# TABLE OF CONTENTS

**SECTION 1**

**GENERAL**

<table>
<thead>
<tr>
<th>Paragraph No.</th>
<th>Description</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Introduction</td>
<td>1-1</td>
</tr>
<tr>
<td>1.3</td>
<td>Engines</td>
<td>1-3</td>
</tr>
<tr>
<td>1.5</td>
<td>Propellers</td>
<td>1-3</td>
</tr>
<tr>
<td>1.7</td>
<td>Fuel</td>
<td>1-4</td>
</tr>
<tr>
<td>1.9</td>
<td>Oil</td>
<td>1-4</td>
</tr>
<tr>
<td>1.11</td>
<td>Maximum Weights</td>
<td>1-5</td>
</tr>
<tr>
<td>1.13</td>
<td>Standard Airplane Weights</td>
<td>1-5</td>
</tr>
<tr>
<td>1.15</td>
<td>Baggage Space</td>
<td>1-5</td>
</tr>
<tr>
<td>1.17</td>
<td>Specific Loadings</td>
<td>1-5</td>
</tr>
<tr>
<td>1.19</td>
<td>Symbols, Abbreviations and Terminology</td>
<td>1-6</td>
</tr>
</tbody>
</table>
SECTION I

GENERAL

1.1 INTRODUCTION

This Pilot's Operating Handbook is designed for maximum utilization as an operating guide for the pilot. It includes the material required to be furnished to the pilot by the Federal Aviation Regulations and additional information provided by the manufacturer and constitutes the FAA Approved Airplane Flight Manual.

This handbook is not designed as a substitute for adequate and competent flight instruction, knowledge of current airworthiness directives, applicable federal air regulations or advisory circulars. It is not intended to be a guide for basic flight instruction or a training manual and should not be used for operational purposes unless kept in a current status.

Assurance that the airplane is in an airworthy condition is the responsibility of the owner. The pilot in command is responsible for determining that the airplane is safe for flight. The pilot is also responsible for remaining within the operating limitations as outlined by instrument markings, placards, and this handbook.

Although the arrangement of this handbook is intended to increase its in-flight capabilities, it should not be used solely as an occasional operating reference. The pilot should study the entire handbook to familiarize himself with the limitations, performance, procedures and operational handling characteristics of the airplane before flight.

The handbook has been divided into numbered (arabic) sections, each provided with a finger-tip tab divider for quick reference. The limitations and emergency procedures have been placed ahead of the normal procedures, performance and other sections to provide easier access to information that may be required in flight. The Emergency Procedures Section has been furnished with a red tab divider to present an instant reference to the section. Provisions for expansion of the handbook have been made by the deliberate omission of certain paragraph numbers, figure numbers, item numbers and pages noted as being intentionally left blank.
THREE VIEW
Figure 1-1
1.3 ENGINES

(a) Number of Engines: 1
(b) Engine Manufacturer: Lycoming
(c) Engine Model Number: IO-360-C1C6
(d) Rated Horsepower: 200
(e) Rated Speed (rpm): 2700
(f) Bore (in.): 5.125
(g) Stroke (in.): 4.375
(h) Displacement (cu. in.): 361
(i) Compression Ratio: 8.7:1
(j) Engine Type: Four Cylinder, Direct Drive, Horizontally Opposed, Air Cooled and Fuel Injected

1.5 PROPELLERS

McCausley

(a) Number of Propellers: 1
(b) Propeller Manufacturer: McCausley
(c) Blade Model: 90DHA-16
(d) Number of Blades: 2
(e) Hub Model: B2D34C213
(f) Propeller Diameter (in.):
   (1) Maximum: 74
   (2) Minimum: 73
(g) Propeller Type: Constant Speed, Hydraulically Actuated
1.5 PROPELLERS (continued)

Hartzell
(a) Number of Propellers
(b) Propeller Manufacturer  Hartzell
(c) Blade Model F7666A-2R
(d) Number of Blades 2
(e) Hub Model HC-C2YK-1( )F/
(f) Propeller Diameter (in.)
   (1) Maximum 74
   (2) Minimum 72
(g) Propeller Type Constant Speed, Hydraulically Actuated

1.7 FUEL

(a) Fuel Capacity (U.S. gal.) (total) 77
(b) Usable Fuel (U.S. gal.) (total) 72
(c) Fuel Grade, Aviation
   (1) Minimum Octane 100/130 - Green or
        100 LL - Blue
   (2) Alternate Fuels Aviation Grade
        Refer to latest revision
        of Lycoming Service
        Instruction 1070,
        except alcohol is not
        approved for use in this
        airplane. MIL-I-27686D
        is approved.

1.9 OIL

(a) Oil Capacity (U.S. qts.) 8
(b) Oil Specification Refer to latest issue
   of Lycoming Service
   Instruction 1014
(c) Oil Viscosity Refer to Section 8 -
   paragraph 8.19

REPORT: VB-1612
ISSUED: JULY 12, 1995
1.11 MAXIMUM WEIGHTS
   (a) Maximum Takeoff Weight (lb.)  2750
   (b) Maximum Landing Weight (lb.)  2750
   (c) Maximum Weights in Baggage
       Compartment  200

1.13 STANDARD AIRPLANE WEIGHTS*
   (a) Standard Empty Weight (lb.):
       Weight of a standard airplane including
       unusable fuel, full operating fluids and
       full oil.  1603
   (b) Maximum Useful Load (lb.): The
       difference between the Maximum
       Takeoff Weight and the Standard
       Empty Weight.  1147

1.15 BAGGAGE SPACE
   (a) Compartment Volume (cu. ft.)  24
   (b) Entry Width (in.)  22
   (c) Entry Height (in.)  20

1.17 SPECIFIC LOADINGS
   (a) Wing Loading (lb. per sq. ft.)  16.18
   (b) Power Loading (lb. per hp)  13.75

*These values are approximate and vary from one aircraft to another. Refer to Figure 6-5 for the Standard Empty Weight value and the Useful Load value to be used for C.G. calculations for the aircraft specified.
### 1.19 SYMBOLS, ABBREVIATIONS AND TERMINOLOGY

The following definitions are of symbols, abbreviations and terminology used throughout the handbook and those which may be of added operational significance to the pilot.

(a) General Airspeed Terminology and Symbols

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>Calibrated Airspeed means the indicated speed of an aircraft, corrected for position and instrument error. Calibrated airspeed is equal to true airspeed in standard atmosphere at sea level.</td>
</tr>
<tr>
<td>KCAS</td>
<td>Calibrated Airspeed expressed in Knots.</td>
</tr>
<tr>
<td>GS</td>
<td>Ground Speed is the speed of an airplane relative to the ground.</td>
</tr>
<tr>
<td>IAS</td>
<td>Indicated Airspeed is the speed of an aircraft as shown on the airspeed indicator when corrected for instrument error. IAS values published in this handbook assume zero instrument error.</td>
</tr>
<tr>
<td>KIAS</td>
<td>Indicated Airspeed expressed in Knots.</td>
</tr>
<tr>
<td>M</td>
<td>Mach Number is the ratio of true airspeed to the speed of sound.</td>
</tr>
<tr>
<td>TAS</td>
<td>True Airspeed is the airspeed of an airplane relative to undisturbed air which is the CAS corrected for altitude, temperature and compressibility.</td>
</tr>
<tr>
<td>VA</td>
<td>Maneuvering Speed is the maximum speed at which application of full available aerodynamic control will not overstress the airplane.</td>
</tr>
<tr>
<td>VFE</td>
<td>Maximum Flap Extended Speed is the highest speed permissible with wing flaps in a prescribed extended position.</td>
</tr>
</tbody>
</table>
1.19 SYMBOLS, ABBREVIATIONS, AND TERMINOLOGY (continued)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLE</td>
<td>Maximum Landing Gear Extended Speed is the maximum speed at which an aircraft can be safely flown with the landing gear extended.</td>
</tr>
<tr>
<td>VLO</td>
<td>Maximum Landing Gear Operating Speed is the maximum speed at which the landing gear can be safely extended or retracted.</td>
</tr>
<tr>
<td>VNE/MNE</td>
<td>Never Exceed Speed or Mach Number is the speed limit that may not be exceeded at any time.</td>
</tr>
<tr>
<td>VNO</td>
<td>Maximum Structural Cruising Speed is the speed that should not be exceeded except in smooth air and then only with caution.</td>
</tr>
<tr>
<td>Vs</td>
<td>Stalling Speed or the minimum steady flight speed at which the airplane is controllable.</td>
</tr>
<tr>
<td>VSO</td>
<td>Stalling Speed or the minimum steady flight speed at which the airplane is controllable in the landing configuration.</td>
</tr>
<tr>
<td>VX</td>
<td>Best Angle-of-Climb Speed is the airspeed which delivers the greatest gain of altitude in the shortest possible horizontal distance.</td>
</tr>
<tr>
<td>VY</td>
<td>Best Rate-of-Climb Speed is the airspeed which delivers the greatest gain in altitude in the shortest possible time.</td>
</tr>
</tbody>
</table>
1.19 SYMBOLS, ABBREVIATIONS, AND TERMINOLOGY (continued)

(b) Meteorological Terminology

**ISA**

International Standard Atmosphere in which:

1. The air is a dry perfect gas.
2. The temperature at sea level is 15°C (59°F Fahrenheit).
3. The pressure at sea level is 29.92 inches Hg (1013.2 mb).
4. The temperature gradient from sea level to the altitude at which the temperature is -56.5°C (-69.7°F) is 0.00198°C (-0.003564°F) per foot and zero above that altitude.

**OAT**

Outside Air Temperature is the free air static temperature, obtained either from inflight temperature indications or ground meteorological sources, adjusted for instrument error and compressibility effects.

**Indicated Pressure Altitude**

The number actually read from an altimeter when the barometric subscale has been set to 29.92 inches of mercury (1013.2 millibars).

**Pressure Altitude**

Altitude measured from standard sea-level pressure (29.92 in. Hg) by a pressure or barometric altimeter. It is the indicated pressure altitude corrected for position and instrument error. In this handbook, altimeter instrument errors are assumed to be zero.

**Station Pressure**

Actual atmospheric pressure at field elevation.

**Wind**

The wind velocities recorded as variables on the charts of this handbook are to be understood as the headwind or tailwind components of the reported winds.
1.19 SYMBOLS, ABBREVIATIONS, AND TERMINOLOGY (continued)

(c) Power Terminology

Takeoff Power  Maximum power permissible for takeoff.
Maximum Continuous Power  Maximum power permissible continuously during flight.
Maximum Climb Power  Maximum power permissible during climb.
Maximum Cruise Power  Maximum power permissible during cruise.

(d) Engine Instruments

EGT Gauge  Exhaust Gas Temperature Gauge

(e) Airplane Performance and Flight Planning Terminology

Climb Gradient  The demonstrated ratio of the change in height during a portion of a climb, to the horizontal distance traversed in the same time interval.

Demonstrated Crosswind Velocity  The demonstrated crosswind velocity is the velocity of the crosswind component for which adequate control of the airplane during takeoff and landing was actually demonstrated during certification tests.

Accelerate-Stop Distance  The distance required to accelerate an airplane to a specified speed and, assuming failure of an engine at the instant that speed is attained, to bring the airplane to a stop.

MEA  Minimum en route IFR altitude.

Route Segment  A part of a route. Each end of that part is identified by: (1) a geographical location; or (2) a point at which a definite radio fix can be established.
## 1.19 SYMBOLS, ABBREVIATIONS, AND TERMINOLOGY (continued)

### (f) Weight and Balance Terminology

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Datum</td>
<td>An imaginary vertical plane from which all horizontal distances are measured for balance purposes.</td>
</tr>
<tr>
<td>Station</td>
<td>A location along the airplane fuselage usually given in terms of distance from the reference datum.</td>
</tr>
<tr>
<td>Arm</td>
<td>The horizontal distance from the reference datum to the center of gravity (C.G.) of an item.</td>
</tr>
<tr>
<td>Moment</td>
<td>The product of the weight of an item multiplied by its arm. (Moment divided by a constant is used to simplify balance calculations by reducing the number of digits.)</td>
</tr>
<tr>
<td>Center of Gravity (C.G.)</td>
<td>The point at which an airplane would balance if suspended. Its distance from the reference datum is found by dividing the total moment by the total weight of the airplane.</td>
</tr>
<tr>
<td>C.G. Arm</td>
<td>The arm obtained by adding the airplane's individual moments and dividing the sum by the total weight.</td>
</tr>
<tr>
<td>C.G. Limits</td>
<td>The extreme center of gravity locations within which the airplane must be operated at a given weight.</td>
</tr>
<tr>
<td>Usable Fuel</td>
<td>Fuel available for flight planning.</td>
</tr>
<tr>
<td>Unusable Fuel</td>
<td>Fuel remaining after a runout test has been completed in accordance with governmental regulations.</td>
</tr>
<tr>
<td>Standard Empty Weight</td>
<td>Weight of a standard airplane including unusable fuel, full operating fluids and full oil.</td>
</tr>
</tbody>
</table>
1.19 SYMBOLS, ABBREVIATIONS, AND TERMINOLOGY (continued)

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Empty Weight</td>
<td>Standard empty weight plus optional equipment</td>
</tr>
<tr>
<td>Payload</td>
<td>Weight of occupants, cargo and baggage.</td>
</tr>
<tr>
<td>Useful Load</td>
<td>Difference between takeoff weight, or ramp weight if applicable, and basic empty weight.</td>
</tr>
<tr>
<td>Maximum Ramp Weight</td>
<td>Maximum weight approved for ground maneuver. It includes weight of start, taxi and run up fuel.</td>
</tr>
<tr>
<td>Maximum Takeoff Weight</td>
<td>Maximum weight approved for the start of the takeoff run.</td>
</tr>
<tr>
<td>Maximum Landing Weight</td>
<td>Maximum weight approved for the landing touchdown.</td>
</tr>
<tr>
<td>Maximum Zero Fuel Weight</td>
<td>Maximum weight exclusive of usable fuel.</td>
</tr>
</tbody>
</table>