

SECTION 6 WEIGHT & BALANCE/ EQUIPMENT LIST

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INTRODUCTION

This section describes the procedure for establishing the basic empty weight and moment of the airplane. Sample forms are provided for reference. Procedures for calculating the weight and moment for various operations are also provided. A comprehensive list of all Cessna equipment available for this airplane is included at the back of this section.

It should be noted that specific information regarding the weight, arm, moment and installed equipment for this airplane as delivered from the factory can only be found in the plastic envelope carried in the back of this handbook.

WARNING

IT IS THE RESPONSIBILITY OF THE PILOT TO ENSURE THE AIRPLANE IS LOADED PROPERLY. OPERATION OUTSIDE OF PRESCRIBED WEIGHT AND BALANCE LIMITATIONS COULD RESULT IN AN ACCIDENT AND SERIOUS OR FATAL INJURY.

AIRPLANE WEIGHING PROCEDURES

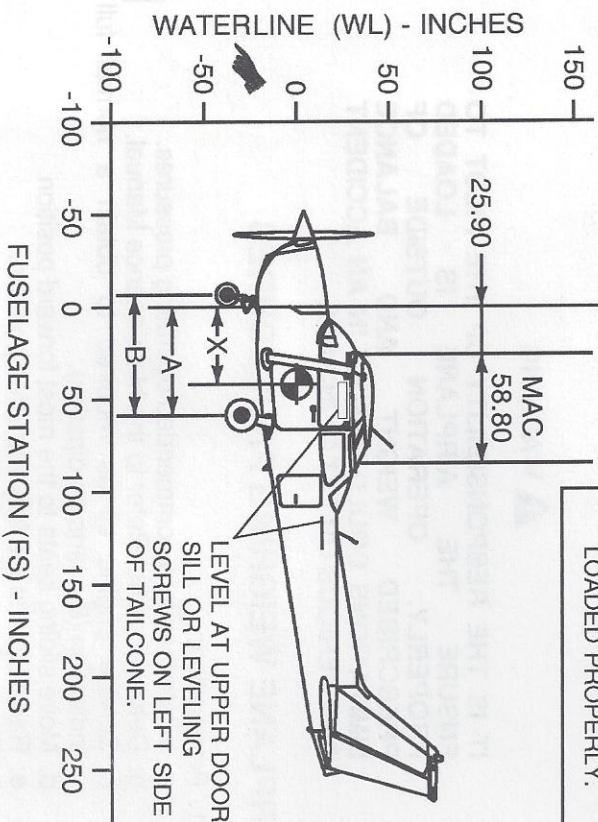
1. Preparation:
 - a. Inflate tires to recommended operating pressures.
 - b. Defuel airplane. Refer to the Maintenance Manual.
 - c. Service engine oil as required to obtain a normal full indication (8 quarts on dipstick).
 - d. Move sliding seats to the most forward position.
 - e. Raise flaps to the fully retracted position.
 - f. Place all control surfaces in neutral position.
 - g. Remove all non-required items from airplane.
2. Leveling:
 - a. Place scales under each wheel (minimum scale capacity, 500-pounds nose, 1000 pounds each main).
 - b. Deflate the nose tire and/or lower or raise the nose strut to properly center the bubble in the level (Refer to Figure 6-1).

AIRPLANE WEIGHING FORM

REFERENCE
DATUM

(FIREWALL FRONT FACE,
LOWER PORTION)
STA 0.0

NOTE
IT IS THE RESPONSIBILITY
OF THE PILOT TO ENSURE
THAT THE AIRPLANE IS
LOADED PROPERLY.



0585C1010

Figure 6-1. Airplane Weighing Form (Sheet 1 of 2)

LOCATING CG WITH AIRPLANE ON LANDING GEAR

FORMULA for Longitudinal CG:

$$(X) = (A) \cdot \frac{\text{(NOSE GEAR NET WEIGHT) () X (B)}}{\text{NOSE AND MAIN LANDING GEAR WEIGHT TOTALED ()}}$$

INCHES
AFT OF
DATUM

MEASURING A AND B

MEASURE A AND B PER PILOTS
OPERATING HANDBOOK
INSTRUCTIONS TO ASSIST IN
LOCATING CG WITH AIRPLANE
WEIGHED ON LANDING GEAR.

LOCATING PERCENT MAC

FORMULA for Percent MAC:

$$\text{CG Percent MAC} = \frac{\text{(CG Arm of Airplane)} - 25.90}{0.5880}$$

LEVELING PROVISIONS

LONGITUDINAL - LEFT SIDE OF
TAILCONE AT FS 108.00 & 142.00

AIRPLANE AS WEIGHED TABLE

POSITION	SCALE READING	SCALE DRIFT	TARE	NET WEIGHT
LEFT SIDE				
RIGHT SIDE				
NOSE				
AIRPLANE TOTAL AS WEIGHED				

BASIC EMPTY WEIGHT AND CENTER-OF-GRAVITY TABLE

ITEM	WEIGHT POUNDS	CG ARM (INCHES)	MOMENT (INCH-POUNDS /1000)
AIRPLANE (CALCULATED OR AS WEIGHED) (INCLUDES ALL UNDRAINABLE FLUIDS AND FULL OIL)			
DRAINABLE UNUSABLE FUEL AT 6.0 POUNDS PER GALLON - (3 GALLONS)	18.0	46.0	0.87
BASIC EMPTY WEIGHT			

Figure 6-1. Airplane Weighing Form (Sheet 2 of 2)

3. Weighing:
 - a. Weigh airplane in a closed hangar to avoid errors caused by air currents.
 - b. With the airplane level and brakes released, record the weight shown on each scale. Deduct the tare, if any, from each reading.
4. Measuring:
 - a. Obtain measurement A by measuring horizontally (along the airplane centerline) from a line stretched between the main wheel centers to a plumb bob dropped from the firewall.
 - b. Obtain measurement B by measuring horizontally and parallel to the airplane centerline, from center of nose wheel axle, left side, to a plumb bob dropped from the line between the main wheel centers. Repeat on right side and average the measurements.
5. Using weights from item 3 and measurements from item 4, the airplane weight and C.G. can be determined.
6. Basic Empty Weight may be determined by completing Figure 6-1.

WEIGHT AND BALANCE

The following information will enable you to operate your Cessna within the prescribed weight and center of gravity limitations. To calculate weight and balance, use the Sample Loading Problem, Loading Graph, and Center of Gravity Moment Envelope as follows:

Take the basic empty weight and moment from appropriate weight and balance records carried in your airplane, and enter them in the column titled YOUR AIRPLANE on the Sample Loading Problem.

NOTE

In addition to the basic empty weight and moment noted on these records, the C.G. arm (fuselage station) is also shown, but need not be used on the Sample Loading Problem. The moment which is shown must be divided by 1000 and this value used as the moment/1000 on the loading problem.

Use the Loading Graph to determine the moment/1000 for each additional item to be carried; then list these on the loading problem.

SAMPLE WEIGHT AND BALANCE RECORD

(CONTINUOUS HISTORY OF CHANGES IN STRUCTURE OR EQUIPMENT AFFECTING WEIGHT AND BALANCE)

AIRPLANE MODEL			SERIAL NO.			PAGE NUMBER					
DATE	ITEM NO.		DESCRIPTION OF ARTICLE OR MODIFICATION	WEIGHT CHANGE						RUNNING BASIC EMPTY WEIGHT	
	IN	OUT		ADDED (+)			REMOVED (-)			WT. (LB.)	MOMENT /1000
				WT. (LB.)	ARM (IN.)	MOMENT /1000	WT. (LB.)	ARM (IN.)	MOMENT /1000		
07/14/97	✓		AS DELIVERED							1687	66,013
02/23/01		✓	KLN89B GP\$ LRN								
02/23/01	✓		KLN94 GP\$ LRN							1687	66,01

Figure 6-2. Sample Weight and Balance Record

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NOTE

Loading Graph information for the pilot, passengers and baggage is based on seats positioned for average occupants and baggage loaded in the center of the baggage areas as shown on the Loading Arrangements diagram. For loadings which may differ from these, the Sample Loading Problem lists fuselage stations for these items to indicate their forward and aft C.G. range limitations (seat travel and baggage area limitation). Additional moment calculations, based on the actual weight and C.G. arm (fuselage station) of the item being loaded, must be made if the position of the load is different from that shown on the Loading Graph.

Total the weights and moments/1000 and plot these values on the Center of Gravity Moment Envelope to determine whether the point falls within the envelope, and if the loading is acceptable.

BAGGAGE TIE-DOWN

A nylon baggage net having tie-down straps is provided standard equipment to secure baggage on the cabin floor aft of the rear seat (baggage area 1) and in the aft baggage area (baggage area 2). Six eyebolts serve as attaching points for the net. Two eyebolts for the forward tie-down straps are mounted on the cabin floor near each sidewall just forward of the baggage door approximately at station 90; two eyebolts are installed on the cabin floor slightly inboard of each sidewall approximately at station 107; and two eyebolts are located below the aft window near each sidewall approximately at station 107. A placard on the baggage door defines the weight limitations in the baggage areas.

When baggage area 1 is utilized for baggage only, the two forward floor mounted eyebolts and the two aft floor mounted eyebolts (or the two eyebolts below the aft window) may be used, depending on the height of the baggage. When baggage is carried in the baggage area 2 only, the aft floor mounted eyebolts and the eyebolts below the aft window should be used. When baggage is loaded in both areas, all six eyebolts should be utilized.

LOADING ARRANGEMENTS

* Pilot or passenger center of gravity on adjustable seats positioned for average occupant. Numbers in parentheses indicate forward and aft limits of occupant center of gravity range.

** Arm measured to the center of the areas shown.

- NOTES:**
1. The usable fuel C.G. arm for integral tanks is located at station 48.0.
 2. The rear cabin wall (approximate station 108) or aft baggage wall (approximate station 142) can be used as convenient interior reference points for determining the location of baggage area fuselage stations.

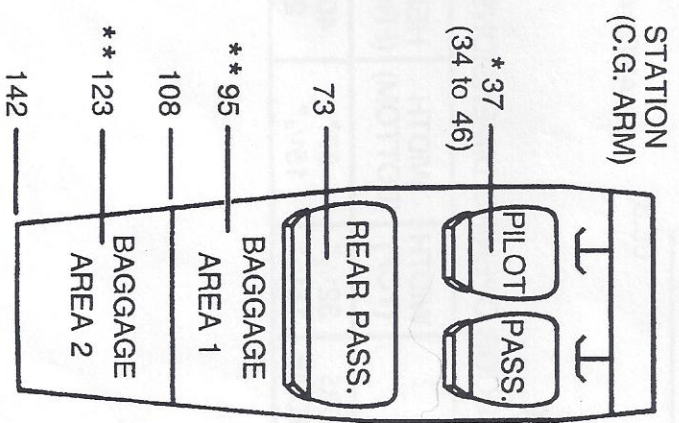
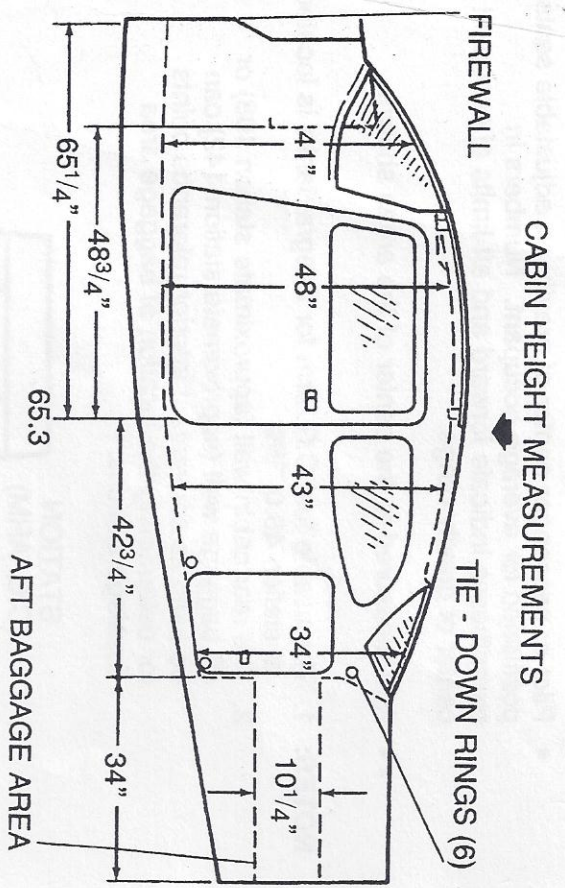


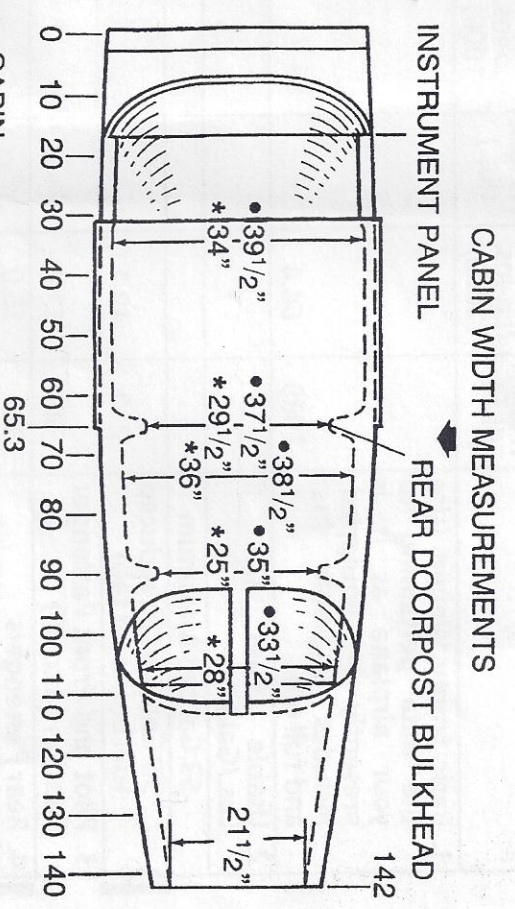
Figure 6-3. Loading Arrangements



DOOR OPENING DIMENSIONS

	WIDTH (TOP)	WIDTH (BOTTOM)	HEIGHT (FRONT)	HEIGHT (REAR)
CABIN DOORS	32 1/2"	37"	40 1/2"	39"
BAGGAGE DOOR	15 1/4"	15 1/4"	22"	21"

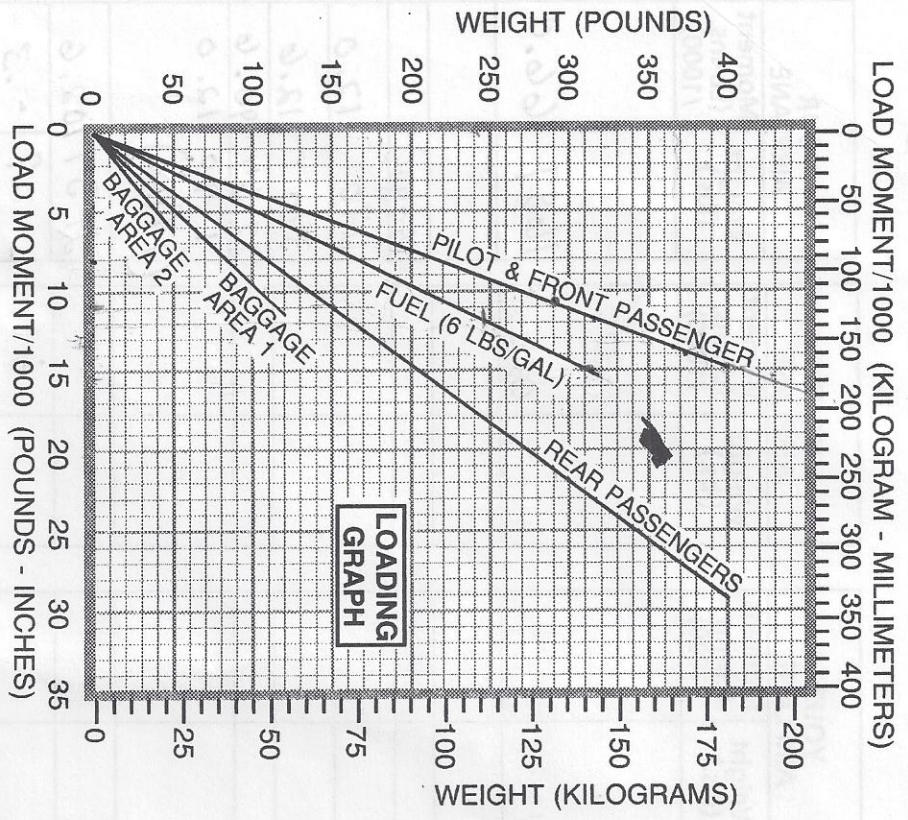
Figure 6-4. Internal Cabin Dimensions (Sheet 1 of 2)



CABIN STATIONS (C.G. ARMS)

- LWR WINDOW LINE
- * CABIN FLOOR

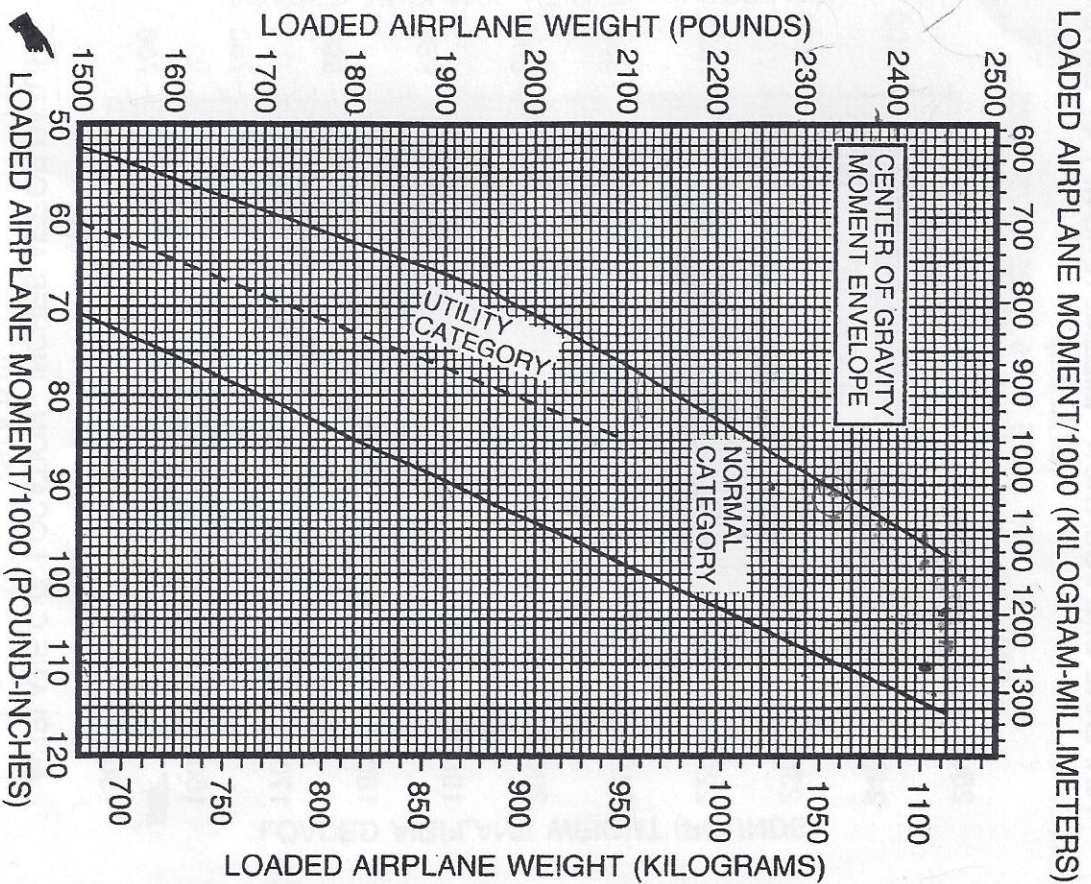
Figure 6-4. Internal Cabin Dimensions (Sheet 2 of 2)



NOTE: 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.

0585C-1006

Figure 6-6. Loading Graph



0585C-1007

Figure 6-7. Center of Gravity Moment Envelope

AIRPLANE C.G. LOCATION - MILLIMETERS AFT OF DATUM
(STA. 0.0)

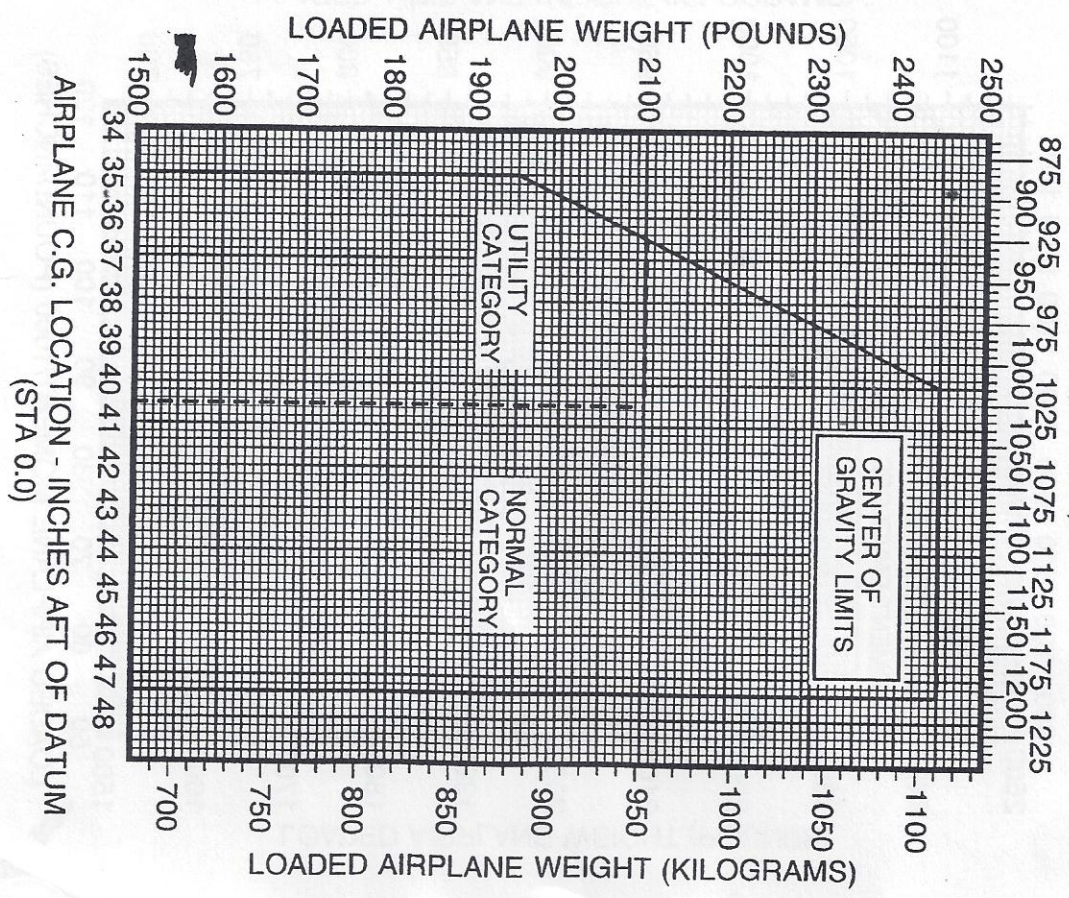


Figure 6-8. Center of Gravity Limits

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COMPREHENSIVE EQUIPMENT LIST

The following figure (Figure 6-9) is a comprehensive list of all Cessna equipment which is available for the Model 172R airplane. This comprehensive equipment list provides the following information in column form:

In the **ITEM No.** column, each item is assigned a coded number. The first two digits of the code represent the assignment of the item within the Air Transport Association Specification 100 breakdown (11 for Paint and Placards; 24 for Electrical Power; 77 for Engine Indicating, etc...). These assignments also correspond to the Maintenance Manual chapter breakdown for the airplane. After the first two digits (and hyphen), items receive a unique sequence number (01, 02, 03, etc...). After the sequence number (and hyphen), a suffix letter is assigned to identify equipment as a required item, a standard item or an optional item. Suffix letters are as follows:

- R = required items or equipment for FAA certification
- S = standard equipment items
- O = optional equipment items replacing required or standard items
- A = optional equipment items which are in addition to required or standard items

In the **EQUIPMENT LIST DESCRIPTION** column, each item is assigned a descriptive name to help identify its function.

In the **REF DRAWING** column, a Cessna drawing number is provided which corresponds to the item.

NOTE

If additional equipment is to be installed, it must be done in accordance with the reference drawing, service bulletin or a separate FAA approval.

In the **WT LBS** and **ARM INS** columns, information is provided on the weight (in pounds) and arm (in inches) of the equipment item.

NOTES

Unless otherwise indicated, true values (not net change values) for the weight and arm are shown. Positive arms are distances aft of the airplane datum; negative arms are distances forward of the datum.

Asterisks (*) in the weight and arm column indicate complete assembly installations. Some major components of the assembly are listed on the lines immediately following. The sum of these major components does not necessarily equal the complete assembly installation.

ITEM No.	EQUIPMENT LIST DESCRIPTION	REF DRAWING	WT LBS	ARM INS.
11-01-R	11 - PLACARDS AND MARKINGS IFR DAY & NIGHT LIMITATIONS PLACARD	0605087-3	0.0	43.0
11-02-S	PAINT, OVERALL EXTERIOR - OVERALL WHITE - COLORED STRIP DECALS	0604051	19.2*	95.4*
			18.4	93.6
			0.8	135.9
21-01-S	21 - AIR CONDITIONING REAR SEAT AIR VENTS	0513575-1	1.7	60.0
21-02-S	CABIN HEATER SYSTEM	0554001-9	2.5	-4.0
22-02-A	22 - AUTO FLIGHT SINGLE AXIS AUTO-PILOT (KAP 140) -AUTO-PILOT COMPUTER -ROLL ACTUATOR, WITH MOUNT -DIRECTIONAL GYRO (EXCHANGE) -CONFIGURATION MODULE -CABLE ASSEMBLY	065-00176-2602 065-00179-0300	8.6* 2.6	36.8* 12.4
			3.6	68.5
			0.5	14.0
			0.1	12.0
			1.4	20.8
23-01-S	23 - COMMUNICATIONS STATIC DISCHARGE WICKS (SET OF 10) NAV/COM #1 INSTALLATION NO GS	0501048-1 9390404-1	0.4 7.9*	143.2 52.7*
23-02-S	- KX 155A BENDIX/KING NAV/COM W/ GS - KI 208 NAV INDICATOR - VHF COM ANTENNA - COM ANTENNA CABLE - OMNI NAV ANTENNA	066-01032-0201 066-03056-0002 9360113-8 9321100-1	3.5 1.0 0.5 0.4	12.5 13.9 61.2 26.5
			0.5	253.4
			1.5	123.8
			0.5*	53.2*
			6.5*	17.1*
23-03-A	NAV/COM INSTALLATION WITH GS - KX 155A BENDIX/KING NAV/COM W/GS - KI 209 NAV INDICATOR - VHF ANTENNA - ANTENNA COUPLER - HARDWARE AND CABLE ASSEMBLY - CO-AX, COM ANTENNA	9390404-1 066-01032-0201 066-03056-0002 9360113-9 9330403-1 9321101-1	4.0 1.2 0.5 0.2 0.2 0.4	12.5 13.9 61.2 14.0 14.0 26.5
			2.5*	19.7*
			1.7	14.8
			0.8	30.0
			11.3*	27.4*
			0.5	130.7
			7.9	26.5
			0.2	18.0
			1.2	6.5
			0.4	16.5
23-04-S	AUDIO/INTERCOM/MARKER BEACON INSTL - KMA 26 AUDIO SWITCH PANEL - HARDWARE AND CABLE ASSEMBLY BASIC AVIONICS (USED WITH #1 NAV/COM)	3900003-1 066-01155-0101 3900003-2 3900003-1 3960188-1	2.5* 1.7 0.8 11.3* 0.5	19.7* 14.8 30.0 27.4* 130.7
23-05-S	- MARKER BEACON ANTENNA - FUSELAGE AUDIO WIRING - MICROPHONE - HANDHELD - AVN COOLING FAN INSTL - BASIC CIRCUIT BREAKER PANEL		0.5 7.9 0.2 1.2	130.7 26.5 18.0 6.5

Figure 6-9. Equipment List Description (Sheet 1 of 7)

ITEM No.	EQUIPMENT LIST DESCRIPTION	REF DRAWING	WT LBS	ARM INS.
24-01-R	24 - ELECTRICAL POWER - AVN GROUND INSTL - MISC HARDWARE	3930357	0.2	15.0
24-02-R	ALTERNATOR, 28 VOLT 60 AMP BATTERY, 24 VOLT, 12.75 A.H. MAINFOLD TYPE	9910591-5 C614002-0101	10.0 23.2	-29.0 -5.0
24-03-R	POWER JUNCTION BOX (PRECISION AIRMOTIVE) - ALTERNATOR CONTROL UNIT - MASTER CONTACTOR - STARTER CONTACTOR - AMMETER TRANSDUCER	MC01-2A AC2101 X61-0007 X61-0012 CS 3100	6.4* 0.2 0.7 0.7 0.1	1.0* 1.0 1.0 1.0 1.0
24-04-S	BASIC AVIONICS KIT INSTALLATION - AVIONICS POWER AND BUS BAR	3900002-1 9390299-1	3.5* 0.3	13.1* 17.0
25-01-R	25 - EQUIPMENT/FURNISHINGS SEAT, PILOT, VERTICAL ADJUST, CLOTH	0514211-1	34.3	41.5
25-02-O	SEAT, PILOT, VERTICAL ADJUST, LEATHER	0514211-5	35.0	41.5
25-03-O	SEAT, PILOT, VERTICAL ADJUST, LEATHER/VINYL	0514211-8	34.8	41.5
25-04-S	SEAT, FRONT PASSENGER, VERTICAL ADJUST, CLOTH	0514211-1	34.3	41.5
25-05-O	SEAT, FRONT PASSENGER, VERTICAL ADJUST, LEATHER	0514211-5	35.0	41.5
25-06-O	SEAT, FRONT PASSENGER, VERTICAL ADJUST, LEATHER/VINYL	0514211-8	34.8	41.5
25-07-S	SEAT, REAR, ONE PIECE BACK CUSHION, CLOTH	0514219-1	43.3	79.5
25-08-O	SEAT, REAR, ONE PIECE BACK CUSHION, LEATHER	0514219-2	44.7	79.5
25-09-O	SEAT, REAR, ONE PIECE BACK CUSHION, LEATHER/VINYL	0514219-3	44.3	79.5
25-10-R	SEAT BELT AND SHOULDER HARNESS, INERTIA REEL, PILOT AND FRONT PASSENGER	504516-401-8013	5.2	54.0
25-11-O	SEAT BELT AND SHOULDER HARNESS, MANUAL ADJUST, PILOT AND FRONT PASSENGER	504851-401-8013	3.5	54.0
25-11-S	SEAT BELT AND SHOULDER HARNESS, INERTIA REEL, REAR SEAT (SET OF 2)	504516-403-8013	5.2	90.0
25-12-O	SEAT BELT AND SHOULDER HARNESS, MANUAL ADJUST, REAR SEAT (SET OF 2)	504851-403-8013	3.5	90.0
25-13-S	PADDED GLARESHIELD	0514230-1	1.2	21.0
25-14-S	SUN VISORS	0514166-2	1.1	32.8
25-15-S	BAGGAGE RETAINING NET	2015009-7	0.5	95.0
25-16-S	CARGO TIE DOWN RINGS	0515055-6	0.2	95.0
25-17-S	PILOTS OPERATING CHECKLIST (STOWED IN INSTRUMENT PANEL MAP CASE)	0500832-1	0.3	14.3

Figure 6-9. Equipment List Description (Sheet 2 of 7)

ITEM No.	EQUIPMENT LIST DESCRIPTION	REF DRAWING	WT LBS	ARM INS.
25-18-R	PILOT'S OPERATING HANDBOOK AND FAA APPROVED AIRPLANE FLIGHT MANUAL (STOWED IN PILOT'S SEAT BACK CASE)	0500832-1	1.2	50.0
25-19-S	FUEL SAMPLING CUP	S2107-1	0.1	14.3
25-20-S	TOW BAR, NOSE GEAR (STOWED)	0501019-1	1.7	124.0
25-21-R	EMERGENCY LOCATOR TRANSMITTER INSTL - ELT TRANSMITTER 3000-11 - ANTENNA AND CABLE ASSY, 3003-45 - HARDWARE	3940401-1 3940401-1 3940401-1	3.1* 0.5 0.1	101.0* 122.0 118.3
26-01-S	26 - FIRE PROTECTION FIRE EXTINGUISHER INSTALLATION - FIRE EXTINGUISHER - MOUNTING CLAMP	0501011-2 C421001-0201 C421001-0202	5.3* 4.8 0.5	43.8* 44.0 42.2
27-01-S	27 - FLIGHT CONTROLS DUAL CONTROLS INSTL, RIGHT SEAT - CONTROL WHEEL, RH - RUDDER & BRAKE PEDAL INSTL, RH CONTROL WHEEL MAP LIGHT AND MIC. SWITCH INSTL (INCLUDES PANEL MOUNTED AUXILIARY MIC. JACK)	0506008-1 0513576-2 0510402-16 0560059-1	5.5* 2.0 1.1 0.2	12.4* 26.0 6.8 22.0
28-01-R	28 - FUEL FUEL QUANTITY INDICATORS, LEFT & RIGHT AUXILIARY FUEL PUMP	S3281-1 5100-00-1	0.4 1.9	14.4 9.5
31-01-S	31 - INDICATING/RECORDING SYSTEM CLOCK/OAT INDICATOR, DIGITAL HOUR RECORDER "HOBBS TIME" ANNUNCIATOR	M803B-2-0 C664503-0103 90-44001-1	0.7 0.5* 0.5	16.5 9.1* 16.0
31-03-R	STALL WARNING INDICATOR - PNEUMATIC	0523112-2	0.4	28.5
32-01-R	32 - LANDING GEAR WHEEL BRAKE AND TIRE, 6.00 X 6 MAIN - WHEEL ASSY, CLEVELAND (EACH) - BRAKE ASSY, CLEVELAND (EACH) - TIRE, 4-PLY BLACKWALL (EACH) - TUBE (EACH)	0541200-7,-8 C163001-0104 C163030-0111 C262003-0101 C262023-0102	34.4* 6.2 1.8 7.9 1.3	57.8* 58.2 54.5 58.2 58.2

Figure 6-9. Equipment List Description (Sheet 3 of 7)

ITEM No.	EQUIPMENT LIST DESCRIPTION	REF DRAWING	WT LBS	ARM INS.
32-03-R	WHEEL AND TIRE, 5.00 X 5 NOSE - WHEEL ASSY, CLEVELAND - TIRE, 6-PLY BLACKWALL - TUBE	0543062-17 1241156-12 C262003-0202 C262023-0101	9.5* 3.5 4.6 1.4	-6.8* -6.8 -6.8 -6.8
32-03-A	WHEEL FAIRINGS AND INSTALLATION - NOSE WHEEL FAIRING - MAIN WHEEL FAIRINGS (SET OF 2) - BRAKE FAIRINGS (SET OF 2) - MOUNTING PLATE (SET OF 2)	0541225-1 0543079-3 0541223-1,-2 0541224-1,-2 0541220-1,-2	16.5* 3.5 10.1 1.1 0.8	46.1* -3.5 61.1 55.6 59.5
33-01-S	33 - LIGHTS COURTESY LIGHTS UNDER WING (SET OF 2) NAVIGATION LIGHT DETECTORS (SET OF 2) FLASHING BEACON LIGHT ON VERTICAL FIN TIP STROBE LIGHT INSTALLATION ON WING TIPS LANDING AND TAXI LIGHT INSTL IN WINGS	0521101-8 0701013-1,-2 0506009-6 0501027-6 0523029-2,-7	0.5 0.0 1.4 3.4 2.2	61.0 40.8 204.7 43.3 25.3
33-02-S	34 - NAVIGATION INDICATOR, AIRSPEED ALTERNATE STATIC AIR SOURCE ALTIMETER WITH 20 FT. MARKINGS, INCHES OF MERCURY ALTIMETER WITH 20 FT. MARKINGS, FEET & MILLIBAR BLIND ALTITUDE ENCODER INSTL COMPASS INSTL, MAGNETIC GYRO, INSTALLATION (REQUIRES 37-01-S)	S3325-1 0501017-1 S3328-1 S3371-1 3930402-1 0513262-2 0501135-1 S3330-1 S33226-1 0501135-1 S3291-1	0.6 0.2 0.9 0.9 0.9 0.5 6.0* 2.3 2.1 1.5 1.2	16.2 15.5 14.0 14.0 11.0 14.0 13.0* 14.0 14.0 10.0 14.7
34-04-O	TURN COORDINATOR INDICATOR FOR AUTO PILOT	S3227-1	0.8	15.7
34-06-R	VERTICAL SPEED INDICATOR	3930404-1	10.4*	26.9*
34-07-S	ADF INSTALLATION - KR 87 ADF RECEIVER - KI 227 ADF INDICATOR - ADF ANTENNA - ADF CABLE ASSEMBLY	066-01072-0014 066-03063-0000 3960187-1 3922102-1	3.2 0.7 4.2 2.3	12.1 15.9 39.3 29.0
34-08-S	GPS INSTALLATION - KING GPS-VFR, KLN-89 - GPS ANTENNA - GPS CABLE ASSEMBLY	3930404-1 066-01148-1111 3960190-1 3928101-1	4.4* 3.3 0.3 0.8	15.3* 12.4 43.5 14.1

Figure 6-9. Equipment List Description (Sheet 4 of 7)

ITEM No.	EQUIPMENT LIST DESCRIPTION	REF DRAWING	WT LBS	ARM INS.
34-12-S	MODE C TRANSPONDER INSTL - KT 76C TRANSPONDER - TRANS CAL BLIND ENCODER - TRANSPONDER ANTENNA - HARDWARE AND CABLE ASSEMBLY HORIZONTAL SITUATION INDICATOR INSTL (NET WT INCREASE) (REQUIRED 37-01-S)	3930404-1 066-01165-0101 3930402-1 3960191-1 3923102-1 3900016-1	4.1* 2.4 0.8 0.2 0.6 15.3*	18.7* 13.5 10.9 85.3 28.9 84.1*
34-13-O	GYRO SLAVING ACCESSORY - FLUX DETECTOR INSTL IN LH WING - REMOTE DIRECTION GYRO - SLAVED - NAV CONVERTER INSTL - WIRING - STD GYRO INSTL (REMOVED) - GYRO INSTL FOR HSI INSTALLED - REMOVE #1 NAV INDICATOR	066-03046-0007 071-01242-0006 3940364-1 3940365-1 3940366-1 3900016 0501135 0501171-1	3.4 0.3 0.7 5.1 1.6 8.0 -13.6 11.0 -1.2	13.4 15.8 62.6 112.5 117.0 60.7 3.6 1.6 13.9
37-01-S	37 - VACUUM VACUUM SYSTEM, ENGINE DRIVEN, DUAL - VACUUM PUMP, AIRBORNE 211CC - VACUUM PUMP, AIRBORNE 212CW - COOLING SHROUD, AIRBORNE 2CDH - COOLING SHROUD, AIRBORNE 2CDH - FILTER INSTALLATION - VACUUM GAGE/AMMETER - VACUUM RELIEF VALVE - MANIFOLD	E211CC E212CW 2CDH 2CDH 1201075-2 S3280-1 2H3-48 1H5-25 S3280-1 0506008-1	5.4* 1.9 1.9 0.1 0.1 0.3 0.3 0.3 0.5 0.3 0.0	-1.8* -6.5 -3.9 -6.5 -3.9 5.3 14.3 4.8 -0.2 14.3 16.0
37-02-R	VACUUM GAGE/AMMETER LOW VACUUM WARNING LIGHT, VACUUM PUMP	S3280-1 0506008-1	0.3 0.0	14.3 16.0
37-03-S	53 - FUSELAGE REFUELING STEPS AND HANDLE INSTL	0513415-2	1.7	16.3
53-01-S	56 - WINDOWS WINDOW, HINGED RIGHT DOOR, OPENABLE	0517001-40	5.8*	48.5*
56-01-S	WINDOW, HINGED LEFT DOOR, OPENABLE	0517001-39	5.8*	48.5*
56-02-R	57 - WINGS HEAVY DUTY FLAPS, (WT SHOWN, NET CHNG) - TWO (2) FLAPS (EXCHANGED) - ONE (1) FLAP (EXCHANGED)	0523302 0523302	2.2 1.1	83.2 83.2

Figure 6-9. Equipment List Description (Sheet 5 of 7)

ITEM No.	EQUIPMENT LIST DESCRIPTION	REF DRAWING	WT LBS	ARM INS.
61-01-R	61 - PROPELLER PROPELLER ASSY, FIXED PITCH - PROPELLER, 75 INCH MCCAULEY - PROP SPACER ADAPTER, 3.5 INCH MCCAULEY	0550320-14 1C235/LFA7570	38.8* 35.0 3.6	-38.2* -38.4 -36.0
61-02-R	SPINNER INSTALLATION, PROPELLER - SPINNER DOME ASSEMBLY - FWD SPINNER BULKHEAD - AFT SPINNER BULKHEAD	0550320-14 0550367-1 0552231-2 0550921-10	1.8* 1.0 0.3 0.4	-41.0* -42.6 -40.8 -37.3
71-01-R	71 - POWERPLANT FILTER, AIR INTAKE, DONALDSON WINTERIZATION KIT INSTL (INSTALLED ARM SHOWN)	P198281 0501128-3	0.3 0.8*	-27.5 -20.3*
71-02-S	- BREATHER TUBE INSTALLATION - COWL INLET COVERS (INSTALLED) - COWL INLET COVERS (STOWED) ENGINE, LYCOMING IO-360-L2A	0552011 0552229-3,-4 0552229-3,-4 0550359-2	0.4 0.3 0.3 297.8*	-13.8 -32.0 95.0 -18.6*
71-03-R	- FUEL INJECTOR, PAC RSA-5AD1 - MAGNETOS & HARNESS, SLICK 4371 (SET OF 2) - OIL FILTER AND ADAPTER - SPARK PLUGS - STARTER, LAMAR 31B22207		7.6 9.0 2.5 1.9 11.2	-13.9 -5.0 -18.5 -13.9 -23.0
73-01-S	73 - ENGINE FUEL & CONTROL EGT/FUEL FLOW INDICATOR	S3277-4	0.6	7.8
77-01-R	77 - ENGINE INDICATING TACHOMETER, RECORDING	S3329-1	1.0	12.1
78-01-R	78 - EXHAUST EXHAUST SYSTEM INSTALLATION - MUFFLER & TAILPIPE WELD ASSY - SHROUD ASSY, MUFFLER HEATER	0554012-1 0554011-2 0554001-9	16.3* 4.6 0.8	-20.0* -22.7 -22.7
79-01-R	79 - OIL OIL COOLER INSTALLATION - OIL COOLER, STEWART WARNER OIL PRESSURE & TEMPERATURE INDICATORS	0550359-2 8406-R S3279-1	3.3* 2.3 0.4	-11.0* -11.0 16.5
79-02-R	98 - AVIONICS PACKAGE OPTIONS STANDARD AVIONICS PACKAGE - 23-05-S BASIC AVN KIT INSTL - 23-04-S AUDIO/INTERCOMM/MARKER BEACON INSTL	3900003-1 3900002-1 3930404-1	28.0* 11.3 2.5	32.2* 27.4 19.7

Figure 6-9. Equipment List Description (Sheet 6 of 7)

ITEM No.	EQUIPMENT LIST DESCRIPTION	REF DRAWING	WT LBS	ARM INS.
	- 23-02-S NAV/COM INSTL	3930404-1	7.9	52.7
	- MODE C TRANSPONDER INSTL (34-11-S)	3930404-1	4.5	15.2
98-02-A	TRAINER AVIONICS PACKAGE (NET CHG OVER STD AVN PKG)	3900004-1	21.3*	21.5*
	- 23-03-A NAV/COM WITH GLIDESLOPE	3930404-1	6.5	17.1
	- 34-09-A ADF INSTALLATION	3930404-1	10.4	26.9
	- 34-10-A GLOBAL POSITIONING SYSTEM (GPS)		4.4	15.3
98-03-A	NAV II PACKAGE (NET CHG OVER STD AVN PKG)	3900005-1	29.9*	25.9*
	- 98-02-A TRAINER AVN PKG		21.3	21.5
	- 22-02-A SINGLE AXIS AUTOPILOT		8.6	36.8
	- GPS INSTALLATION	3930404-1	4.4	17.6
98-04-A	NAV II PACKAGE WITH HSI (NET CHG OVER STD AVN PKG)	3900016-1	45.2*	45.6*
	- 98-03-A NAV II PACKAGE		29.9	25.9
	- 34-12-O HORIZONTAL SITUATION INDICATOR (HSI) GYRO INSTL		15.3	84.1

Figure 6-9. Equipment List Description (Sheet 7 of 7)

Aircraft Weight and Balance Revision Form

Date: 4-17-2012

Aircraft	
Tail No:	N920CF
Make:	CESSNA
Model:	172R
Serial:	17280112
Time:	198.7
TCD No:	

Registered Owner	
Name:	CLEARWATER AIRCRAFT INC
Address:	670 ISLAND WAY UNIT 606 CLEARWATER, FLORIDA 33767

Weight		CG Range	
Maximum Weight:	2,450.00	FWD:	AFT:

As Received			
Previous Weight & Balance Date : 3-08-2012 ²⁰⁰⁵ <i>(FC)</i>			
Empty Weight:	Useful Load:	Empty Weight CG:	Moment:
1,670.50	779.50	39.06	65,247.13

Item	Weight	Arm	Moment
REMOVED-GILL AIRCRAFT BATTERY	-28.0	-5.00	140.00
INSTALLED-CONCORDE BATTERY RG24-15M	29.5	-5.00	-147.50
			0.00
			0.00
			0.00
			0.00
			0.00
			0.00

New			
Empty Weight:	Useful Load:	Empty Weight CG:	Moment:
1,672.00	778.00	39.02	65,239.63

Notes:

As Calculated
 As Weighed

Prepared By: BENDER AVIATION SERVICES INC.

Signature: *Jeff Bender*

Printed Name: JEFF BENDER

Repair Agency License No: 3162764