SECTION VI
WEIGHT AND BALANCE/EQUIPMENT LIST
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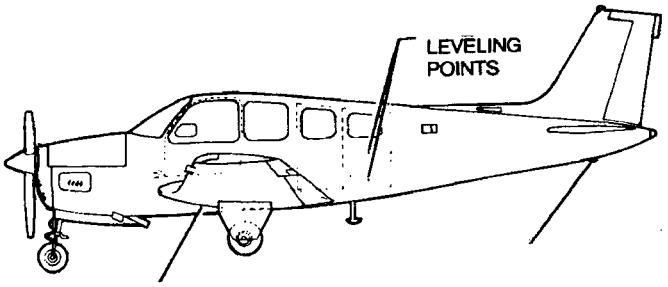
WEIGHING INSTRUCTIONS



FRONT JACK POINTS
F.S. 83.1

REAR JACK POINT
F.S. 271.0 A36-603-48

Periodic weighing of the Bonanza A36 may be required to keep the Basic Empty Weight current. All changes to the airplane affecting weight and balance are the responsibility of the airplane's owner and/or operator.

1. Three jack points are provided for weighing: two on the wing front spar at Fuselage Station 83.1 and one on the aft fuselage at Fuselage Station 271.0.
2. Fuel should be drained prior to weighing. Tanks are drained from the regular drain ports with the airplane in static ground attitude. When tanks are drained, 1.5 pounds of trapped fuel remain in the airplane at Fuselage Station 76.0. The remainder of the unusable fuel to be added to a drained system is 34.5 pounds at Fuselage Station 79.1.
3. Engine oil must be at the full level or completely drained. Total engine oil when full is 26 pounds at Fuselage Station 14.5. (Includes 3 pounds trapped.)
4. To determine airplane configuration at time of weighing, installed equipment is checked against the airplane equipment list or superseding forms. All installed equipment must be in its proper place during weighing.

5. At the time of weighing, the airplane must be level both longitudinally and laterally, and the landing gear must be fully extended. Leveling screws are located on the left side of the fuselage at approximately Fuselage Station 152.25. Longitudinally level attitude is determined with a plumb bob. Laterally level attitude is obtained when the vertical distance from each wing tip to the floor is equal.
6. Measurement of the reaction arms for a wheel weighing is made using a steel measuring tape. Measurements are taken with the airplane level on the scales, from the reference (a plumb bob dropped from the center of either main jack point) to the axle center line of the main gear and then to the nose wheel axle center line. The main wheel axle center line is best located by stretching a string across from one main wheel to the other. All measurements are to be taken with the tape level with the hangar floor and parallel to the fuselage center line. The locations of the wheel reactions will be approximately at Fuselage Station 96.7 for main wheels and Fuselage Station 2.7 for the nose wheel.
7. Jack point weighings are accomplished by placing scales at the jack points specified in step 1 above. Since the center of gravity of the airplane is forward of Fuselage Station 83.1, the tail reaction of the airplane will be in an up direction. This can be measured on regular scales by placing ballast of approximately 200 pounds on the scales to which the aft weighing point is attached by cable of adjustable length. The up reaction will then be total ballast weight minus the scale reading and is entered in the weighing form as a negative quantity.
8. Weighing should always be made in an enclosed area which is free from air currents. The scales used should be properly calibrated and certified.

BASIC EMPTY WEIGHT AND BALANCE

BONANZA A36 SER. NO _____ REG. NO _____ DATE _____

STRUT POSITION - NOSE	MAIN	JACK POINT LOCATION		PREPARED BY
EXTENDED	1.8	96.0	*FORWARD*	83.1	*Company* _____
COMPRESSED	3.1	97.0	*AFT*	271.0	*Signature* _____

REACTION WHEEL - JACK POINTS	SCALE READING	TARE	NET WEIGHT	ARM	MOMENT
LEFT MAIN					
RIGHT MAIN					
NOSE OR TAIL					
TOTAL (AS WEIGHED)					
Space below provided for additions and subtractions to as - weighed condition					
ADD: DRAINABLE USABLE FUEL			34.5	79.1	2729
BASIC EMPTY WEIGHT					

NOTE: Basic Empty Weight includes full engine oil and unusable fuel.

E#06C
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NOTE

Each new airplane is delivered with a completed sample loading, basic empty weight and center of gravity, and equipment list, all pertinent to that specific airplane. It is the owner's responsibility to ensure that changes in equipment are reflected in a new weight and balance and in an addendum to the equipment list. There are many ways of doing this; it is suggested that a running tally of equipment changes and their effect on basic empty weight and CG is a suitable means for meeting both requirements.

The current equipment list and basic empty weight and CG information must be retained with the airplane when it changes ownership. Raytheon Aircraft cannot maintain this information; the current status is known only to the owner.

WEIGHT AND BALANCE RECORD

SERIAL NO. _____ REGISTRATION NO. _____ PAGE NO. _____

DATE	ITEM NO.		DESCRIPTION OF ARTICLE OR CHANGE	WEIGHT CHANGE ADDED (+) OR REMOVED (-)			RUNNING BASIC EMPTY WEIGHT	
	IN	OUT		WT (LBS)	ARM (IN.)	MOM / 100	WT (LBS)	MOM / 100

BT04946

WEIGHT AND BALANCE RECORD

SERIAL NO. _____ REGISTRATION NO. _____ PAGE NO. _____

DATE	ITEM NO.		DESCRIPTION OF ARTICLE OR CHANGE	WEIGHT CHANGE ADDED (+) OR REMOVED (-)			RUNNING BASIC EMPTY WEIGHT	
	IN	OUT		WT (LBS)	ARM (IN.)	MOM / 100	WT (LBS)	MOM / 100

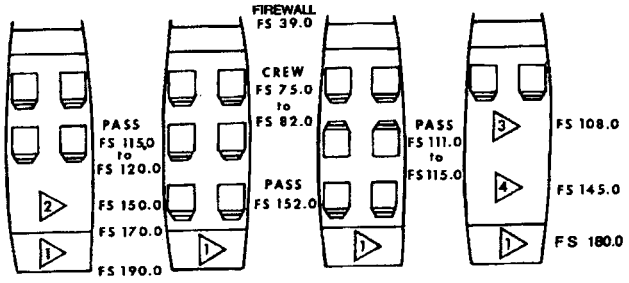
BT04946

LOADING INSTRUCTIONS

It is the responsibility of the airplane operator to ensure that the airplane is properly loaded. At the time of delivery, Raytheon Aircraft provides the necessary weight and balance data to compute individual loadings. All subsequent changes in airplane weight and balance are the responsibility of the airplane owner and/or operator.

The basic empty weight and moment of the airplane at the time of delivery are shown on the airplane Basic Empty Weight and Balance form. Useful load items which may be loaded into the airplane are shown on the Useful Load Weight and Moment tables. The minimum and maximum moments are indicated by the heavy border line on the Moment Limits vs Weight graph. These moments correspond to the forward and aft center of gravity flight limits for a particular weight. All moments are divided by 100 to simplify computations.

SEATING, BAGGAGE AND EQUIPMENT ARRANGEMENTS



NOTE

The floor structure load limit is 100 pounds per square foot, except for the area between the front and rear spars, where the floor structure load limit is 50 pounds per square foot.

1 MAXIMUM WEIGHT 70 POUNDS INCLUDING EQUIPMENT AND BAGGAGE.

2 MAXIMUM WEIGHT 400 POUNDS INCLUDING EQUIPMENT AND BAGGAGE.

3 MAXIMUM WEIGHT 200 POUNDS FORWARD OF REAR SPAR INCLUDING EQUIPMENT AND BAGGAGE WITH 3rd AND 4th SEATS REMOVED.

4 MAXIMUM WEIGHT 400 POUNDS AFT OF REAR SPAR INCLUDING EQUIPMENT AND BAGGAGE WITH 3rd, 4th, 5th AND 6th SEATS REMOVED.

All baggage must be secured with an approved retention system.

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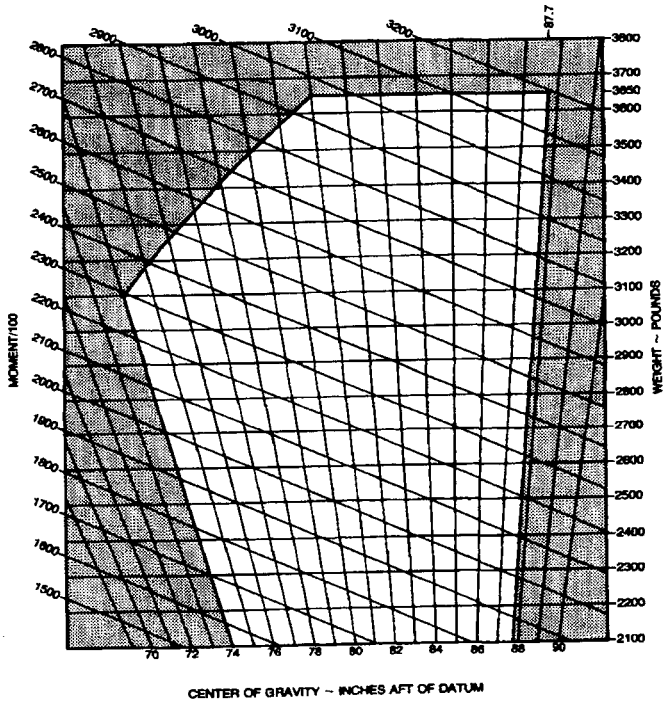
MOMENT LIMITS VS WEIGHT



Envelope Based On The Following Weight And
Center Of Gravity Limit Data (Landing Gear Down)

Weight Condition	Forward C.G. Limit	Aft C.G. Limit
3650 Lb. (Max. Take-Off or Landing)	81.0	87.7
3100 Lb. or Less	74.0	87.7

A36-601-171

COMPUTING PROCEDURE

1. Record the Basic Empty Weight and Moment from the Basic Empty Weight and Balance form (or from the latest superseding form) under the Basic Empty Condition block. The moment must be divided by 100 to correspond to Useful Load Weights and Moments tables.
2. Record the weight and corresponding moment from the appropriate table of each of the useful load items (except fuel) to be carried in the airplane.
3. Total the weight column and moment column. The SUBTOTALS are the Zero Fuel Condition.
4. Determine the weight and corresponding moment for the fuel loading to be used. This fuel loading includes fuel for the flight, plus that required for start, taxi, and run up. Add the Fuel Loading Condition to Zero Fuel Condition to obtain the SUBTOTAL Ramp Condition.
5. Subtract the fuel to be used for start, taxi, and run up to arrive at the SUBTOTAL Take-off Condition.
6. Subtract the weight and moment of the fuel in the incremental sequence in which it is to be used from the take-off weight and moment. The Zero Fuel Condition, the Take-off Condition, and the Landing Condition moments must be within the minimum and maximum moments shown on the Moment Limits vs Weight graph for that weight. If the total moment is less than the minimum moment allowed, useful load items must be shifted aft or forward load items reduced. If the total moment is greater than the maximum moment allowed, useful load items must be shifted forward or aft load items reduced. If the quantity or location of load items is changed, the calculations must be revised and the moments rechecked.

WEIGHT AND BALANCE LOADING FORM

BONANZA _____ DATE _____

SERIAL NO. _____ REG NO. _____

ITEM	WEIGHT	MOM/100
1. BASIC EMPTY CONDITION		
2. FRONT SEAT OCCUPANTS		
3. 3rd and 4th SEAT OCCUPANTS		
4. 5th SEAT & 6th SEAT OCCUPANTS		
5. BAGGAGE		
6. BAGGAGE		
7. SUB TOTAL ZERO FUEL CONDITION		
8. FUEL LOADING		
9. SUB TOTAL RAMP CONDITION		
10. *LESS FUEL FOR START, TAXI, AND RUN UP		
11. SUB TOTAL TAKE-OFF CONDITION		
12. LESS FUEL TO DESTINATION		
13. LANDING CONDITION		

BT04942

*Fuel for start, taxi, and run up is normally 13 lbs at an average mom/100 of 10.

WEIGHT AND BALANCE LOADING FORM

BONANZA _____ DATE _____

SERIAL NO. _____ REG NO. _____

ITEM	WEIGHT	MOM/100
1. BASIC EMPTY CONDITION		
2. FRONT SEAT OCCUPANTS		
3. 3rd and 4th SEAT OCCUPANTS		
4. 5th SEAT & 6th SEAT OCCUPANTS		
5. BAGGAGE		
6. BAGGAGE		
7. SUB TOTAL ZERO FUEL CONDITION		
8. FUEL LOADING		
9. SUB TOTAL RAMP CONDITION		
10. *LESS FUEL FOR START, TAXI, AND RUN UP		
11. SUB TOTAL TAKE-OFF CONDITION		
12. LESS FUEL TO DESTINATION		
13. LANDING CONDITION		

BT04942

*Fuel for start, taxi, and run up is normally 13 lbs at an average mom/100 of 10.

USEFUL LOAD WEIGHTS AND MOMENTS

OCCUPANTS								
WEIGHT	FRONT SEATS		STANDARD SEATING			CLUB SEATING		
			3rd & 4TH SEATS FWD FACING		5TH & 6TH SEATS	3RD & 4TH SEATS AFT FACING		5TH & 6TH SEATS
	FWD. POS. ARM 75	AFT POS. ARM 82	FWD. POS. ARM 115	AFT POS. ARM 120	ARM 152	FWD. POS. ARM 111	AFT POS. ARM 115	ARM 152
	MOMENT/100							
100	75	82	115	120	152	111	115	152
110	82	90	126	132	167	122	126	167
120	90	98	138	144	182	133	138	182
130	98	106	150	156	198	144	150	198
140	105	114	161	168	212	155	161	212
150	112	123	172	180	228	166	172	228
160	120	131	184	192	243	178	184	243
170	128	139	196	204	258	188	196	258
180	135	148	207	216	274	200	207	274
190	142	156	218	228	288	210	218	288
200	150	164	230	240	304	222	230	304

BT04943

NOTE: Occupant Positions for Adjustable Seats are shown at their extreme positions. Intermediate Positions will require interpolation of the Moment/100 Values.

USEFUL LOAD WEIGHTS AND MOMENTS

	BAGGAGE			
WT	BEHIND 3rd and 4th SEATS ARM 150	AFT COMPT ARM 180	FORWARD OF SPAR (3rd and 4th SEATS REMOVED) ARM 108	AFT OF SPAR (3rd, 4th & 5th, 6th SEATS REMOVED) ARM 145
	MOMENT/100			
10	15	18	11	15
20	30	36	22	29
30	45	54	32	44
40	60	72	43	58
50	75	90	54	73
60	90	108	65	87
70	105	126	76	102
80	120		86	116
90	135		97	131
100	150		108	145
110	165		119	160
120	180		130	174
130	195		140	189
140	210		151	203
150	225		162	218
160	240		173	232
170	255		184	247
180	270		194	261
190	285		205	276
200	300		216	290
220	330			319
240	360			348
260	390			377
280	420			406
300	450			435
320	480			464
340	510			493
360	540			522
380	570			551
400	600			580

BT04944

USEFUL LOAD WEIGHTS AND MOMENTS

USABLE FUEL

LEADING EDGE TANKS
ARM 75

GALLONS	WEIGHT	MOM/100	GALLONS	WEIGHT	MOM/100
5	30	23	44	264	198
10	60	45	50	300	225
15	90	68	55	330	248
20	120	90	60	360	270
25	150	113	65	390	293
30	180	135	70	420	315
35	210	158	74	444	333
40	240	180			

BT04945

Each airplane has a checklist for the preflight inspection which must be followed. USE THE CHECKLIST.

WEIGHT AND BALANCE

Maintaining center of gravity within the approved envelope throughout the planned flight is an important safety consideration.

The airplane must be loaded so as not to exceed the weight and center of gravity (C.G.) limitations. Airplanes that are loaded above the maximum takeoff or landing weight limitations will have an overall lower level of performance compared to that shown in the Performance section of the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual. If loaded above maximum takeoff weight, takeoff distance and the landing distance will be longer than that shown in the Performance section; the stalling speed will be higher, rate of climb, the cruising speed, and the range of the airplane at any level of fuel will all be lower than shown in the Performance section.

If an airplane is loaded so that the C.G. is forward of the forward limit, it will require additional control movements for maneuvering the airplane with correspondingly higher control forces. The pilot may have difficulty during takeoff and landing because of the elevator control limits.

If an airplane is loaded aft of the aft C.G. limitation, the pilot will experience a lower level of stability. Airplane characteristics that indicate a lower stability level are; lower control forces, difficulty in trimming the airplane, lower control forces for maneuvering with attendant danger of structural overload, decayed stall characteristics, and a lower level of lateral-directional damping.

Ensure that all cargo and baggage is properly secured before takeoff. A sudden shift in balance at rotation can cause controllability problems.