

Pilot's Operating Handbook and FAA Approved Airplane Flight Manual

FAA Approved in Normal and Utility Category based on CAR 3. This document must be carried in the airplane at all times and be kept within reach of the pilot during all flight operations.

This handbook includes the material required to be furnished to the pilot by CAR 3.

| Airplane Serial Number: |
|--|
| Airplane Registration Number: |
| FAA Approved: |
| A.e. Jackson Beech Aircraft Corporation DOA CE-2 |

This handbook supersedes all BEECH published owner's manuals, flight manuals, and check lists issued for this airplane with the exception of FAA Approved Airplane Flight Manuals.

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P/N 169-590008-23 Issued: February, 1979 P/N 169-590008-23A7 Revised: July, 1994

Section I General

MAXIMUM CERTIFICATED WEIGHTS

NORMAL CATEGORY

| Maximum Ramp Weight | 2455 | lbs |
|-------------------------|------|-----|
| Maximum Take-Off Weight | 2450 | ibs |
| Maximum Landing Weight | 2450 | lbs |

UTILITY / ACROBATIC CATEGORY

| Maximum Ramp Weight | 2035 lbs |
|-------------------------|----------|
| Maximum Take-Off Weight | 2030 lbs |
| Maximum Landing Weight | 2030 lbs |

ALL CONFIGURATIONS

| Maximum Zero Fuel Weight | No Structu | ral Limit |
|--------------------------|----------------|-----------|
| Maximum Weight in | | |
| Baggage Compartment . | | 270 lbs. |

CABIN AND ENTRY DIMENSIONS

| Length (maximum) | | • | • | • • | | | • | • | | • | • | | | | | • | • | • • | • | - | 7 f | ť | 11 | | in. |
|------------------|---|---|---|---------|---|---|---|---|---|---|-----|---|---|---|----|----|---|-----|---|---|-----|----|------------|----|-----|
| Height (maximum) | • | | • | | | • | | • | | • | • | | | | | • | • | • • | | | 4 | ft | : C |) | in. |
| Width (maximum) | | | • | • • | • | | | | | • | • | | • | • | | • | | • • | | • | 3 | ft | : 8 | 3 | in. |
| Cabin Door | | | | | • | • | • | | З | 6 | i i | n | | M | vi | de |) | b | y | 3 | 8 | in | . t | ni | gh |

BAGGAGE SPACE AND ENTRY DIMENSIONS

| Compartment Volume | | • | • | • | •• | • | • | | | • | • | • | | • | • | 19.5 | cu | ft |
|-----------------------|------------|---|---|---|----|---|---|------|---|---|-------|---|-----|---|---|------|----|-----|
| Door Width (Minimum) |) | • | • | | | | | | | | • | • | • • | • | | 23 | .6 | in. |
| Door Height (Minimum) | 1) | | | | | | • | | • | • | | | | • | | 18 | .5 | in. |

SPECIFIC LOADINGS (2450 lbs.)

| Wing Loading | 16.78 lbs/sq ft |
|---------------|-----------------|
| Power Loading | 13.61 lbs/hp |

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FUEL QUANTITY

| On M-1517 thru M-1879 except M-1875, or prior air- planes after compliance with S.I. No. 0624-281 |
|--|
| Yellow Band E to 3/8 full |
| On M-1875, M-1880 and after Yellow Band E to 1/3 full |
| WEIGHT LIMITS |
| NORMAL CATEGORY |
| Maximum Ramp Weight 2455 lbs Maximum Take-off |
| and Landing Weight |
| Maximum Baggage Compartment |
| Load |
| UTILITY/ACROBATIC CATEGORY |
| Maximum Ramp Weight |
| and Landing Weight |
| Zero Fuel Weight No Structural Limitation |
| Maximum Baggage Compartment |
| |
| CENTER OF GRAVITY LIMITS |

NORMAL CATEGORY

- Forward: 107.8 inches aft of datum to 1800 lbs with straight line variation to 114.5 inches at 2450 lbs.
- Aft: 118.3 inches aft of datum at all weights.

Revised: October 1979

Section II Limitations

UTILITY/ACROBATIC CATEGORY

- Forward: 107.8 inches aft of datum to 1800 lbs with straight line variation to 110.2 inches aft of datum at 2030 lbs.
- Aft: 114.0 inches aft of datum at all weights.

REFERENCE DATUM

Datum is 103 inches forward of wing leading edge. MAC length is 52.7 inches.

MANEUVER LIMITS

This airplane is approved for 4 place in the Normal Category and for 2 place in the Utility and Acrobatic Category. Maximum slip duration is 30 seconds.

NORMAL CATEGORY (2450 POUNDS) No acrobatic maneuvers approved.

UTILITY CATEGORY (2030 POUNDS)

No acrobatic maneuvers are approved except those listed below.

| MANEUVER | ENTRY SPEED (CAS) |
|---------------------|-----------------------|
| Chandelle | 116 kts/133 mph |
| Steep Turn | 116 kts/133 mph |
| Lazy Eight | 116 kts/133 mph |
| Stall (Except Whip) | Use slow deceleration |

Intentional Spins M-1494 and after (only if certificated as Acrobatic) or prior airplanes modified by

Kit No. 23-4007-1S per

S.I. No. 0619-090 Use slow deceleration

ACROBATIC CATEGORY (2030 POUNDS)

For additional approved acrobatic maneuvers, see FAA Approved Airplane Flight Manual Supplement.

INTRODUCTION TO WEIGHT AND BALANCE

The necessity for proper computation of the airplane's weight and balance cannot be overemphasized. In the basic design, it is planned that under normal loading the weight distribution of pilot, passengers, baggage, and fuel will balance the airplane for flight. Since these items are all variables, it is possible to concentrate weight in such a way as to make the airplane unsafe for flight. The factors which must be considered in the weight and balance of the airplane are the installation of equipment after the airplane has been weighed, trapped or unusable fuel, engine oil, usable fuel, pilot and passenger weights, and baggage or cargo.

In order to simplify the computation of the weight and balance, Beech Aircraft Corporation has devised a form called Basic Empty Weight and Balance. When the airplane is delivered from the factory it will first be weighed and the data recorded on this form. Provision has been made on the form for listing additions of items to be installed before the delivery or subtractions of items to be removed before delivery from the "as weighed" condition. This then represents the empty weight of the airplane.

When the airplane is first fueled, a certain amount of fuel is trapped in the fuel lines and cells which cannot be drained. Also, in some regimes of flight there are certain amounts of fuel that cannot be used. The combination of these fuel amounts is classified as unusable fuel. Also, it has been found that all operators bring the oil level near full before each flight. Thus, these items are computed along with the empty weight, giving a Basic Empty Weight as a starting point to the pilot for each flight computation.

Once the Basic Empty Weight for a given airplane has been established, the pilot is then only concerned with the

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variable items which will comprise his useful load. These items which are of a changing nature are: Pilot and Passengers (computed on an individual weight and the seat occupied), Baggage and/or Cargo (computed on weight and location within the airplane), and Usable Fuel (the remaining fuel after subtracting the unusable fuel from the measured fuel on board).

WEIGHING INSTRUCTIONS

Periodic weighing of the airplane 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 operator.

- 1. Provision for jack points are provided for weighing: two on the wing front spar at Fuselage Station 129.4 and one on the aft fuselage at Fuselage Station 285.9 (tail tie-down ring).
- 2. Fuel should be drained preparatory to weighing. Tanks are drained from the regular drain ports with the airplane in static ground attitude. The unusable fuel to be added to a Basic Empty Weight is: 6 lbs (M-1285 thru M-1516) at Fuselage Station 125.0. 45.6 lbs (M-1517 thru M-1879 except M-1875 or prior airplanes after compliance with Service Instructions No. 0624-281) at Fuselage Station 125.0. 15.6 lbs (M-1875, M-1880 & After) at Fuselage Station (125.0).
- 3. Engine oil must be at the full level or completely drained. Total engine oil when full is 15 pounds at Fuselage Station 48.
- 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.

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- 5. At the time of weighing, the airplane must be level both longitudinally and laterally. Longitudinally and laterally level attitude is determined with a level on the baggage compartment floor.
- 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 centerline of airplane at F.S. 126.438, forward screw in spar access cover, approximately 8 to 10 inches forward of centerline drain hole) to the axle centerline of the main gear and then to the nose wheel axle centerline. The main wheel axle centerline 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 centerline. The locations of the wheel reactions will be approximately at Fuselage Station 134.0 for main wheels and Fuselage Station 58.5 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 129.4, 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.





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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 c.g. is a suitable means for meeting both requirements.

The current equipment list and empty weight and c.g. information must be retained with the airplane when it changes ownership. Beech Aircraft Corporation cannot maintain this information; the current status is known only to the owner. If these papers become lost, the FAA will require that the airplane be reweighed to establish the empty weight and c.g. and that an inventory of installed equipment be conducted to create a new equipment list.

It is recommended that duplicate copies of the Basic Empty Weight and Balance sheet and the Equipment List be made and kept in an alternate location in the event the original handbook is misplaced.

| ERIAL | NO | | REGISTRATION | PAGE NO | | | | | | | |
|-------|------|-------|------------------------|-------------|------------------------|-------------------|-------------------------------|-------------------|--|--|--|
| DATE | ITEN | I NO. | DESCRIPTION OF ARTICLE | WE ADDED | IGHT CHA (+) OR REI | NGE MOVED (-) | RUNNING BASIC EMPTY WEIGHT | | | | |
| | IN | Ουτ | OR CHANGE | WT (LBS) | ARM (IN.) | <u>MOM</u> 100 | WT (LBS) | <u>MOM</u> 100 | | | |
| | | | | | | | | | | | |
| | | _ | | | | | | | | | |
| | | | | | | | | | | | |
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| ERIAL | NO | | REGISTRATION | | PAGE NO | | | | | | |
|-------|------------------|-------------|---------------------------------------|-------------------|-----------------------|-------------------------------|--|--|--|--|--|
| DATE | ITEN | I NO. | DESCRIPTION OF ARTICLE | WE ADDED | IGHT CHA (+) OR RE | RUNNING BASIC EMPTY WEIGHT | | | | | |
| | IN OUT OR CHANGE | WT (LBS) | ARM (IN.) | <u>MOM</u> 100 | WT (LBS) | <u>MOM</u> 100 | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
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WEIGHT AND BALANCE RESPONSIBILITIES

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 Weights and Moments tables. The minimum and maximum moments are shown on the Moment Limits vs Weight table and can also be plotted on the Moment Limits vs Weight graph as visual indication that the limit is within the operational envelope. These moments correspond to the forward and aft center-of-gravity flight limits for a particular weight. The airplane must be loaded in such a manner to keep the center-of-gravity within these limits.

NOTE

THE FLOOR STRUCTURE LOAD LIMIT IS 100 POUNDS PER SQUARE FOOT.

ALL BAGGAGE/CARGO MUST BE SECURED.

GROSS WEIGHT MOMENT LIMITS GRAPH



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GROSS WEIGHT MOMENT LIMITS

| | Minum | Maximum | | Minumum | Maximum | | Minumum | Maximum |
|---------|--------|---------|---------|----------|---------|----------|---------|---------|
| Gran | Mamaat | Mamon | Gran | Alemant. | Moment | Grow | Moment | Moment |
| Gross | Moment | Noment | Gross | Moment | Moment | Gross | Moment | |
| vveight | 100 | 100 | vveight | 100 | 100 | AA GIDLE | 100 | 100 |
| 1500 | 1617 | 1775 | 1900 | 2068 | 2248 | 2300 | 2599 | 2721 |
| 1510 | 1628 | 1786 | 1910 | 2081 | 2260 | 2310 | 2613 | 2733 |
| 1520 | 1639 | 1798 | 1920 | 2094 | 2271 | 2320 | 2626 | 2745 |
| 1530 | 1649 | 1810 | 1930 | 2107 | 2283 | 2330 | 2640 | 2756 |
| 1540 | 1660 | 1822 | 1940 | 2120 | 2295 | 2340 | 2654 | 2768 |
| 1550 | 1671 | 1834 | 1950 | 2133 | 2307 | 2350 | 2668 | 2780 |
| 1560 | 1682 | 1845 | 1960 | 2145 | 2319 | 2360 | 2681 | 2792 |
| 1570 | 1692 | 1857 | 1970 | 2158 | 2331 | 2370 | 2695 | 2804 |
| 1580 | 1703 | 1869 | 1980 | 2172 | 2342 | 2380 | 2708 | 2816 |
| 1590 | 1714 | 1881 | 1990 | 2185 | 2354 | 2390 | 2722 | 2827 |
| | } | | | | | | | ! |
| 1600 | 1725 | 1893 | 2000 | 2198 | 2366 | 2400 | 2736 | 2839 |
| 1610 | 1736 | 1905 | 2010 | 2211 | 2378 | 2410 | 2750 | 2851 |
| 1620 | 1746 | 1916 | 2020 | 2224 | 2390 | 2420 | 2764 | 2863 |
| 1630 | 1757 | 1928 | 2030 | 2237 | 2401 이 | 2430 | 2777 | 2875 |
| 1640 | 1768 | 1940 | 2040 | 2250 | 2413 | 2440 | 2791 | 2887 |
| 1650 | 1779 | 1952 | 2050 | 2263 | 2425 | 2450 | 2805 | 2898 |
| 1660 | 1789 | 1964 | 2060 | 2276 | 2437 | | | 1 1 |
| 1670 | 1800 | 1976 | 2070 | 2290 | 2449 | | é. | } } |
| 1680 | 1811 | 1987 | 2080 | 2303 | 2461 | | 8 | |
| 1690 | 1822 | 1999 | 2090 | 2316 | 2472 | | 2 | i |
| | | | | | < | | | |
| 1700 | 1833 | 2011 | 2100 | 2329 | 2484 | | | |
| 1710 | 1843 | 2023 | 2110 | 2343 | 2496 | | | |
| 1720 | 1854 | 2035 | 2120 | 2356 | 2508 | | ĺ | |
| 1730 | 1865 | 2047 | 2130 | 2369 | 2520 | | | |
| 1740 | 1876 | 2058 | 2140 | 2383 | 2532 | | | } |
| 1750 | 1887 | 2070 | 2150 | 2396 | 2543 | | | |
| 1760 | 1897 | 2082 | 2160 | 2409 | 2555 | | | ļ |
| 1770 | 1908 | 2094 | 2170 | 2423 | 2567 | | | } |
| 1780 | 1919 | 2106 | 2180 | 2436 | 2579 | | | |
| 1790 | 1930 | 2118 | 2190 | 2450 | 2591 | |] | 1 |
| Ì | 1 | | 1 | | 1 | |] | |
| 1800 | 1940 | 2129 | 2200 | 2463 | 2603 | ľ | | |
| 1810 | 1953 | 2141 | 2210 | 2477 | 2614 | 1 | | |
| 1820 | 1966 | 2153 | 2220 | 2490 | 2626 | | | |
| 1830 | 1978 | 2165 | 2230 | 2504 | 2638 | li | | |
| 1840 | 1991 | 2177 | 2240 | 2517 | 2650 | | | |
| 1850 | 2004 | 2189 | 2250 | 2531 | 2662 | | | |
| 1860 | 2017 | 2200 | 2260 | 2544 | 2674 | ļ | | |
| 1870 | 2029 | 2212 | 2270 | 2558 | 2685 | | | |
| 1880 | 2042 | 2224 | 2280 | 2572 | 2697 | | | |
| 1890 | 2055 | 2236 | 2290 | 2585 | 2709 | n | | |
| | 1 | l l | 1 | 1 | 1 | | 1 | 1 |

(NORMAL CATEGORY)

The above weight and moment limits are based on the following weight and center of gravity limit data

NORMAL CATEGORY

| WEIGHT CONDITION | FWD CG LIMIT | AFT CG LIMIT |
|------------------------------------|--------------|--------------|
| 2450 lbs (max_take-off or landing) | 1145 | 118 3 |
| 1800 lbs or less | 107 8 | 118.3 |

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GROSS WEIGHT MOMENT LIMITS

| Gross Weight | Minimum <u>Moment</u> 100 | Maximum <u>Moment</u> 100 | Gross Weight | Minimum <u>Moment</u> 100 | Maximum <u>Moment</u> 100 |
|-----------------|---------------------------------|---------------------------------|-----------------|---------------------------------|---------------------------------|
| 1500 | 1617 | 1710 | 1800 | 1940 | 2052 |
| 1510 | 1628 | 1721 | 1810 | 1953 | 2063 |
| 1520 | 1639 | 1733 | 1820 | 1966 | 2075 |
| 1530 | 1649 | 1744 | 1830 | 1978 | 2086 |
| 1540 | 1660 | 1756 | 1840 | 1991 | 2098 |
| 1550 | 1671 | 1767 | 1850 | 2004 | 2109 |
| 1560 | 1682 | 1778 | 1860 | 2017 | 2120 |
| 1570 | 1692 | 1790 | 1870 | 2029 | 2132 |
| 1580 | 1703 | 1801 | 1880 | 2042 | 2143 |
| 1590 | 1714 | 1813 | 1890 | 2055 | 2155 |
| | | | | | |
| 1600 | 1725 | 1824 | 1900 | 2068 | 2166 |
| 1610 | 1736 | 1835 | 1910 | 2081 | 2177 |
| 1620 | 1746 | 1847 | 1920 | 2094 | 2189 |
| 1630 | 1757 | 1858 | 1930 | 2107 | 2200 |
| 1640 | 1768 | 1870 | 1940 | 2120 | 2212 |
| 1650 | 1779 | 1881 | 1950 | 2133 | 2223 |
| 1660 | 1789 | 1892 | 1960 | 2145 | 2234 |
| 1670 | 1800 | 1904 | 1970 | 2158 | 2246 |
| 1680 | 1811 | 1915 | 1980 | 2172 | 2257 |
| 1690 | 1822 | 1927 | 1990 | 2185 | 2269 |
| 1700 | 1922 | 1020 | 2000 | 2100 | 2200 |
| 1710 | 1042 | 1930 | 2000 | 2190 | 2200 |
| 1720 | 1043 | 1945 | 2010 | 2211 | 2291 |
| 1720 | 1965 | 1071 | 2020 | 2224 | 2303 |
| 1730 | 1000 | 1972 | 2030 | 2237 | 2314 |
| 1740 | 10/0 | 1964 | 1 | | |
| 1700 | 1007 | 1992 | | | |
| 1700 | 1000 | 2000 | | | |
| 17/0 | 1908 | 2018 | 1 | | |
| 1780 | 1919 | 2029 | | | |
| 1790 | 1930 | 2041 | 1 | 1 | |

(UTILITY CATEGORY & ACROBATIC CATEGORY)

The above weight and moment limits are based on the following weight and center of gravity limit data:

UTILITY CATEGORY & ACROBATIC CATEGORY

| WEIGHT CONDITION | FWD CG LIMIT | AFT CG LIMIT | |
|------------------------------------|--------------|--------------|--|
| 2030 lbs (max_take-off or landing) | 110.2 | 114.0 | |
| 1800 lbs or less | 107 8 | 114.0 | |

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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 SUB-TOTAL is 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 take-off. Add the Fuel to Zero Fuel Condition to obtain the SUB-TOTAL Ramp Condition.
- 5. Subtract the fuel to be used for start, taxi, and take-off to arrive at the SUB-TOTAL 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 moment must be within the minimum and maximum moments shown on the Moment Limit 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 allowed, useful load items reduced. If the total moment allowed, useful load items must be shifted forward or aft load items reduced. If the calculations must be revised and the moments rechecked.

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The following Sample Loading chart is presented to depict the sample method of computing a load. Weights used DO NOT reflect an actual airplane loading.

WEIGHT AND BALANCE LOADING FORM

| MODEL | <u>C23</u> | DATE | | |
|------------|------------|---------|------|--|
| SERIAL NO. | M-XXXX | REG NO. | NXXX | |

| ITEM | WEIGHT | MOM/100 |
|--|--------|---------|
| 1. BASIC EMPTY CONDITION | 1500 | 1650 |
| 2. FRONT SEAT OCCUPANTS | 340 | 374 |
| 3. 3rd & 4th SEAT OCCUPANTS | 340 | 482 |
| 4. BAGGAGE OR CARGO | 40 | 67 |
| 5. SUB TOTAL ZERO FUEL CONDITION | 2220 | 2573 |
| 6. FUEL LOADING (37 GAL) | 222 | 259 |
| 7. SUB TOTAL RAMP CONDITION | 2442 | 2832 |
| 8. *LESS FUEL F GA , TAXI, AND TAK UFF | -5 | -6 |
| 9. SUB TOTAL TAKE-OFF CONDITION | 2437 | 2826 |
| 10. LESS FUEL TO DESTINATION (25 GAL) | -150 | -176 |
| 11. LANDING CONDITION | 2287 | 2650 |

*Fuel for start, taxi and take-off is normally 5 lbs at an average mom/100 of 6.

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WEIGHT AND BALANCE LOADING FORM

| MODEL | DATE | |
|-------|------|----------|
| | | <u> </u> |

SERIAL NO._____REG NO.___NXXX

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

*Fuel for start, taxi and take-off is normally 5 lbs at an average mom/100 of 6.

| | FRONT SEATS | | 3RD AND 4 | TH SEATS | |
|--------|-------------|-------|-----------|------------|------------|
| | *FWD | POS. | *AFT POS. | BENCH SEAT | SPLIT SEAT |
| | ††ARM | †ARM | ARM | ARM | ARM |
| | **104 | **105 | **112 | **142 | **144 |
| WEIGHT | MOM | MOM | MOM | MOM | MOM |
| | 100 | 100 | 100 | 100 | 100 |
| 120 | 125 | 126 | 134 | 170 | 173 |
| 130 | 135 | 137 | 146 | 185 | 187 |
| 140 | 146 | 147 | 157 | 199 | 202 |
| 150 | 156 | 158 | 168 | 213 | 216 |
| 160 | 166 | 168 | 179 | 227 | 230 |
| 170 | 177 | 179 | 190 | 241 | 245 |
| 180 | 187 | 189 | 202 | 256 | 259 |
| 190 | 198 | 200 | 213 | 270 | 274 |
| 200 | 208 | 210 | 224 | 284 | 288 |

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†Effective M-1285 thru M-2006

††Effective M-2007 and after

*Reclining seat with back in full-up position

**Values computed from a C.G. criterion based on a 170 pound male. Differences in physical characteristics can cause variation in center of gravity location.

Section VI Wtand Bal/Equip List

USEFUL LOAD WEIGHTS AND MOMENTS

OCCUPANTS

USEFUL LOAD WEIGHTS AND MOMENTS

OIL

(Included in Basic Empty Weight)

| ARM 48 | | | | |
|--------|----|------------|--|--|
| QTS | wT | MOMENT/100 | | |
| 8 | 15 | 7 | | |

USABLE FUEL

| ARM 117 | | | | |
|---------|--------|------------|--|--|
| GALLONS | WEIGHT | MOMENT/100 | | |
| 5 | 30 | 35 | | |
| 10 | 60 | 70 | | |
| 15 | 90 | 105 | | |
| 20 | 120 | 140 | | |
| 22 | 132 | 154 | | |
| 25 | 150 | 176 | | |
| 27 | 162 | 189 | | |
| 30 | 180 | 211 | | |
| 32 | 192 | 225 | | |
| 35 | 210 | 246 | | |
| 37 | 222 | 259 | | |
| 40 | 240 | 281 | | |
| 45 | 270 | 316 | | |
| 50 | 300 | 351 | | |
| 52 | 312 | 365 | | |
| 55 | 330 | 386 | | |
| 57 | 342 | 400 | | |
| 58 | 348 | 407 | | |

Wt and Bal/Equip List

USEFUL LOAD WEIGHTS AND MOMENTS

| ARM 167 | | | |
|---------|---------------|--|--|
| WEIGHT | MOMENT 100 | | |
| 10 | 17 | | |
| 20 | 33 | | |
| 30 | 50 | | |
| 40 | 67 | | |
| 50 | 84 | | |
| 60 | 100 | | |
| 70 | 117 | | |
| 80 | 134 | | |
| 90 | 150 | | |
| 100 | 167 | | |
| 110 | 184 | | |
| 120 | 200 | | |
| 130 | 217 | | |
| 140 | 234 | | |

BAGGAGE

GENERAL

As a pilot, you are responsible to yourself and to those who fly with you, to other pilots and their passengers and to people on the ground, to fly wisely and safely.

The following material in this Safety Information publication covers several subjects in limited detail. Here are some condensed Do's and Don'ts.

DO'S

Be thoroughly familiar with your airplane, know its limitations and your own.

Be current in your airplane, or fly with a qualified instructor until you are current. Practice until you are proficient.

Preplan all aspects of your flight - including a proper weather briefing and adequate fuel reserves.

Use services available - weather briefing, inflight weather and Flight Service Station.

Carefully preflight your airplane.

Use the approved checklist.

Have more than enough fuel for takeoff, plus the trip, and an adequate reserve.

Be sure your weight and C.G. are within limits.

Use seatbelts and shoulder harnesses at all times.

Be sure all loose articles and baggage are secured.

Check freedom and proper direction of operation of all controls during preflight inspection.

Maintain the prescribed airspeeds in takeoff, climb, descent, and landing.

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Avoid wake turbulence (Vortices).

Preplan fuel and fuel tank management before the actual flight. Utilize auxiliary tanks only in level cruise flight. Take off and land on the fullest main tank, NEVER use auxiliary tanks for takeoff or landing.

Practice emergency procedures at safe altitudes and airspeeds, preferably with a qualified instructor pilot, until the required action can be accomplished without reference to the manual.

Keep your airplane in good mechanical condition.

Stay informed and alert; fly in a sensible manner.

DON'TS

Don't take off with frost, ice or snow on the airplane.

Don't take off with less than minimum recommended fuel, plus adequate reserves, and don't run the tank dry before switching.

Don't fly in a reckless, show-off, or careless manner.

Don't fly into thunderstorms or severe weather.

Don't fly in possible icing conditions.

Don't fly close to mountainous terrain.

Don't apply controls abruptly or with high forces that could exceed design loads of the airplane.

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Don't fly into weather conditions that are beyond your ratings or current proficiency.

Don't fly when physically or mentally exhausted or below par.

Don't trust to luck.

SOURCES OF INFORMATION

There is a wealth of information available to the pilot created for the sole purpose of making your flying safer, easier and more efficient. Take advantage of this knowledge and be prepared for an emergency in the event that one should occur.

PILOT'S OPERATING HANDBOOK AND FAA APPROVED AIRPLANE FLIGHT MANUAL

You must be thoroughly familiar with the contents of your operating manuals, placards, and check lists to ensure safe utilization of your airplane. When the airplane was manufactured, it was equipped with one or more of the following: placards, Owner's Manual, FAA Approved Airplane Flight Manual, FAA Approved Airplane Flight Manual Supplements. Pilot's Operating Handbook and FAA Approved Airplane Flight Manual. Beech has revised and reissued many of the early manuals for certain models of airplanes in GAMA Standard Format as Pilot's Operating Handbooks and FAA Approved Airplane Flight Manuals. For simplicity and convenience, all official manuals in various models are referred to as the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual. If the airplane has changed ownership, the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual may have been misplaced or may not be current. Replacement handbooks may be obtained from any BEECHCRAFT Authorized Outlet.

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Examples of unauthorized attachments found are drilling holes in seat tubing to attach fire extinguishers and drilling holes to attach approach plate book bins to seats.

FLIGHT PLANNING

FAR Part 91 requires that each pilot in command, before beginning a flight, familiarize himself with all available information concerning that flight.

Obtain a current and complete preflight briefing. This should consist of local, enroute and destination weather and enroute navaid information. Enroute terrain and obstructions, alternate airports, airport runways active, length of runways, and takeoff and landing distances for the airplane for conditions expected should be known.

The prudent pilot will review his planned enroute track and stations and make a list for quick reference. It is strongly recommended a flight plan be filed with Flight Service Stations, even though the flight may be VFR. Also, advise Flight Service Stations of changes or delays of one hour or more and remember to close the flight plan at destination.

The pilot must be completely familiar with the performance of the airplane and performance data in the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual. The resultant effect of temperature and pressure altitude must be taken into account in performance if not accounted for on the charts. An applicable FAA Approved Airplane Flight Manual must be aboard the airplane at all times and include the weight and balance forms and equipment list.

PASSENGER INFORMATION CARDS

Beech has available, for most current production airplanes, passenger information cards which contain important information on the proper use of restraint systems, oxygen

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masks, emergency exits and emergency bracing procedures. Passenger information cards may be obtained at any BEECHCRAFT Authorized Outlet. A pilot should not only be familiar with the information contained in the cards, but should always, prior to flight, inform the passengers of the information contained in the information cards. The pilot should orally brief the passengers on the proper use of restraint systems, doors and emergency exits, and other emergency procedures, as required by Part 91 of the FAR's,

STOWAGE OF ARTICLES

The space between the seat pan and the floor is utilized to provide space for seat displacement. If hard, solid objects are stored beneath seats, the energy absorbing feature is lost and severe spinal injuries can occur to occupants.

Prior to flight, pilots should insure that articles are not stowed beneath seats that would restrict seat pan energy absorption or penetrate the seat in event of a high vertical velocity accident.

FLIGHT OPERATIONS

GENERAL

The pilot MUST be thoroughly familiar with ALL INFORMA-TION published by the manufacturer concerning the airplane, and is required by law to operate the airplane in accordance with the FAA Approved Airplane Flight Manual and placards installed.

PREFLIGHT INSPECTION

In addition to maintenance inspections and preflight information required by FAR Part 91, a complete, careful preflight inspection is imperative.

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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.