS CHECKED ON STANDARD EQUIPMENT LIST, UNUSABLE FUEL AND UNDRAINABLE OIL)			

OPTIONAL EQUIPMENT LIST

MODEL PA-28-160

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND-INCHES)
	Engine Accessories			
_____	Vacuum Pump, Airborne Mechanisms Model #10-113A1, 113A5 or 200 cc and Drive	5.0	37.0	185
_____	Oil Filter - Lycoming #74911 (AC 81-A #6437032)	3.3	40.5	134
_____	Vacuum Regulator and Filter	2.2	57.0	125
	Electrical Equipment			
_____	Rotating Beacon, Grimes Model D7080	2.0	263.4	527
_____	Landing Light, G. E. Model 4509	.5	18.1	9
_____	Navigation Light (Rear)(1) Grimes Model 2064 (White)	.2	281.0	56
_____	Navigation Lights (2) Grimes Model A1285 (Red and Greeen)	.4	106.6	43
_____	Battery 12V, 35 A.H., Reading R-35	27.0	160.9	4344
_____	Cabin Light	.3	104.0	31
_____	Cabin Speaker	.8	104.0	83
_____	Rotating Beacon, Whelen Model WRM L-12	1.6	264.0	422

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND-INCHES)
	Electrical Equipment (Cont'd)			
_____	Auxiliary Power Receptacle PAC 62225	2.7	168.0	454
_____	External Power Cable PAC 62355-2	4.6	142.8	657
_____	Piper Pitch Trim	4.0	158.0	632
_____	Heated Pitot Head	.4	100.0	40
	Instruments			
_____	Turn and Bank, Pioneer A-5	1.5	66.4	100
_____	Suction Gauge, AN5771-11	.5	68.1	34
_____	Suction Gauge, Airborne Mechanisms 1G3-4	.5	68.1	34
_____	Suction Gauge, U.S. Gauge AW1821AFO3	.5	68.1	34
_____	Altimeter, AN5760-2 (C-12 or C-13)	Same as Standard Equipment Weight		
_____	Rate of Climb, Pioneer C-7	1.0	66.8	67
_____	Rate of Climb, AN5825	1.0	66.8	67
_____	Directional Gyro, Jack & Heintz	2.6	66.6	173
_____	Directional Gyro, Sperry	3.9	66.6	260
_____	Directional Gyro, Garwin (3")	2.4	65.6	157
_____	Directional Gyro, AIM (3")	3.1	64.9	201

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND-INCHES)
	Instruments (Cont'd)			
_____	Artificial Horizon, Jack & Heintz	2.8	66.1	185
_____	Artificial Horizon, Garwin (3")	1.8	65.8	118
_____	Artificial Horizon, AIM (3")	2.2	65.3	144
_____	Air Temperature Gauge, Rochester Manufacturing Co., #1592-C2	.2	82.6	17
_____	Clock, 8-Day MIL-C-7939	.4	68.3	27
_____	Piper Course Selector PAC 31058	3.0	66.6	200
_____	Tru-Speed Indicator, PAC 62143	Same as Standard Equipment Weight		
_____	Electric Turn and Bank	2.7	65.8	178
_____	Pictorial Rate of Turn, Mitchell #52D69	1.3	66.2	86
_____	Brittain Turn Coordinator #TC-100(12)	2.6	65.6	171
_____	Rate of Climb, Karnish AC135-3	1.0	66.8	67
	AutoPilots			
_____	AutoControl III			
_____	Console, Mitchell #1C388	1.2	66.6	80
_____	Roll Servo, Mitchell #1D363-183R	1.2	122.2	147
_____	Cables	.7	95.5	67

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND-INCHES)
	AutoPilots (Cont'd)			
	Artificial Horizon, Garwin	1.9	65.8	125
	Artificial Horizon, AIM	2.3	65.3	150
	Directional Gyro, Garwin	2.5	65.6	164
	Directional Gyro, AIM	3.2	64.9	208
	Omni Coupler	.9	65.8	59
	AutoControl II			
	Roll Servo, Mitchell #1X221E-CH-1	2.8	60.6	170
	Console, Mitchell #1X224E-3	1.3	66.6	87
	Directional Gyro, Mitchell #52B15E	4.3	66.6	286
	Directional Gyro, Course Selector PAC Drawing 31058-2	3.0	66.6	200
	Artificial Horizon, Mitchell #52B9	4.5	66.1	298
	AutoFlite			
	Roll Servo, Mithcell #1D363-153	2.6	122.2	318
	Gyro Amplifier, Mitchell #1C359	1.8	111.8	201
	Cables	1.0	95.5	96
	Panel Unit	.3	68.8	21
	Omni Tracker (#1D482)	.5	64.5	32

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND-INCHES)
	Radio			
	PM-1 Marker Beacon			
	Receiver	1.1	121.3	133
	Panel Unit	.3	69.0	21
	Cable	.3	85.0	26
	Piper Radio Compass PRC-3	4.5	64.4	290
	Piper VHF Transceiver PTR-1	5.0	64.8	324
	Piper Omni Convertor O-1	2.5	65.3	163
	King KX150B	9.1	62.8	572
	Omni Receiving Antenna, Narco VTP-37 (Includes Cables)	1.4	203.0	284
	VHF Antenna, Transmitting VHF-1	.3	157.8	47
	Cable VHF-1	.4	118.0	47
	VHF Antenna, Transmitting VHF-2	.3	192.8	58
	Cable VHF-2	.5	135.0	68
	Low Frequency Antenna	.5	167.0	84
	Loop Antenna (PRC-3)	.3	54.5	16
	Narco Mark 12A			
	Transceiver, Single	6.0	62.8	377
	Transceiver, Dual	12.0	62.8	754
	Modulator-Power Unit, Single	4.0	56.0	224
	Modulator-Power Unit, Dual	8.0	186.0	1488

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND-INCHES)
	Radio (Cont'd)			
	Cable, Single	.3	58.0	17
	Cable, Dual	3.4	120.0	408
	Narco VOA-6 Omni Convertor	1.8	65.3	118
	Narco VOA-5 Omni Convertor	3.1	65.3	202
	Narco VOA-4 Omni Convertor	3.0	65.3	196
	Narco ADF-30	9.9	107.9	1068
	Narco Omnigator VTR-2A Installation (Less Antenna)	14.0	58.0	812
	Marker Antenna	1.2	64.8	78
	Piper Radio Compass (PRC-4)	4.9	64.4	316
	Loop Antenna (PRC-4)	.4	112.6	45
	Piper Omni Convertor OL-1	2.8	65.3	183
	Narco ADF-31			
	Receiver	5.1	64.4	328
	Loop Antenna	2.7	162.0	437
	Cable Antenna	1.7	108.0	184
	Bendix ADF-T-12C			
	Receiver	3.8	64.9	247
	Audio Amplifier	.8	64.9	52
	Radio Compass	1.7	67.3	114

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND-INCHES)
	Radio (Cont'd)			
	Loop Antenna	1.2	160.8	193
	Cable, Antenna	1.5	108.0	162
	Narco UDI-III DME	8.6	62.6	538
	Narco Mark III	7.5	63.6	477
	Narco UDI-4 DME			
	Receiver	8.5	62.6	532
	Antenna	.3	113.9	34
	Cable, Antenna	.4	100.0	40
	UGR-2 Glide Slope			
	Receiver	2.4	173.8	417
	Cable	2.1	128.0	269
	Antenna	.4	92.4	37
	Cable, Antenna	.5	145.0	73
	Transmitter Selector (Dual VHF Only)	.7	67.2	47
	Microphone	.5	75.0	38
	Headset	.5	66.0	33
	Junction Box	.6	67.2	40

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND-INCHES)
	Miscellaneous			
_____	Nose Wheel Fairing	3.5	34.8	122
_____	Main Wheel Fairing	7.4	109.6	811
_____	Assist Step	1.8	156.0	281
_____	Toe Brakes (Dual)	10.5	54.6	573
_____	Toe Brakes (Single)	5.0	54.6	273
_____	Fire Extinguisher-Stop Fire #A-20	7.5	93.0	698
_____	Inertia Safety Belt, PAC Drawing 65766	2.5	111.6	279
_____	Assist Strap and Coat Hooks	.2	109.5	22
_____	Lighter	.2	68.8	14
	TOTAL			

EMPTY C.G. AFT DATUM IS _____

AIRCRAFT EMPTY WEIGHT _____ _____

OPTIONAL EQUIPMENT WEIGHT _____ _____

LICENSED EMPTY WEIGHT _____ _____

IT IS THE RESPONSIBILITY OF THE PILOT AND AIRCRAFT OWNER TO INSURE THAT THE AIRPLANE IS LOADED PROPERLY. THE EMPTY WEIGHT C. G. IS FOR THE AIRPLANE AS DELIVERED FROM THE FACTORY. REFER TO FORM FAA-337 WHEN ALTERATIONS HAVE BEEN MADE.

C. G. RANGE AND WEIGHT INSTRUCTIONS

1. Add the weight of all items to be loaded to the licensed empty weight.
2. Use the loading graph to determine the moment of all items to be carried in the airplane.
3. Add the moment of all items to be loaded to the licensed empty weight moment.
4. Divide the total weight moment by the total weight to determine the C. G. location.
5. By using the figures of item 1 and item 4, locate a point on the C. G. range and weight graph. If the point falls within the C. G. envelope, the loading meets all weight and balance requirements.

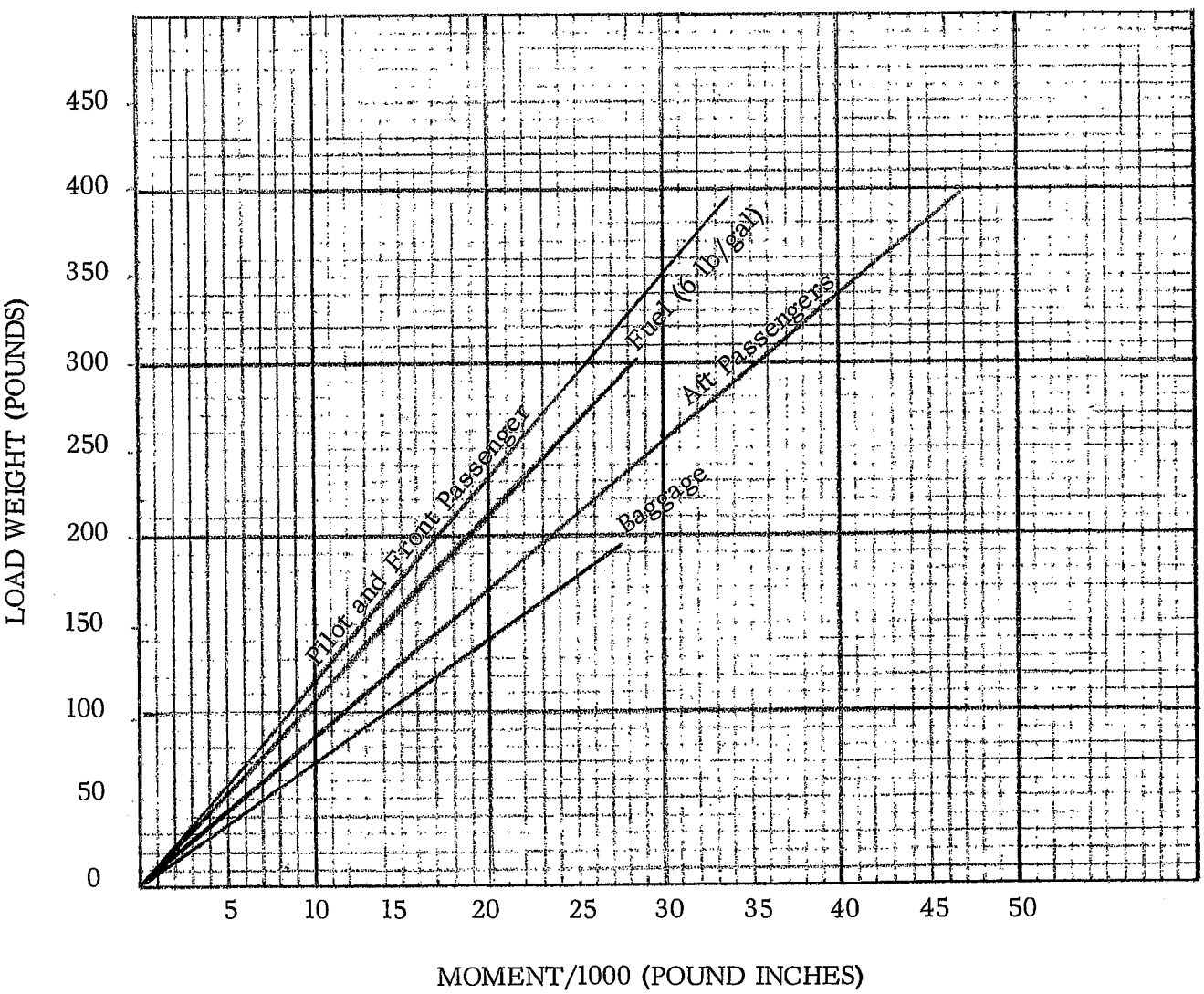
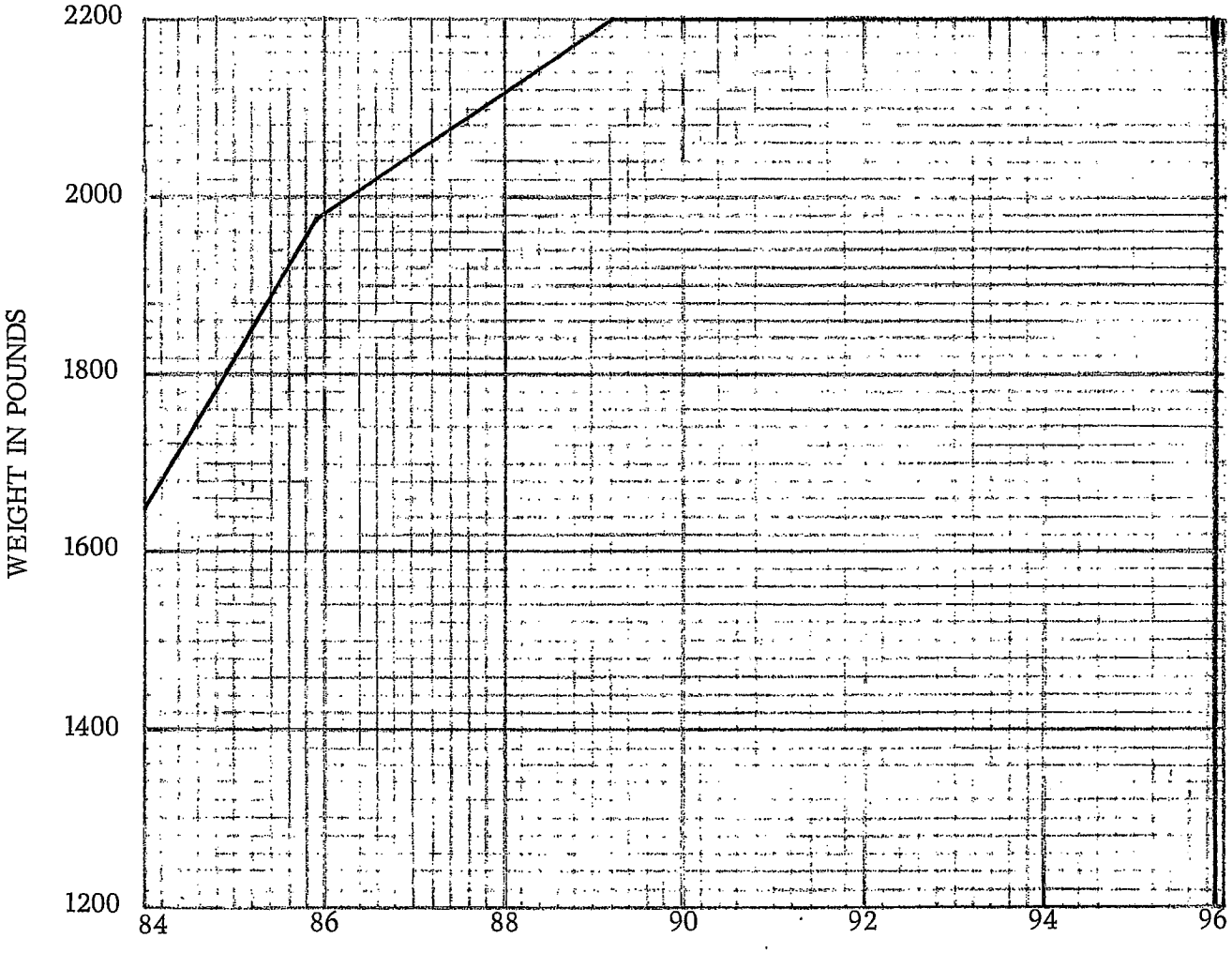
SAMPLE LOADING PROBLEM (NORMAL CATEGORY)

	WEIGHT (LBS.)	ARM AFT DATUM (INCHES)	MOMENT (POUND-INCHES)
LICENSED EMPTY WEIGHT			
OIL (2 GAL.)	15	32.5	488
PILOT & PASSENGER	340	85.5	29070
FUEL		95.0	
PASSENGERS (REAR SEAT)	340	118.1	40154
BAGGAGE		142.8	
TOTAL LOADED AIRPLANE			

_____ = INCHES (ARM AFT DATUM)

LOCATE THIS POINT ( ) ON THE C. G. RANGE AND WEIGHT GRAPH. SINCE THIS POINT FALLS WITHIN THE C. G. ENVELOPE THE LOADING MEETS ALL WEIGHT AND BALANCE REQUIREMENTS.

LOADING GRAPH



C.G. RANGE AND WEIGHT