Raytheon Aircraft Company

Beechcraft

Beech Bonanza® A36

(Serials E-1946, E-2104, E-2111 thru E-3629 and E-3631 thru E-3635)

Pilot's Operating Handbook and FAA Approved Airplane Flight Manual

FAA Approved in the Normal Category based on CAR Part 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 Part 3.

Airplane Serial Number:_____

Airplane Registration Number:_____

FAA Approved by:_____

John Tigue
Raytheon Aircraft Company
DOA-230339-CE

P/N 36-590002-37B **P/N 36-590002-37B2**
Reissued: November, 2002 **Revised: January, 2006**

Published by
RAYTHEON AIRCRAFT COMPANY
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NOTE

Where Beech Aircraft Corporation is referred to in this publication, it will be taken to read Raytheon Aircraft Company.

Raytheon
Aircraft Company

Member of GAMA
GAMA General Aviation Manufacturers Association

Raytheon Aircraft

Beech Bonanza® A36

(Serials E-1946, E-2104, E-2111 and After)

Pilot's Operating Handbook
and
FAA Approved Airplane Flight Manual

FAA Approved in the Utility Category based on 14 CFR Part 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 14 CFR Part 3.

Airplane Serial Number: E-2738

Airplane Registration Number: N345SF

FAA Approved by: _____
John Tigue
Raytheon Aircraft Company
DOA-230339-CE

This is the Flight Manual assigned

to the aircraft registered G- [illegible]

P/N 36-590002-37B **P/N 36-590002-37B1**
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LIST OF EFFECTIVE PAGES

This listing contains all current pages with effective revision number or date. It should be used after posting changes to ensure the manual is complete and up-to-date. Always destroy superseded pages when you insert revised pages.

Beech Bonanza® A36

(Serials E-1946, E-2104, E-2111 thru E-3629 and E-3631 thru E-3635)

Pilot's Operating Handbook and FAA Approved Airplane Flight Manual

P/N 36-590002-37B

Revision B2 - January, 2006

List Of Effective Pages (Cont'd)
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Revision B2 - January, 2006

Raytheon Aircraft Company

LOG OF REVISIONS

Beech Bonanza® A36

(Serials E-1946, E-2104, E-2111 thru E-3629 and E-3631 thru E-3635)

Pilot's Operating Handbook and FAA Approved Airplane Flight Manual

P/N 36-590002-37B

Revision B2 - January, 2006

PAGE	DESCRIPTION
Title Page	New
List of Effective Pages	
1 of 2	New
2 of 2	New
Log of Revisions	
1 of 1	New
1-7	Revised "Revising The Handbook"
2-11	Revised "Maneuver Limits"
7-40 and 7-41	Revised "Interior Lighting" and Shifted Data
8-1 and 8-2	Revised Table of Contents
8-4	Revised "Airplane Inspection Periods"
8-20	Revised "Brakes"
8-26 and 8-28	Revised "Exterior Painted Surfaces"
8-30	Revised "Consumable Materials", Deleted and Shifted Data

Raytheon Aircraft

LOG OF REVISIONS

Beech Bonanza® A36

(Serials E-1946, E-2104, E-2111 and After)

Pilot's Operating Handbook
and
FAA Approved Airplane Flight Manual

P/N 36-590002-37B

B - Reissue - November, 2002

Original Issue - October, 1983

PAGE	DESCRIPTION
Title Page	New
List of Effective Pages	New
Log of Revisions	
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Supplements	See Log of Supplements
10-1 thru 10-48	May, 1994

B

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GENERAL
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SUBJECT *PAGE*

SECTION I
GENERAL
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SUBJECT *PAGE*

INTRODUCTION

The format and contents of the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual conform to GAMA (General Aviation Manufacturers Association) Handbook Specification No. 1 through Revision No. 2, dated October 18, 1996. Use of this specification by all manufacturers will provide the pilot with the same type of data in the same place in all handbooks.

Attention is called to Section X, SAFETY INFORMATION. Raytheon Aircraft Company feels that it is highly important to have Safety Information in a condensed form in the hands of the pilots. The Safety Information should be read and studied. Periodic review will serve as a reminder of good piloting techniques.

WARNING

Use only genuine Raytheon Aircraft or Raytheon Aircraft approved parts obtained from Raytheon Aircraft approved sources, in connection with the maintenance and repair of Beech airplanes.

Genuine Raytheon Aircraft parts are produced and inspected under rigorous procedures to ensure airworthiness and suitability for use in Beech airplane applications. Parts purchased from sources other than Raytheon Aircraft, even though outwardly identical in appearance, may not have had the required tests and inspections, may be different in fabrication techniques and materials, and may be dangerous when installed in an airplane.

Salvaged airplane parts, reworked parts obtained from non-Raytheon Aircraft approved sources, or parts, components, or structural assemblies, the ser-

vice history of which is unknown or cannot be authenticated, may have been subjected to unacceptable stresses or temperatures or have other hidden damage, not discernible through routine visual or usual nondestructive testing techniques. This may render the part, component, or structural assembly, even though originally manufactured by Raytheon Aircraft, unsuitable or unsafe for airplane use.

Raytheon Aircraft expressly disclaims any responsibility for malfunctions, failures, damage or injury caused by use of non-Raytheon Aircraft approved parts.

IMPORTANT NOTICE

This handbook should be read carefully by the owner and the operator in order to become familiar with the operation of the airplane. Suggestions and recommendations have been made within it to aid in obtaining maximum performance without sacrificing economy. Be familiar with, and operate the airplane in accordance with, the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual and/or placards which are located in the airplane. This handbook includes the material required to be furnished to the pilot by the Title 14 Code of Federal Regulations and additional information provided by the manufacturer and constitutes the FAA Approved Flight Manual.

As a further reminder, the owner and the operator should also be familiar with the Federal Aviation Regulations applicable to the operation and maintenance of the airplane, and, as appropriate 14 CFR Part 91 General Operating and Flight Rules. Further, the airplane must be operated and maintained in accordance with FAA Airworthiness Directives which may be issued against it.

The Title 14 Code of Federal Regulations place the responsibility for the maintenance of this airplane on the owner and the operator, who should ensure that all maintenance is done by qualified mechanics in conformity with all airworthiness requirements established for this airplane.

All limits, procedures, safety practices, time limits, servicing, and maintenance requirements contained in this handbook are considered mandatory for continued airworthiness and to maintain the airplane in a condition equal to that of its original manufacture.

Raytheon Aircraft Authorized Outlets can provide recommended modification, service, and operating procedures issued by both the FAA and Raytheon Aircraft Company, which are designed to get maximum utility and safety from the airplane.

USE OF THE HANDBOOK

WARNINGS, CAUTIONS, AND NOTES

The following definitions apply to (WARNINGS), (CAUTIONS), and (NOTES) found throughout the handbook:

WARNING

Operating procedures, techniques, etc., which could result in personal injury or loss of life if not carefully followed.

CAUTION

Operating procedures, techniques, etc., which could result in damage to equipment if not carefully followed.

NOTE

An operating procedure, technique, etc., which is considered essential to emphasize.

REVISING THE HANDBOOK

The Pilot's Operating Handbook is designed to facilitate maintaining the documents necessary for the safe and efficient operation of the airplane. The handbook has been prepared in loose-leaf form for ease in maintenance. It incorporates quick-reference tabs imprinted with the title of each section.

NOTE

In an effort to provide as complete coverage as possible, applicable to any configuration of the airplane, some optional equipment has been included in the scope of the handbook. However, due to the variety of airplane appointments and arrangements available, optional equipment described or depicted herein may not be designated as such in every case.

Immediately following the Title Page is a List of Effective Pages. A complete listing of all pages is presented along with the current status of the material contained; i.e. Original Issue, Reissued or Revised. A reissue of the manual or the revision of any portion will be received with a new List of Effective Pages to replace the

previous one. Reference to the List of Effective Page(s) enables the user to determine the current issue, revision, or reissue in effect for each page in the handbook, except for the Supplements Section.

When the handbook is originally issued, and each time it is revised or reissued, a new Log of Revisions page is provided immediately following the List of Effective Pages. All Log of Revisions pages must be retained until the handbook is reissued. A capital letter in the lower right corner of the Log of Revisions page designates the Original Issue ("A") or reissue ("B", "C", etc.) covered by the Log of Revisions page. If a number follows the letter, it designates the sequential revision (1st, 2nd, 3rd, etc.,) to the Original Issue or reissue covered by the Log of Revisions page. Reference to the Log of Revisions page(s) provides a record of changes made since the Original Issue or the latest reissue.

That portion of text or an illustration which has been revised by the addition of, or a change in, information is denoted by a solid revision bar located adjacent to the area of change and placed along the outside margin of the page.

REVISION SERVICE

The following publications will be provided, at no charge, to the registered owner and/or operator of this airplane:

1. Reissues and revisions of the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual.
2. Original issues and revisions of FAA Approved Airplane Flight Manual Supplements.
3. Original issues and revisions of Raytheon Aircraft Service Bulletins.

The above publications will be provided only to the registered owner/operator at the address listed on the FAA Aircraft Registration Branch List or the Raytheon Aircraft Domestic/International Owner's Notification Service List. Further, the owner/operator will receive only those publications pertaining to the registered airplane serial number. For detailed information on how to obtain "Revision Service" applicable to this handbook or other Raytheon Aircraft Service Publications, consult any Raytheon Aircraft Authorized Outlet or refer to the latest revision of Raytheon Aircraft Service Bulletin No. 2001.

Raytheon Aircraft Company expressly reserves the right to supersede, cancel, and/or declare obsolete, without prior notice, any part, part number, kit, or publication referenced in this handbook.

The owner/operator should always refer to all supplements for possible placards, limitations, emergency, abnormal, normal, and other operational procedures for proper operation of the airplane with optional equipment installed.

WARNING

It shall be the responsibility of the owner/operator to ensure that the latest revisions of publications referenced in this handbook are utilized during operation, servicing, and maintenance of the airplane.

SUPPLEMENTS

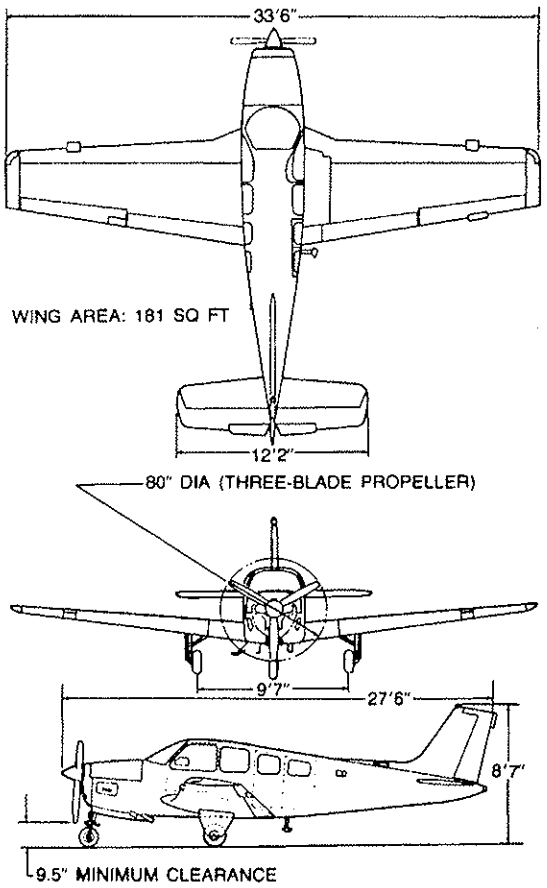
When a new airplane is delivered from the factory, the handbook delivered with it contains either an STC (Supplemental Type Certificate) Supplement or a Raytheon Aircraft Flight Manual Supplement for every installed item requiring a supplement. If a new handbook for operation of the airplane is obtained at a later date, it is the responsibility of the owner/operator to ensure that all required STC Supplements (as well as Weight and Balance and other pertinent data) are transferred into the new handbook.

AIRPLANE FLIGHT MANUAL SUPPLEMENTS REVISION RECORD

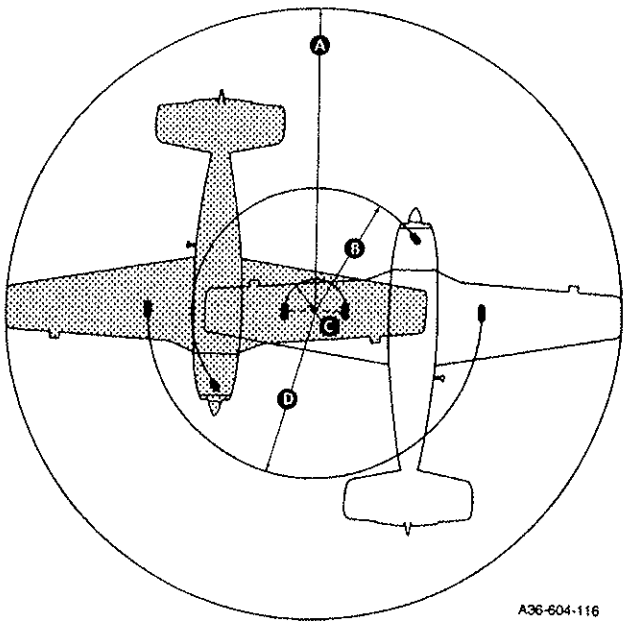
Section IX, Supplements, contains the FAA-approved Airplane Flight Manual Supplements, headed by a Log of Supplements page. When new supplements are received or existing supplements are revised, a new Log page will replace the previous one, since it contains a listing of all previous approvals, plus the new approval. The supplemental material will be added to the Section in accordance with the sequence specified on the Log page.

NOTE

Upon receipt of a new or revised supplement, compare the existing Log of Supplements in the handbook with the corresponding applicable Log page accompanying the new or revised supplement. It may occur that the Log page already in the handbook is dated later than the Log page accompanying the new or revised supplement. In any case, retain the Log page having the later date and discard the older Log page.



AIRPLANE THREE VIEW



GROUND TURNING CLEARANCE

Ⓐ Radius for Wing Tip . . . . . .27 feet 7 inches
Ⓑ Radius for Nose Wheel . . . . . .13 feet 8 inches
Ⓒ Radius for Inside Gear. . . . . .6 feet 3 inches
Ⓓ Radius for Outside Gear . . . . . .15 feet 10 inches

TURNING RADII ARE CALCULATED USING FULL STEERING, ONE BRAKE AND PARTIAL POWER.

DESCRIPTIVE DATA

ENGINE

NUMBER OF ENGINES

One

ENGINE MANUFACTURER

Teledyne Continental Motors Corporation (Muskegon, Michigan)

ENGINE MODEL NUMBER

IO-550-B

ENGINE TYPE

Normally aspirated, Fuel-injected, direct-drive, air-cooled, horizontally opposed, 6-cylinder, 550-cubic-inch displacement.

HORSEPOWER RATING

300 H.P.

NUMBER OF PROPELLERS

One

PROPELLER MANUFACTURER

McCauley Propeller (Vandalia, Ohio)
(Refer to supplement HPA36-2 for airplanes equipped with a Hartzell propeller.)

NUMBER OF BLADES

Three

PROPELLER TYPE

Constant-speed, Hydraulically Actuated consisting of (X)-82NDB-2 blades and a D3A32C409-(X) hub.

NOTE

The letters appearing in the place of the (X) represent minor variations in the propeller hub or blades. They do not affect eligibility or interchangeability.

PITCH SETTINGS (30-INCH STATION)

Low . . . . . 13.7° ± 0.2°
High . . . . . 28.8° ± 0.5°

PROPELLER DIAMETER

Maximum . . . . . 80 inches
Minimum . . . . . 78.5 inches

FUEL

APPROVED ENGINE FUELS

Aviation Gasoline Grade 100LL (blue)
Aviation Gasoline Grade 100 (green)

FUEL CAPACITY

Total Capacity . . . . . 80 Gallons
Total Usable . . . . . 74 Gallons

ENGINE OIL

OIL CAPACITY

Total ..... 12 Quarts

SPECIFICATION

Use MIL-L-22851 Ashless Dispersant Oils meeting the requirements of the latest revision of Teledyne Continental Motors Corporation Specification MHS-24B or current applicable Teledyne Continental Service Bulletin. Refer to Section VIII, HANDLING, SERVICING AND MAINTENANCE for a list of approved oils.

MAXIMUM CERTIFICATED WEIGHTS

Maximum Ramp Weight ..... 3663 lbs
Maximum Take-off Weight ..... 3650 lbs
Maximum Landing Weight ..... 3650 lbs
Maximum Zero Fuel Weight ..... No Structural Limitation
Maximum Weight in Baggage Compartment ..... (See Section II, LIMITATIONS)

CABIN AND ENTRY DIMENSIONS

Interior Cabin Length ..... 12 ft 7 in.
Interior Cabin Width (max) ..... 3 ft 6 in.
Interior Cabin Height (max) ..... 4 ft 2 in.
Fwd Cabin Door Opening ..... 37 in. wide x 36 in. high
Aft Utility Door Opening ..... 45 in. wide x 35 in. high

CABIN BAGGAGE VOLUMES

Rear Cabin Compartment
(Rear Spar to Sta. 170.0) . . . . . 37 cu ft

Extended Aft Compartment
(Sta. 170.0 to 190.0) . . . . . 10 cu ft

SPECIFIC LOADINGS

Wing Loading at Maximum Take-off Weight. . . . . 20.2 lbs/sq ft

Power Loading at Maximum Take-off Weight. . . . . 12.2 lbs/hp

SYMBOLS, ABBREVIATIONS AND TERMINOLOGY

The following glossary is applicable within this handbook.

GENERAL AIRSPEED TERMINOLOGY

CAS	*Calibrated Airspeed* is the indicated airspeed of an airplane corrected for position and instrument error. Calibrated airspeed is equal to true airspeed in standard atmosphere at sea level.
GS	*Ground Speed* is the speed of an airplane relative to the ground.
IAS	*Indicated Airspeed* is the speed of an airplane as shown on the airspeed indicator. IAS values published in this handbook assume zero instrument error.
KCAS	*Calibrated Airspeed* expressed in knots.
KIAS	*Indicated Airspeed* expressed in knots.
TAS	*True Airspeed* is the airspeed of an airplane relative to undisturbed air, which is the CAS corrected for altitude, temperature, and compressibility.
V_A	*Maneuvering Speed* is the maximum speed at which application of full available aerodynamic control will not overstress the airplane.

V_{FE}	*Maximum Flap Extended Speed* is the highest speed permissible with wing flaps in a prescribed extended position.
V_{LE}	*Maximum Landing Gear Extended Speed* is the maximum airspeed at which an airplane can be safely flown with the landing gear extended.
V_{LO}	*Maximum Landing Gear Operating Speed* is the maximum speed at which the landing gear can be safely extended or retracted.
V_{NE}	*Never Exceed Speed* is the airspeed limit that may not be exceeded at any time.
V_{NO}	*Maximum Structural Cruising Speed* is the airspeed that should not be exceeded except in smooth air and then only with caution.
V_S	*Stalling Speed* or the minimum steady flight speed at which the airplane is controllable.
V_{SO}	*Stalling Speed* or the minimum steady flight speed at which the airplane is controllable in the landing configuration.
V_X	*Best Angle-of-Climb Speed* is the airspeed which delivers the greatest gain of altitude in the shortest possible horizontal distance.
V_Y	*Best Rate-of-Climb Speed* is the airspeed which delivers the greatest gain in altitude in the shortest possible time.

METEOROLOGICAL TERMINOLOGY

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).
ISA	*International Standard Atmosphere* in which: (1) The air is a dry, perfect gas; (2) The temperature at sea level is 15° Celsius (59° Fahrenheit); (3) The pressure at sea level is 29.92 inches of mercury (1013.2 millibars); (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 (-0.003566°F) per foot and zero above that altitude.
OAT	*Outside Air Temperature* is the free air static temperature, obtained either from the temperature indicator (IOAT) adjusted for compressibility effects, or from ground meteorological sources.
Pressure Altitude	Altitude measured from standard sea-level pressure (29.92 in. Hg/1013.2 millibars) by a pressure (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. Position errors may be obtained from the Altimeter Correction graphs.

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.

POWER TERMINOLOGY

Cruise Climb Power	Power recommended for cruise climb.
Economy Cruise Power	Minimum power setting for which specific values of fuel flow and airspeed are presented.
Maximum Cruise Power	Maximum power setting for which specific values of fuel flow and airspeed are presented.
Recommended Cruise Power	Power settings for which specific values of fuel flow and airspeed are presented.
Take-off and Maximum Continuous Power (MCP)	Highest power rating not limited by time.

ENGINE CONTROLS AND INSTRUMENTS TERMINOLOGY

EGT	The Exhaust Gas Temperature Indicator is used to identify the lean and best-power fuel flow mixtures for various power settings during cruise.
Manifold Pressure	The regulated absolute air pressure in the intake manifold of the engine located between the throttle valve and the cylinders.
Manifold Pressure Gage	Measures the absolute pressure in the intake manifold of an engine, expressed in inches of mercury (in.Hg).
Mixture Control	Used to set fuel flow in all modes of operation, and to cut off fuel completely for engine shutdown.
Propeller Control	Used to control the rpm setting of the propeller governor. Movement of the control results in an increase or decrease in prop rpm.
Propeller Governor	Regulates the rpm of the engine/propeller by increasing or decreasing the propeller pitch through a pitch change mechanism in the propeller hub.
Tachometer	Indicates the rotational speed of the propeller in revolutions per minute (rpm).
Throttle Control	Used to control power by introducing fuel-air mixture into the intake passages of an engine. Settings are reflected by readings on the manifold pressure gage.

AIRPLANE PERFORMANCE AND FLIGHT PLANNING TERMINOLOGY

Climb Gradient	The 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 velocity of the crosswind component for which adequate control of the airplane during takeoff and landing was actually demonstrated during certification tests. The value shown is not limiting.
GPH	U.S. Gallons per hour.
MEA	Minimum Enroute 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.

WEIGHT AND BALANCE TERMINOLOGY

Airplane Center of Gravity (CG)	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.
Arm	The horizontal distance from the reference datum to the center of gravity (C.G.) of an item.

Basic Empty Weight	The weight of an empty airplane including full engine oil and unusable fuel. This equals empty weight plus the weight of unusable fuel, and the weight of all the engine oil required to fill the lines and tanks. Basic empty weight is the basic configuration from which loading data is determined.
CG Arm	The arm is obtained by adding the airplane's individual moments and dividing the sum by the total weight.
CG Limits	The extreme center of gravity locations within which the airplane must be operated at a given weight.
Empty Weight	The weight of an empty airplane before any oil or fuel has been added. This includes all permanently installed equipment, fixed ballast, full hydraulic fluid, full chemical toilet fluid, and all other operating fluids full, except that the engines, tanks, and lines do not contain any engine oil or fuel.
Engine Oil	Total system oil including undrainable.
Jack Points	Points on the airplane identified by the manufacturer as suitable for supporting the airplane for weighing or other purposes.
Leveling Points	Those points which are used during the weighing process to level the airplane.
Maximum Landing Weight	Maximum weight approved for the landing touchdown.
Maximum Ramp Weight	Maximum weight approved for ground maneuvering (includes weight of start, taxi, and runup fuel).

Maximum Take-off Weight	Maximum weight approved for the start of the take-off run.
Maximum Zero Fuel Weight	Maximum weight exclusive of usable fuel.
Moment	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).
Payload	Weight of occupants, cargo, and baggage.
Reference Datum	An imaginary vertical plane from which all horizontal distances are measured for balance purposes.
Station	A location along the airplane fuselage usually given in terms of distance from the reference datum.
Tare	The weight of chocks, blocks, stands, etc., used on the scales when weighing an airplane.
Unusable Fuel	Fuel that is not available for flight planning.
Usable Fuel	Fuel available for flight planning.
Useful Load	Difference between Ramp Weight, and Basic Empty Weight.

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SECTION II
LIMITATIONS
TABLE OF CONTENTS

SECTION II
LIMITATIONS
TABLE OF CONTENTS (Cont'd)

SUBJECT *PAGE*

CIVIL AVIATION AUTHORITY

ADDITIONAL LIMITATIONS AND INFORMATION

FOR UNITED KINGDOM CERTIFICATION

CAA Supplement No.1 issue 1 to the FAA approved Beechcraft A36 Pilot's Operating Handbook and Airplane Flight Manual Part No 36-590002-37.

Beechcraft	Constructor's	Registration
Bonanza A36	Serial No. E-2788	Marks G-FOZZ

The limitations and information contained herein either supplement or, in the case of conflict, override those in the Pilot's Operating Handbook.

When the aeroplane is flown for the purpose of public transport, the performance information contained in the Pilot's Operating Handbook and in any relevant supplement or change sheet shall be used in assessing the ability of the aeroplane to comply with the requirements of the relevant Air Navigation (General) Regulation. It is recommended that this same information is used by the commander before every flight, regardless of purpose, to satisfy himself that the aeroplane can take-off, carry out the flight and land safely in the conditions expected, so as to comply with the pre-flight action by the commander of an aircraft required by the Air Navigation Order.

CLASSIFICATION

For the purpose of the first schedule of the Air Navigation Order, the aircraft is classified as an Aeroplane (landplane).

CATEGORY

The Beechcraft Bonanza A36 is eligible for certification in the United Kingdom in the Transport Category (Passenger). This aeroplane may however be restricted to another Category and to a particular use and this will be stated in the certificate of airworthiness.

FLIGHT OVER WATER

For the purpose of compliance with the legislation governing flight over water, a true airspeed of 150 knots shall be used.

MINIMUM CREW

The minimum crew is one pilot.

MAXIMUM NUMBER OF OCCUPANTS

The maximum number of occupants including the crew shall not exceed six nor exceed the number for which approved seats are fitted.

Children under the age of three years carried in the arms of passengers may be left out of this count.

CIVIL AVIATION AUTHORITY

ADDITIONAL LIMITATIONS AND INFORMATION

FOR UNITED KINGDOM CERTIFICATION

FLIGHT IN ICING CONDITIONS

Flight in icing conditions is prohibited.

FLIGHT BY NIGHT AND IN IFR

The aeroplane may be flown at night or in IFR conditions when permitted by the air navigation legislation and when the equipment required by that legislation is carried.

KING KFC 200 AUTOMATIC FLIGHT CONTROL SYSTEM

When the autopilot is installed in the aeroplane, the flight manual shall contain the appropriate approved airplane flight manual supplement.

An autopilot shall not be engaged when the aeroplane is flying at a height less than 1,000 feet above the terrain except that, when coupled to an ILS glide slope, it shall not remain engaged when the aeroplane is flying at a height less than 320 feet above the terrain.

STALLING

Warning: stall characteristics are particularly sensitive to sideslip at aft C. of G. in the landing configuration with power on. An inadvertent stall in this configuration is likely to produce marked left wing drop. Large bank angles will be reached unless immediate recovery action is taken.

LANDING WITH FLAPS RETRACTED

When approaching to land with wing flaps retracted, a final approach speed of 90 knots I.A.S. is recommended. The resulting landing distance from a heights of 50 feet must be assumed to be 35% greater than the normal landing distance given on page 5-40 of the Pilot's Operating Manual.

PERFORMANCE

When operated for public transport, the aeroplane is classified in performance group E of the Air Navigation (General) Regulations.

For the purpose of establishing compliance with these regulations, the performance information given in the Bonanza A36 Pilot's Operating Manual with the following factors applied must be used.

OPERATIONS ON GRASS SURFACES

On short, dry grass surfaces, the normal take-off and landing distances scheduled in Section 5 of the Pilot's Operating manual are to be increased by 20%

CIVIL AVIATION AUTHORITY

ADDITIONAL LIMITATIONS AND INFORMATION

FOR UNITED KINGDOM CERTIFICATION

TAKE-OFF SAFETY SPEED AND DISTANCE

At weights below 3,000 lbs the air speed at 50 feet should be 73 knots IAS and the distance to 50 feet height must be assumed to be not less than the distance appropriate to 3,000 lb. The distance must also be factored as required by the previous paragraph if the take-off is to be made on short, dry grass.

To be inserted in the POH opposite Page 2-3 and the CAA revision record sheet amended accordingly.

The limitations included in this section have been approved by the Federal Aviation Administration and should be observed in the operation of this airplane.

AIRSPEED LIMITATIONS

SPEED	KCAS	KIAS	REMARKS
Never Exceed (V_{NE})	203	205	Do not exceed this speed in any operation.
Maximum Structural Cruising (V_{NO} or V_C)	165	167	Do not exceed this speed except in smooth air and then only with caution.
Maneuvering (V_A)	139	141	Do not make full or abrupt control movements above this speed.
Maximum Flap Extension/ Extended (V_{FE}) Approach (12°) Full Down (30°)	 152 122	 154 124	Do not extend flaps or operate with flaps extended above this speed.
Maximum Landing Gear Operating Extended (V_{LO}/V_{LE})	152	154	Do not extend, retract or operate with gear extended above this speed, except in emergency.

AIRSPEED INDICATOR MARKINGS*

MARKING	KCAS VALUE OR RANGE	KIAS VALUE OR RANGE	SIGNIFICANCE
White Arc	61-122	61-124	Full Flap Operating Range
White Triangle	152	154	Maximum Speed for Approach Flaps
Green Arc	68-165	68-167	Normal Operating Range
Yellow Arc	165-203	167-205	Operate with Caution, Only in Smooth Air
Red Line	203	205	Do Not Exceed This Speed In Any Operation.

*The airspeed indicator is marked in IAS values.

POWER PLANT LIMITATIONS

NUMBER OF ENGINES

One

ENGINE MANUFACTURER

Teledyne Continental Motors Corporation (Muskegon, Michigan)

ENGINE MODEL NUMBER

IO-550-B

ENGINE TYPE

Normally aspirated, fuel-injected, direct-drive, air-cooled, horizontally opposed, 6-cylinder, 550-cubic-inch displacement, 300-hp.

ENGINE OPERATING LIMITATIONS

Take-off and Maximum
Continuous Power ..... Full Throttle, 2700 rpm

Cylinder Head Temperature

Maximum ..... 238°C

Oil Temperature

Minimum (Take-Off) ..... 24°C

Maximum ..... 116°C

Oil Pressure

Minimum (idle) ..... 10 psi

Maximum ..... 100 psi

Fuel Flow

Serials prior to E-2165 except those serials complying with Raytheon Service Bulletin No. 2024:

Maximum ..... 26.2 gph

Serials E-2165 and After and those serials complying with Raytheon Service Bulletin No. 2024:

Maximum ..... 27.4 gph

Manual Leaning Limitations ..... See Manifold Pressure vs RPM Graph in Section V, Performance, for Engine Leaning Limitations.

Aux Fuel Pump

The HI position of the auxiliary fuel pump is not to be used during flight except when failure of the engine-driven fuel pump occurs.

Starter

Do not engage starter for more than 30 seconds in any 4-minute time period.

FUEL LIMITS

APPROVED ENGINE FUELS

100LL (blue)
100 (green)

FUEL CAPACITY

Total Capacity . . . . . 80 gal
Total Usable . . . . . 74 gal

FUEL MANAGEMENT

Do not take off when Fuel Quantity Gages indicate in Yellow Arc or with less than 13 gallons in each main tank.

Maximum Slip Duration . . . . . 30 seconds

OIL SPECIFICATION

Use MIL-L-22851 Ashless Dispersant Oils meeting the requirements of the latest revision of Teledyne Continental Motors Corporation Specification MHS-24B or current applicable Teledyne Continental Service Bulletin. Refer to Section VIII, HANDLING, SERVICING AND MAINTENANCE, for a list of approved oils.

NUMBER OF PROPELLERS

One

PROPELLER MANUFACTURER

McCauley Propeller (Vandalia, Ohio)
(Refer to supplement HPA36-2 for airplanes equipped with a Hartzell propeller.)

NUMBER OF BLADES

Three

PROPELLER TYPE

Constant-speed, Hydraulically Actuated consisting of (X)-82NDB-2 blades and a D3A32C409-(X) hub.

NOTE

The letters appearing in the place of the (X) represent minor variations in the propeller hub or blades. They do not affect eligibility or interchangeability.

PITCH SETTINGS (30-INCH STATION)

Low	13.7° ±0.2°
High	28.8° ±0.5°

PROPELLER DIAMETER

Maximum	80 inches
Minimum	78.5 inches

POWER PLANT INSTRUMENT MARKINGS

OIL TEMPERATURE

Caution (Yellow Radial)	24°C

Normal Operating Range (Green Arc) . . . . . 24° to 116°C
Maximum (Red Radial) . . . . . 116°C

OIL PRESSURE

Minimum (Idle) (Red Radial) . . . . . 10 psi
Caution Range (Yellow Arc) . . . . . 10 to 30 psi
Operating Range (Green Arc) . . . . . 30 to 60 psi
Maximum (Red Radial) . . . . . 100 psi

TACHOMETER

Operating Range (Green Arc) . . . . . 1800 to 2700 rpm
Maximum (Red Radial) . . . . . 2700 rpm

CYLINDER HEAD TEMPERATURE

Operating Range (Green Arc) . . . . . 116° to 238°C
Maximum (Red Radial) . . . . . 238°C

MANIFOLD PRESSURE

Operating Range (Green Arc) . . . . . 15.0 to 29.6 in. Hg
Maximum (Red Radial) . . . . . 29.6 in. Hg

FUEL FLOW

Serials prior to E-2165 except those serials complying with Raytheon Service Bulletin No. 2024:

Operating Range (Green Arc) . . . . . 3.0 to 26.2 gph
Maximum (Red Radial) . . . . . 26.2 gph

Serials E-2165 and After and those serials complying with Raytheon Service Bulletin No. 2024:

Operating Range (Green Arc) . . . . . 3.0 to 27.4 gph
Maximum (Red Radial) . . . . . 27.4 gph

MISCELLANEOUS INSTRUMENT MARKINGS

INSTRUMENT PRESSURE

Operating Range (Green Arc) . . . . . .4.3 to 5.9 in. Hg

FUEL QUANTITY

Yellow Arc. . . . . E to 3/8 full

WEIGHT LIMITS

Maximum Ramp Weight . . . . . 3663 lbs
Maximum Take-off Weight . . . . . 3650 lbs
Maximum Landing Weight . . . . . 3650 lbs
Maximum Zero Fuel Weight . . . . . .No Structural Limitation
Maximum Weights in Baggage Compartments:
Between Spars . . . . . 200 lbs
Rear Spar to Sta. 170 . . . . . 400 lbs
Aft Compartment (Sta. 170 to Sta. 190) . . . . . 70 lbs
Floor Structure Load Limits:
Between Spars . . . . . 50 lbs per sq ft
Rear Spar to Sta. 170 . . . . . 100 lbs per sq ft
Maximum combined weight of aft seat occupants is 250 lbs unless otherwise placarded.

CENTER OF GRAVITY LIMITS (Landing Gear Extended)

FORWARD LIMITS

74.0 inches aft of datum at 3100 lbs or less, with straight line variation to 81.0 inches at 3650 lbs.

AFT LIMIT

87.7 inches aft of datum at all weights.

REFERENCE DATUM

Datum is 83.1 inches forward of center line through forward jack points.

MEAN AERODYNAMIC CHORD

MAC leading edge is 66.7 inches aft of datum.
MAC length is 65.3 inches.