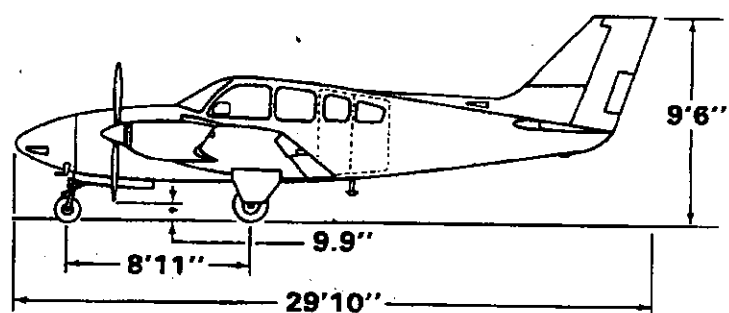
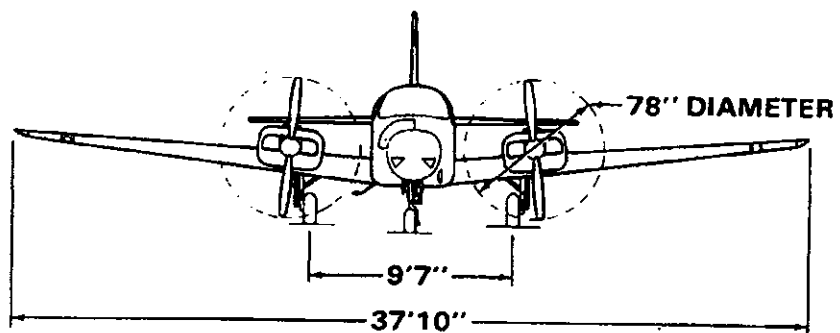
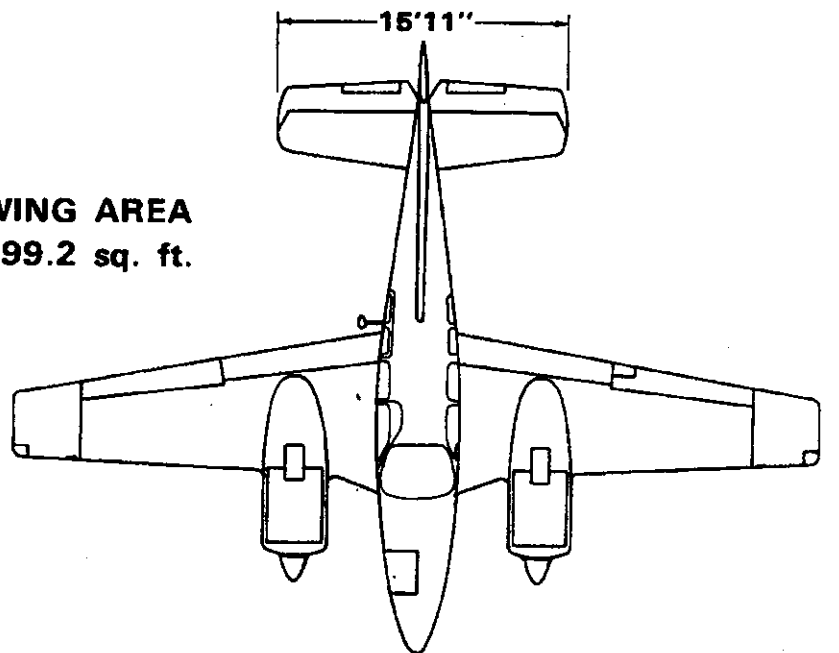


BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section I
General

WING AREA
199.2 sq. ft.

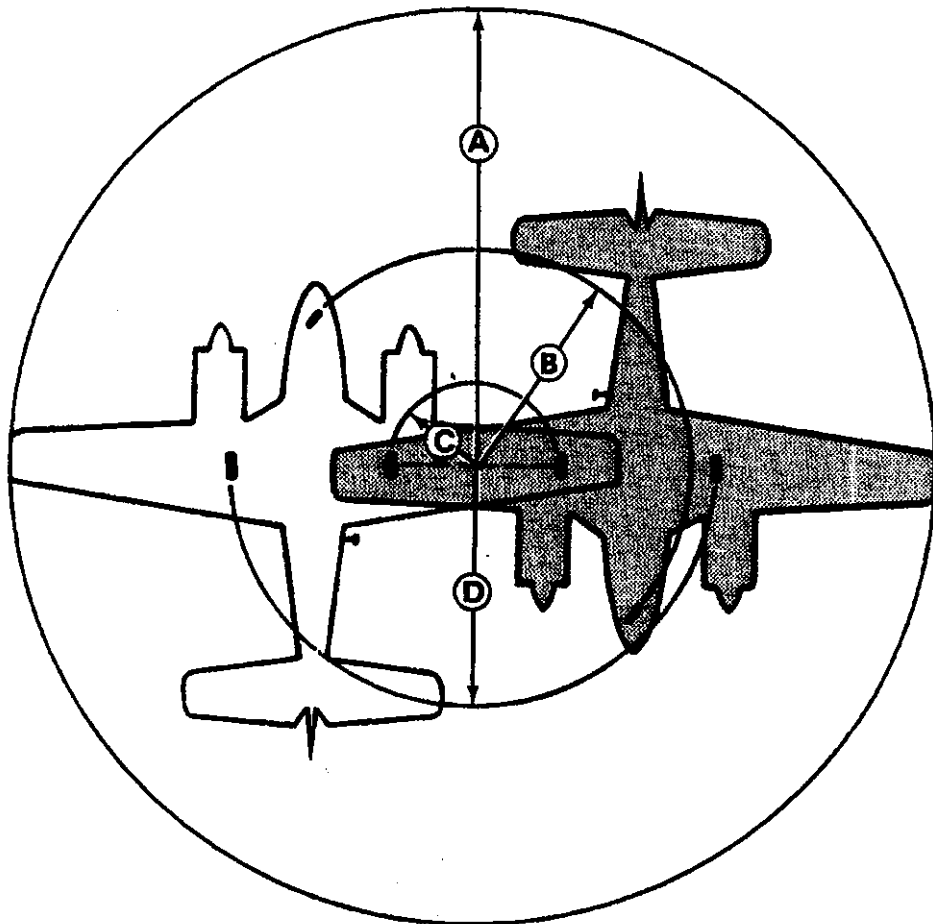


AIRPLANE THREE VIEW

January 1983

1-9

GROUND TURNING CLEARANCE



- Ⓐ Radius for Wing Tip 31 feet 6 inches
- Ⓑ Radius for Nose Wheel 15 feet 6 inches
- Ⓒ Radius for Inside Gear 7 feet 11 inches
- Ⓓ Radius for Outside Gear 17 feet 6 inches

TURNING RADII ARE PREDICATED ON THE USE OF PARTIAL BRAKING ACTION AND DIFFERENTIAL POWER.

DESCRIPTIVE DATA

ENGINES

Two Continental IO-520-C fuel injected, air cooled six-cylinder, horizontally opposed engines each rated at 285 horsepower at 2700 rpm.

Take-off and Maximum

Continuous Power Full throttle and 2700 rpm

Maximum One-Engine

Inoperative Power Full throttle and 2700 rpm

Cruise Climb Power 25.0 in. Hg at 2500 rpm

Maximum Cruise Power 24.5 in. Hg at 2500 rpm

PROPELLERS

HARTZELL

2 Blade Hubs: BHC-J2YF-2CF

Blades: FC8475-6

Pitch Setting at 30 inch Station:

Low 14.5°; Feathered 80.0°

Diameter: 78 inches maximum, 76 inches minimum

3 Blade Hubs: PHC-J3YF-2F

Blades: FC7663-2R

Pitch Setting at 30 inch Station:

Low 13.0°; Feathered 82.0°

Diameter: 76 inches maximum, 74 inches minimum

**Section I
General**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

McCAULEY

2 Blade Hubs: D2AF34C30

Blades: 78FF-0

Pitch Setting at 30 inch Station:

Low 15.0°; Feathered 79.0°

Diameter: 78 inches maximum, 76 inches minimum

3 Blade Hubs: D3AF32C35

Blades: 82NB-6

Pitch Setting at 30 inch Station:

Low 14.0° ± .2°; Feathered 81.2° ± 3°

Diameter: 76 inches, no cut-off permitted

FUEL

**Aviation Gasoline 100LL (blue) preferred, 100 (green)
minimum grade.**

STANDARD SYSTEM:

Total Capacity 142 Gallons

Total Usable 136 Gallons

OPTIONAL SYSTEMS:

Total Capacity 172 Gallons

Total Usable 166 Gallons

or

*** Total Capacity 200 Gallons**

Total Usable 194 Gallons

OIL

The oil capacity is 12 quarts for each engine.

WEIGHTS

58

Maximum Ramp Weight	5424 lbs
Maximum Take-Off Weight	5400 lbs
Maximum Landing Weight	5400 lbs

58A

Maximum Ramp Weight	5014 lbs
Maximum Take-Off Weight	4990 lbs
Maximum Landing Weight	4990 lbs

CABIN AND ENTRY DIMENSIONS

Length	12 ft 7 in.
Height (Max.)	4 ft 2 in.
Width (Max.)	3 ft 6 in.
Entrance Door	37 in. x 36 in.

BAGGAGE SPACE AND ENTRY DIMENSIONS

Main Cabin Compartment	37 cu ft
Extended Aft Compartment	10 cu ft
Utility Door Opening	45 in. x 35 in.
Nose Compartment	18 cu ft

SPECIFIC LOADINGS

Wing Loading	27.1 lbs/sq ft
Power Loading	9.47 lbs/hp

SYMBOLS, ABBREVIATIONS AND TERMINOLOGY

The following Abbreviations and Terminologies have been listed for convenience and ready interpretation where used within this handbook. Whenever possible, they have been categorized for ready reference.

AIRSPPEED TERMINOLOGY

- CAS** Calibrated Airspeed is the indicated speed 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.
- TAS** True Airspeed is the airspeed of an airplane relative to undisturbed air which is the CAS corrected for altitude, temperature, and compressibility.
- V_{MCA}** Air minimum control speed is the minimum flight speed at which the airplane is directionally controllable as determined in accordance with Federal Aviation Regulations. The airplane certification conditions include one engine becoming inoperative and windmilling; a 5° bank towards the operative engine; takeoff power on operative engine; landing gear up; flaps in take-off position; and most rearward C.G. For some conditions of weight and altitude, stall can be encountered at

speeds above V_{MCA} as established by the certification procedure described above, in which event stall speed must be regarded as the limit of effective directional control.

V_{SSE} The Intentional One-Engine-Inoperative Speed is a speed above both V_{MCA} and stall speed, selected to provide a margin of lateral and directional control when one engine is suddenly rendered inoperative. Intentional failing of one engine below this speed is not recommended.

V_A Maneuvering Speed is the maximum speed at which application of full available aerodynamic control will not overstress the airplane.

V_F Design flap speed is the highest speed permissible at which wing flaps may be actuated.

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 speed 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 speed limit that may not be exceeded at any time.

V_{NO} Maximum Structural Cruising Speed is the speed that should not be exceeded except in smooth air and then only with caution.

Section I
General

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

- 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

- 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 in. Hg (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 inflight temperature indications adjusted for instrument error and compressibility effects, or ground meteorological sources.

Indicated Pressure Altitude	The number actually read from an altimeter when the barometric sub-scale has been set to 29.92 in. Hg (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. Position errors may be obtained from the Altimeter Correction Chart.
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

Take-off	The highest power rating to be used for takeoff.
Maximum Continuous	The highest power rating not limited by time. To be used only for conditions which warrant the use of this rating.
Cruise Climb	Power recommended for cruise climb.
Maximum Cruise	The highest power settings recommended for cruise.

**Section I
General**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

**Recommended
Cruise** Intermediate power settings
for which cruise power settings are
presented.

**Economy
Cruise** The lowest power setting for which
cruise power settings are presented.

**ENGINE CONTROLS AND INSTRUMENTS
TERMINOLOGY**

**Throttle
Control** The lever used to control the introduc-
tion of a fuel-air mixture into the intake
passages of an engine.

**Propeller
Control** This lever requests the governor to
maintain rpm at a selected value and, in
the maximum decrease rpm position,
feathers the propellers.

**Mixture
Control** This lever, in the idle cut-off position,
stops the flow of fuel at the injectors and
in the intermediate thru the full rich
positions, regulates the fuel air mixture.

**Propeller
Governors** The governors maintain the selected
rpm requested by the propeller
control levers.

**Manifold
Pressure
Gage** An instrument that measures the ab-
solute pressure in the intake manifold
of an engine, expressed in inches of
mercury (in. Hg).

Tachometer An instrument that indicates the ro-
tational speed of the propeller (and en-
gine) in revolutions per minute (rpm).

**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 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. The value shown is not limiting.
Accelerate- Stop Distance	The distance required to accelerate to a specified speed and, assuming failure of an engine at the instant that speed is attained, to bring the airplane to a stop.
Accelerate- Go Distance	The distance required to accelerate to a specified speed and, assuming failure of an engine at the instant that speed is attained, feather inoperative propeller and continue takeoff on the remaining engine to a height of 50 feet.
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.
GPH	U.S. Gallons per hour.

WEIGHT AND BALANCE TERMINOLOGY

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.
Arm	The horizontal distance from the reference datum to the center of gravity (C.G.) of an item.
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.)
Airplane Center of Gravity (C.G.)	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.
C.G. Arm	The arm obtained by adding the airplane's individual moments and dividing the sum by the total weight.
C.G. Limits	The extreme center of gravity locations within which the airplane must be operated at a given weight.
Unusable Fuel	Fuel remaining after a runout test has been completed in accordance with governmental regulations.

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section I
General

Usable Fuel	Fuel available for flight planning.
Standard Empty Weight	Weight of a standard airplane including unusable fuel, full operating fluids and full oil.
Basic Empty Weight	Standard empty weight plus optional equipment.
Payload	Weight of occupants, cargo and baggage.
Useful Load	Difference between ramp weight and basic empty weight.
Maximum Ramp Weight	Maximum weight approved for ground maneuvering. (It includes weight of start, taxi, and run up fuel).
Maximum Take-off Weight	Maximum weight approved for the start of the take off run.
Maximum Landing Weight	Maximum weight approved for the landing touchdown.
Zero Fuel Weight	Weight exclusive of usable fuel.

**Section I
General**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

INTENTIONALLY LEFT BLANK

SECTION II

LIMITATIONS

TABLE OF CONTENTS

<i>SUBJECT</i>	<i>PAGE</i>
Airspeed Limitations	2-3
Airspeed Indicator Markings	2-4
Power Plant Limitations	2-5
Engines	2-5
Fuel	2-5
Oil	2-5
Propellers	2-6
Starters - Time for Cranking	2-6
Power Plant Instrument Markings	2-7
Miscellaneous Instrument Markings	2-8
Weights	2-8
CG Limits	2-9
Maneuver Limits	2-9
Flight Load Factors (5400 Pounds)	2-10
Minimum Flight Crew	2-10
Kinds of Operation	2-10
Fuel	2-11
Oxygen Requirements	2-11
Maximum Passenger Seating	
Configuration	2-11
Seating	2-11
Placards	2-12 - 2-22
Required Equipment for Various	
Conditions of Flight	2-23
 January 1983	 2-1

**Section II
Limitations**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

INTENTIONALLY LEFT BLANK

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section II
Limitations

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

AIRSPEED LIMITATIONS

SPEED	CAS		IAS		REMARKS
	KNOTS	MPH	KNOTS	MPH	
Never Exceed V_{NE}	223	257	223	257	Do not exceed this speed in any operation
Maximum Structural Cruising V_{NO}	195	225	195	225	Do not exceed this speed except in smooth air and then only with caution
Maneuvering V_A	156	180	156	180	Do not make full or abrupt control movements above this speed
Maximum Flap Extension/ Extended V_{FE} (Approach 15°) (Full down 30°)					Do not extend flaps or operate with flaps extended above this speed
	152	175	152	175	
	122	140	122	140	
Maximum Landing Gear Operating/ Extended V_{LO} and V_{LE}	152	175	152	175	Do not extend, retract or operate with landing gear extended above this speed
Air Minimum Control Speed V_{MCA}	81	93	81	93	Minimum speed for directional controllability after sudden loss of engine
Maximum With Utility Doors Removed	174	200	174	200	Utility door removal kit must be installed

***AIRSPEED INDICATOR MARKINGS**

MARKING	CAS		IAS		SIGNIFICANCE
	KNOTS	MPH	KNOTS	MPH	
White Arc	72-122	83-140	74-122	85-140	Full Flap Operating Range
Blue Radial	100	115	100	115	One-Engine-Inoperative Best Rate-of-Climb Speed
Green Arc	83-195	95-225	84-195	96-225	Normal Operating Range
Yellow Arc	195-223	225-257	195-223	225-257	Operate with caution only in smooth air
Red Radial	223	257	223	257	Maximum speed for ALL operations

*The Airspeed Indicator is marked in CAS values

POWER PLANT LIMITATIONS

ENGINES

Two Continental IO-520-C fuel injected, air cooled six-cylinder, horizontally opposed engines each rated at 285 horsepower at 2700 rpm.

Take-off and Maximum
continuous power Full throttle, 2700 rpm

Maximum Cylinder Head Temperature 460°F
Maximum Oil Temperature 240°F
Minimum Take-off Oil Temperature 75°F
Minimum Oil Pressure (Idle) 30 psi
Maximum Oil Pressure 100 psi

FUEL

Aviation Gasoline 100LL (blue) preferred, 100 (green) minimum grade.

OIL

Ashless Dispersant oils must meet latest revision of Teledyne Continental Motors Corporation Specification MHS-24. Refer to Approved Engine Oils, Section VIII, HANDLING, SERVICING, and MAINTENANCE.

**Section II
Limitations**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

PROPELLERS

HARTZELL

2 Blade Hubs: BHC-J2YF-2CF

Blades: FC8475-6

Pitch Setting at 30 inch Station:

Low 14.5°; Feathered 80.0°

Diameter: 78 inches maximum, 76 inches minimum

3 Blade Hubs: PHC-J3YF-2F

Blades: FC7663-2R

Pitch Setting at 30 inch Station:

Low 13.0°; Feathered 82.0°

Diameter: 76 inches maximum, 74 inches minimum

McCAULEY

2 Blade Hubs: D2AF34C30

Blades: 78FF-0

Pitch Setting at 30 inch Station:

Low 15.0°; Feathered 79.0°

Diameter: 78 inches maximum, 76 inches minimum

3 Blade Hubs: D3AF32C35

Blades: 82NB-6

Pitch Setting at 30 inch Station:

Low 14.0° ± .2°; Feathered 81.2° ± 3°

Diameter: 76 inches, no cut-off permitted

STARTERS - TIME FOR CRANKING

Do not operate starter continuously for more than 30 seconds. Allow starter to cool before cranking again.

POWER PLANT INSTRUMENT MARKINGS

OIL TEMPERATURE

Caution (Yellow Radial) 75°F
Operating Range
(Green Arc) 75° to 240°F
Maximum (Red Radial) 240°F

OIL PRESSURE

Minimum (Red Radial) 30 psi
Operating Range (Green Arc) 30 to 60 psi
Maximum (Red Radial) 100 psi

FUEL FLOW AND PRESSURE

Minimum (Red Radial) 1.5 psi
Cruise Power (Green Arc) 9.7 gph to 17.0 gph
Take-off and Climb Power
(Wide Green Arc) 17.8 gph to 24.3 gph
Maximum (Red Radial) 17.5 psi

MANIFOLD PRESSURE

Operating Range
(Green Arc) 15 to 29.6 in. Hg
Maximum (Red Radial) 29.6 in. Hg

TACHOMETER

Operating Range (Green Arc) ... 2000 to 2700 rpm
Maximum (Red Radial) 2700 rpm

CYLINDER HEAD TEMPERATURE

Operating Range
(Green Arc) 200° to 460°F
Maximum
(Red Radial) 460°F

Section II
Limitations

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

MISCELLANEOUS INSTRUMENT MARKINGS

INSTRUMENT PRESSURE

Caution (Yellow Arc) 2.5 to 3.5 in. Hg
Normal (Green Arc) 3.5 to 5.5 in. Hg
Caution (Yellow Arc) 5.5 to 6.5 in. Hg
Red Button Source Failure Indicators

or

Normal (Green Arc) 4.3 to 5.9 in. Hg
Red Button Source Failure Indicators

PROPELLER DEICE AMMETER

Normal Operating Range
(Green Arc) 7 to 12 amps (2 blade)
Normal Operating Range
(Green Arc) 14 to 18 amps (3 blade)

FUEL QUANTITY

Yellow Arc E to 1/8 Full

WEIGHTS

58

Maximum Ramp Weight 5424 lbs
Maximum Take-Off Weight 5400 lbs
Maximum Landing Weight 5400 lbs

58A

Maximum Ramp Weight 5014 lbs
Maximum Take-Off Weight 4990 lbs
Maximum Landing Weight 4990 lbs

Maximum Baggage/Cargo Compartment Weights:

Main Cabin Compartment
(less occupants and equipment) 400 lbs
Extended Aft Compartment 120 lbs
Nose Compartment (baggage less
equipment) 300 lbs

Refer to Weight and Balance section for additional
information.

CG LIMITS

Baron 58

Forward Limits: 74 inches aft of datum at 4200 lbs and under, then straight line variation to 78.0 inches aft of datum at gross weight of 5400 lbs.

Aft Limits: 86 inches aft of datum at all weights.

Baron 58A

Forward Limits: 74 inches aft of datum at 4200 lbs and under, then straight line variation to 76.6 inches aft of datum at gross weight of 4990 lbs.

Aft Limits: 86 inches aft of datum at all weights.

REFERENCE DATUM

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

MAC leading edge is 67.2 inches aft of datum.
MAC length is 63.1 inches.

MANEUVER LIMITS

This is a normal category airplane. Acrobatic maneuvers, including spins, are prohibited.

**Section II
Limitations**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

FLIGHT LOAD FACTORS (5400 POUNDS)

Positive maneuvering load factors:

Flaps Up	4.2G
Flaps Down	2.0G

MINIMUM FLIGHT CREW One (1) Pilot

KINDS OF OPERATION LIMITS

This airplane is approved for the following type operations when the required equipment is installed and operational as defined herein:

1. VFR day and night
2. IFR day and night

WARNING

Ice protection equipment which may be installed on this airplane has not been demonstrated to meet requirements for flight into known icing conditions.

FUEL

TOTAL FUEL with left and right wing fuel systems full:

Standard Fuel System

Capacity	142 Gallons
Usable	136 Gallons

Optional Fuel System

Capacity	172 Gallons
Usable	166 Gallons

or

Capacity	200 Gallons
Usable	194 Gallons

Do not take off if Fuel Quantity Gages indicate in Yellow Arc or with less than 13 gallons in each wing fuel system.

The fuel crossfeed system to be used during emergency conditions in level flight only.

Maximum slip duration: 30 seconds

OXYGEN REQUIREMENTS

Refer to FAR 91 for oxygen requirements.

**MAXIMUM PASSENGER SEATING
CONFIGURATION**

Five (5) passengers and one (1) pilot

SEATING

All seats must be in the upright position for takeoff and landing.

SECTION III

EMERGENCY PROCEDURES

TABLE OF CONTENTS

<i>SUBJECT</i>	<i>PAGE</i>
Emergency Airspeeds	3-3
One Engine Operation	3-3
Determining Inoperative Engine	3-4
One-Engine Inoperative Procedures	3-4
Engine Failure During Take-Off	3-4
Engine Failure After Lift-off and In Flight	3-5
Air Start	3-6
Engine Fire	3-7
Ground	3-7
In Flight	3-7
Emergency Descent	3-7
Glide	3-8
Landing Emergencies	3-8
Gear Up Landing	3-8
One-Engine Inoperative Landing	3-9
One-Engine Inoperative Go-Around	3-9
Systems Emergencies	3-10
One-Engine Inoperative Operation on Crossfeed	3-10
Electrical Smoke or Fire	3-10
Illumination of Alternator-Out Light	3-11
Unscheduled Electric Elevator Trim	3-12
Landing Gear Manual Extension	3-12

TABLE OF CONTENTS (Continued)

<i>SUBJECT</i>	<i>PAGE</i>
Landing Gear Retraction After	
Practice Manual Extension	3-13
Ice Protection	3-14
Surface Deice System	3-14
Electrothermal Propeller Deice	
System	3-14
Alternate (Emergency) Static Air	
Source System	3-15
Emergency Exits	3-16
Unlatched Door in Flight	3-17
Simulated One-Engine Inoperative	3-17
Spins	3-18

All airspeeds quoted in this section are indicated airspeeds (IAS) and assume zero instrument error.

EMERGENCY AIRSPEEDS

Air Minimum Control Speed (V_{MCA})	... 81 kts/93 mph
Intentional One-Engine Inoperative Speed (V_{SSE}) 86 kts/99 mph
Best Rate-of-Climb Speed One-Engine Inoperative (V_Y) 100 kts/115 mph
Best Angle-of-Climb Speed One-Engine Inoperative (V_X) 96 kts/111 mph
Landing - One Engine Inoperative: Maneuvering to Final Approach (minimum) 100 kts/115 mph
Final Approach (minimum) 90 kts/104 mph

The following information is presented to enable the pilot to form, in advance, a definite plan of action for coping with the most probable emergency situations which could occur in the operation of the airplane. Where practicable, the emergencies requiring immediate corrective action are treated in check list form for easy reference and familiarization. Other situations, in which more time is usually permitted to decide on and execute a plan of action, are discussed at some length. In order to supply one safe speed for each type of emergency situation, the airspeeds presented were derived at 5400 lbs.

ONE ENGINE OPERATION

Two major factors govern one engine operations; airspeed and directional control. The airplane can be safely maneuvered or trimmed for normal hands-off operation and sustained in this configuration by the operative engine AS LONG AS SUFFICIENT AIRSPEED IS MAINTAINED.

DETERMINING INOPERATIVE ENGINE

The following checks will help determine which engine has failed.

1. **DEAD FOOT - DEAD ENGINE.** The rudder pressure required to maintain directional control will be on the side of the good engine.
2. **THROTTLE.** Partially retard the throttle for the engine that is believed to be inoperative; there should be no change in control pressures or in the sound of the engine if the correct throttle has been selected. **AT LOW ALTITUDE AND AIRSPEED THIS CHECK MUST BE ACCOMPLISHED WITH EXTREME CAUTION.**

Do not attempt to determine the inoperative engine by means of the tachometers or the manifold pressure gages. These instruments often indicate near normal readings.

ONE-ENGINE INOPERATIVE PROCEDURES

ENGINE FAILURE DURING TAKE-OFF

1. **Throttles - CLOSED**
2. **Braking - MAXIMUM**

If insufficient runway remains for stopping:

3. **Fuel Selector Valves - OFF**
4. **Battery, Alternator, and Magneto/Start Switches - OFF**

**ENGINE FAILURE AFTER LIFT-OFF
AND IN FLIGHT**

An immediate landing is advisable regardless of take-off weight. Continued flight cannot be assured if take-off weight exceeds the weight determined from the TAKE-OFF WEIGHT graph. Higher take-off weights will result in a loss of altitude while retracting the landing gear and feathering the propeller. Continued flight requires immediate pilot response to the following procedures.

1. Landing Gear and Flaps - UP
2. Throttle (inoperative engine) - CLOSED
3. Propeller (inoperative engine) - FEATHER
4. Power (operative engine) - AS REQUIRED
5. Airspeed - MAINTAIN SPEED AT ENGINE FAILURE (100 KTS/115 MPH MAX.) UNTIL OBSTACLES ARE CLEARED.

After positive control of the airplane is established:

6. Secure inoperative engine:
 - a. Mixture Control - IDLE CUT-OFF
 - b. Fuel Selector - OFF
 - c. Auxiliary Fuel Pump - OFF
 - d. Magneto/Start Switch - OFF
 - e. Alternator Switch - OFF
 - f. Cowl Flap - CLOSED
7. Electrical Load - MONITOR (Maximum load of 1.0 on remaining engine)

NOTE

The most important aspect of engine failure is the necessity to maintain lateral and directional control. If airspeed is below 81 kts (93 mph), reduce power on the operative engine as required to maintain control. Refer to the SAFETY INFORMATION Section for additional information regarding pilot technique.

AIR START

CAUTION

The pilot should determine the reason for engine failure before attempting an air start.

1. Fuel Selector Valve - ON
2. Throttle - SET approximately 1/4 travel
3. Mixture Control - FULL RICH, below 5000 ft (1/2 travel above 5,000 ft)
4. Aux Fuel Pump - LOW
5. Magnetos - CHECK ON
6. Propeller:

WITH UNFEATHERING ACCUMULATORS:

- a. Move propeller control full forward to accomplish unfeathering. Use starter momentarily if necessary.
- b. Return control to high pitch (low rpm) position, when windmilling starts, to avoid overspeed.

If propeller does not unfeather or engine does not turn, proceed to WITHOUT UNFEATHERING ACCUMULATORS procedure.

WITHOUT UNFEATHERING ACCUMULATORS:

- a. Move propeller control forward of the feathering detent to midrange
 - b. Engage Starter to accomplish unfeathering
 - c. If engine fails to run, clear engine by allowing it to windmill with mixture in IDLE CUT-OFF. When engine fires, advance mixture to FULL RICH
7. When Engine Starts - ADJUST THROTTLE, PROPELLER and MIXTURE CONTROLS
 8. Aux Fuel Pump - OFF (when reliable power has been regained)

9. Alternator Switch - ON
10. Oil Pressure - CHECK
11. Warm Up Engine (approximately 2000 rpm and 15 in. Hg)
12. Set power as required and trim

ENGINE FIRE

ON THE GROUND

1. Mixture Controls - IDLE CUT-OFF
2. Continue to crank affected engine
3. Fuel Selector Valves - OFF
4. Battery and Alternator Switches - OFF
5. Extinguish with Fire Extinguisher

IN FLIGHT

Shut down the affected engine according to the following procedure and land immediately. Follow the applicable single-engine procedures in this section.

1. Fuel Selector Valve - OFF
2. Mixture Control - IDLE CUT-OFF
3. Propeller - FEATHERED
4. Aux Fuel Pump - OFF
5. Magneto/Start Switch - OFF
6. Alternator Switch - OFF

EMERGENCY DESCENT

1. Propellers - 2700 RPM
2. Throttles - CLOSED
3. Airspeed - 152 kts (175 mph)
4. Landing Gear - DOWN
5. Flaps - APPROACH (15°)

GLIDE

1. Propellers - FEATHER
2. Flaps - UP
3. Landing Gear - UP
4. Cowl Flaps - CLOSED

The glide ratio in this configuration is approximately 2 nautical miles of gliding distance for each 1000 feet of altitude above the terrain at an airspeed of 120 kts (138 mph).

LANDING EMERGENCIES

GEAR-UP LANDING

If possible, choose firm sod or foamed runway. When assured of reaching landing site:

1. Cowl Flaps - CLOSED
2. Wing Flaps - AS DESIRED
3. Throttles - CLOSED
4. Fuel Selectors - OFF
5. Mixture Controls - IDLE CUT-OFF
6. Battery, Alternator and Magneto/Start Switches - OFF
7. Keep wings level during touchdown.
8. Get clear of the airplane as soon as possible after it stops.

NOTE

The gear up landing procedures are based on the best available information and no actual tests have been conducted.

ONE ENGINE INOPERATIVE LANDING

On final approach and when it is certain that the field can be reached:

1. Landing Gear - DOWN
2. Flaps - APPROACH (15°)
3. Airspeed - 90 kts/104 mph
4. Power - AS REQUIRED to maintain 800 ft/min rate of descent

When it is certain there is no possibility of go-around:

5. Flaps - DOWN
6. Execute normal landing

ONE ENGINE INOPERATIVE GO-AROUND

WARNING

Level flight might not be possible for certain combinations of weight, temperature and altitude. In any event, DO NOT attempt a one engine inoperative go-around after flaps have been fully extended.

1. Power - MAXIMUM ALLOWABLE
2. Landing Gear - UP
3. Flaps - UP
4. Airspeed - MAINTAIN 100 kts (115 mph) MINIMUM

SYSTEMS EMERGENCIES

**ONE-ENGINE INOPERATIVE OPERATION
ON CROSSFEED**

NOTE

The fuel crossfeed system is to be used only during emergency conditions in level flight only.

Left engine inoperative:

1. Right Aux Fuel Pump - LOW
2. Left Fuel Selector Valve - OFF
3. Right Fuel Selector Valve - CROSSFEED
4. Right Aux Fuel Pump - LOW or OFF as required

Right engine inoperative:

1. Left Aux Fuel Pump - LOW
2. Right Fuel Selector Valve - OFF
3. Left Fuel Selector Valve - CROSSFEED
4. Left Aux Fuel Pump - LOW or OFF as required

ELECTRICAL SMOKE OR FIRE

Action to be taken must consider existing conditions and equipment installed:

1. Battery and Alternator Switches - OFF

WARNING

Electrically driven flight instruments will become inoperative.

2. Oxygen - AS REQUIRED
3. All Electrical Switches - OFF
4. Battery and Alternator Switches - ON

5. Essential Electrical Equipment - ON (Isolate defective equipment:

NOTE

Ensure fire is out and will not be aggravated by draft. Turn off CABIN HEAT switch and push in the CABIN AIR control. Open pilot's storm window, if required.

ILLUMINATION OF ALTERNATOR OUT LIGHT

In the event of the illumination of a single ALTERNATOR OUT light:

1. Check the respective loadmeter for load indication
 - a. No Load - Turn off affected alternator
 - b. Regulate load

In the event of the illumination of both ALTERNATOR OUT lights:

1. Check loadmeters for load indication
 - a. No load indicates failure of regulator
 - (1) Switch regulators
 - (2) System should indicate normal
 - b. If condition recurs
 - (1) Switch to original regulator
 - (2) System returns to normal, indicates overload condition causing malfunction
 - (3) Reduce load
 - c. If condition indicates malfunction of both alternator circuits
 - (1) Both ALT Switches - OFF
 - (2) Minimize electrical load since only battery power will be available

UNSCHEDULED ELECTRIC ELEVATOR TRIM

Incorporated in the system is an emergency release button located on the left handle grip of the pilot's control wheel. This button can be depressed to deactivate the system quickly in case of a malfunction in the system. The system will remain deactivated only while the release button is being held in the depressed position.

1. Airplane Attitude - MAINTAIN using elevator control
2. Trim Release (under pilot's thumb adjacent to control wheel trim switch) - HOLD IN DEPRESSED POSITION
3. Trim - MANUALLY RE-TRIM AIRPLANE
4. Electric Trim - OFF
5. Trim Release - RELEASE
6. Circuit Breaker - PULL

NOTE

Do not attempt to operate the electric trim system until the cause of the malfunction has been determined and corrected.

LANDING GEAR MANUAL EXTENSION

Reduce airspeed before attempting manual extension of the landing gear.

1. LDG GR MOTOR Circuit Breaker - PULL
2. Landing Gear Handle - DOWN
3. Remove cover from handcrank at rear of front seats. Engage handcrank and turn counterclockwise as far as possible (approximately 50 turns). Stow handcrank.
4. If electrical system is operative, check landing gear position lights and warning horn (check LDG GR RELAY circuit breaker engaged.)

CAUTION

The manual extension system is designed only to lower the landing gear; do not attempt to retract the gear manually.

WARNING

Do not operate the landing gear electrically with the handcrank engaged, as damage to the mechanism could occur.

After emergency landing gear extension, do not move any landing gear controls or reset any switches or circuit breakers until airplane is on jacks, as failure may have been in the gear-up circuit and gear might retract with the airplane on the ground.

**LANDING GEAR RETRACTION AFTER
PRACTICE MANUAL EXTENSION**

After practice manual extension of the landing gear, the gear may be retracted electrically, as follows:

1. Handcrank - CHECK, STOWED
2. Landing Gear Motor Circuit Breaker - IN
3. Landing Gear Handle - UP

ICE PROTECTION

SURFACE DEICE SYSTEM

- a. Failure of AUTO Operation
 - (1) Surface Deice Switch - MANUAL (Do not hold more than 8 seconds)

CAUTION

The boots will inflate only as long as the switch is held in the MANUAL position. When the switch is released the boots will deflate.

- b. Failure of boots to deflate
 - (1) Pull circuit breaker on pilot's side panel.

ELECTROTHERMAL PROPELLER DEICE SYSTEM

- 1. Loss of one alternator; turn off unnecessary electrical equipment. Turn the prop deice system off while operating the cabin heater blower or the landing gear motor. Monitor electrical loads so as not to exceed alternator capacity of 1.0 on the loadmeter.

An abnormal reading on the Propeller Deice Ammeter indicates need for the following action:

- a. Zero Amps:

Check prop deice circuit breaker. If the circuit breaker has tripped, a wait of approximately 30 seconds is necessary before resetting. If ammeter reads 0 and the circuit breaker has not tripped or if the ammeter still reads 0 after the circuit breaker has been reset, turn the switch off and consider the prop deice system inoperative.

- b. Zero to 7 Amps, 2 Blade Propeller; Zero to 14 Amps, 3 Blade Propeller:

If the prop deice system ammeter occasionally or regularly indicates less than 7 amps for 2 blade, (or 14 amps for 3 blade), operation of the prop deice system can continue unless serious propeller imbalance results from irregular ice throw-offs.

- c. 12 to 15 Amps, 2 Blade Propeller; 18 to 23 Amps, 3 Blade Propeller:

If the prop deicing system ammeter occasionally or regularly indicates 12 to 15 amps for 2 blade (or 18 to 23 amps for 3 blade), operation of the prop deice system can continue unless serious propeller imbalance results from irregular ice throw-offs.

- d. More than 15 Amps, 2 Blade Propeller, More than 23 amps, 3 Blade Propeller:

If the prop deice system ammeter occasionally or regularly indicates more than 15 amps for 2 blade, or more than 23 amps for 3 blade, the system should not be operated unless the need for prop deicing is urgent.

ALTERNATE (EMERGENCY) STATIC AIR SOURCE SYSTEM

THE EMERGENCY STATIC AIR SOURCE SHOULD BE USED FOR CONDITIONS WHERE THE NORMAL STATIC SOURCE HAS BEEN OBSTRUCTED. When the airplane has been exposed to moisture and/or icing conditions (especially on the ground), the possibility of obstructed static ports should be considered. Partial obstructions will

Section III
Emergency Procedures

BEEHCRAFT Baron 58
Serial TH 1 thru TH 772

result in the rate of climb indication being sluggish during a climb or descent. Verification of suspected obstruction is possible by switching to the emergency system and noting a sudden sustained change in rate of climb. This may be accompanied by abnormal indicated airspeed and altitude changes beyond normal calibration differences.

Whenever any obstruction exists in the Normal Static Air System or the Emergency Static Air System is desired for use:

1. Emergency Static Air Source - Switch to ON EMERGENCY. (lower sidewall adjacent to pilot)
2. For Airspeed Calibration and Altimeter Corrections, refer to the PERFORMANCE section.

CAUTION

The emergency static air valve should remain in the OFF NORMAL position when system is not needed.

EMERGENCY EXITS

Emergency exits, provided by the openable window on each side of the cabin may be used for egress in addition to the cabin door and the utility door. An emergency exit placard, "EMERGENCY EXIT, LIFT LATCH - PULL PIN, PUSH WINDOW OUT," is installed below the left and right middle windows after compliance with BEEHCRAFT Service Instructions 1241. To open each emergency exit:

1. Lift the latch
2. Pull out the emergency release pin and push the window out.

NOTE

On TH-733 and after, for access past the 3rd and/or 4th seats, rotate the red handle, located on the lower inboard side of the seat back, and fold the seat back over.

UNLATCHED DOOR IN FLIGHT

If the cabin door is not locked it may come unlatched in flight. This may occur during or just after take-off. The door will trail in a position approximately 3 to 4 inches open. Flight characteristics of the airplane will not be affected except for a reduction in performance. Return to the field in a normal manner. If practicable, during the landing flare-out have a passenger hold the door to prevent it from swinging open.

SIMULATED ONE ENGINE INOPERATIVE

ZERO THRUST (Simulated Feather)

Use the following power setting (only on one engine at a time) to establish zero thrust. Use of this power setting avoids the difficulties of restarting an engine and preserves the availability of engine power.

The following procedure should be accomplished by alternating small reductions of propeller and then throttle, until the desired setting has been reached.

1. Propeller Lever - RETARD TO FEATHER DETENT
2. Throttle Lever - SET 12 in. Hg MANIFOLD PRESSURE

NOTE

This setting will approximate Zero Thrust using recommended One-Engine Inoperative Climb speeds.

SPINS

If a spin is entered inadvertently:

Immediately move the control column full forward, apply full rudder opposite to the direction of the spin and reduce power on both engines to idle. These three actions should be done as near simultaneously as possible; then continue to hold this control position until rotation stops and then neutralize all controls and execute a smooth pullout. Ailerons should be neutral during recovery.

NOTE

Federal Aviation Administration Regulations do not require spin demonstration of airplanes of this weight; therefore, no spin tests have been conducted. The recovery technique is based on the best available information.

SECTION IV

NORMAL PROCEDURES

TABLE OF CONTENTS

<i>SUBJECT</i>	<i>PAGE</i>
Airspeeds for Safe Operation	4-3
Preflight Inspection	4-4
Before Starting	4-7
Starting	4-8
After Starting and Taxi	4-10
Before Takeoff	4-11
Takeoff	4-12
Maximum Performance Climb	4-12
Cruise Climb	4-12
Cruise	4-13
Leaning Using the Exhaust Gas	
Temperature Indicator (EGT)	4-13
Descent	4-14
Before Landing	4-14
Balked Landing	4-15
After Landing	4-15
Shutdown	4-15
Oxygen System	4-16
Electric Elevator Trim	4-18
Cold Weather Operation	4-19
Preflight Inspection	4-19
Engines	4-19
External Power	4-20
Starting Engines Using	
Auxiliary Power Unit	4-21
January 1983	4-1

TABLE OF CONTENTS (Continued)

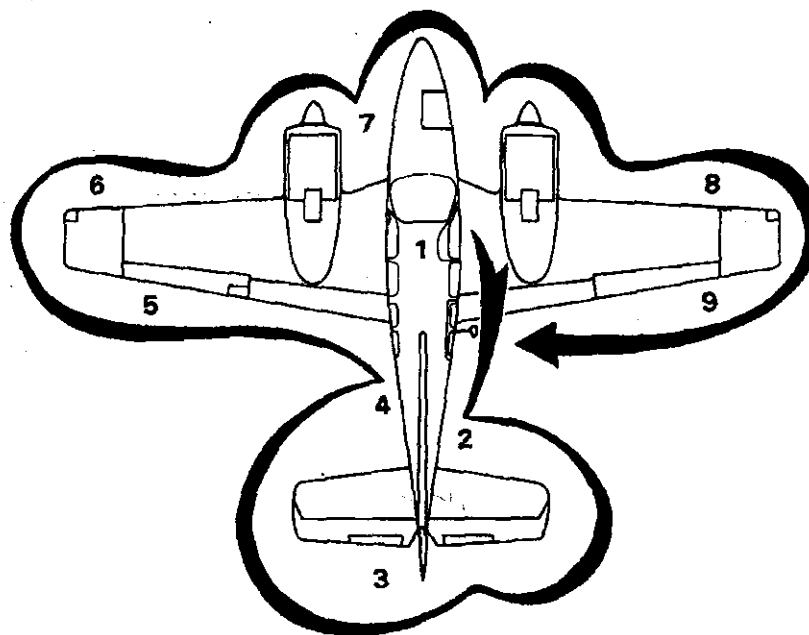
SUBJECT	PAGE
Taxiing	4-22
Ice Protection Systems	4-22
Emergency Static Air Source	4-22
Surface Deice System	4-23
Electrothermal Propeller Deice	4-24
Propeller and Windshield	
Anti-Ice System (Fluid Flow)	4-25
Pitot Heat and Heated Stall Warning	4-25
Fuel Vent Heat	4-26
Windshield Defogging	4-26
Engine Break-In Information	4-26
Practice Demonstration of V _{MCA}	4-26

All airspeeds quoted in this section are indicated airspeeds (IAS) and assume zero instrument error.

AIRSPEEDS FOR SAFE OPERATION

(Settings established at 5400 lbs.)

Two-Engine Best Angle-of-Climb	86 kts/99 mph
Two-Engine Best Rate-of-Climb	104 kts/120 mph
Single-Engine Best Angle-of-Climb ...	96 kts/111 mph
Single-Engine Best Rate-of-Climb ...	100 kts/115 mph
Air Minimum Control (V_{MCA})	81 kts/93 mph
Intentional One Engine Inoperative (V_{SSE})	86 kts/99 mph
Cruise Climb	139 kts/160 mph
Balked Landing Climb	95 kts/109 mph
Landing Approach Flaps 30°	96 kts/110 mph
Turbulent Air Penetration	156 kts/180 mph
Maximum Demonstrated Crosswind	22 kts/25 mph



PREFLIGHT INSPECTION

1. **COCKPIT:**
 - a. Control Lock - REMOVE AND STOW
 - b. Parking Brake - SET
 - c. All Switches - OFF
 - d. Trim Tabs - SET TO ZERO
2. **RIGHT FUSELAGE:**
 - a. Load Distribution - CHECK AND SECURED
 - b. Utility Door - SECURE
 - c. Static Port - UNOBSTRUCTED
 - d. Emergency Locator Transmitter - ARMED
3. **EMPENNAGE:**
 - a. Control Surfaces, Tabs and Deice Boots - CHECK CONDITION, SECURITY, AND ATTACHMENT
 - b. Tail Cone, Tail Light, and Beacon - CHECK
 - c. Tie Down - REMOVE
 - d. Cabin Air Inlet - CHECK
4. **LEFT FUSELAGE:**
 - a. Cabin Air Outlet - CHECK
 - b. Static Port - UNOBSTRUCTED
 - c. All Antennas and Lower Beacon - CHECK
5. **LEFT WING TRAILING EDGE:**
 - a. Fuel Sump Aft of Wheel Well - DRAIN
 - b. Fuel Vents - CHECK
 - c. Flaps - CHECK GENERAL CONDITION
 - d. Aileron - CHECK CONDITION AND FREEDOM OF MOVEMENT, TAB NEUTRAL WHEN AILERON NEUTRAL
6. **LEFT WING LEADING EDGE**
 - a. Lights and Deice Boot - CHECK FOR CONDITION
 - b. Stall Warning Vane - CHECK FREEDOM OF MOVEMENT
 - c. Fuel - CHECK QUANTITY AND SECURE CAP(S). ALWAYS CHECK WING TIP TANK FIRST (IF IN-

STALLED); DO NOT REMOVE INBOARD CAP IF FUEL IS VISIBLE IN TIP TANK.

- d. Wing Tip Tank (if installed) Sump - DRAIN
- e. Fuel Sight Gage - CHECK (if installed)
- f. Tie Down, Chocks - REMOVE
- g. Engine Oil - CHECK QUANTITY, SECURE CAP AND DOOR
- h. Engine Cowling and Doors - CHECK CONDITION AND SECURITY
- i. Engine Air Intake - REMOVE COVER AND EXAMINE FOR OBSTRUCTIONS
- j. Propeller - EXAMINE FOR NICKS, SECURITY AND OIL LEAKS
- k. Cowl Flap - CHECK
- l. Wheel Well Doors, Tire, Brake Line and Shock Strut - CHECK
- m. Landing Gear Uplock Roller - CHECK
- n. Fuel Drains - DRAIN

7. NOSE SECTION

- a. Wheel Well Doors, Tire and Shock Strut - CHECK
- b. Heater Fuel Strainer - DRAIN (if installed)
- c. Pitot(s) - REMOVE COVER, EXAMINE FOR OBSTRUCTIONS
- d. Taxi/Landing Light - CHECK
- e. Heater Air Inlets - CLEAR
- f. Oxygen - CHECK
- g. Baggage Door - SECURE

8. RIGHT WING LEADING EDGE

- a. Wheel Well Doors, Tire, Brake Line, and Shock Strut - CHECK
- b. Landing Gear Uplock Roller - CHECK
- c. Cowl Flap - CHECK
- d. Fuel Drains - DRAIN
- e. Engine Oil - CHECK QUANTITY, SECURE CAP AND DOOR

Section IV
Normal Procedures

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

- f. Engine Cowling and Doors - CHECK CONDITION AND SECURITY
 - g. Propeller - EXAMINE FOR NICKS, SECURITY AND OIL LEAKS
 - h. Engine Air Intake - REMOVE COVER AND EXAMINE FOR OBSTRUCTIONS
 - i. Fuel Sight Gage - CHECK (if installed)
 - j. Fuel - CHECK QUANTITY AND SECURE CAP(S). ALWAYS CHECK WING TIP TANK FIRST (IF INSTALLED); DO NOT REMOVE INBOARD CAP IF FUEL IS VISIBLE IN TIP TANK.
 - k. Wing Tip Tank (if installed) Sump - DRAIN
 - l. Tie Down and Chocks - REMOVE
 - m. Lights and Deice Boot - CHECK FOR CONDITION
9. RIGHT WING TRAILING EDGE
- a. Aileron - CHECK CONDITION AND FREEDOM OF MOVEMENT
 - b. Fuel Vents - CHECK
 - c. Fuel Sump Aft of Wheel Well - DRAIN
 - d. Flaps - CHECK GENERAL CONDITION

NOTE

Check operation of lights if night flight is anticipated.

CAUTION

DO NOT TAXI WITH A FLAT SHOCK STRUT.

BEFORE STARTING

1. Seats - POSITION AND LOCK; Seat Backs - UPRIGHT
2. Rudder Pedals - ADJUST
3. Seat Belts and Shoulder Harnesses - FASTEN AND ADJUST
4. Parking Brake - SET
5. All Avionics - OFF
6. Oxygen - CHECK QUANTITY AND OPERATION
7. Landing Gear Handle - DOWN
8. Cowl Flaps - CHECK, OPEN
9. Fuel Selector Valves - CHECK OPERATION THEN ON
10. All Circuit Breakers, Switches and Equipment Controls - CHECK
11. Battery Switch and Alternator Switches - ON (If external power is used, Alternator switches - OFF)
12. Fuel Quantity Indicators - CHECK QUANTITY (See LIMITATIONS for take-off fuel)
13. Landing Gear Position Lights - CHECK

STARTING

1. Throttle Position - APPROXIMATELY 1/2 IN. OPEN
2. Propeller Control - LOW PITCH (High RPM)
3. Mixture Control - FULL RICH

NOTE

If the engine is hot, and the ambient temperature is 90°F or above, place mixture control in IDLE CUT-OFF, switch aux fuel pump to HIGH for 30 to 60 seconds, then OFF. Return mixture control to FULL RICH.

4. Aux Fuel Pump - HIGH (until pressure stabilizes then - OFF)
5. Magneto/Start Switch - START (Observe Starter Limits)

CAUTION

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

NOTE

In the event of a balked start (or overprime condition) place mixture control in IDLE CUT-OFF and open the throttle; operate the starter to remove excess fuel. As engine starts, reduce the throttle to idle rpm and place the mixture control in FULL RICH.

6. Warm-up - 1000 to 1200 RPM
7. Oil Pressure - 25 PSI WITHIN 30 SECONDS
8. External Power (if used) - DISCONNECT

WARNING

When using external power, start the right engine first, since the external power receptacle is on the left nacelle. Disconnect external power before starting left engine.

- 9. Alternator Switch - ON
- 10. All Engine Indicators - CHECK

CAUTION

If the total of both loadmeters exceeds .2, after two minutes at 1000-1200 rpm, with no additional electrical equipment on, and the indication shows no signs of decreasing, an electrical malfunction is indicated. The battery master and both alternator switches should be placed in the OFF position. Do not take off.

CAUTION

Low voltage, high ammeter or loadmeter readings, dimming of lights, or excessive noise in radio receivers could be indications that problems are developing in the starter system. A noted change in such normal conditions could indicate prolonged starter motor running and the engine should be shut down. No further flight operations should be attempted until the cause is determined and repaired.

- 11. Using the same procedure, start other engine.

**Section IV
Normal Procedures**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

AFTER STARTING AND TAXI

NOTE

**Do not operate engine above 1200 RPM until
oil temperature reaches 75°F.**

- 1. Brakes - RELEASE AND CHECK**
- 2. Avionics - ON, AS REQUIRED**
- 3. Exterior Lights - AS REQUIRED**

WARNING

When using external power, start the right engine first, since the external power receptacle is on the left nacelle. Disconnect external power before starting left engine.

- 9. Alternator Switch - ON
- 10. All Engine Indicators - CHECK

CAUTION

If the total of both loadmeters exceeds .2 after two minutes at 1000-1200 rpm, with no additional electrical equipment on, and the indication shows no signs of decreasing, an electrical malfunction is indicated. The battery master and both alternator switches should be placed in the OFF position. Do not take off.

CAUTION

Low voltage, high ammeter or loadmeter readings, dimming of lights, or excessive noise in radio receivers could be indications that problems are developing in the starter system. A noted change in such normal conditions could indicate prolonged starter motor running and the engine should be shut down. No further flight operations should be attempted until the cause is determined and repaired.

- 11. Using the same procedure, start other engine.

**Section IV
Normal Procedures**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

AFTER STARTING AND TAXI

NOTE

Do not operate engine above 1200 RPM until
oil temperature reaches 75°F.

1. Brakes - RELEASE AND CHECK
2. Avionics - ON, AS REQUIRED
3. Exterior Lights - AS REQUIRED

BEFORE TAKEOFF

- 1. Seat Belts and Shoulder Harnesses - CHECK
- 2. Parking Brake - SET
- 3. Aux Fuel Pumps - OFF (If ambient temperature is 90°F or above, use LOW pressure boost)
- 4. All Instruments - CHECKED
- 5. Fuel Selector Valves - CHECK ON
- 6. Mixture - FULL RICH (or as required by field elevation)
- 7. Propellers - EXERCISE AT 2200 RPM

CAUTION

When exercising propellers in their governing range, do not move the control lever aft past the detent. To do so will allow the propeller to change rapidly to the full feathered position, imposing high stresses on the blade shank and engine.

- Run up*
- 8. Loadmeters - CHECK for proper indication
 - 9. Throttles - 1700 RPM
 - 10. Magnetos - CHECK (Variance between individual magnetos should not exceed 50 rpm, max. drop 150 rpm)
 - 11. Throttles - 1500 RPM
 - 12. Propellers - FEATHERING CHECK (Do not allow an rpm drop of more than 500 rpm)
 - 13. Throttles - IDLE
 - 14. Electric Trim - CHECK OPERATION
 - 15. Trim - AS REQUIRED FOR TAKEOFF
 - 16. Flaps - CHECK AND SET FOR TAKEOFF
 - 17. Controls - CHECK PROPER DIRECTION, FULL TRAVEL, AND FREEDOM OF MOVEMENT
 - 18. Doors and Windows - LOCKED
 - 19. Parking Brake - OFF

Section IV
Normal Procedures

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

TAKEOFF

Take-Off Power Full Throttle, 2700 rpm

Minimum Take-Off Oil Temperature 75°F

1. Power - SET TAKE-OFF POWER (MIXTURE - SET FUEL FLOW TO ALTITUDE) BEFORE BRAKE RELEASE
2. Airspeed - ACCELERATE TO AND MAINTAIN RECOMMENDED SPEED
3. Landing Gear - RETRACT (when positive rate of climb is established)
4. Airspeed - ESTABLISH DESIRED CLIMB SPEED (when clear of obstacles)

MAXIMUM PERFORMANCE CLIMB

1. Power - SET MAXIMUM CONTINUOUS POWER
2. Mixtures - LEAN TO APPROPRIATE FUEL FLOW
3. Cowl Flaps - OPEN
4. Airspeed - ESTABLISH 104 KTS/120 MPH

CRUISE CLIMB

1. Power - SET (25.0 in. Hg or Full Throttle - 2500 RPM)
2. Mixture - LEAN TO APPROPRIATE FUEL FLOW
3. Airspeed - 139 KTS/160 MPH
4. Cowl Flaps - AS REQUIRED

NOTE

In high ambient temperatures, low pressure boost may be required to prevent excessive fuel flow fluctuations.

CRUISE

Maximum Cruise Power 24.5 in. Hg at 2500 rpm
Recommended Cruise Power . 24.0 in. Hg at 2300 rpm
Recommended Cruise Power . 21.0 in. Hg at 2300 rpm
Economy Cruise Power 20.5 in. Hg at 2100 rpm

1. Power - SET AS DESIRED (Use Tables in PERFORMANCE section)
2. Fuel Flow - LEAN AS REQUIRED
3. Cowl Flaps - AS REQUIRED

LEANING USING THE EXHAUST GAS TEMPERATURE INDICATOR (EGT)

A thermocouple type exhaust gas temperature (EGT) probe is mounted in the system. This probe is connected to an indicator on the instrument panel. The indicator is calibrated in degrees Fahrenheit. Use EGT system to lean the fuel/air mixture when cruising at maximum cruise power or less.

1. Lean the mixture and note the point on the indicator that the temperature peaks and starts to fall.
 - a. CRUISE (LEAN) MIXTURE - Increase the mixture until the EGT shows a drop of 25°F below peak on the rich side of peak.
 - b. BEST POWER MIXTURE - Increase the mixture until the EGT shows a drop of 100°F below peak on the rich side of peak.

CAUTION

Do not continue to lean mixture beyond that necessary to establish peak temperature.

Section IV
Normal Procedures

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

2. Continuous operation is recommended at 25°F or more below peak EGT only on the rich side of peak.
3. Changes in altitude and power settings require the peak EGT to be rechecked and the mixture reset.

DESCENT

1. Altimeter - SET
2. Cowl Flaps - CLOSED
3. Windshield Defroster - AS REQUIRED
4. Power - AS REQUIRED (avoid prolonged idle settings and low cylinder head temperatures)

Recommended descent speeds:

Smooth air 175 kts/201 mph
Rough air (Max.) 156 kts/180 mph

BEFORE LANDING

1. Seat Belts and Shoulder Harnesses - FASTENED, SEAT BACKS UPRIGHT
2. Fuel Selector Valves - CHECK ON
3. Aux. Fuel Pumps - OFF, OR LOW AS PER AMBIENT TEMPERATURE
4. Cowl Flaps - AS REQUIRED
5. Mixture Controls - FULL RICH (or as required by field elevation)
6. Flaps - APPROACH 15° POSITION (Maximum extension speed 152 kts/175 mph)
7. Landing Gear - DOWN (Gear extension speed 152 kts/175 mph)
8. Flaps - FULL DOWN (30°) (Maximum extension speed, 122 kts/140 mph)
9. Airspeed - ESTABLISH NORMAL LANDING APPROACH SPEED.
10. Propellers - LOW PITCH (high rpm)

BALKED LANDING

1. Propellers - LOW PITCH (high rpm)
2. Power - MAXIMUM ALLOWABLE
3. Airspeed - BALKED LANDING CLIMB SPEED (95 KTS/109 MPH)
4. Flaps - UP (0°)
5. Landing Gear - UP
6. Cowl Flaps - AS REQUIRED

AFTER LANDING

1. Landing and Taxi Lights - AS REQUIRED
2. Flaps - UP
3. Trim Tabs - SET TO ZERO
4. Cowl Flaps - OPEN
5. Aux Fuel Pumps - AS REQUIRED

SHUTDOWN

1. Parking Brake - SET
2. Propellers - HIGH RPM
3. Throttles - 1000 RPM
4. Aux Fuel Pumps - OFF
5. Electrical and Avionics Equipment - OFF
6. Mixture Controls - IDLE CUT-OFF
7. Magneto/Start Switches - OFF, AFTER ENGINES STOP
8. Battery and Alternator Switches - OFF
9. Controls - LOCKED
10. If airplane is to be parked for an extended period of time, install wheel chocks and release the parking brake as greatly varying ambient temperatures may build excessive pressures on the hydraulic system.

NOTE

Induction air scoop covers, included in the loose tools and accessories, are to prevent foreign matter from entering the air scoops while the aircraft is parked.

OXYGEN SYSTEM

WARNING

NO SMOKING permitted when using oxygen.

PREFLIGHT

1. Check Oxygen Pressure Gage for pressure reading.
2. Determine percent of full system.
3. Multiply oxygen duration in minutes by percent of full system.

EXAMPLE:

People	5
Gage Pressure	1500 psi
Percent Capacity (from chart)	80%
Cylinder Capacity (full)	49 cu ft
Altitude (planned flight)	15,000 feet
Duration (full cylinder)	149 minutes
Duration (80% full)	119 minutes

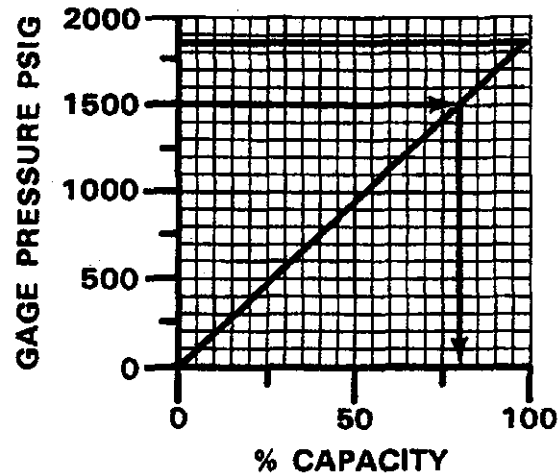
OXYGEN DURATION

The recommended masks are provided with the system. They are designed to be adjustable to fit the average person, with minimum leakage of oxygen.

CAUTION

Since 90% of the system efficiency is determined by the fit of the oxygen mask, make certain the masks fit properly and are in good condition.

**OXYGEN AVAILABLE WITH
PARTIALLY FULL BOTTLE**



OXYGEN DURATION CHART

Duration in minutes at the following altitudes:

	Persons Using	12,500	15,000	20,000
49 cu ft	1	1014	746	507
	2	507	373	253
	3	338	248	169
	4	253	186	126
	5	202	149	101
	6	169	124	84
66 cu ft	1	1344	988	672
	2	672	494	336
	3	448	329	224
	4	336	247	168
	5	268	197	134
	6	224	164	112

**Section IV
Normal Procedures**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

IN FLIGHT

The use of oxygen is recommended to be in accordance with current FAR operating rules.

1. Oxygen Control Valve - OPEN SLOWLY
2. Mask - INSERT FITTING, DON MASK (adjust mask for proper fit)
3. Oxygen Flow Indicator - CHECK (red plunger lifts from its seat when the hose is inserted into the oxygen coupling)

AFTER USING

1. Discontinue use by unplugging mask from outlet.

NOTE

Closing the control valve while in flight is not necessary due to automatic sealing of the outlet when the mask is unplugged.

2. Oxygen Control Valve - CLOSE (may be accomplished during shut-down).

ELECTRIC ELEVATOR TRIM

1. ON-OFF switch - ON
2. Control Wheel Trim Switch - Forward for nose down, aft for nose up, (when released the switch returns to the center - OFF position)

Malfunction procedures are given in the EMERGENCY PROCEDURES section.

COLD WEATHER OPERATION

PREFLIGHT INSPECTION

In addition to the normal preflight exterior inspection, remove ice, snow and frost from the wings, tail, control surfaces and hinges, propellers, windshield, fuel cell filler caps and fuel vents, and crankcase breathers. If you have no way of removing these formations of ice, snow, and frost leave the airplane on the ground, as these deposits will not blow off. The wing contour may be changed by these formations sufficiently that its lift qualities are considerably disturbed and sometimes completely destroyed. Complete your normal preflight procedures. Check the flight controls for complete freedom of movement.

Conditions for accumulating moisture in the fuel tanks are most favorable at low temperatures due to the condensation increase and the moisture that enters as the system is serviced. Therefore, close attention to draining the fuel system will assume particular importance during cold weather.

ENGINES

Use engine oil in accordance with Consumable Materials in the SERVICING section. Always pull the propeller through by hand several times to clear the engine and "limber up" the cold, heavy oil before using the starter. This will also lessen the load on the battery if an auxiliary power unit is not used.

Under very cold conditions, it may be necessary to preheat the engine prior to a start. Particular attention should be applied to the oil cooler, and engine sump to insure proper preheat. A start with congealed oil in the system may

Section IV
Normal Procedures

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

produce an indication of normal pressure immediately after the start, but then the oil pressure may decrease when residual oil in the engine is pumped back with the congealed oil in the sump. If an engine heater capable of heating both the engine sump, and cooler is not available, the oil should be drained while the engines are hot and stored in a warm area until the next flight.

If there is no oil pressure within the first 60 seconds of running, or if oil pressure drops after a few minutes of ground operation, shut down and check for broken oil lines, oil cooler leaks or the possibility of congealed oil.

NOTE

It is advisable to use external power for starting in cold weather.

During warm-up, watch engine temperatures closely, since it is quite possible to exceed the cylinder head temperature limit in trying to bring up the oil temperature. Exercise the propellers several times to remove cold oil from the pitch change mechanisms. The propellers should also be cycled occasionally in flight.

During letdown and landing, give special attention to engine temperatures, since the engines will have a tendency toward overcooling.

EXTERNAL POWER

It is very important that the following precautions be observed while using external power.

1. The airplane has a negative ground system. Be sure to connect the positive lead of the auxiliary power unit to the positive terminal of the airplane's external power receptacle and the negative lead of the auxiliary power unit to the negative terminal of the external power receptacle.
2. To prevent arcing, make certain no power is being supplied when the connection is made.
3. Make certain that the battery switch is ON, all avionics and electrical switches OFF, and a battery is in the system before connecting an external power unit. This protects the voltage regulators and associated electrical equipment from voltage transients (power fluctuations).

STARTING ENGINES USING AUXILIARY POWER UNIT

1. Battery switch - ON
2. Alternators, Electrical, and Avionics Equipment - OFF
3. Auxiliary Power Unit - CONNECT
4. Auxiliary Power Unit - SET OUTPUT (27.0 to 28.5 volts)
5. Auxiliary Power Unit - ON
6. Right Engine - START (use normal start procedures)
7. Auxiliary Power Unit - OFF (after engine has been started)
8. Auxiliary Power Unit - DISCONNECT (before starting left engine)
9. Alternator Switches - ON

TAXIING

Avoid taxiing through water, slush or muddy surfaces if possible. In cold weather, water, slush or mud, when splashed onto landing gear mechanisms or control surface hinges may freeze, preventing free movement and resulting in structural damage.

ICE PROTECTION SYSTEMS

The following equipment, when installed and operable, will provide a degree of protection when icing conditions are inadvertently encountered. Since this equipment has not been demonstrated to meet current requirements for flight into known icing conditions, the pilot must exit such conditions as soon as possible if ice accumulates on the airplane.

1. Equipment required for IFR flight
2. Beech approved emergency static air source
3. Beech approved surface deice system
4. Beech approved propeller deice or anti-ice system
5. Beech approved pitot heat
6. Beech approved heated stall warning
7. Beech approved heated fuel vents
8. Beech approved windshield defogging and openable storm window
9. Beech approved alternate induction air
10. Beech approved external antenna masts (capable of withstanding ice loads)

WARNING

Stalling airspeeds should be expected to increase due to the distortion of the wing airfoil when ice has accumulated on the airplane. For the same reason, stall warning devices are not accurate and should not be relied upon. With ice on the airplane, maintain a comfortable margin of airspeed above the normal stall airspeed.

1. EMERGENCY STATIC AIR SOURCE

If the Emergency Static Air Source is desired for use:

- a. Emergency Static Air Source - ON EMERGENCY (lower sidewall adjacent to pilot)
- b. For Airspeed Calibration and Altimeter Corrections, refer to PERFORMANCE section

CAUTION

The emergency static air valve should be in the OFF NORMAL position when the system is not needed.

2. SURFACE DEICE SYSTEM

a. BEFORE TAKE-OFF

- (1) Throttles - 2000 RPM
- (2) Surface Deice Switch - AUTO (UP)
- (3) Deice Pressure - 9 to 20 PSI (while boots are inflating)
- (4) Wing Boots - CHECK VISUALLY FOR INFLATION AND HOLD DOWN

b. IN FLIGHT

When ice accumulates 1 / 2 to 1 inch

- (1) Surface Deice Switch - AUTO (UP)
- (2) Deice Pressure - 9 to 20 PSI (while boots are inflating)
- (3) Repeat - AS REQUIRED

CAUTION

Rapid cycles in succession or cycling before at least 1/2 inch of ice has accumulated may cause the ice to grow outside the contour of the inflated boots and prevent ice removal.

Stall speeds are increased 4 kts/5 mph in all configurations with surface deice system operating.

NOTE

Either engine will supply sufficient vacuum and pressure for deice operation.

- c. For Emergency Operation refer to the EMERGENCY PROCEDURES section.

3. ELECTROTHERMAL PROPELLER DEICE

CAUTION

Do not operate the propeller deice when propellers are static.

a. BEFORE TAKEOFF

- (1) Propeller Deice Switch - ON
- (2) Propeller Deice Ammeter - CHECK, 7 to 12 amps (2 Blade), 14 to 18 amps (3 Blade)

b. IN FLIGHT

- (1) Propeller Deice Switch - ON. The system may be operated continuously in flight and will function automatically until the switch is turned OFF.
- (2) Relieve propeller imbalance due to ice by increasing rpm briefly and returning to the desired setting. Repeat as necessary.

CAUTION

If the propeller deice ammeter indicates abnormal reading, refer to the Emergency Procedures section.

**4. PROPELLER AND WINDSHIELD ANTI-ICE SYSTEM
(FLUID FLOW)**

CAUTION

This anti-ice system is designed to PREVENT the formation of ice. Always turn the system ON before entering icing conditions.

a. PREFLIGHT

- (1) Check the quantity in reservoir
- (2) Check slinger ring and lines for obstructions
- (3) Check propeller boots for damage

b. IN FLIGHT

- (1) Prop Anti-ice Switch - ON
- (2) Windshield Anti-ice Switch - CYCLE AS REQUIRED
- (3) Anti-ice Quantity Indicator - MONITOR

NOTE

See SYSTEM description for endurance.

5. PITOT HEAT AND HEATED STALL WARNING

- a. Pitot Heat Switch(es) - ON (Note deflection on Loadmeter) Heated Stall Warning is activated by the left pitot heat switch.

NOTE

Switches may be left on throughout flight. Prolonged operation on the ground could damage the Pitot Heat System.

6. FUEL VENT HEAT

- a. Fuel Vent Switch - ON (If ice is encountered)

7. WINDSHIELD DEFOGGING

- a. Defrost Control - PUSH ON
- b. Pilot's Storm Window - OPEN, AS REQUIRED

ENGINE BREAK-IN INFORMATION

Refer to Systems section.

PRACTICE DEMONSTRATION OF V_{MCA}

V_{MCA} demonstration may be required for multi-engine pilot certification. The following procedure shall be used at a safe altitude of at least 5000 feet above the ground in clear air only.

WARNING

**INFLIGHT ENGINE CUTS BELOW V_{SSE} SPEED
OF 86 kts/99 mph ARE PROHIBITED.**

- 1. Landing Gear - Up
- 2. Flaps - Up
- 3. Airspeed - Above 86 kts/99 mph (V_{SSE})
- 4. Propeller Levers - High RPM
- 5. Throttle (Simulated inoperative engine) - Idle
- 6. Throttle (Other engine) - Maximum Manifold Pressure
- 7. Airspeed - Reduce approximately 1 knot per second until either V_{MCA} or stall warning is obtained.

CAUTION

Use rudder to maintain directional control (heading) and ailerons to maintain 5° bank towards the operative engine (lateral attitude). At the first sign of either V_{MCA} or stall warning (which may be evidenced by: inability to maintain heading or lateral attitude, aerodynamic stall buffet, or stall warning horn sound) immediately initiate recovery: reduce power to idle on the operative engine and immediately lower the nose to regain V_{SSE} .

**Section IV
Normal Procedures**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

INTENTIONALLY LEFT BLANK

SECTION V

PERFORMANCE

TABLE OF CONTENTS

<i>SUBJECT</i>	<i>PAGE</i>
Introduction to Performance and Flight Planning	5-3
Conditions	5-3 - 5-13
Comments Pertinent to the Use of Performance Graphs	5-13
Performance Graphs	5-14 - 5-47
Airspeed Calibration - Normal System	5-14
Altimeter Correction - Normal System	5-15
Airspeed Calibration - Alternate System	5-16
Altimeter Correction - Alternate System	5-17
Fahrenheit to Celsius	5-18
ISA Conversion	5-19
Manifold Pressure vs RPM	5-20
Take-Off Weight	5-21
Stall Speeds - Power Idle	5-22
Wind Components	5-23
Take-Off Distance	5-24
Accelerate - Stop	5-25
Accelerate - Go	5-26
Climb - Two Engine	5-27
Take-Off Climb Gradient, One Engine Inoperative	5-28
Time, Fuel, Distance to Climb	5-29
Climb - One Engine Inoperative	5-30
Service Ceiling - One Engine Inoperative	5-31
 January 1983	 5-1

Section V
Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

TABLE OF CONTENTS (Continued)

<i>SUBJECT</i>	<i>PAGE</i>
Cruise Speeds	5-32
Fuel Flow vs Brake Horsepower	5-33
Cruise Power Settings	5-34 - 5-37
Maximum Cruise Power	5-34
Recommended Cruise Power	5-35
Recommended Cruise Power	5-36
Economy Cruise Power	5-37
Range Profile - 136 Gallons	5-38
Endurance Profile - 136 Gallons	5-39
Range Profile - 166 Gallons	5-40
Endurance Profile - 166 Gallons	5-41
Range Profile - 194 Gallons	5-42
Endurance Profile - 194 Gallons	5-43
Holding Time	5-44
Time, Fuel and Distance to Descend	5-45
Climb - Balked Landing	5-46
Landing Distance	5-47

**INTRODUCTION TO PERFORMANCE
AND FLIGHT PLANNING**

All airspeeds quoted in this section are indicated airspeeds (IAS) except as noted and assume zero instrument error.

The graphs and tables in this section present performance information for takeoff, climb, landing and flight planning at various parameters of weight, power, altitude, and temperature. FAA approved performance information is included in this section. Examples are presented on all performance graphs. In addition, the calculations for flight time, block speed, and fuel required are presented using the conditions listed.

Performance with a gross weight of 4990 lbs (Baron 58A) will be equal to or better than that of the higher gross weight Baron 58.

CONDITIONS

At Denver:

Outside Air Temperature	15°C (59°F)
Field Elevation	5330 ft
Altimeter Setting	29.60 in. Hg
Wind	270° at 10 kts
Runway 26L length	10,010 ft

Route of Trip

*DEN-V81-AMA

For VFR Cruise at 11,500 feet

Section V
Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

ROUTE SEGMENT	MAGNETIC COURSE	DIST NM	WIND 11500 FEET DIR/KTS	OAT 11500 FEET °C	ALT SETTING IN.HG
DEN-COS	161°	55	010/30	-5	29.60
COS-PUB	153°	40	010/30	-5	29.60
PUB-TBE	134°	74	100/20	0	29.56
TBE-DHT	132°	87	200/20	9	29.56
DHT-AMA	125°	65	200/20	10	29.56

*REFERENCE: Enroute Low Altitude Chart L-6

At Amarillo:

Outside Air Temperature 25°C (77°F)
 Field Elevation 3605 ft
 Altimeter Setting 29.56 in. Hg
 Wind 180° at 10 kts
 Runway 21 Length 10,000 ft

To determine pressure altitude at origin and destination airports, add 100 feet to field elevation for each .1 in. Hg below 29.92, and subtract 100 feet from field elevation for each .1 in. Hg above 29.92:

Pressure Altitude at DEN:

$$29.92 - 29.60 = .32 \text{ in. Hg}$$

The pressure altitude at DEN is 320 feet above the field elevation.

$$5330 + 320 = 5650 \text{ ft}$$

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

Pressure Altitude at AMA:

$$29.92 - 29.56 = .36 \text{ in. Hg}$$

The pressure altitude at AMA is 360 feet above the field elevation.

$$3605 + 360 = 3965 \text{ ft}$$

NOTE

For flight planning, the difference between cruise altitude and cruise pressure altitude has been ignored.

Maximum Allowable Take-off Weight = 5400 lbs

$$\text{Ramp Weight} = 5400 + 24 = 5424 \text{ lbs}$$

NOTE

Fuel for start, taxi and take-off is normally 24 pounds.

Enter the Take-Off Weight graph at 5650 feet pressure altitude and 15°C.

The take-off weight to achieve a positive rate-of-climb at lift-off for one engine inoperative is:

$$\text{Take-off Weight} = 4850 \text{ pounds}$$

Enter the Take-Off Distance graph at 15°C, 5650 feet pressure altitude, 5400 pounds, and 9.5 knots headwind component.

Ground Roll	1900 ft
Total Distance over 50 ft Obstacle	3090 ft
Lift-off Speed	86 kts (99 mph)
50 Foot Speed	94 kts (108 mph)

**Section V
Performance**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

Enter the Accelerate-Stop graph at 15°C, 5650 feet pressure altitude, 5400 pounds, and 9.5 knots headwind component:

Accelerate-Stop Distance 3960 ft
Engine Failure Speed 86 kts (99 mph)

NOTE

Since 3960 feet is less than the available field length (10,010 ft), the accelerate-stop procedure can be performed at any weight.

Take-off at 5400 lbs can be accomplished. However, if an engine failure occurs before becoming airborne, the accelerate-stop procedure must be performed.

The following example assumes the airplane is loaded so that the take-off weight is 4850 pounds.

Although not required by regulations, information has been presented to determine the take-off weight, field requirements and take-off flight path assuming an engine failure occurs during the take-off procedure. The following illustrates the use of these charts.

Enter the Accelerate-Go graph at 15°C, 5650 feet pressure altitude, 4850 pounds, and 9.5 knots headwind component:

Ground Roll 1775 ft
Total Distance Over 50 ft Obstacle 8071 ft
Lift-off Speed 86 kts (99 mph)
50 Foot Speed 94 kts (108 mph)

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

**Section V
Performance**

Enter the graph for Take-off Climb Gradient - One Engine Inoperative at 15°C, 5650 feet pressure altitude, and 4850 pounds.

Climb Gradient 2.1%
Climb Speed 94 kts (108 mph)

A 2.1% climb gradient is 21 feet of vertical height per 1000 feet of horizontal distance.

NOTE

The Climb Gradient - One Engine Inoperative graph assumes zero wind conditions. Climbing into a headwind will result in higher angles of climb, and hence, better obstacle clearance capabilities.

Calculation of horizontal distance to clear an obstacle 90 feet above the runway surface:

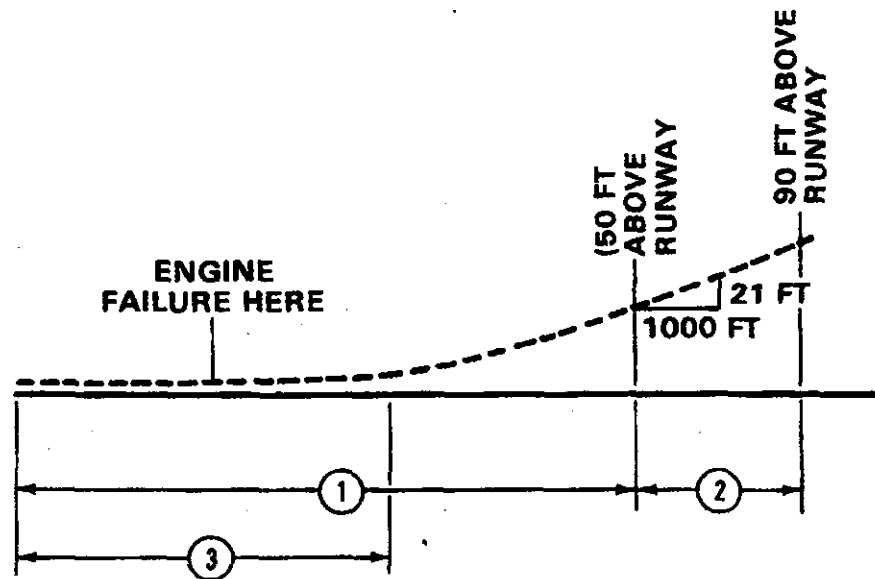
Horizontal distance used to climb from 50 feet to 90 feet = $(90-50) (1000 \div 21) = 1905$ feet

Total Distance = 8071 + 1905 = 9976 feet

The above results are illustrated below:

Section V
Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772



- ① ACCELERATE - GO TAKE-OFF DISTANCE = 8071 FT
- ② DISTANCE TO CLIMB FROM 50 FT TO 90 FT ABOVE RUNWAY = 1905 FT
- ③ ACCELERATE - STOP DISTANCE FOR 5400 LBS TAKE-OFF WEIGHT = 3960 FT

The following calculations provide information for the flight planning procedure. All examples are presented on the performance graphs. A take-off weight of 5400 pounds has been assumed.

Enter the Time, Fuel, and Distance to Climb graph at 15°C to 5650 feet and to 5400 pounds. Also enter at -5°C to 11,500 feet and to 5400 pounds. Read:

Time to Climb = (22 - 7) = 15 min
 Fuel Used to Climb = (12.7 - 4.7) = 8 gal
 Distance Traveled = (55 - 17) = 38 NM

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

The temperatures for cruise are presented for a standard day (ISA); 20°C (36°F) above a standard day (ISA + 20°C); and 20°C (36°F) below a standard day (ISA - 20°C). These should be used for flight planning. The IOAT values are true temperature values which have been adjusted for the compressibility effects. IOAT should be used for setting cruise power while enroute.

Enter the graph for ISA conversion at 11,500 feet and the temperature for the route segment:

DEN-PUB	OAT	=	-5°C
	ISA Condition	=	ISA + 3°C
PUB-TBE	OAT	=	0°C
	ISA Condition	=	ISA + 8°C
TBE-DHT	OAT	=	9°C
	ISA Condition	=	ISA + 17°C
DHT-AMA	OAT	=	10°C
	ISA Condition	=	ISA + 18°C

Enter the table for recommended cruise power - 24 in. Hg, 2300 rpm at 10,000 ft, 12,000 ft, ISA and ISA + 20°C.

	TEMPERATURE					
	ISA			ISA + 20°C		
ALTI- TUDE FEET	MAN. PRESS. IN. HG	FUEL FLOW GPH/ ENG	TAS KTS/ MPH	MAN. PRESS. IN. HG	FUEL FLOW GPH/ ENG	TAS KTS/ MPH
10000	20.1	12.3	187/ 215	20.1	11.8	187/ 215
12000	18.5	11.6	184/ 212	18.5	11.2	185/ 213

Section V
Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Interpolate for 11,500 feet and the temperature for the appropriate route segment. Results of the interpolations are:

ROUTE SEGMENT	MAN. PRESS. IN. HG	FUEL FLOW GPH/ENG	TAS KTS/ MPH
DEN-PUB	18.9	11.7	186/ 214
PUB-TBE	18.9	11.6	186/ 214
TBE-DHT	18.9	11.5	185/ 213
DHT-AMA	18.9	11.4	185/ 213

NOTE

The preceding are exact values for the assumed conditions.

Enter the graph for Descent at 11,500 feet to the descent line, and enter again at 3965 feet to the descent line, and read:

Time to Descend = $(23-8) = 15$ min

Fuel Used to Descend = $(9.7 - 3.3) = 6.4$ gal

Descent Distance = $(72-25) = 47$ NM

Time and fuel used were calculated at Recommended Cruise Power - 24 in. Hg. 2300 RPM as follows:

$$\text{Time} = \frac{\text{Distance}}{\text{Ground Speed}}$$

$$\text{Fuel Used} = (\text{Time}) (\text{Total Fuel Flow})$$

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

Results are:

ROUTE SEGMENT	DISTANCE NM	EST GROUND SPEED KTS/ MPH	TIME AT CRUISE ALTITUDE HRS: MIN	FUEL USED FOR CRUISE GAL
DEN-COS	*17	215/ 247	: 05	1.9
COS-PUB	40	213/ 245	: 11	4.4
PUB-TBE	74	171/ 197	: 26	10.0
TBE-DHT	87	173/ 199	: 30	11.6
DHT-AMA	*18	176/ 203	: 06	2.3

*Distance required to climb or descend has been subtracted from segment distance.

TIME - FUEL - DISTANCE

ITEM	TIME HRS: MINS	FUEL GAL	DISTANCE NM
Start, Runup, Taxi and Take- off	0:00	4.0	0
Climb	0:15	8.0	38
Cruise	1:18	30.2	236
Descent	0:15	6.4	47
Total	1:48	48.6	321

**Section V
Performance**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

Total Flight Time: 1 hour, 48 minutes

Block Speed: $321 \text{ NM} \div 1 \text{ hour, 48 minutes} = 178 \text{ kts/205 mph}$

Reserve Fuel: (45 minutes at Economy Cruise Power):

Enter the cruise power settings table for Economy Cruise Power at 11,500 feet for ISA (assume ISA Fuel Flow Rate).

Fuel Flow Per Engine = 10.3 gal/hr

Total Fuel Flow = 20.6 gal/hr (124 lbs/hr)

Reserve Fuel = (45 min) (124 lbs/hr) = 93 lbs (15.5 gal)

Total Fuel = 48.6 + 15.5 = 64.1 gallons

The estimated landing weight is determined by subtracting the fuel required for the flight from the ramp weight:

Assumed ramp weight = 5424 lbs

Estimated fuel from DEN to AMA = 64.1 gal (385 lbs)

Estimated landing weight = 5424 - 385 = 5039 lbs

Examples have been provided on the performance graphs. The above conditions have been used throughout. Rate of climb was determined for the initial cruise altitude conditions.

Enter the graph for Landing Distance - Flaps 30 degrees at 25°C, 3965 feet pressure altitude, 5039 pounds and 9.5 kts headwind component:

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

Ground Roll 1450 ft
Total Distance over 50 ft Obstacle 2500 ft
Approach Speed 91 kts (105 mph)

Enter the graph for Climb-Balked Landing at 25°C, 3965 feet pressure altitude and 5039 pounds:

Rate-of-Climb 640 ft/min
Climb Gradient 6.5%

**COMMENTS PERTINENT TO THE USE OF
PERFORMANCE GRAPHS**

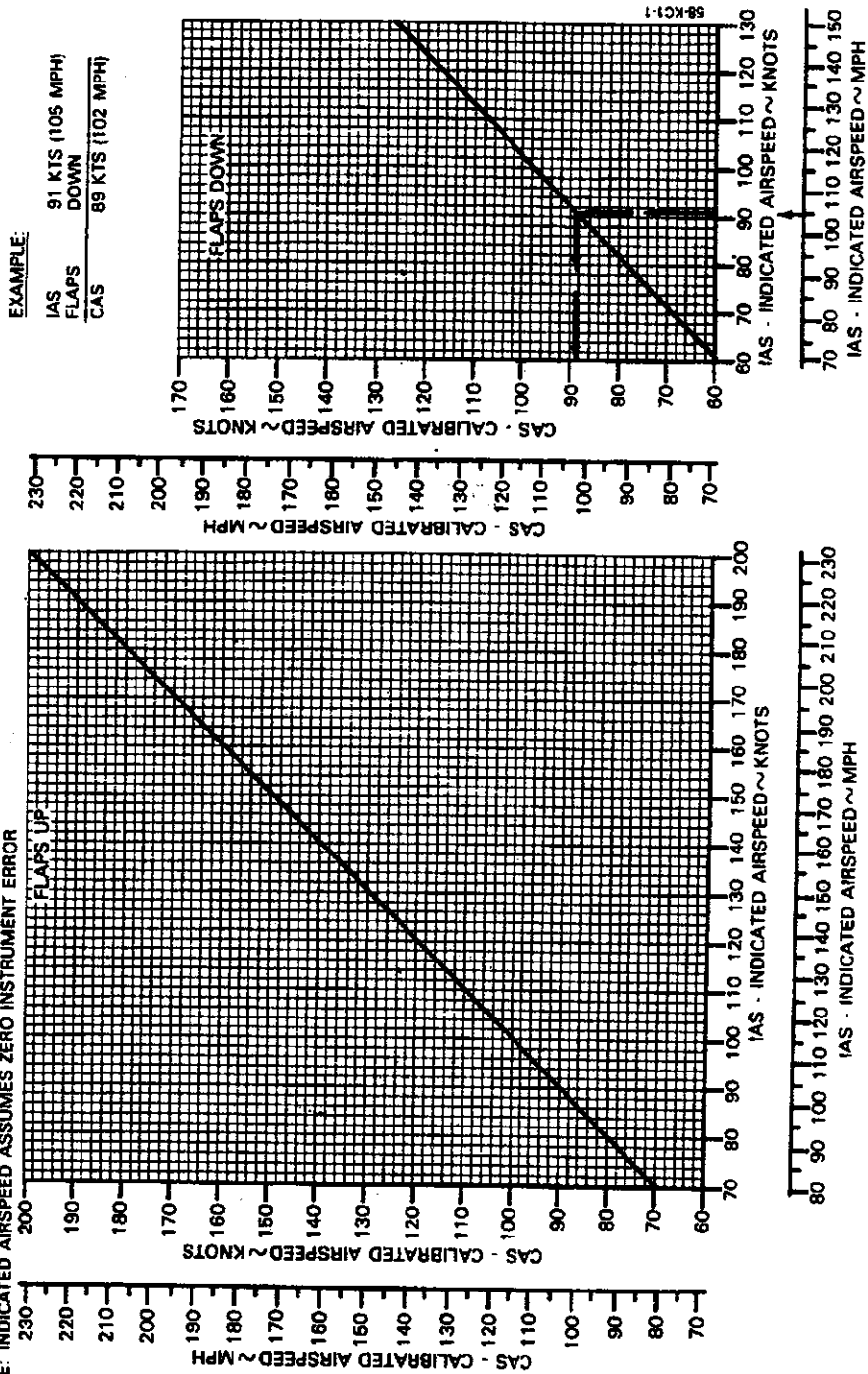
1. The example, in addition to presenting an answer for a particular set of conditions, also presents the order in which the graphs should normally be used, i.e., if the first item in the example is OAT, then enter the graph at the known OAT.
2. The reference lines indicate where to begin following guide lines. Always project to the reference line first, then follow the guide lines to the next known item.
3. Indicated airspeeds (IAS) were obtained by using the Airspeed Calibration-Normal System.
4. The associated conditions define the specific conditions from which performance parameters have been determined. They are not intended to be used as instructions, however, performance values determined from charts can only be achieved if specified conditions exist.
5. The full amount of usable fuel is available for all approved flight conditions.

Section V
Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

AIRSPEED CALIBRATION - NORMAL SYSTEM

NOTE: INDICATED AIRSPEED ASSUMES ZERO INSTRUMENT ERROR



BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

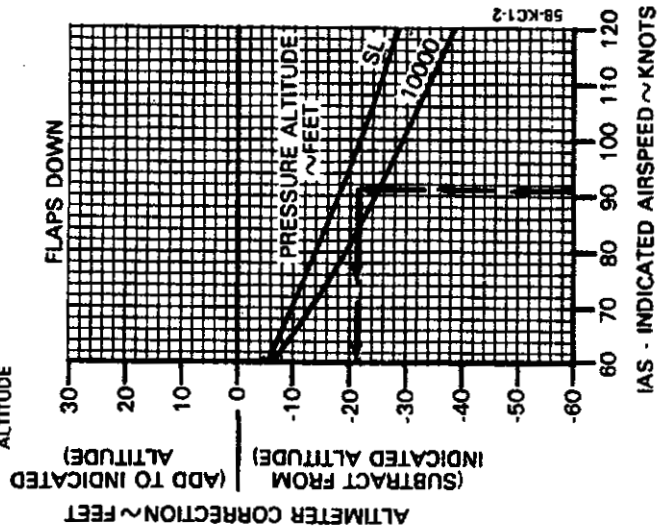
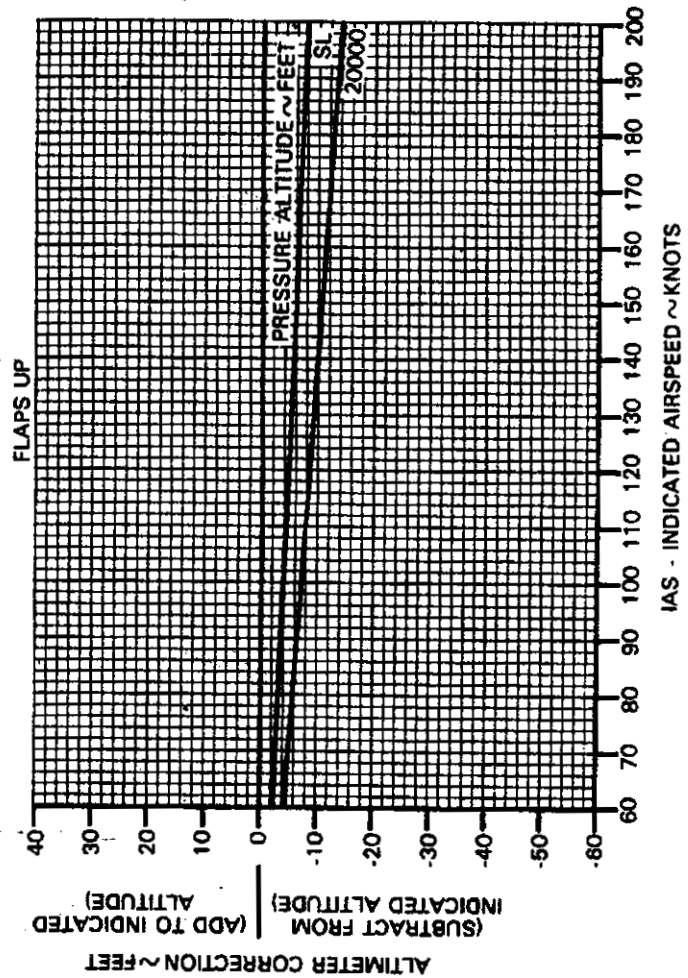
ALTIMETER CORRECTION - NORMAL SYSTEM

NOTE:
 INDICATED ALTITUDE AND INDICATED
 AIRSPEED ASSUME ZERO INSTRUMENT ERROR

EXAMPLE:

IAS 91 KTS (105 MPH)
 FLAPS DOWN
 INDICATED PRESSURE ALTITUDE 3965 FT

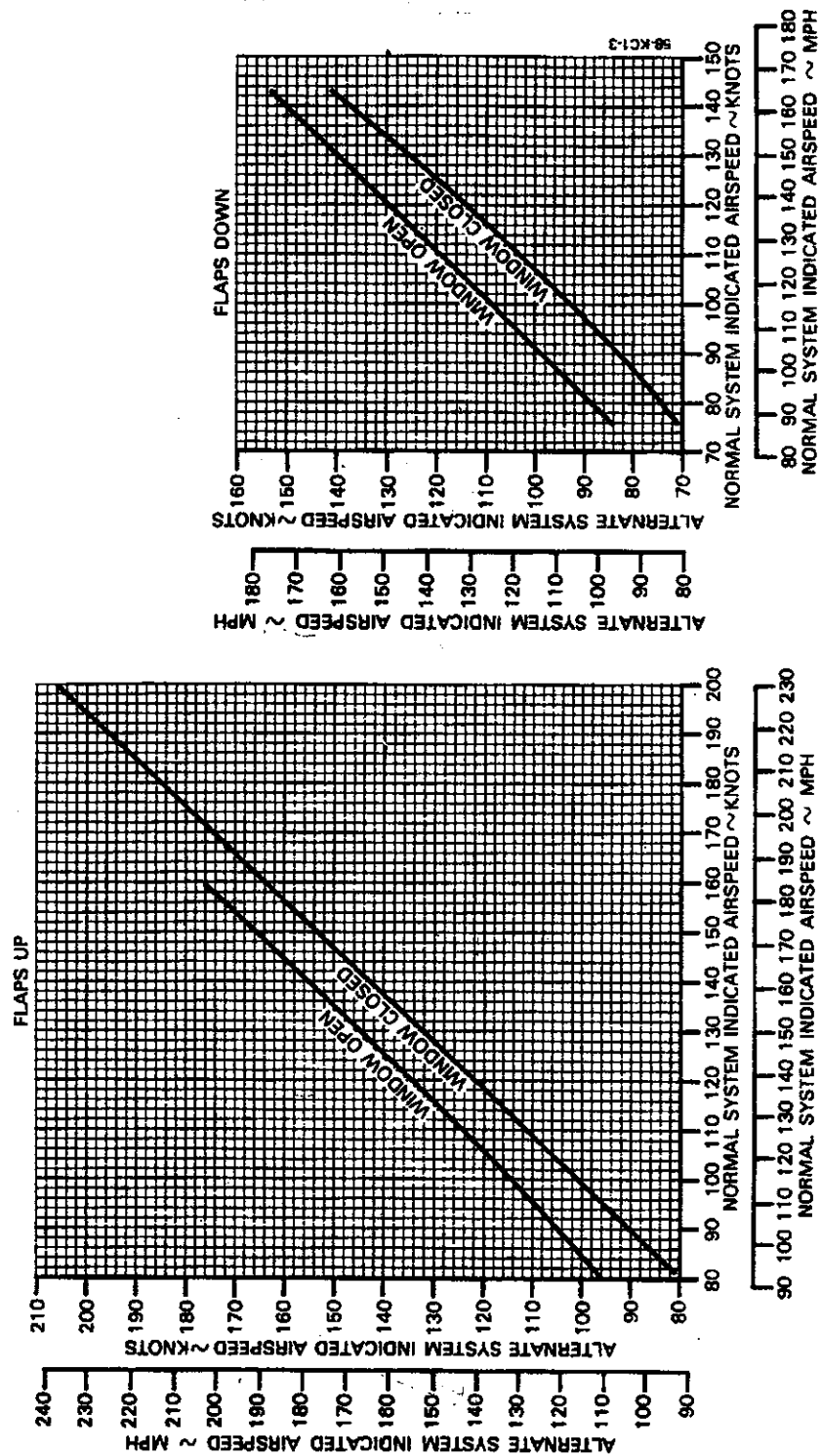
ALTIMETER CORRECTION -21 FT
 ACTUAL PRESSURE ALTITUDE (3965-21) = 3944 FT



Section V
Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

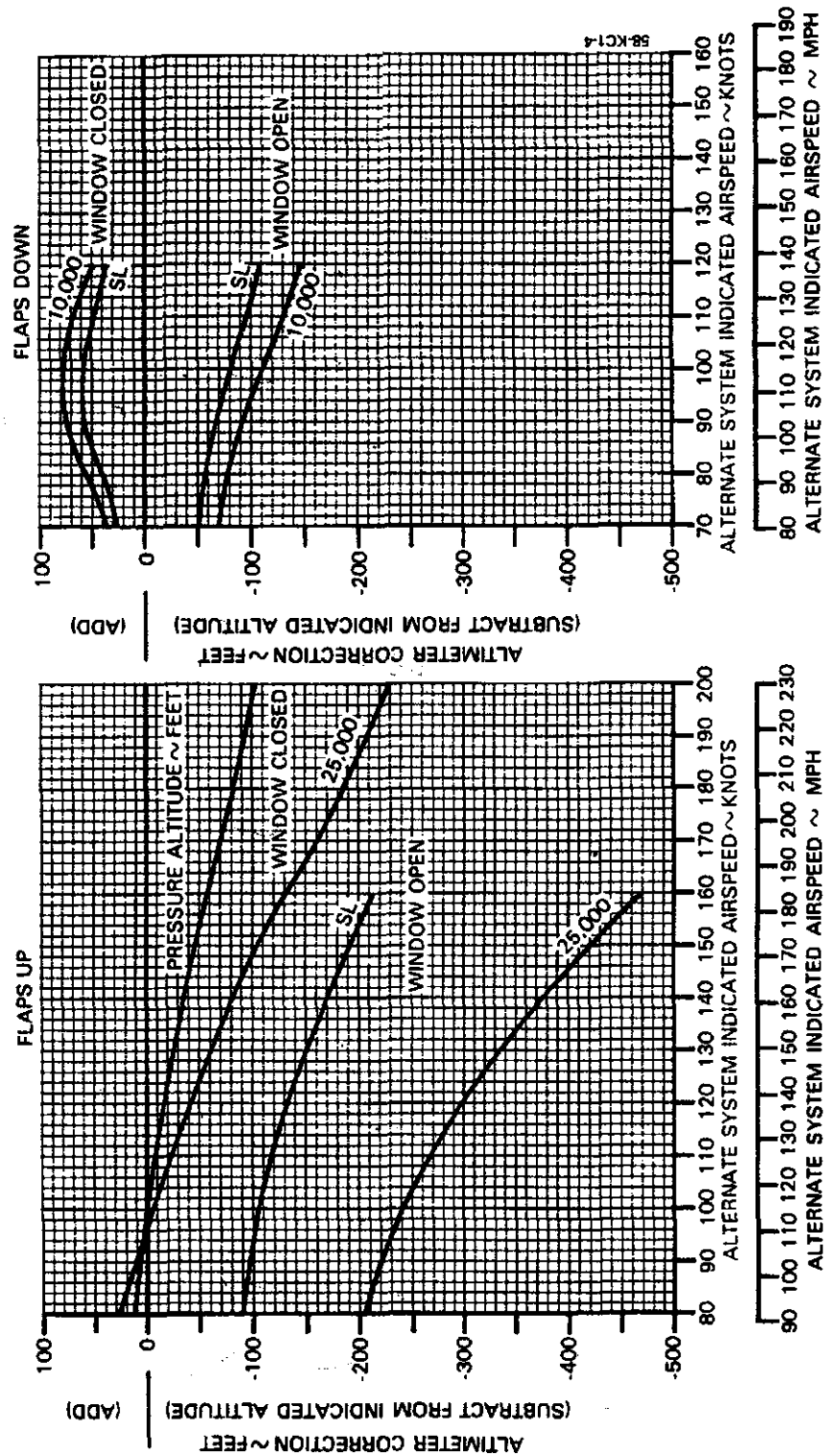
AIRSPEED CALIBRATION - ALTERNATE SYSTEM



BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

ALTIMETER CORRECTION - ALTERNATE SYSTEM

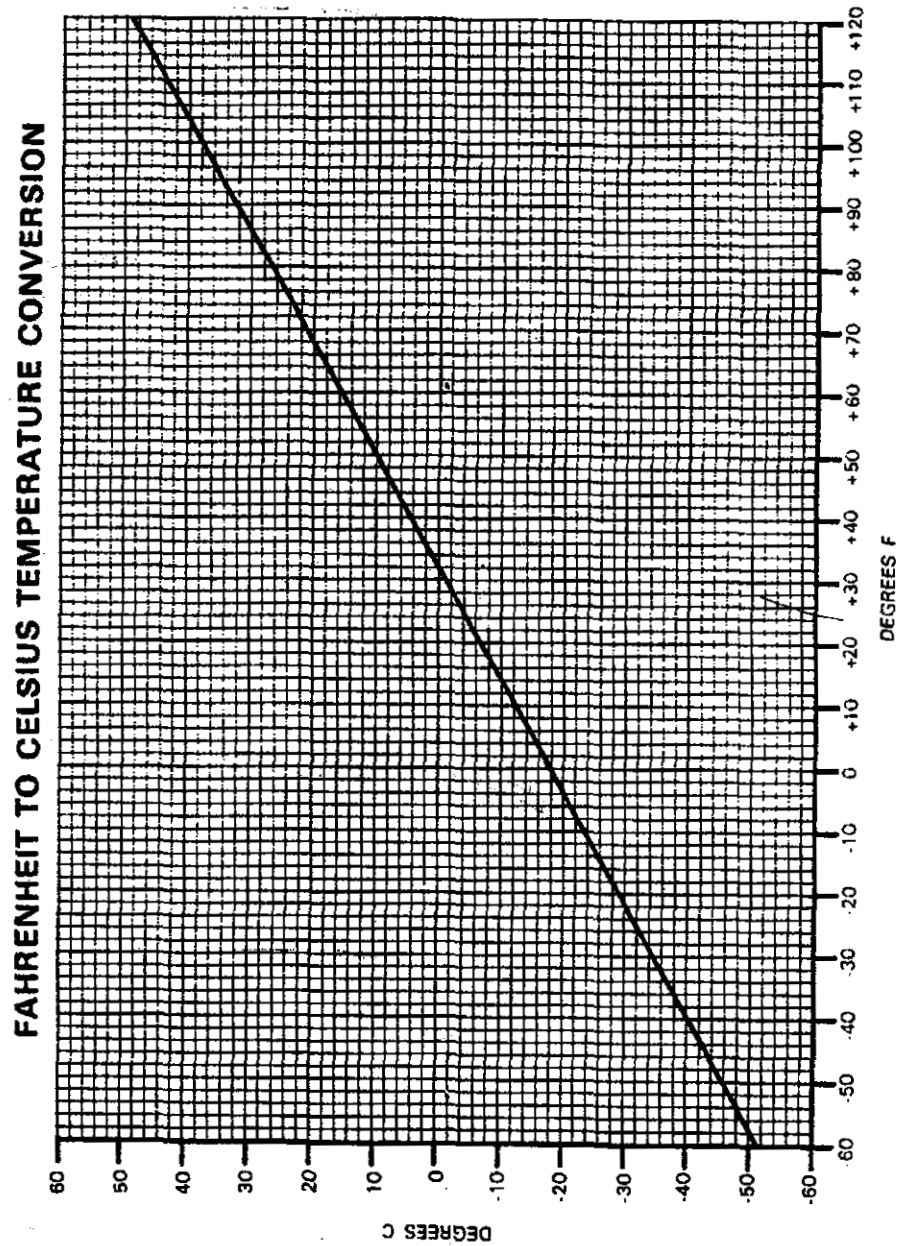


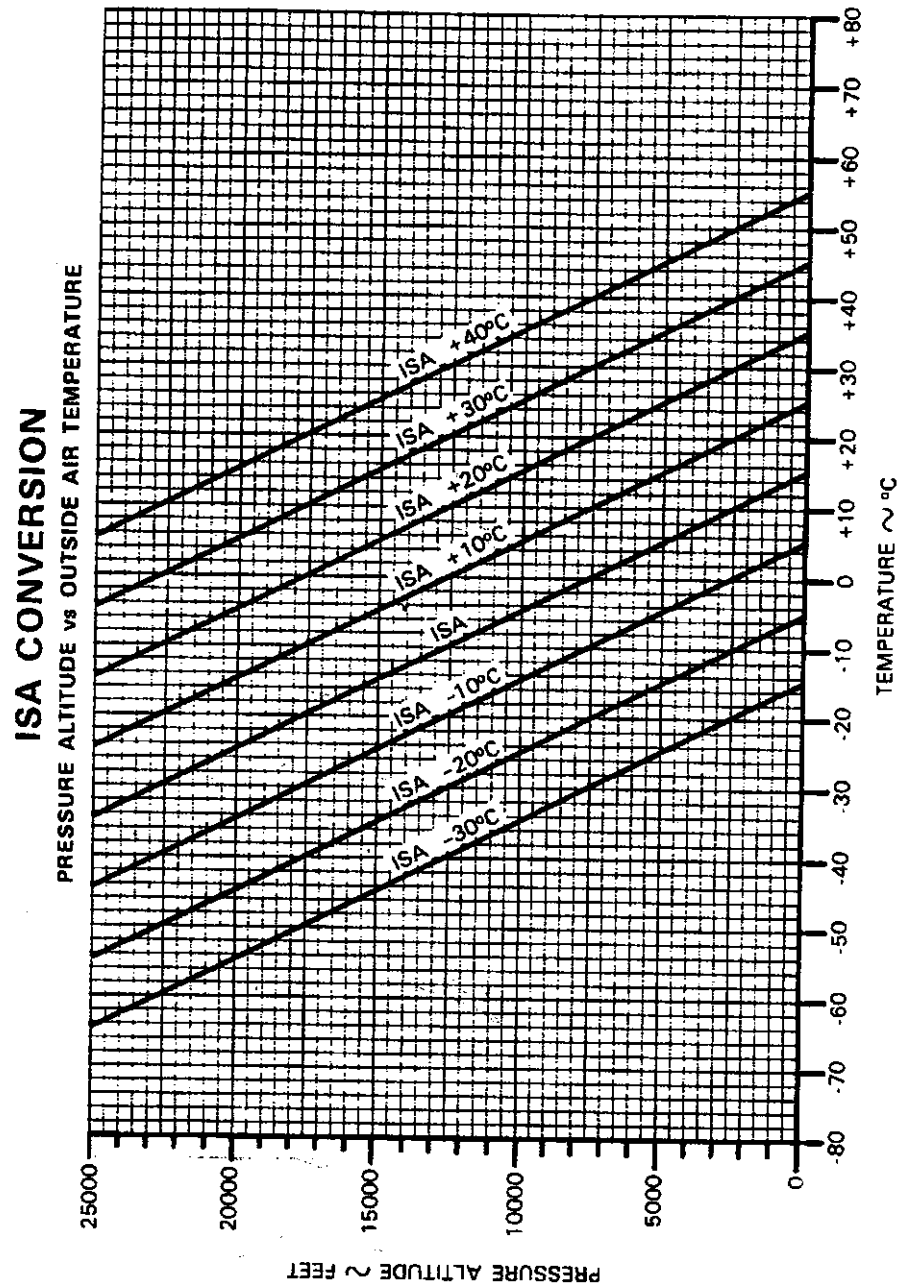
January 1983

5-17

Section V
Performance

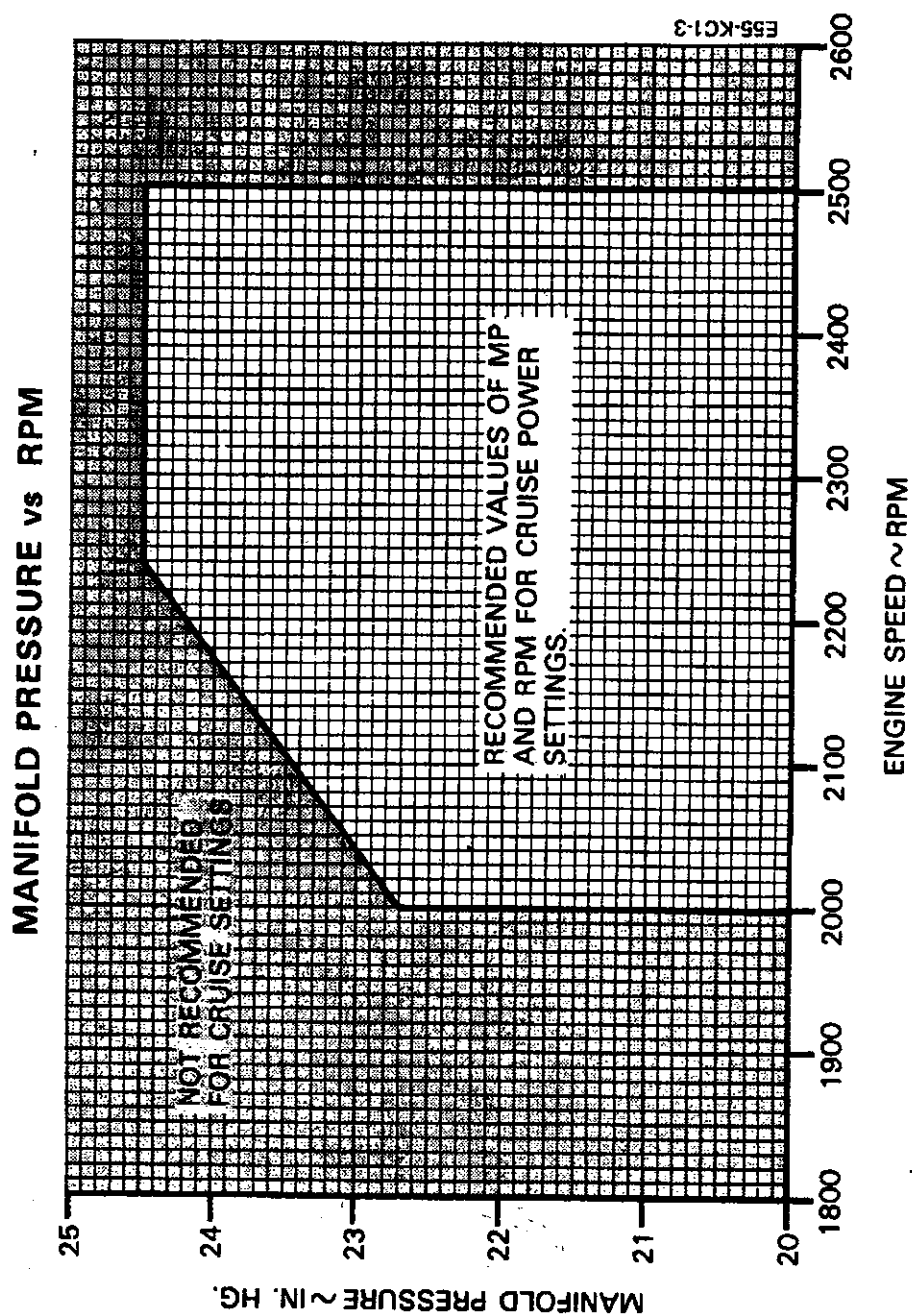
BEECHCRAFT Baron 58
Serial TH 1 thru TH 772





Section V
Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772



BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

TAKE-OFF WEIGHT

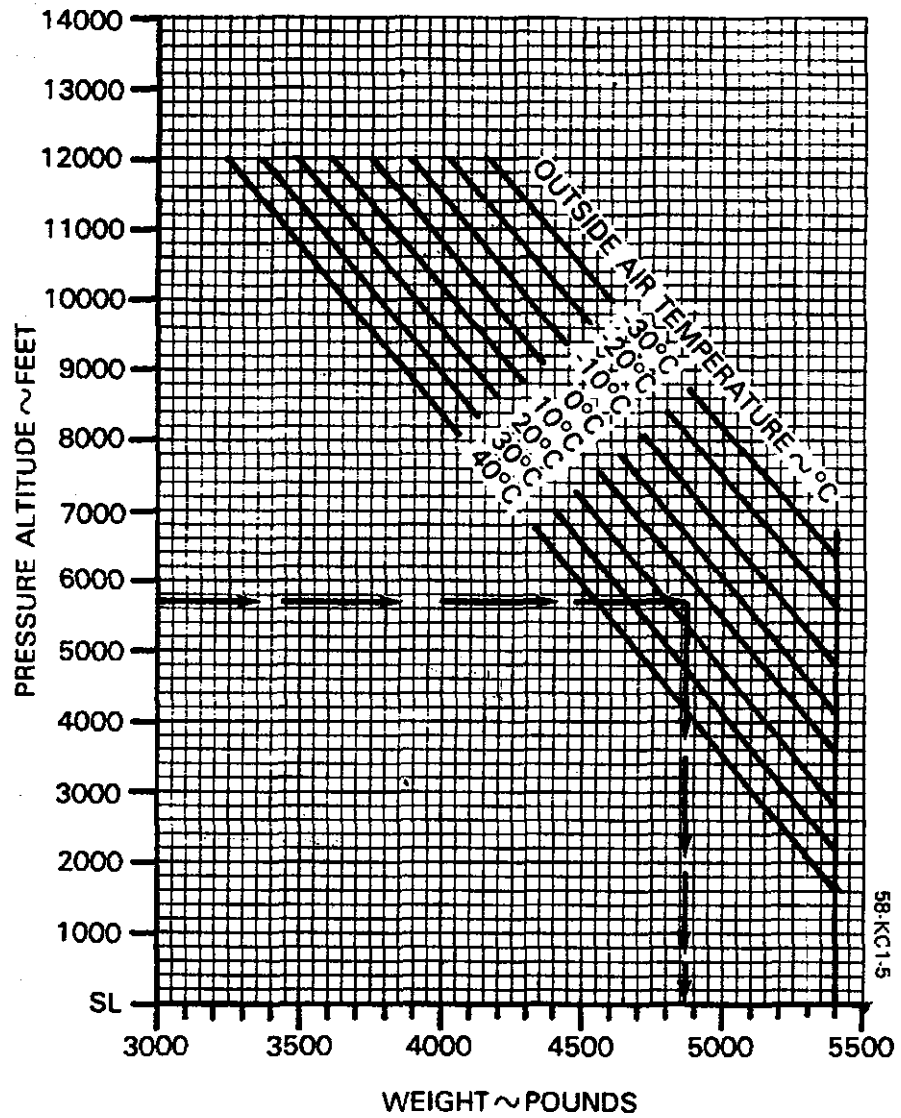
TO ACHIEVE POSITIVE SINGLE ENGINE
 RATE-OF-CLIMB AT LIFT-OFF

ASSOCIATED CONDITIONS:

AIRPLANE	AIRBORNE
POWER	TAKE-OFF
FLAPS	UP
LANDING GEAR	DOWN
INOPERATIVE PROPELLER	FEATHERED

EXAMPLE:

PRESSURE ALTITUDE	5650 FEET
OAT	15°C (59°F)
TAKE-OFF WEIGHT	4850



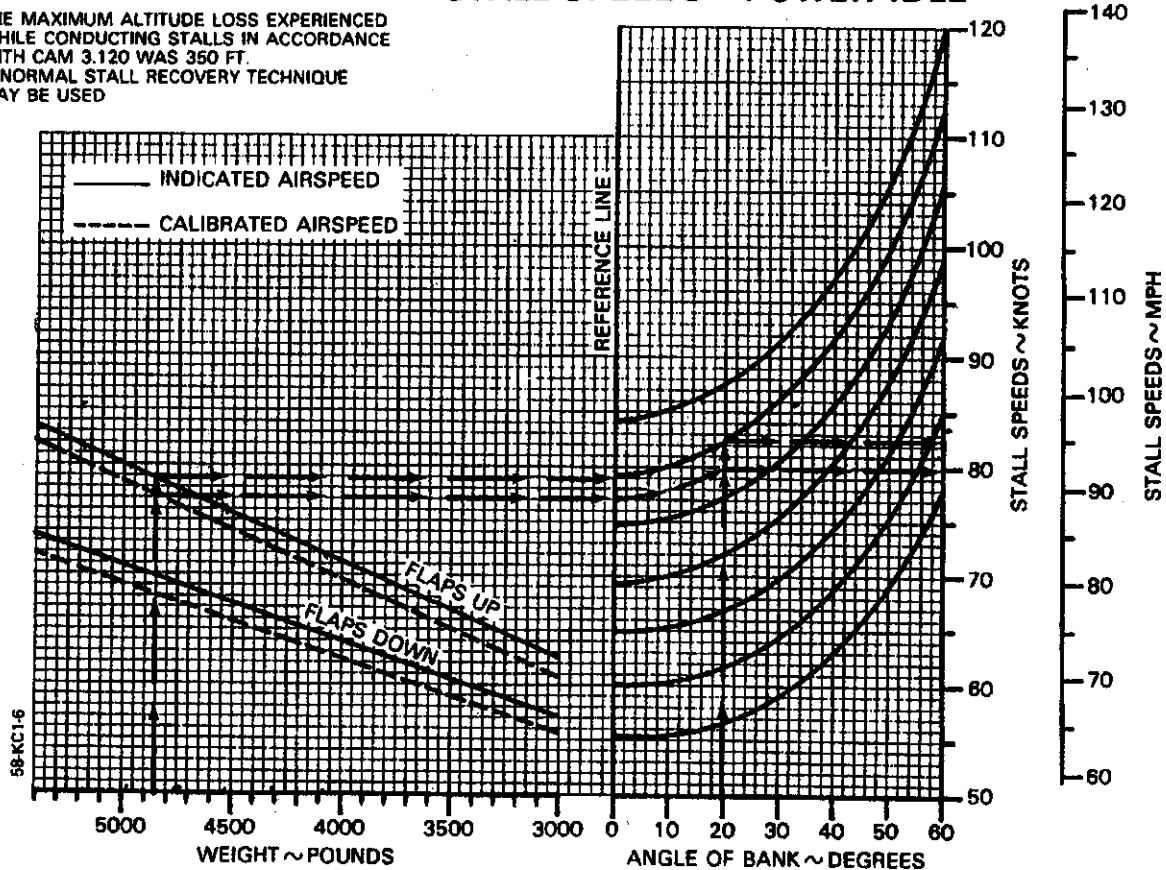
5-22

January 1983

NOTES:

1. THE MAXIMUM ALTITUDE LOSS EXPERIENCED WHILE CONDUCTING STALLS IN ACCORDANCE WITH CAM 3.120 WAS 350 FT.
2. A NORMAL STALL RECOVERY TECHNIQUE MAY BE USED

STALL SPEEDS - POWER IDLE



EXAMPLE:

WEIGHT	4850 LBS
FLAPS	UP
ANGLE OF BANK	20°

STALL SPEED	
(IAS)	82 KTS (94 MPH)
(CAS)	80 KTS (92 MPH)

Section V
Performance

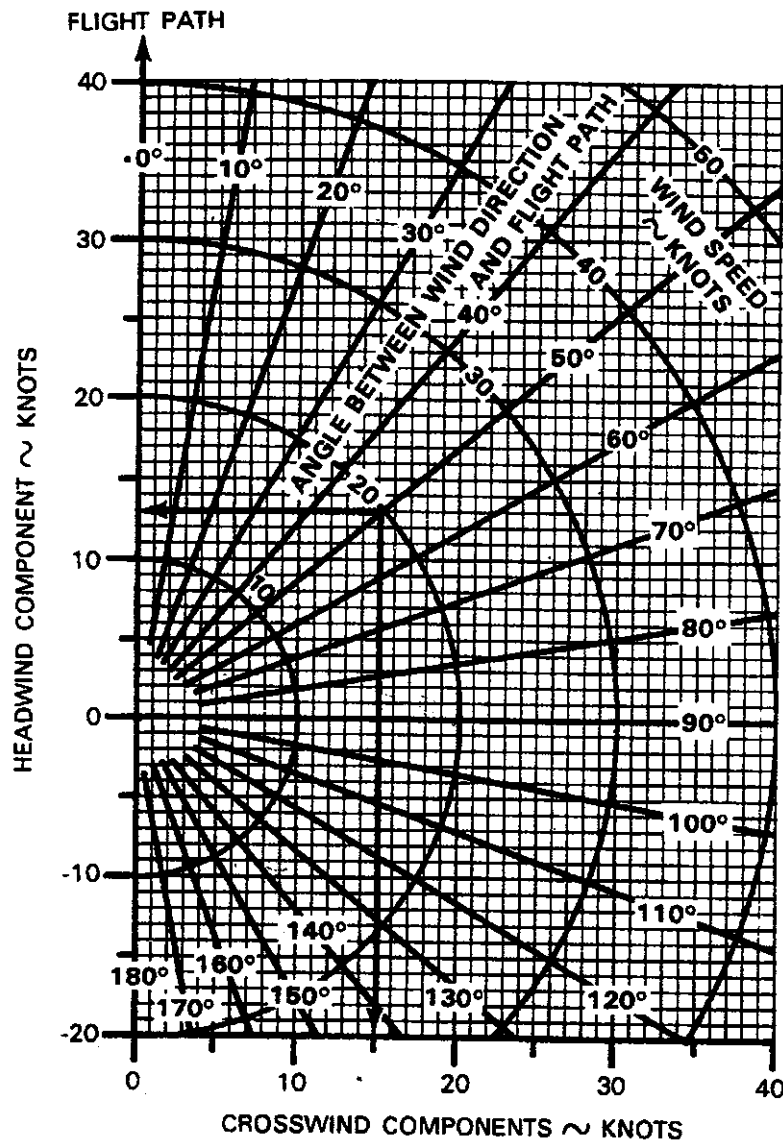
BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

WIND COMPONENTS

Demonstrated Crosswind Component is 22 kts

EXAMPLE:

WIND SPEED	20 KTS
ANGLE BETWEEN WIND DIRECTION AND FLIGHT PATH	50°
HEADWIND COMPONENT	13 KTS
CROSSWIND COMPONENT	15 KTS



Section V
Performance

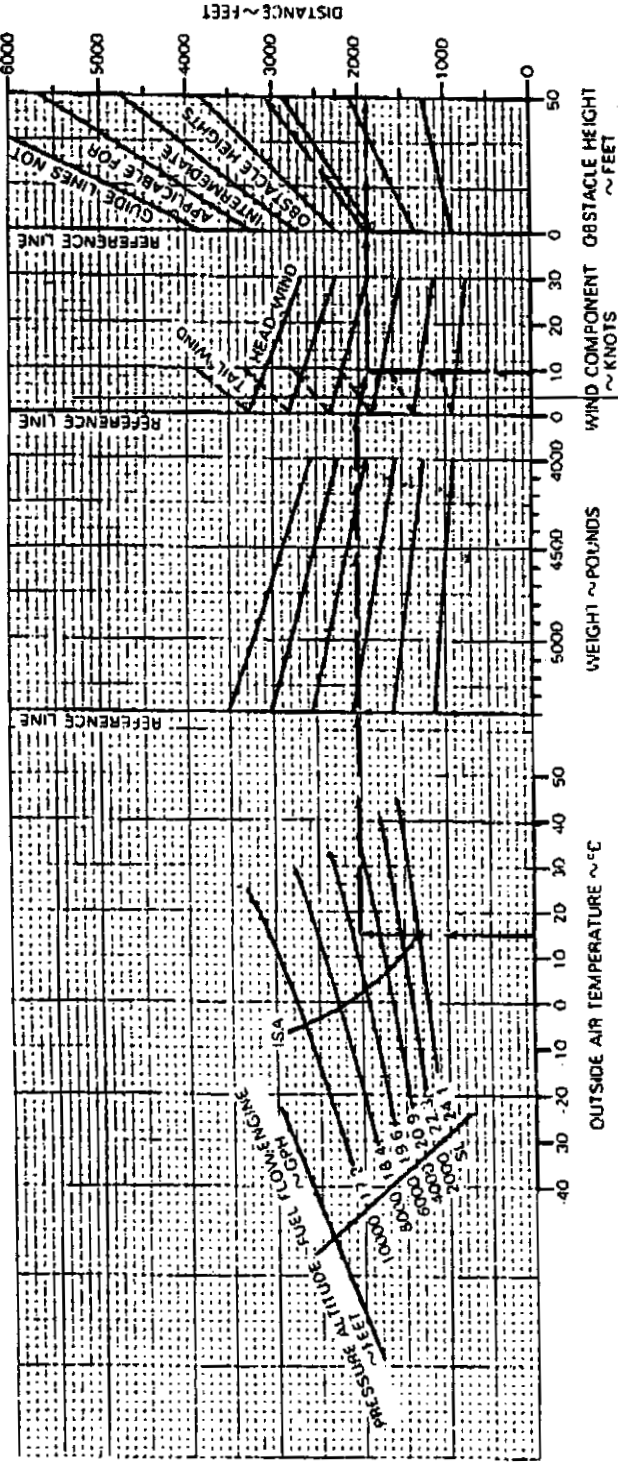
BEECHCRAFT Baron 58
Serial TH 773 and After

TAKE-OFF DISTANCE

EXAMPLE	
OAT	15°C (59°F)
PRESSURE ALTITUDE	5650 FEET
TAKE-OFF WEIGHT	5400 LBS
HEAD WIND COMPONENT	9.5 KNOTS
GROUND ROLL	1900 FEET
TOTAL DISTANCE OVER 50 FT OBSTACLE	3090 FEET
TAKE-OFF SPEED AT LIFT-OFF	66 KTS
	94 KTS

ASSOCIATED CONDITION	
POWER	TAKE OFF POWER
MIXTURE	LEAN TO APPROPRIATE
FLAPS	FUEL FLOW UP
LANDING GEAR	RETRACT AFTER POSITIVE CLIMB ESTABLISHED
COWL FLAPS	OPEN

TAKE-OFF SPEEDS (ALL WEIGHTS)
LIFT-OFF 88 KNOTS
50 FEET 94 KNOTS



BEECHCRAFT Baron 58 **Serial TH 773 and After**

Section V **Performance**

EXAMPLE

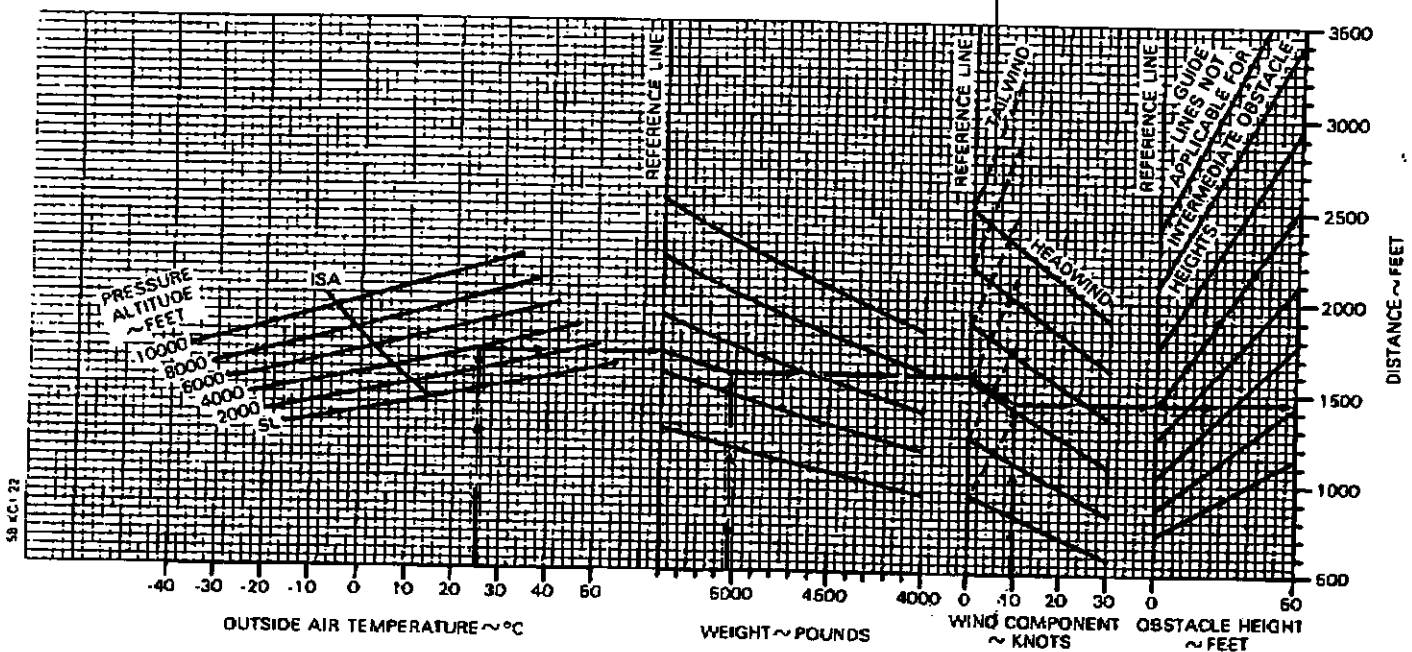
OAT	25°C
PRESSURE ALTITUDE	3965 FT
WEIGHT	5039 LBS
WIND COMPONENT	9.5 KTS
GROUND ROLL	1450 FT
TOTAL OVER 50 FT	2500 FT
OBSTACLE	
APPROACH SPEED	91 KTS

LANDING DISTANCE

WEIGHT ~ POUNDS	SPEED AT 50 FT KNOTS
5400	96
5000	91
4600	87
4000	81

ASSOCIATED CONDITIONS

POWER	RETARDED TO MAINTAIN 800 FT/MIN
FLAPS	DOWN
LANDING GEAR	DOWN
APPROACH SPEED	IAS AS TABULATED
BRACING	MAXIMUM
RUNWAY	PAVED, LEVEL, DRY SURFACE



October 1976

5-47

January 1983

5-25

ACCELERATE - STOP DISTANCE

ASSOCIATED CONDITIONS:

POWER 1. TAKE-OFF POWER
2. ENGINE IDLE AT DECISION SPEED
FLAPS UP
COWL FLAPS OPEN
RUNWAY PAVED, LEVEL, DRY SURFACE

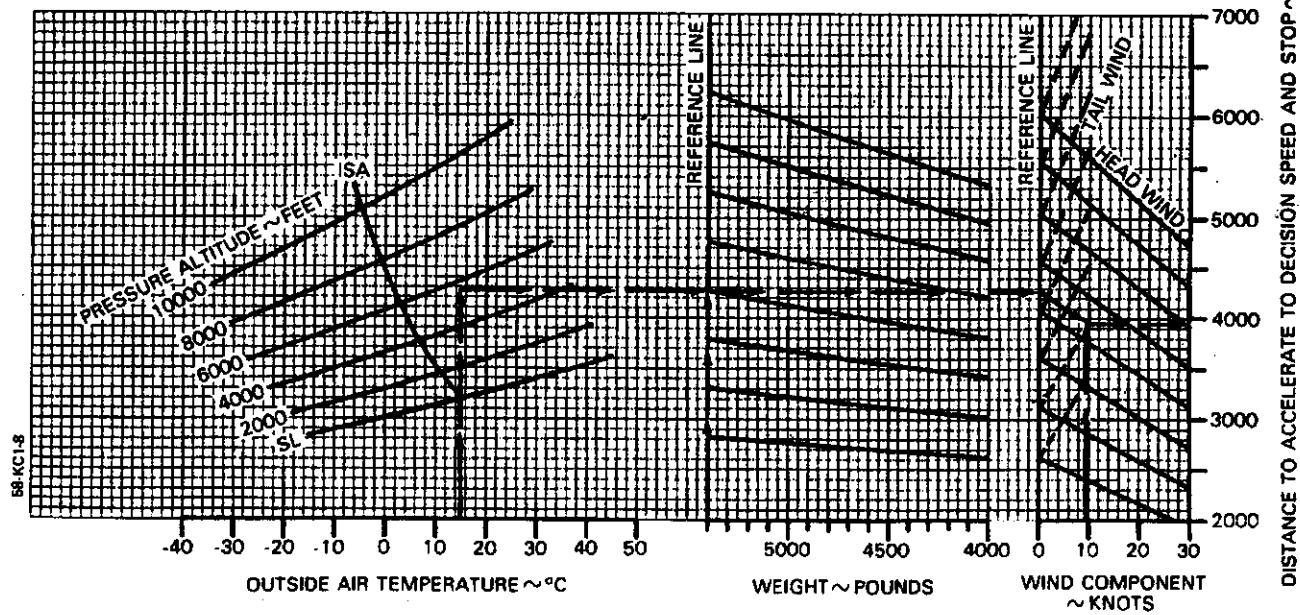
DECISION SPEED (ALL WEIGHTS)

86 KTS
(99 MPH)

EXAMPLE:

OAT 15°C (59°F)
PRESSURE ALTITUDE 5650 FT
TAKE-OFF WEIGHT 5400 LBS
HEAD WIND 9.5 KTS

ACCELERATE - STOP DISTANCE 3980 FT
DECISION SPEED (IAS) 86 KNOTS
(99 MPH)



BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

Section V Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

ACCELERATE - GO DISTANCE

ASSOCIATED CONDITIONS:

POWER TAKE-OFF POWER
FLAPS UP
LANDING GEAR RETRACT AFTER LIFT-OFF
RUNWAY PAVED, LEVEL DRY SURFACE

TAKE-OFF SPEEDS (ALL WEIGHTS)
LIFT-OFF 86 KTS (99 MPH)
50 FEET 94 KTS (108 MPH)

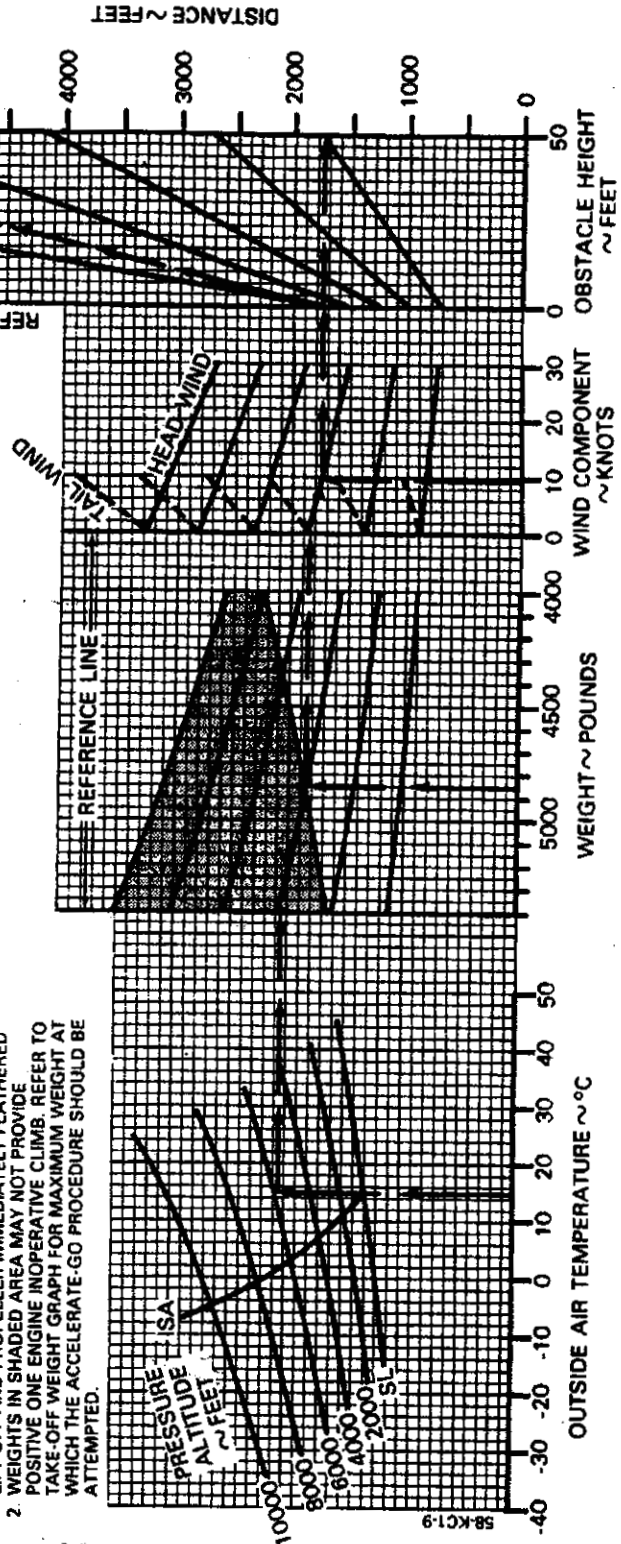
NOTES:

1. DISTANCES ASSUME AN ENGINE FAILURE AT LIFT-OFF AND PROPELLER IMMEDIATELY FEATHERED
2. WEIGHTS IN SHADED AREA MAY NOT PROVIDE POSITIVE ONE ENGINE INOPERATIVE CLIMB. REFER TO TAKE-OFF WEIGHT GRAPH FOR MAXIMUM WEIGHT AT WHICH THE ACCELERATE-GO PROCEDURE SHOULD BE ATTEMPTED.

EXAMPLE:

OAT 15°C (59°F)
PRESSURE ALTITUDE 5850 FT
TAKE-OFF WEIGHT 4850 LBS
HEAD WIND COMPONENT 9.5 KTS

GROUND ROLL 1775 FT
TOTAL DISTANCE OVER 8071 FT
50 FT OBSTACLE



BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

CLIMB - TWO ENGINE

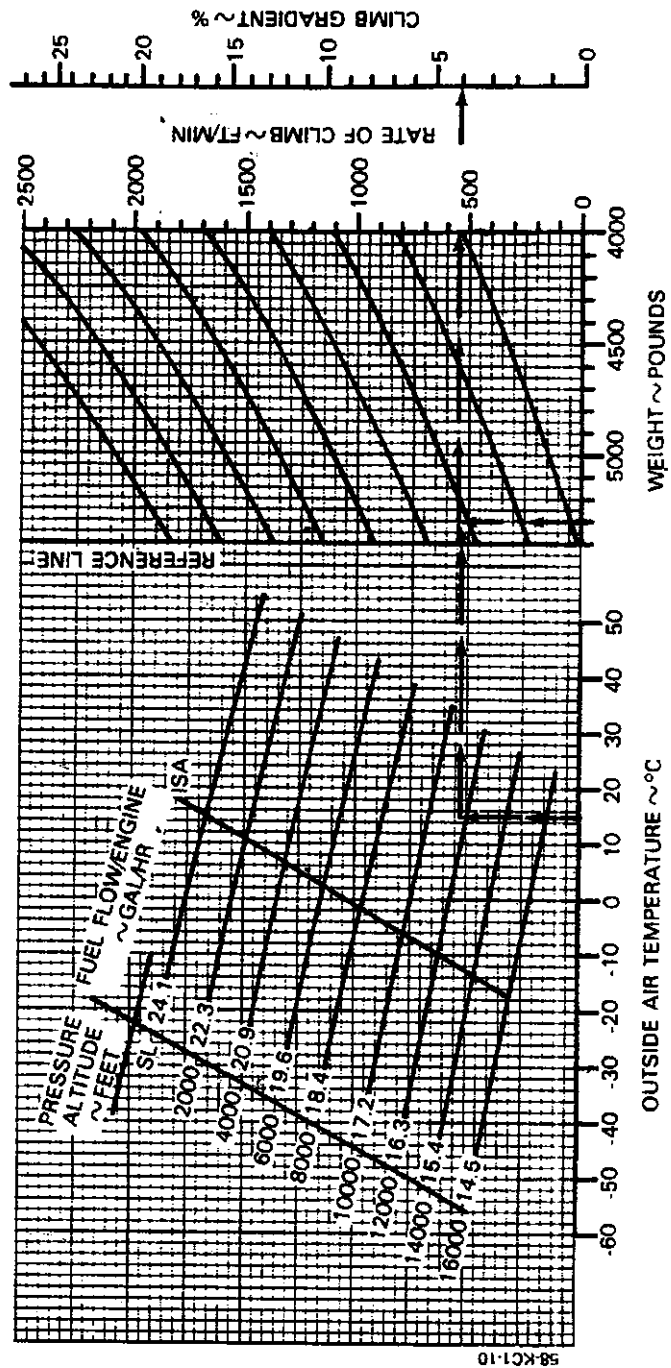
CLIMB SPEED 104 KTS (ALL WEIGHTS)
 (120 MPH)

ASSOCIATED CONDITIONS:

POWER MAXIMUM CONTINUOUS
 FLAPS UP
 LANDING GEAR UP
 COWL FLAPS OPEN
 MIXTURE LEAN TO APPROPRIATE
 FUEL FLOW

EXAMPLE:

OAT 15°C (59°F)
 PRESSURE ALTITUDE 11500 FEET
 WEIGHT 5352 LBS
 RATE OF CLIMB 550 FPM
 CLIMB GRADIENT 4%



Section V Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

TAKE-OFF CLIMB GRADIENT - ONE ENGINE INOPERATIVE

ASSOCIATED CONDITIONS:

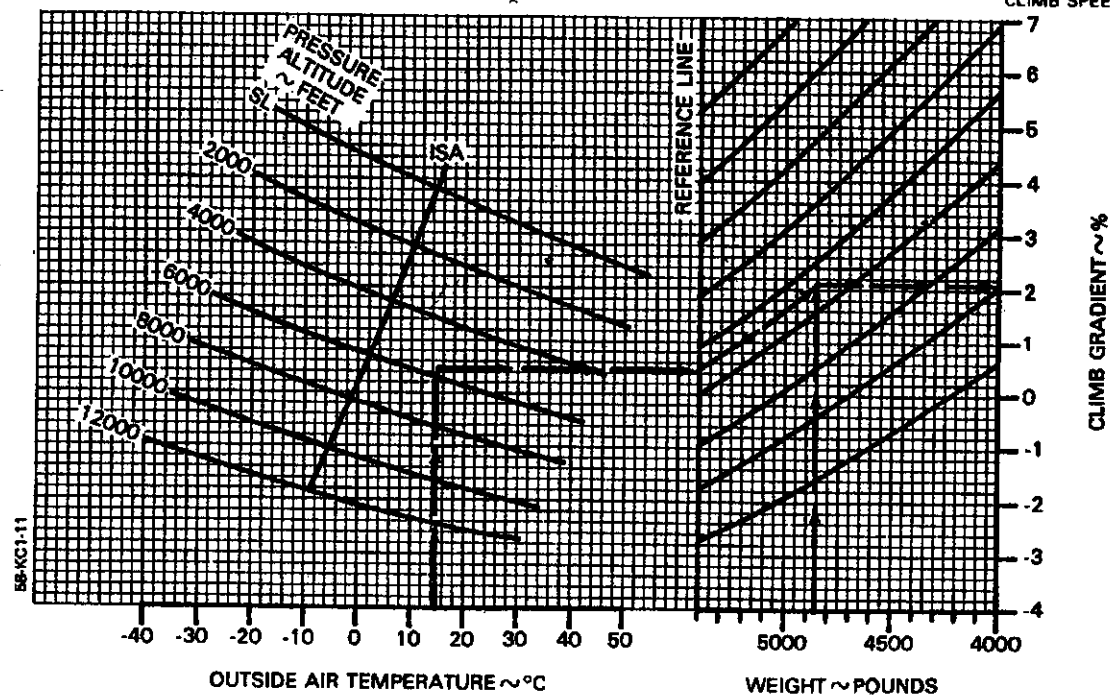
POWER	TAKE-OFF
LANDING GEAR	UP
FLAPS	UP
INOPERATIVE	FEATHERED
PROPELLER	

CLIMB SPEED (ALL WEIGHTS)

94 KTS
(108 MPH)

EXAMPLE:

OAT	15°C (59°F)
PRESSURE ALTITUDE	5650 FT
WEIGHT	4850 LBS
GRADIENT OF CLIMB	2.1%
CLIMB SPEED	94 KTS (108 MPH)



5-28

January 1983

January 1983

5-29

ASSOCIATED CONDITIONS:

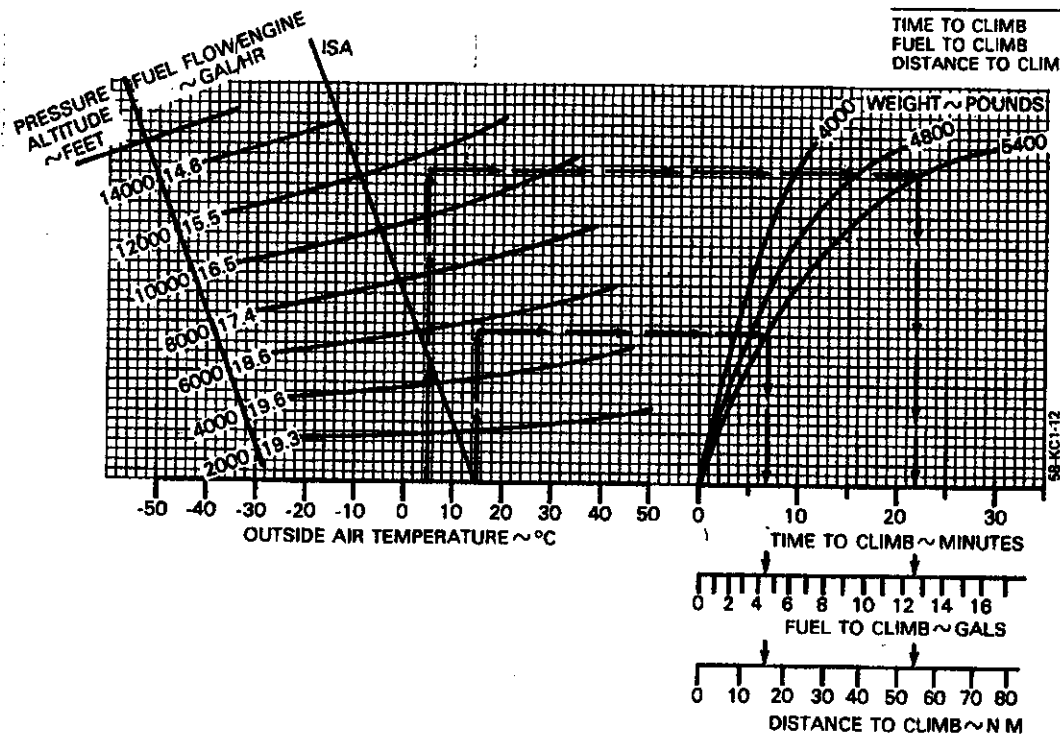
POWER 25 IN. HG. OR
FULL THROTTLE, 2500 RPM
FUEL DENSITY 6.0 LB/GAL
MIXTURE LEAN TO APPROPRIATE FUEL FLOW
COWL FLAPS CLOSED

TIME, FUEL AND DISTANCE TO CLIMB

CLIMB SPEED 139 KTS
(160 MPH)

EXAMPLE:

OAT AT TAKE-OFF	15°C (59°F)
OAT AT CRUISE	5°C (41°F)
AIRPORT PRESSURE	5850 FT
ALTITUDE	
CRUISE PRESSURE	11500 FT
ALTITUDE	
INITIAL CLIMB WEIGHT	5400 LBS
TIME TO CLIMB	(22-7) = 15 MIN
FUEL TO CLIMB	(12.7-4.7) = 8 GAL
DISTANCE TO CLIMB	(55-17) = 38 NM



BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

Section V Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

CLIMB - ONE ENGINE INOPERATIVE

ASSOCIATED CONDITIONS:

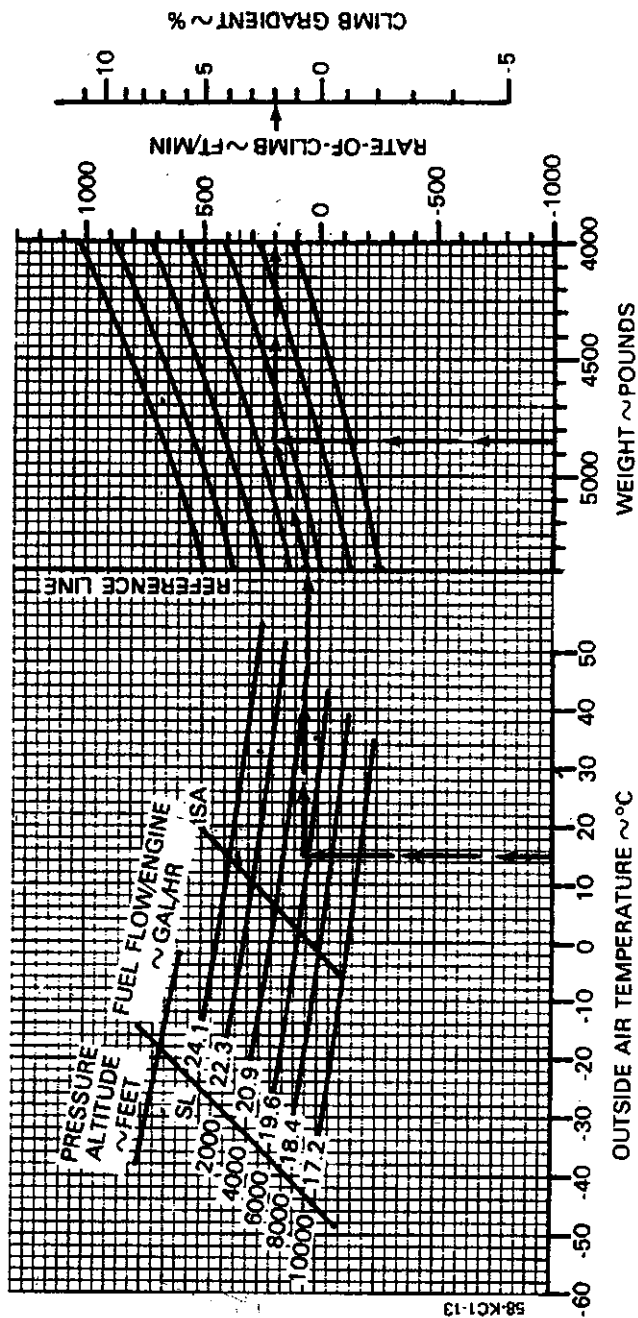
POWER
FLAPS
LANDING GEAR
INOPERATIVE PROPELLER
COWL FLAPS
MIXTURE

MAXIMUM CONTINUOUS
UP
UP
FEATHERED
OPEN
LEAN TO APPROPRIATE
FUEL FLOW

CLIMB SPEED 100 KTS (ALL WEIGHTS)
(115 MPH)

EXAMPLE:

OAT 15°C (59°F)
PRESSURE ALTITUDE 5850 FT
WEIGHT 4850 LBS
RATE-OF-CLIMB 200 FPM
CLIMB GRADIENT 2%



BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

SERVICE CEILING - ONE ENGINE INOPERATIVE

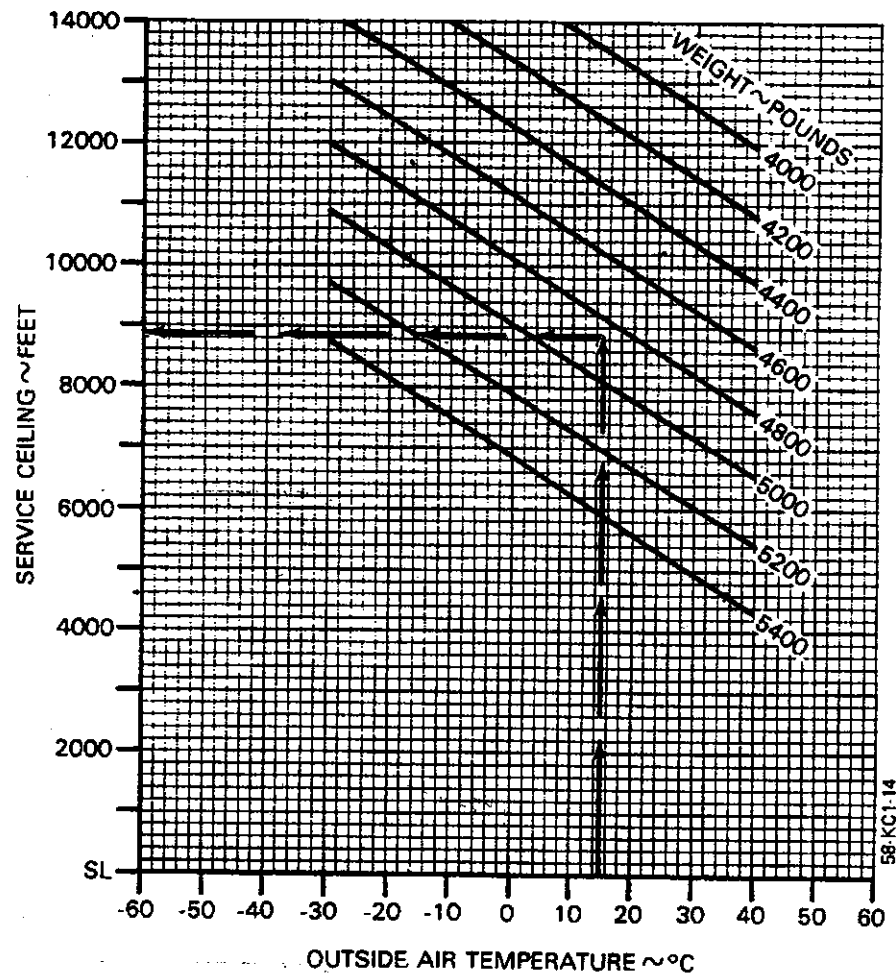
ASSOCIATED CONDITIONS:

POWER	MAXIMUM CONTINUOUS
LANDING GEAR	UP
INOPERATIVE PROPELLER	FEATHERED
FLAPS	UP

EXAMPLE:

OAT	15°C (59°F)
WEIGHT	4850
SERVICE CEILING	8425 FT

NOTE:
 SERVICE CEILING IS THE PRESSURE ALTITUDE WHERE AIRPLANE
 HAS CAPABILITY OF CLIMBING 50 FT MINUTE WITH ONE
 PROPELLER FEATHERED



Section V Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

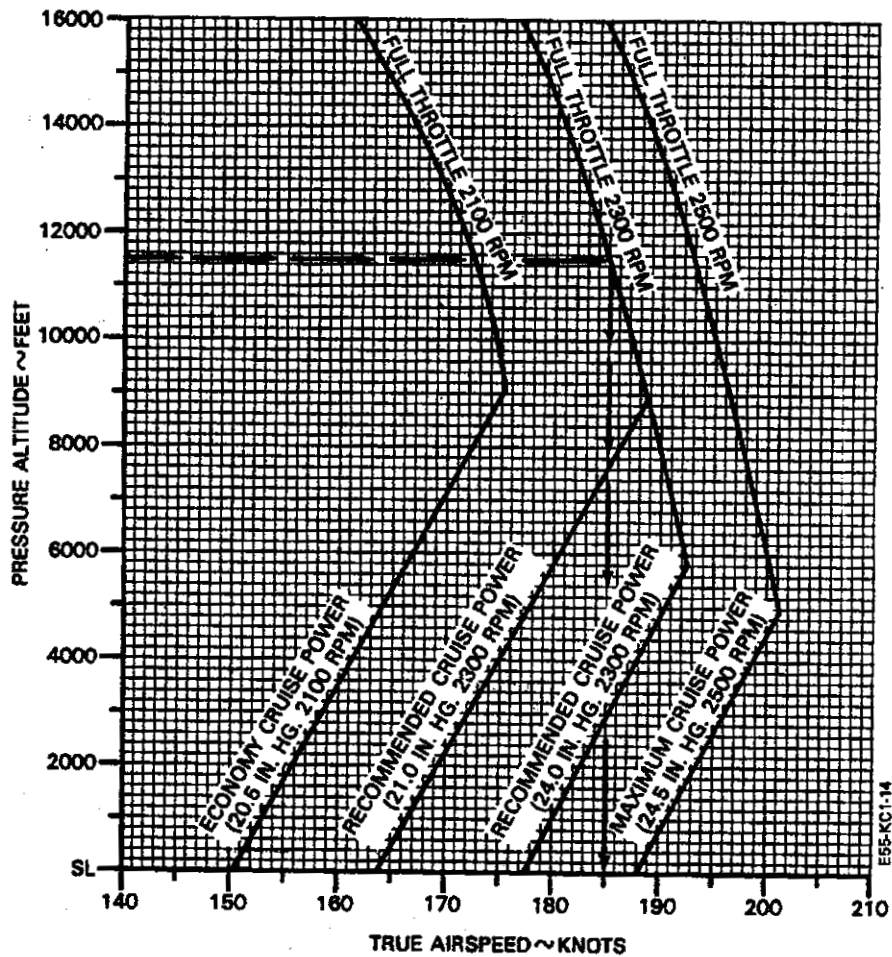
CRUISE SPEEDS

ASSOCIATED CONDITIONS:

AVERAGE CRUISE WEIGHT 5000 LBS
TEMPERATURE STANDARD DAY (ISA)

EXAMPLE:

PRESSURE ALTITUDE 11500 FEET
POWER SETTING FULL THROTTLE 2300 RPM
TRUE AIRSPEED 185 KTS
(213 MPH)

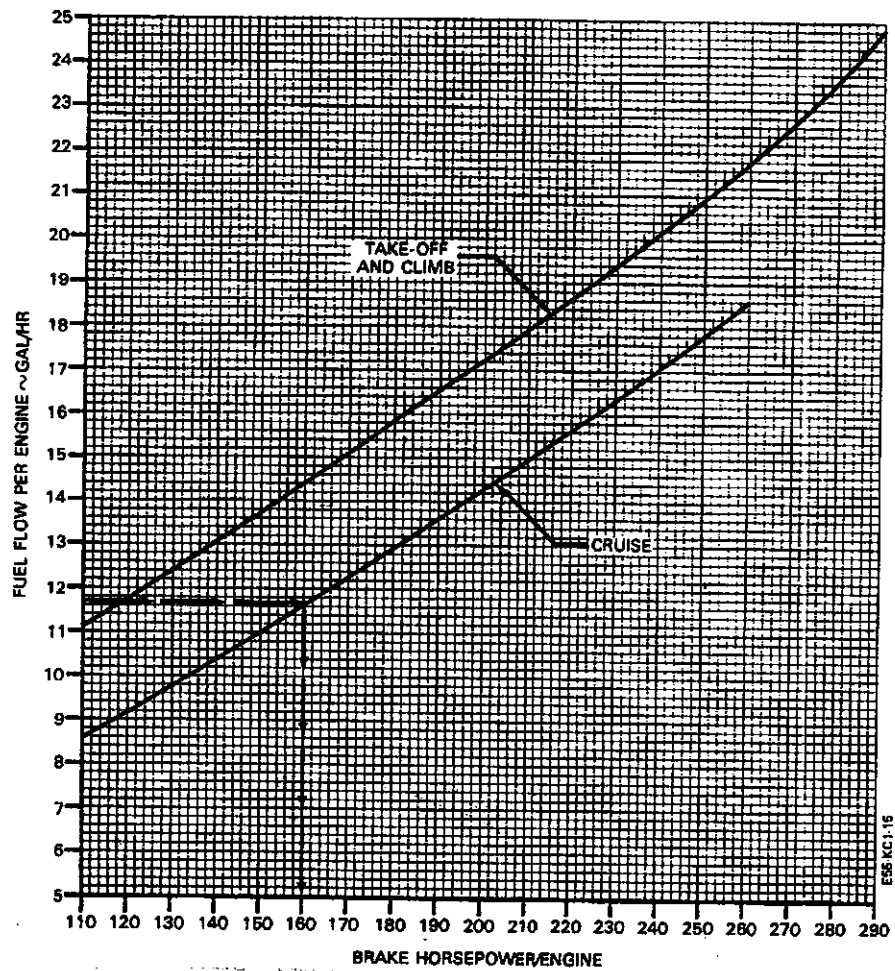


FUEL FLOW vs BRAKE HORSEPOWER

EXAMPLE

FUEL FLOW/ENGINE CONDITION	11.7 GAL HR LEVEL FLIGHT CRUISE LEAN
-------------------------------	--

BRAKE HORSEPOWER PER ENGINE	160 HP
--------------------------------	--------



Section V
Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

CRUISE POWER SETTINGS
MAXIMUM CRUISE POWER
24.5 IN. HG. @ 2500 RPM (OR FULL THROTTLE) 5200 LBS.

	PRESS ALT.	OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW/ ENGINE		TAS	CAS
	FEET	°F	°C	RPM	IN HG	PPH	GPH	KTS	KTS
ISA +36°F (+20°C)	SL	100	38	2500	24.5	90	14.8	189	183
	2000	95	35	2500	24.5	91	15.2	195	183
	4000	88	31	2500	24.5	93	15.5	200	182
	6000	81	27	2500	23.4	90	15.0	201	178
	8000	73	23	2500	22.0	84	14.0	199	170
	10000	66	19	2500	20.0	79	13.1	196	163
	12000	58	15	2500	18.3	73	12.2	193	155
	14000	52	11	2500	16.8	69	11.4	189	148
	16000	43	6	2500	15.5	64	10.6	185	139
STANDARD DAY (ISA)	SL	64	18	2500	24.5	93	15.4	188	188
	2000	57	14	2500	24.5	95	15.8	193	188
	4000	52	11	2500	24.5	96	16.1	199	187
	6000	45	7	2500	23.4	93	15.6	200	183
	8000	37	3	2500	22.0	87	14.5	197	176
	10000	30	-1	2500	20.0	82	13.6	195	168
	12000	23	-5	2500	18.3	76	12.7	192	161
	14000	16	-9	2500	16.8	71	11.8	189	153
	16000	7	-14	2500	15.5	66	11.0	195	145
ISA -36°F (-20°C)	SL	28	-2	2500	24.5	96	16.0	186	193
	2000	21	-6	2500	24.5	98	15.9	192	193
	4000	16	-9	2500	24.5	100	16.7	197	192
	6000	9	-13	2500	23.4	97	16.2	198	188
	8000	1	-17	2500	22.0	90	15.0	196	181
	10000	-6	-21	2500	20.0	84	14.0	194	174
	12000	-13	-25	2500	18.3	78	13.1	191	166
	14000	-20	-29	2500	16.8	73	12.2	188	158
	16000	-29	-34	2500	15.5	68	11.3	184	150

- NOTES: 1. FULL THROTTLE MANIFOLD PRESSURE
SETTINGS ARE APPROXIMATE
2. SHADED AREA REPRESENTS OPERATION
WITH FULL THROTTLE

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

CRUISE POWER SETTINGS
RECOMMENDED CRUISE POWER
24.0 IN. HG. @ 2300 RPM (OR FULL THROTTLE) 5200 LBS.

	PRESS ALT.	OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW/ ENGINE		TAS	CAS
	FEET	°F	°C	RPM	IN HG	PPH	GPH	KTS	KTS
ISA + 36°F (+20°C)	SL	100	38	2300	24.0	78	13.0	179	173
	2000	93	34	2300	24.0	80	13.3	184	172
	4000	86	30	2300	24.0	81	13.6	189	172
	6000	81	27	2300	23.5	82	13.6	193	171
	8000	73	23	2300	21.8	76	12.7	191	164
	10000	64	18	2300	20.1	71	11.9	187	156
	12000	57	14	2300	18.5	67	11.2	185	149
	14000	50	10	2300	17.1	57	9.5	170	133
	16000	43	6	2300	15.6	54	9.1	167	126
STANDARD DAY (ISA)	SL	64	18	2300	24.0	81	13.5	178	178
	2000	57	14	2300	24.0	82	13.7	183	177
	4000	50	10	2300	24.0	84	14.1	188	177
	6000	45	7	2300	23.5	85	14.1	192	176
	8000	36	2	2300	21.8	79	13.2	190	169
	10000	28	-2	2300	20.1	74	12.3	187	161
	12000	21	-6	2300	18.5	69	11.6	184	154
	14000	14	-10	2300	17.1	59	9.9	171	139
	16000	7	-14	2300	15.6	56	9.4	169	132
ISA - 36°F (-20°C)	SL	27	-3	2300	24.0	83	13.9	176	183
	2000	21	-6	2300	24.0	85	14.2	181	182
	4000	14	-10	2300	24.0	87	14.5	187	183
	6000	7	-14	2300	23.5	88	14.6	190	181
	8000	0	-18	2300	21.8	82	13.6	188	174
	10000	-8	-22	2300	20.1	76	12.7	185	166
	12000	-15	-26	2300	18.5	72	11.9	183	159
	14000	-22	-30	2300	17.1	62	10.3	171	144
	16000	-29	-34	2300	15.6	59	9.8	169	138

- NOTES: 1. FULL THROTTLE MANIFOLD PRESSURE
 SETTINGS ARE APPROXIMATE
 2. SHADED AREA REPRESENTS OPERATION
 WITH FULL THROTTLE

Section V
Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

CRUISE POWER SETTINGS
RECOMMENDED CRUISE POWER
21.0 IN. HG. @ 2300 RPM (OR FULL THROTTLE) 5200 LBS.

	PRESS ALT.	OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW/ ENGINE		TAS	CAS
	FEET	°F	°C	RPM	IN HG	PPH	GPH	KTS	KTS
ISA +36°F (+20°C)	SL	99	37	2300	21.0	66	10.9	164	159
	2000	93	34	2300	21.0	67	11.2	169	159
	4000	86	30	2300	21.0	70	11.6	175	160
	6000	79	26	2300	21.0	72	11.9	181	160
	8000	72	22	2300	21.0	73	12.2	187	160
	10000	64	18	2300	20.2	71	11.9	187	156
	12000	57	14	2300	18.6	67	11.2	185	149
	14000	50	10	2300	17.0	57	9.5	170	133
	16000	43	6	2300	15.7	54	9.1	167	126
STANDARD DAY (ISA)	SL	63	17	2300	21.0	68	11.3	164	164
	2000	57	14	2300	21.0	70	11.6	169	164
	4000	50	10	2300	21.0	72	12.0	175	165
	6000	43	6	2300	21.0	74	12.3	180	165
	8000	36	2	2300	21.0	76	12.7	186	165
	10000	28	-2	2300	20.2	74	12.3	187	161
	12000	21	-6	2300	18.6	69	11.6	184	154
	14000	14	-10	2300	17.0	59	9.9	171	139
	16000	7	-14	2300	15.7	56	9.4	169	132
ISA -36°F (-20°C)	SL	27	-3	2300	21.0	70	11.6	163	168
	2000	21	-6	2300	21.0	72	12.0	168	169
	4000	14	-10	2300	21.0	74	12.4	173	170
	6000	7	-14	2300	21.0	76	12.7	179	170
	8000	0	-18	2300	21.0	78	13.1	185	170
	10000	-3	-22	2300	20.2	76	12.7	185	166
	12000	-15	-26	2300	18.6	72	12.0	183	159
	14000	-22	-30	2300	17.0	62	10.3	171	144
	16000	-29	-34	2300	15.7	59	9.8	169	138

- NOTES: 1. FULL THROTTLE MANIFOLD PRESSURE
SETTINGS ARE APPROXIMATE
2. SHADED AREA REPRESENTS OPERATION
FULL THROTTLE

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

CRUISE POWER SETTINGS
ECONOMY CRUISE POWER
20.5 IN. HG. @ 2100 RPM (OR FULL THROTTLE) 5200 LBS.

	PRESS ALT.	OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW/ ENGINE		TAS	CAS
	FEET	°F	°C	RPM	IN HG	PPH	GPH	KTS	KTS
ISA +36°F (+20°C)	SL	99	37	2100	20.5	56	9.2	151	146
	2000	91	33	2100	20.5	57	9.5	156	146
	4000	84	29	2100	20.5	59	9.8	161	147
	6000	79	26	2100	20.5	62	10.3	167	148
	8000	72	22	2100	20.5	62	10.4	171	147
	10000	64	18	2100	20.2	62	10.4	174	144
	12000	57	14	2100	18.6	59	9.3	170	137
	14000	50	10	2100	17.0	54	9.0	165	128
	16000	43	6	2100	15.7	50	8.4	157	118
STANDARD DAY (ISA)	SL	63	17	2100	20.5	58	9.6	151	151
	2000	55	13	2100	20.5	59	9.9	156	152
	4000	48	9	2100	20.5	61	10.2	161	152
	6000	43	6	2100	20.5	64	10.6	167	153
	8000	36	2	2100	20.5	64	10.7	171	152
	10000	28	-2	2100	20.2	64	10.7	174	150
	12000	21	-6	2100	18.6	61	10.1	171	143
	14000	14	-10	2100	17.0	56	9.4	167	135
	16000	7	-14	2100	15.7	52	8.7	160	125
ISA -36°F (-20°C)	SL	27	-3	2100	20.5	60	10.0	151	156
	2000	19	-7	2100	20.5	62	10.3	156	157
	4000	12	-11	2100	20.5	63	10.6	160	157
	6000	7	-14	2100	20.5	66	10.9	166	158
	8000	0	-18	2100	20.5	66	11.1	170	157
	10000	-8	-22	2100	20.2	66	11.1	174	155
	12000	-15	-26	2100	18.6	63	10.5	171	149
	14000	-22	-30	2100	17.0	58	9.7	167	140
	16000	-29	-34	2100	15.7	54	9.0	162	132

- NOTES: 1. FULL THROTTLE MANIFOLD PRESSURE
 SETTINGS ARE APPROXIMATE
 2. SHADED AREA REPRESENTS OPERATION
 WITH FULL THROTTLE

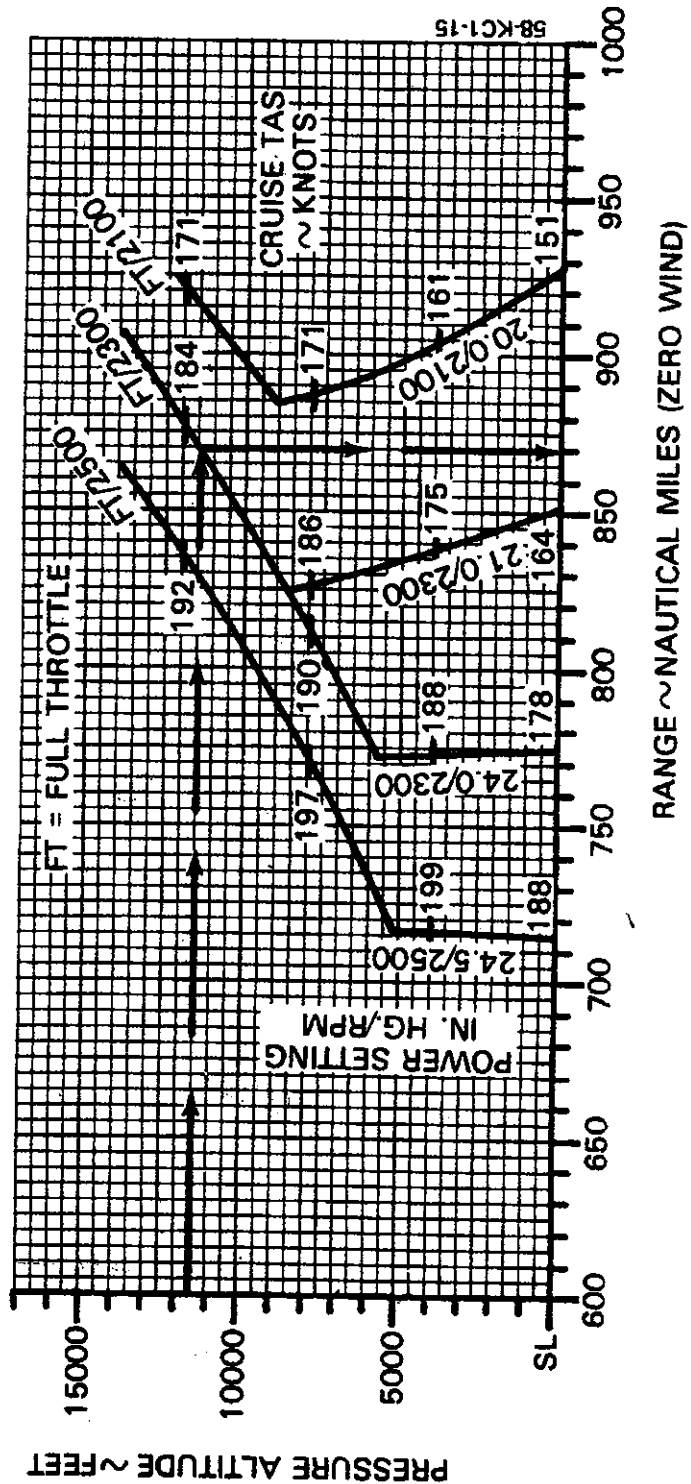
Section V Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

RANGE PROFILE - 136 GALLONS

ASSOCIATED CONDITIONS:			STANDARD DAY (ISA)	
WEIGHT	5000 LBS			
FUEL	AVIATION GASOLINE			
FUEL DENSITY	6.0 LBS/GAL			
INITIAL FUEL LOADING	136 U.S. GALS (816 LBS)			
EXAMPLE:			PRESSURE ALTITUDE	11500 FEET
			POWER SETTING	FULL THROTTLE
				2300 RPM
			RANGE	870 NM

NOTE:
RANGE INCLUDES START, TAXI, CLIMB, AND DESCENT
WITH 45 MINUTES RESERVE FUEL AT ECONOMY CRUISE



January 1983

6-39

ENDURANCE PROFILE - 136 GALLONS

ASSOCIATED CONDITIONS:

WEIGHT 5000 LBS
 FUEL AVIATION GASOLINE
 FUEL DENSITY 6.0 LBS/GAL
 INITIAL FUEL LOADING 136 U.S. GALS (816 LBS)

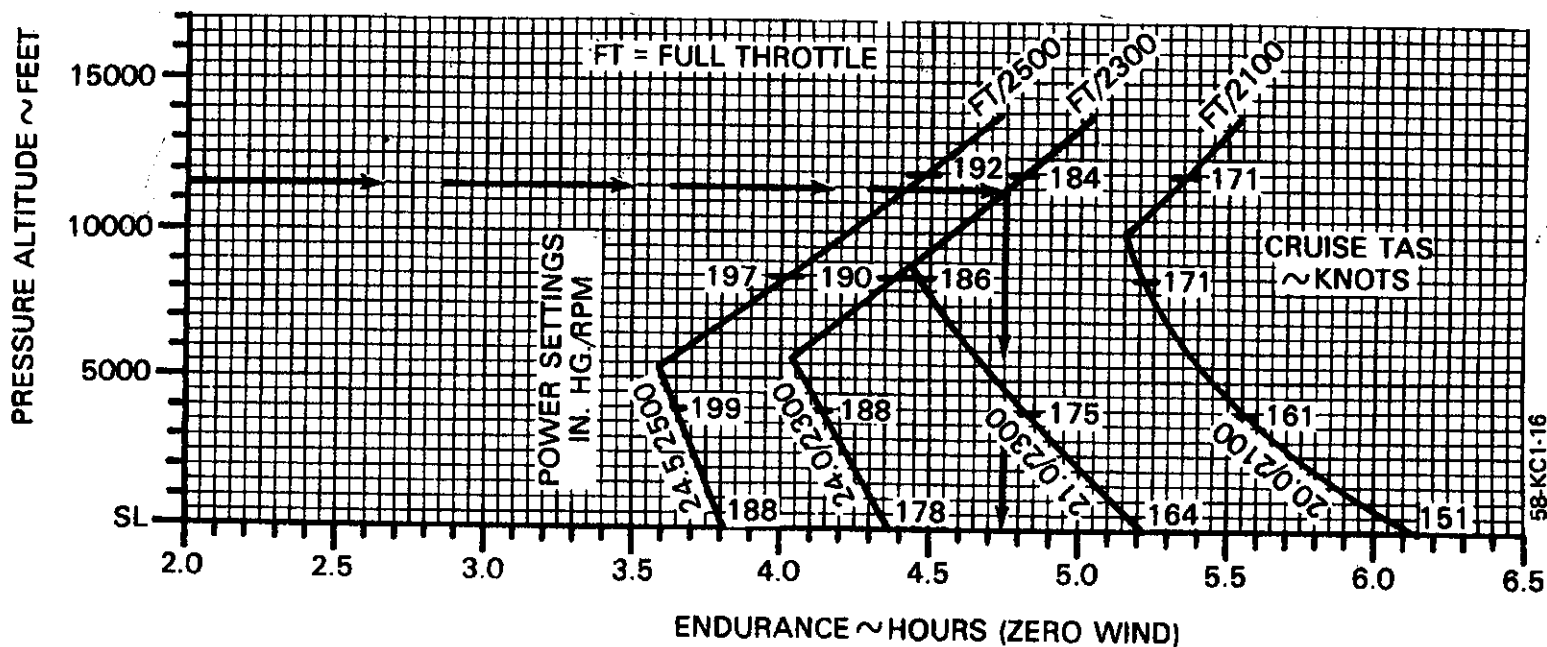
STANDARD DAY (ISA)

NOTE:

ENDURANCE INCLUDES START, TAXI, CLIMB AND DESCENT
 WITH 45 MINUTES RESERVE FUEL AT ECONOMY CRUISE

EXAMPLE:

PRESSURE ALTITUDE 11500 FEET
 POWER SETTING FULL THROTTLE 2300 RPM
 ENDURANCE 4.75 HRS
 (4 HRS. 45 MIN)



BEECHCRAFT Baron 58
 Serial TH 1 thru TH 772

Section V
 Performance

91-1C1-16

5-40

January 1983

RANGE PROFILE - 166 GALLONS

ASSOCIATED CONDITIONS:

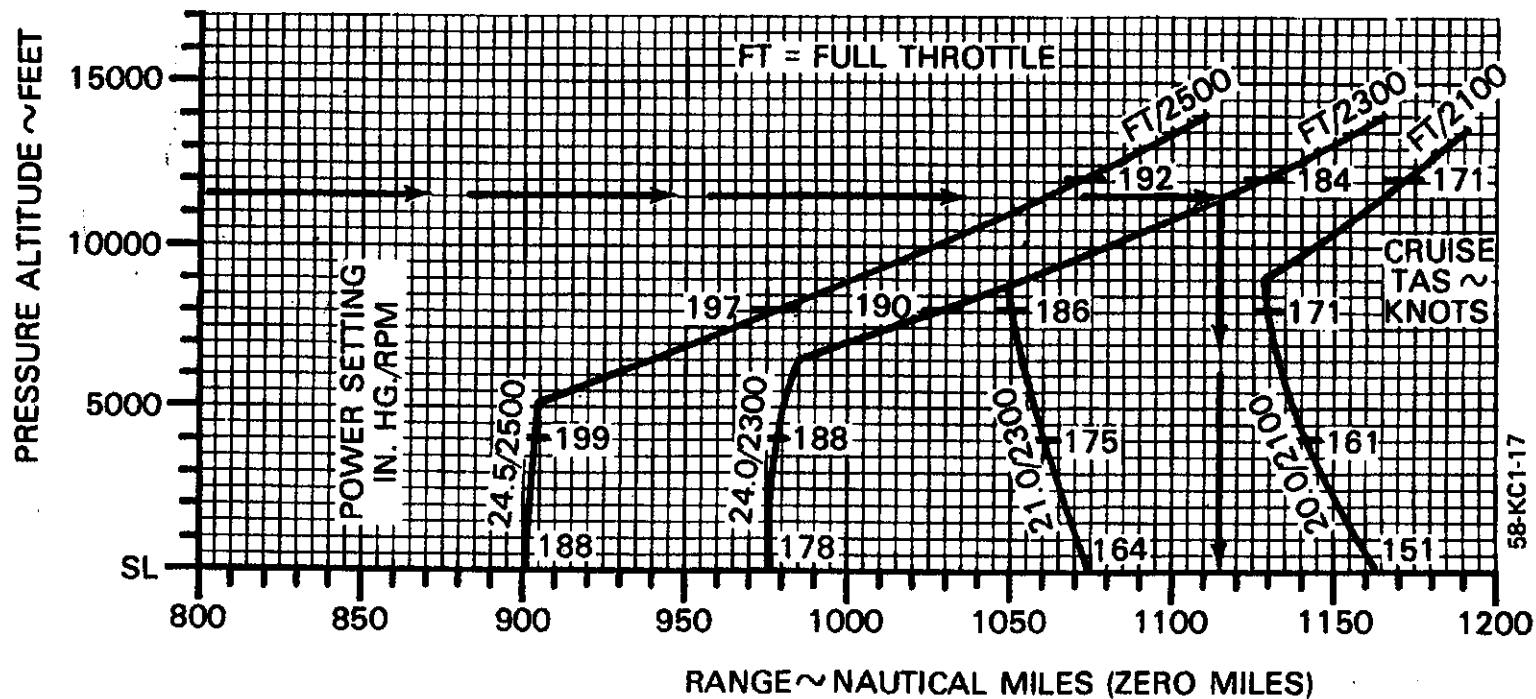
WEIGHT 5000 LBS
 FUEL AVIATION GASOLINE
 FUEL DENSITY 6.0 LBS/GAL
 INITIAL FUEL LOADING 166 U.S. GAL (996 LBS)

STANDARD DAY (ISA)

NOTE:
 RANGE INCLUDES START, TAXI, CLIMB AND DESCENT
 WITH 45 MINUTES RESERVE FUEL AT ECONOMY CRUISE

EXAMPLE:

PRESSURE ALTITUDE 11500 FEET
 POWER SETTING FULL THROTTLE 2300 RPM
 RANGE 1115 NM



Section V
 Performance

BEECHCRAFT Baron 58
 Serial TH 1 thru TH 772

January 1983

ENDURANCE PROFILE - 166 GALLONS

ASSOCIATED CONDITIONS:

WEIGHT	5000 LBS
FUEL	AVIATION GASOLINE
FUEL DENSITY	6.0 LBS/GAL
INITIAL FUEL LOADING	166 U.S. GALS (996 LBS)

STANDARD DAY (ISA)

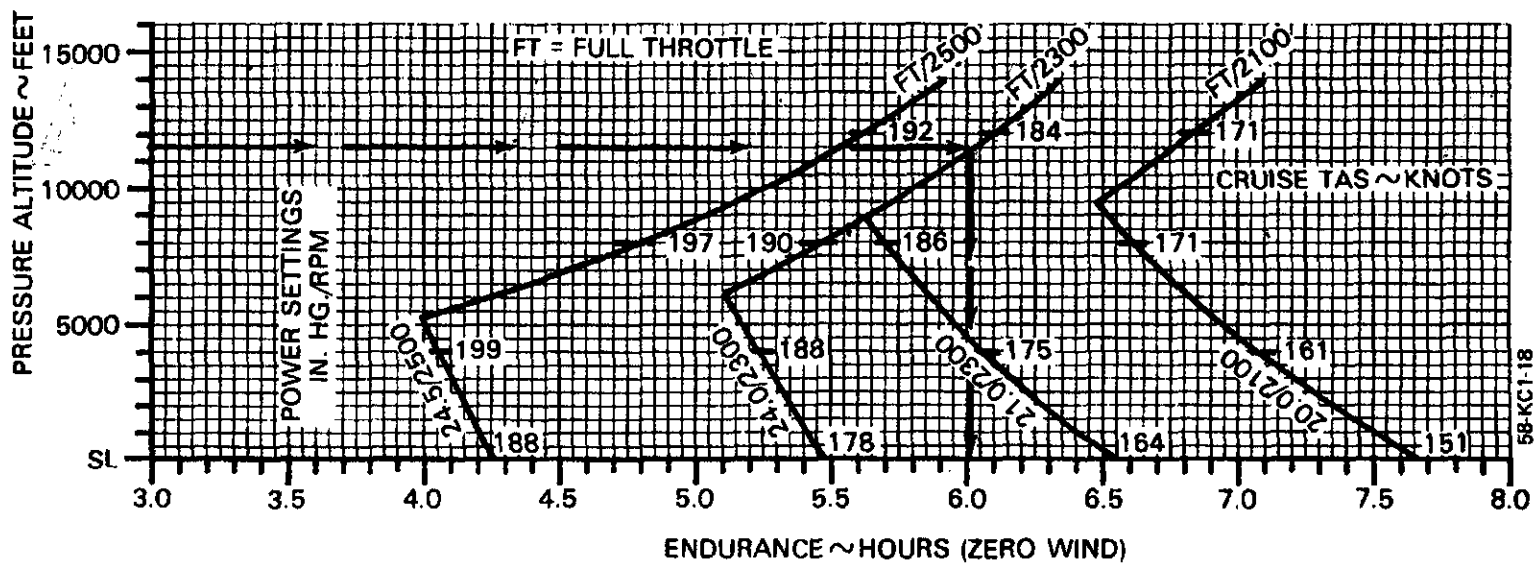
EXAMPLE:

PRESSURE ALTITUDE	11500 FEET
POWER SETTING	FULL THROTTLE 2300 RPM

ENDURANCE	6.0 HRS
-----------	---------

NOTE:
ENDURANCE INCLUDES START, TAXI, CLIMB AND DESCENT
WITH 45 MINUTES RESERVE FUEL AT ECONOMY CRUISE

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772



Section V
Performance

Section V Performance

BEECHCRAFT Baron 58 Serial TH 1 thru TH 772

RANGE PROFILE - 194 GALLONS

ASSOCIATED CONDITIONS:

WEIGHT 5000 LBS
FUEL AVIATION GASOLINE
FUEL DENSITY 6.0 LBS/GAL
INITIAL FUEL LOADING 194 U.S. GAL (1164 LBS)

STANDARD DAY (ISA)

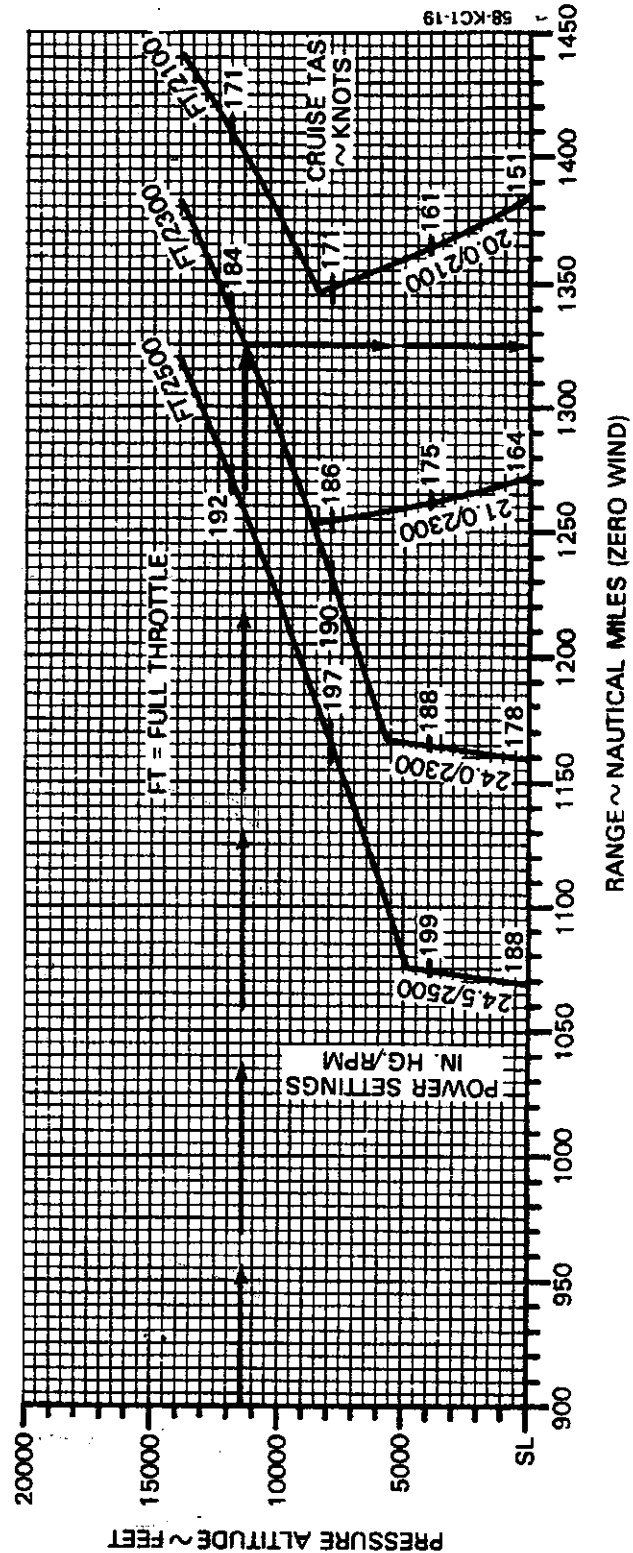
EXAMPLE:

PRESSURE ALTITUDE 11500 FEET
POWER SETTING 2300 RPM

RANGE 1325 NM

NOTE:

RANGE INCLUDES START, TAXI, CLIMB AND DESCENT
WITH 45 MINUTES RESERVE FUEL AT ECONOMY CRUISE



BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

ENDURANCE PROFILE - 194 GALLONS

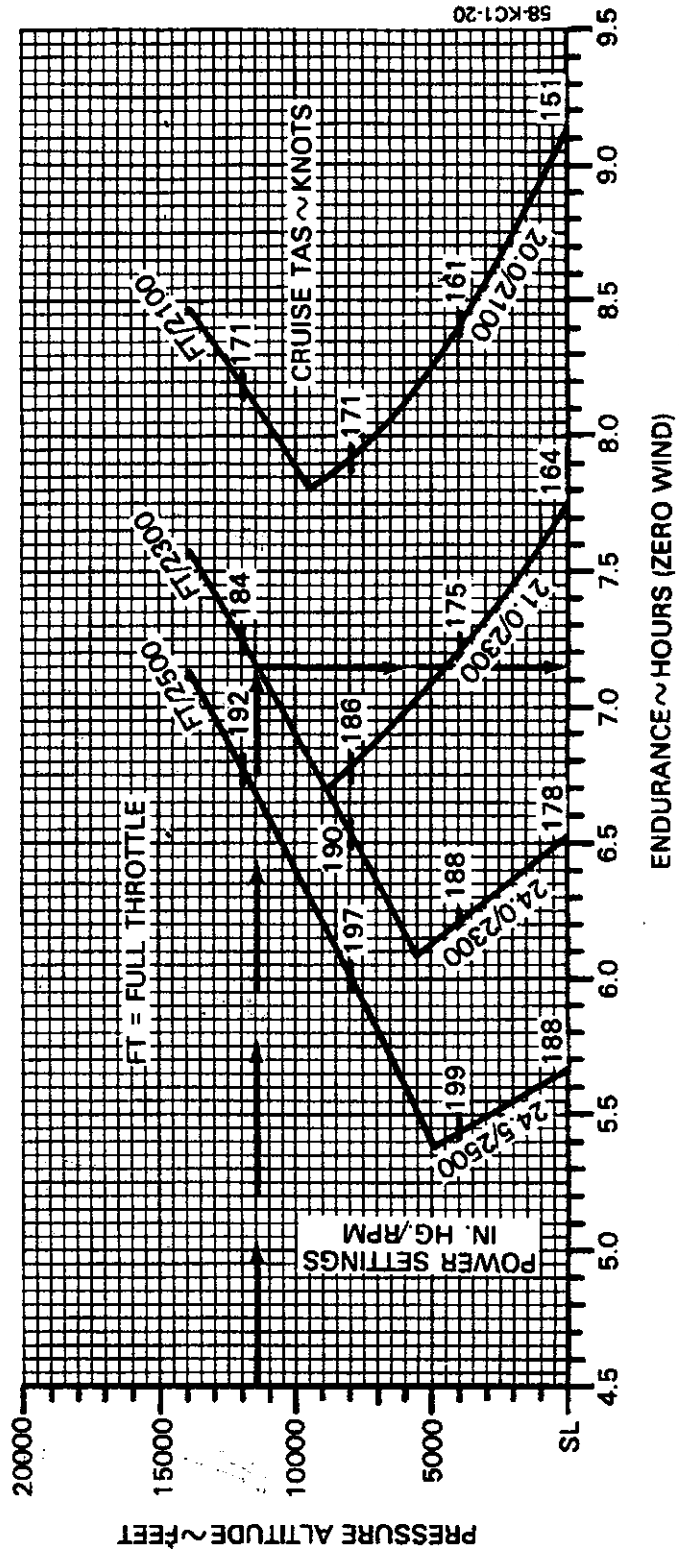
ASSOCIATED CONDITIONS:

WEIGHT 5000 LBS
 FUEL AVIATION GASOLINE
 FUEL DENSITY 6.0 LBS/GAL
 INITIAL FUEL LOADING 194 U.S. GALS (1184 LBS)

STANDARD DAY (ISA)

EXAMPLE:
 PRESSURE ALTITUDE 11500 FEET
 POWER SETTING FULL THROTTLE
 2300 RPM
 ENDURANCE 7.15 HRS
 (7 HRS, 9 MIN)

NOTE:
 ENDURANCE INCLUDES START, TAXI, CLIMB AND DESCENT
 WITH 45 MINUTES RESERVE FUEL AT ECONOMY CRUISE



Section V Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

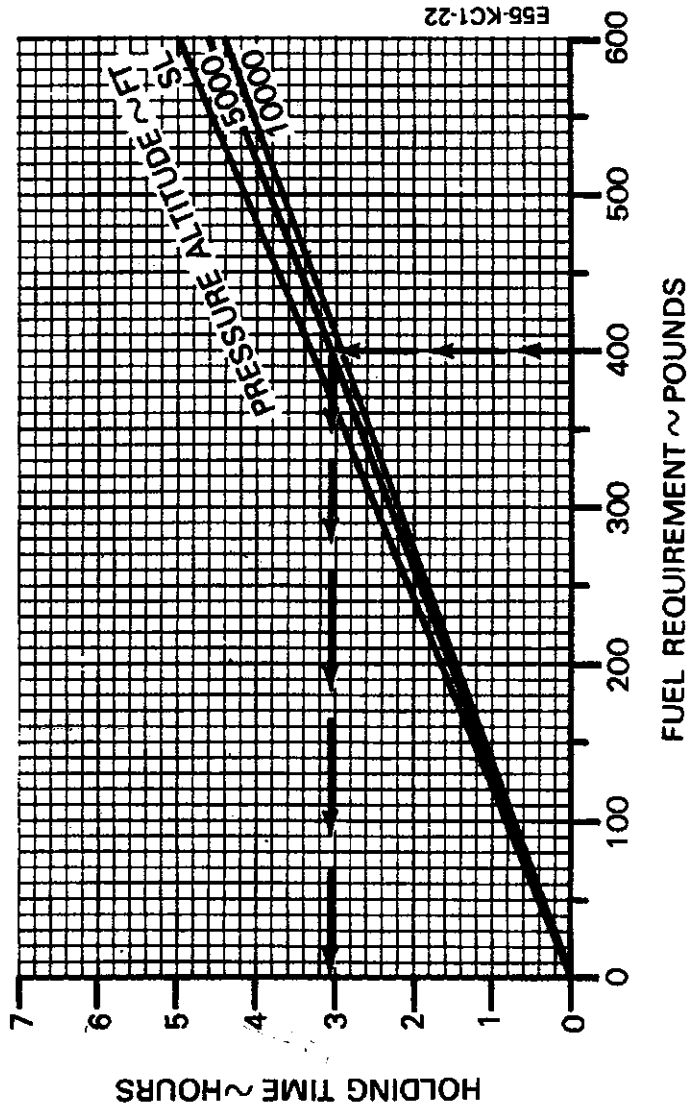
HOLDING TIME

ASSOCIATED CONDITIONS:

POWER SETTING 20.5 IN. HG. OR
FULL THROTTLE
2100 RPM

EXAMPLE:

FUEL AVAILABLE 400 LBS
FOR HOLDING
PRESSURE ALTITUDE 5000 FT
HOLDING TIME 3.1 HR



BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section V
Performance

TIME, FUEL AND DISTANCE TO DESCEND

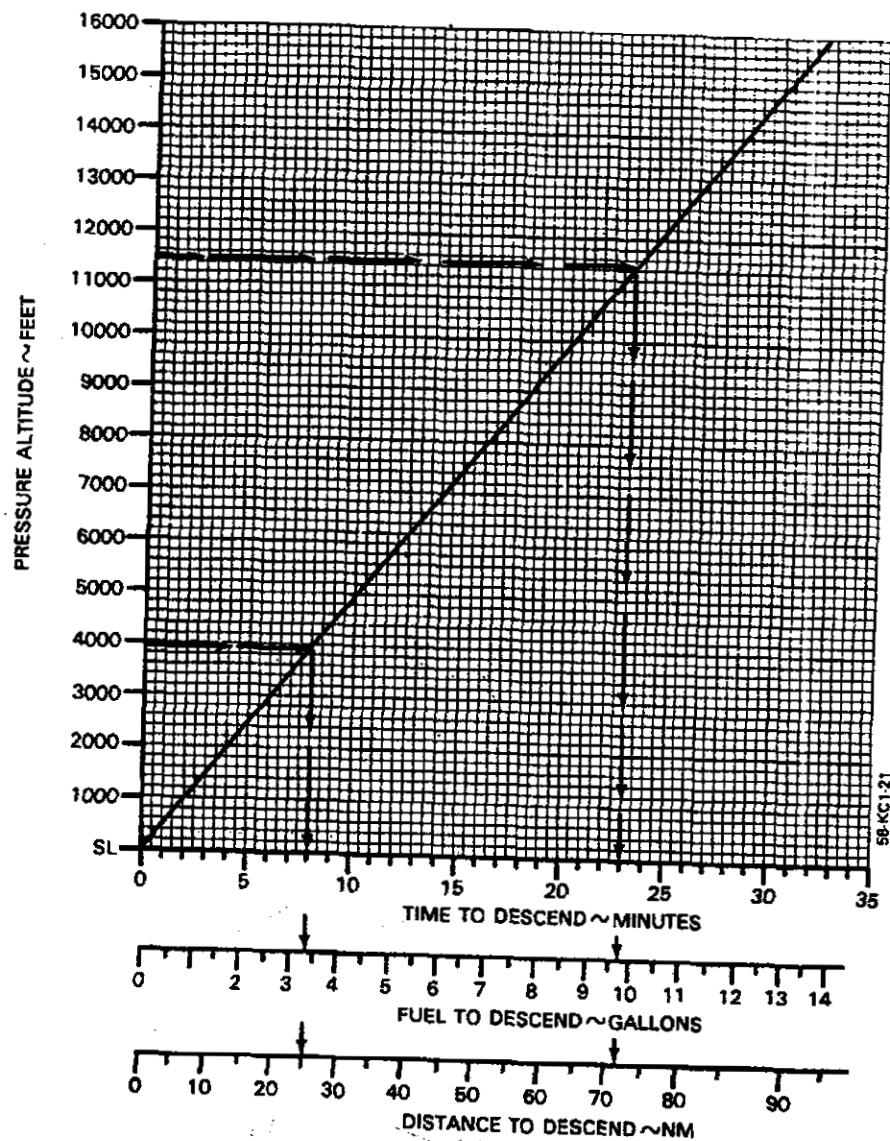
ASSOCIATED CONDITIONS:

POWER AS REQUIRED TO
 MAINTAIN 500 FT/MIN
 RATE-OF-DESCENT
 LANDING GEAR UP
 FLAPS UP

EXAMPLE

INITIAL ALTITUDE	11500 FT
FINAL ALTITUDE	3965 FT
TIME TO DESCEND	(23-8) = 15 MIN
FUEL TO DESCEND	(9.7-3.3) = 6.4 GAL
DISTANCE TO DESCEND	(72-25) = 47 NM

DESCENT SPEED
 175 KTS
 (201 MPH)



January 1983

5-45

5-46

January 1983

CLIMB-BALKED LANDING

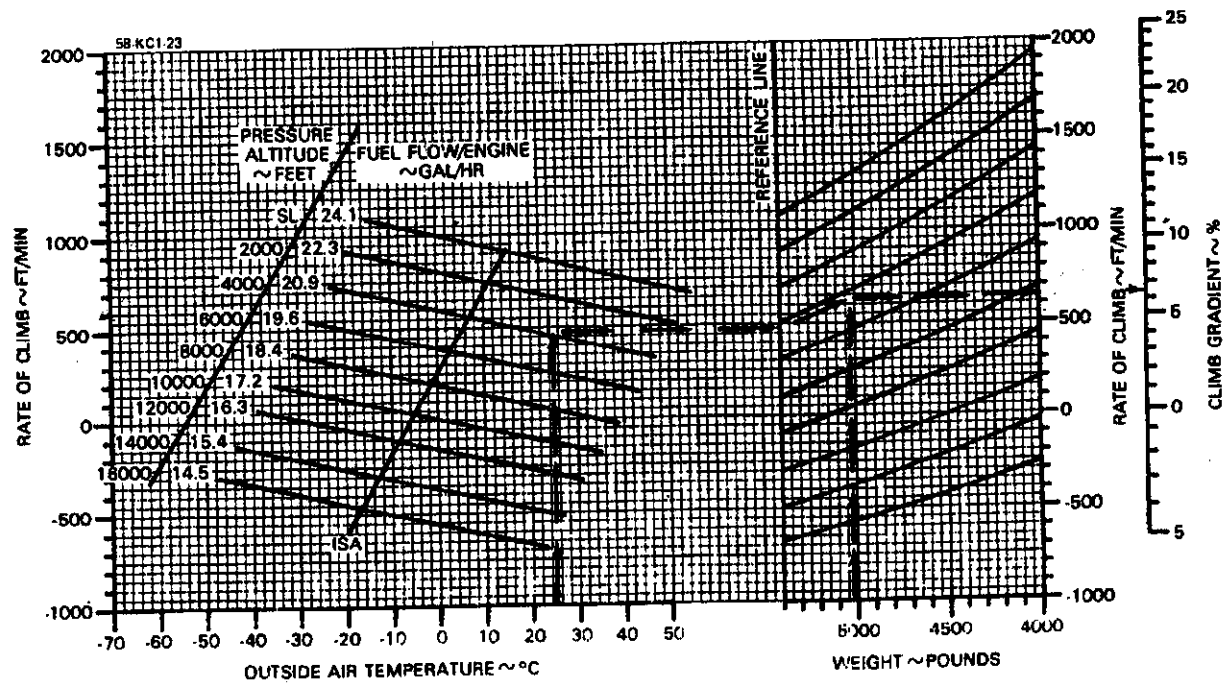
CLIMB SPEED 96 KTS (ALL WEIGHTS)
(110 MPH)

ASSOCIATED CONDITIONS:

POWER	TAKE-OFF
FLAPS	DOWN
LANDING GEAR	DOWN
MIXTURE	LEAN TO APPROPRIATE FUEL FLOW

EXAMPLE:

OAT	25°C (77°F)
PRESSURE ALTITUDE	3965 FT
WEIGHT	5039
RATE OF CLIMB	640 FT/MIN
CLIMB GRADIENT	6.5%



Section V
Performance

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

**Section V
Performance**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

INTENTIONALLY LEFT BLANK

SECTION VI

WEIGHT AND BALANCE/ EQUIPMENT LIST

TABLE OF CONTENTS

<i>SUBJECT</i>	<i>PAGE</i>
Weighing Instructions	6-3
Basic Empty Weight and Balance Form	6-5
Weight and Balance Record	6-7
Seating, Baggage and Equipment Arrangements	6-9
Loading Instructions	6-10
Moment Limits vs Weight Table	6-11 - 6-13
Moment Limits vs Weight Graph	6-14
Computing Procedure	6-15
Sample Weight and Balance Loading Form ...	6-16
Weight and Balance Loading Form	6-17
Useful Load Weights and Moments	6-18 - 6-21
Occupants	6-18
Baggage	6-19
Cargo	6-20
Usable Fuel	6-21
Airplane Papers (furnished with individual airplane)	

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. 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 preparatory to weighing. Tanks are drained from the regular drain ports with the airplane in static ground attitude. When tanks are drained, 5.7 pounds of undrainable fuel remain in the airplane at Fuselage Station 81.6. The remainder of the unusable fuel to be added to a drained system is 30.3 pounds at Fuselage Station 78.5.
3. Engine oil must be at the full level or completely drained. Total engine oil when full is 45 pounds at Fuselage Station 43.
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. The airplane must be longitudinally and laterally level with the landing gear fully extended at the time of weighing. Leveling screws are located on the left side of the fuselage at Fuselage Station 152.25 (approximately). Longitudinally level attitude is determined with a plumb bob. Laterally level attitude is accomplished by having the vertical distance, from the left and right wingtips to the floor, equal.

INTENTIONALLY LEFT BLANK

Section VI

Wt and Bal/Equip List

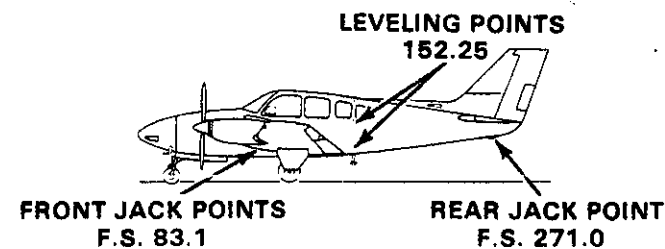
BARON 58		SER. NO.	REG. NO.	DATE
STRUT POSITION - NOSE		MAIN	JACK POINT LOCATION	PREPARED BY
EXTENDED	-11.6	96	FORWARD	83.1 Company
COMPRESSED	-9.8	97	AFT	271.0 Signature

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					
EMPTY WEIGHT (DRY)					
ENGINE OIL			45	-	1935
UNUSABLE FUEL			36	79	2844
BASIC EMPTY WEIGHT					

6-5

BEECHCRAFT Baron 58
Serial TH 773 and After

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 -10.3 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 and attached to the aft weighing point 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.



October 1976

BEECHCRAFT Baron 58 Serial TH 773 and After

Section VI

Wt and Bal/Equip List

Section VI

Wt and Bal/Equip List

BEECHCRAFT Baron 58 Serial TH 773 and After

NOTE

Each new airplane is delivered with a completed sample loading, 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 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 re-weighted to establish the empty weight and c.g. and that an inventory of installed equipment be conducted to create a new equipment list.

October 1976

6-7

6-8

October 1976

[illegible]

Section VI

Wt and Bal/Equip List

The diagrams show the layout of four different ship types, each with a central corridor and seating areas on either side. The layouts are as follows:

- FS-10:** Features a single row of seats at the front, labeled "FS-10" and "FS 39".
- FS 75 TO 82:** Features two rows of seats at the front, labeled "CREW" and "FS 75 TO 82".
- FS 15:** Features two rows of seats at the front, labeled "FS 15".
- FS 108:** Features two rows of seats at the front, labeled "FS 108".
- FS 145:** Features two rows of seats at the front, labeled "FS 145".
- FS 180:** Features two rows of seats at the front, labeled "FS 180".

Passenger seating is indicated by "PASS." and "FS" followed by a number. For example, "PASS. FS 115 TO 120" indicates passenger seating for 115 to 120 people. The diagrams also show the location of the main entrance (marked with a triangle) and the location of the main exit (marked with a circle).

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 300 POUNDS INCLUDING EQUIPMENT AND BAGGAGE.
2. MAXIMUM WEIGHT 120 POUNDS INCLUDING EQUIPMENT AND BAGGAGE.
3. MAXIMUM WEIGHT 400 POUNDS INCLUDING EQUIPMENT AND BAGGAGE.
4. MAXIMUM WEIGHT 200 POUNDS FORWARD OF REAR SPAR INCLUDING EQUIPMENT AND CARGO WITH 3rd and 4th SEATS REMOVED. ALL CARGO MUST BE SECURED WITH APPROVED CARGO RETENTION NETS.
5. MAXIMUM WEIGHT 400 POUNDS AFT OF REAR SPAR INCLUDING EQUIPMENT AND CARGO WITH 3rd, 4th, 5th and 6th SEATS REMOVED.

BEECHCRAFT Baron 58
Serial TH 773 and After

WEIGHT AND BALANCE RECORD

[illegible]

BEECHCRAFT Baron 58
Serial TH 773 and After

Section VI
Wt and Bal/Equip List

Weight	Minimum Moment 100	Maximum Moment 100
3400	2516	2924
3425	2535	2946
3450	2553	2967
3475	2572	2989
3500	2590	3010
3525	2609	3032
3550	2627	3053
3575	2646	3075
3600	2664	3096
3625	2683	3118
3650	2701	3139
3675	2720	3161
3700	2738	3182
3725	2757	3204
3750	2775	3225
3775	2794	3247
3800	2812	3268
3825	2831	3290
3850	2849	3311
3875	2868	3333
3900	2886	3354
3925	2905	3376
3950	2923	3397
3975	2942	3419
4000	2960	3440
4025	2979	3462
4050	2997	3483
4075	3016	3505

October 1976

6-11

Section VI
Wt and Bal/Equip List

BEECHCRAFT Baron 58
Serial TH 773 and After

LOADING INSTRUCTIONS

It is the responsibility of the airplane operator to ensure that the airplane is properly loaded. At the time of delivery, Beech Aircraft Corporation 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 empty weight and moment of the airplane at the time of delivery are shown on the airplane 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 on the Moment Limits vs Weight table. 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.

MOMENT LIMITS vs WEIGHT

Moment limits are based on the following weight and center of gravity limit data (landing gear down).

WEIGHT CONDITION	FORWARD CG LIMIT	AFT CG LIMIT
5400 lb. (58 max. take-off or landing)	78.0	86.0
4990 lb. (58A max. take-off or landing)	76.6	86.0
4200 lb. or less	74.0	86.0

6-10

October 1976

MOMENT LIMITS vs WEIGHT (Continued)

Weight	Minimum Moment 100	Maximum Moment 100
4800	3648	4128
4825	3671	4150
4850	3694	4171
4875	3717	4193
4900	3740	4214
4925	3764	4236
4950	3786	4257
4975	3810	4279
4990	3824	4291
5000	3833	4300
5025	3856	4322
5050	3880	4343
5075	3904	4365
5100	3926	4386
5125	3950	4408
5150	3974	4429
5175	3998	4451
5200	4021	4472
5225	4045	4494
5250	4068	4515
5275	4092	4537
5300	4116	4558
5325	4140	4580
5350	4164	4601
5375	4188	4622
5400	4212	4644

October 1976

6-13

MOMENT LIMITS vs WEIGHT (Continued)

Weight	Minimum Moment 100	Maximum Moment 100
4100	3034	3526
4125	3053	3548
4150	3071	3569
4175	3090	3591
4200	3108	3612
4225	3130	3634
4250	3152	3655
4275	3174	3677
4300	3196	3698
4325	3218	3720
4350	3240	3741
4375	3263	3763
4400	3285	3784
4425	3308	3806
4450	3330	3827
4475	3352	3849
4500	3374	3870
4525	3398	3892
4550	3420	3913
4575	3442	3935
4600	3465	3956
4625	3488	3978
4650	3510	3999
4675	3534	4021
4700	3556	4042
4725	3579	4064
4750	3602	4085
4775	3625	4107

6-12

October 1976

BEECHCRAFT Baron 58
Serial TH 773 and After

Section VI
Wt and Bal/Equip List

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 and taxi to arrive at the SUB-TOTAL Take-off Condition.
6. Subtract the weight and moment of the fuel to be used from the take-off weight and moment. (Determine the weight and moment of this fuel by subtracting the amount on board on landing from the amount on board on take-off.) 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 table 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.

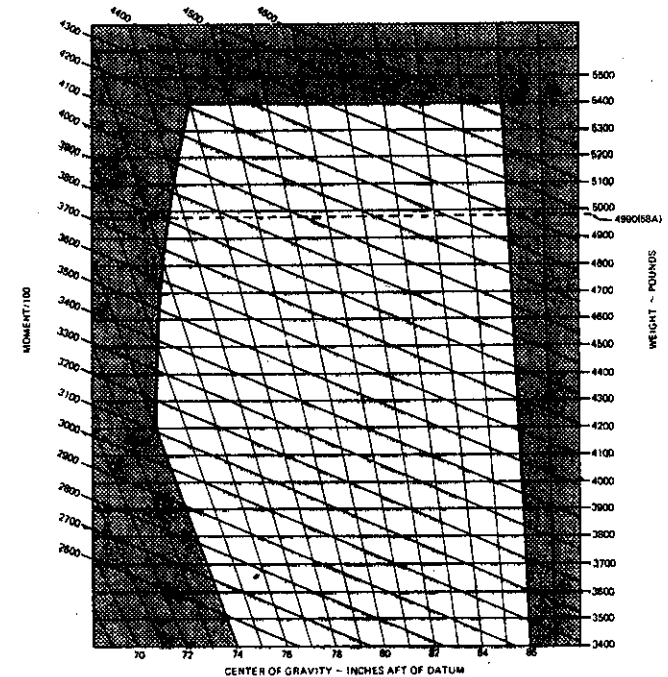
October 1976

6-15

Section VI
Wt and Bal/Equip List

BEECHCRAFT Baron 58
Serial TH 773 and After

MOMENT LIMITS vs WEIGHT



ENVELOPE BASED ON THE FOLLOWING WEIGHT AND
CENTER OF GRAVITY LIMIT DATA (LANDING GEAR DOWN)

BARON 58

WEIGHT CONDITION	FORWARD C.G. LIMIT	AFT C.G. LIMIT
5400 LBS. (MAXIMUM TAKE OFF OR LANDING)	78.0	86.0
4200 LBS.	74.0	85.0

BARON 58A

WEIGHT CONDITION	FORWARD C.G. LIMIT	AFT C.G. LIMIT
4890 LBS. (MAXIMUM TAKE OFF OR LANDING)	76.6	86.0
3690 LBS.	74.0	85.0

6-14

October 1976

BEECHCRAFT Baron 58
Serial TH 773 and After

Section VI
Wt and Bal/Equip List

WEIGHT AND BALANCE LOADING FORM

BARON _____ **DATE** _____

SERIAL NO. _____ **REG NO.** _____

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

*Fuel for start, taxi and take-off is normally 24 lbs at an average mom/100 of 20.

October 1976

6-17

Section VI
Wt and Bal/Equip List

BEECHCRAFT Baron 58
Serial TH 773 and After

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

BARON 58 **DATE** _____

SERIAL NO. TH-XXXX **REG NO.** NXXX

ITEM	WEIGHT	MOM/100
1. BASIC EMPTY CONDITION	3517	2763
2. FRONT SEAT OCCUPANTS	340	256
3. 3rd and 4th SEAT OCCUPANTS FWD FACING	-	-
4. 3rd and 4th SEAT OCCUPANTS AFT FACING	340	378
5. 5th and 6th SEAT OCCUPANTS	170	258
6. NOSE BAGGAGE	61	9
7. AFT BAGGAGE	-	-
8. CARGO	-	-
9. SUB TOTAL ZERO FUEL CONDITION	4428	3664
10. FUEL LOADING (166 GAL)	996	824
11. SUB TOTAL RAMP CONDITION	5424	4488
12. *LESS FUEL FOR START, TAXI, AND TAKE-OFF	-24	-20
13. SUB TOTAL TAKE-OFF CONDITION	5400	4468
14. LESS FUEL TO DESTINATION (142 GAL)	-852	-712
15. LANDING CONDITION	4548	3756

*Fuel for start, taxi and take-off is normally 24 lbs at an average mom/100 of 20.

6-16

October 1976

BEECHCRAFT Baron 58
Serial TH 773 and After

Section VI
Wt and Bal/Equip List

BAGGAGE

Weight	NOSE	REAR	AFT
	COMPT	FS 131 TO 170	FS 170 TO 190
	ARM 15	ARM 150	ARM 180
	Mom/100	Mom/100	Mom/100
10	2	15	18
20	3	30	36
30	5	45	54
40	6	60	72
50	8	75	90
60	9	90	108
70	11	105	126
80	12	120	144
90	14	135	162
100	15	150	180
110	17	165	198
120	18	180	216
130	20	195	
140	21	210	
150	23	225	
160	24	240	
170	26	255	
180	27	270	
190	29	285	
200	30	300	
220	33	330	
240	37	360	
260	39	390	
280	42	420	
300	45	450	
320		480	
340		510	
360		540	
380		570	
400		600	

October 1976

6-19

Section VI
Wt and Bal/Equip List

BEECHCRAFT Baron 58
Serial TH 773 and After

USEFUL LOAD WEIGHTS AND MOMENTS
OCCUPANTS

WEIGHT	Front Seats		Standard Seating 3rd and 4th Fwd Facing		Club Seating 3rd and 4th Aft Facing		5th and 6th Seats	
	Fwd Position	Aft Position	Fwd Position	Aft Position	Fwd Position	Aft Position	Standard or Club Seating	ARM 152
	ARM 75	ARM 82	ARM 115	ARM 120	ARM 111	ARM 115		
	MOM/100							
100	75	82	115	120	111	115	152	
110	82	90	126	132	122	126	167	
120	90	98	138	144	133	138	182	
130	98	106	150	156	144	150	198	
140	105	114	161	168	155	161	212	
150	112	123	172	180	166	172	228	
160	120	131	184	192	178	184	243	
170	128	139	196	204	188	196	258	
180	135	148	207	216	200	207	274	
190	142	156	218	228	210	218	288	
200	150	164	230	240	222	230	304	

NOTE: OCCUPANT POSITIONS SHOWN ARE FOR THE SEATS ADJUSTED TO THE MAXIMUM RANGE. INTERMEDIATE POSITIONS WILL REQUIRE INTERPOLATION OF THE MOM/100 VALUES.

6-18

October 1976

BEECHCRAFT Baron 58
Serial TH 773 and After

Section VI
Wt and Bal/Equip List

Weight	Moment 100	Weight	Moment 100
290	421	350	508
300	435	360	522
310	450	370	537
320	464	380	551
330	479	390	566
340	493	400	580

USABLE FUEL

		136 GAL	166 GAL	194 GAL
Gallons	Weight	Mom/100		
10	60	46	46	46
20	120	92	92	92
30	180	140	140	140
40	240	189	189	189
50	300	238	238	238
60	360	288	288	288
70	420	338	338	338
80	480	388	388	388
90	540	439	439	439
100	600	489	489	489
110	660	539	539	539
120	720	590	590	590
130	780	641	641	641
136	816	671		
140	840		692	692
150	900		743	743
160	960		793	793
166	996		824	
170	1020			845
180	1080			899
190	1140			953
194	1164			974

October 1976

6-21

Section VI
Wt and Bal/Equip List

BEECHCRAFT Baron 58
Serial TH 773 and After

CARGO
FWD OF SPAR
(CENTER SEATS REMOVED)
ARM 108

Weight	Moment 100	Weight	Moment 100
10	11	110	119
20	22	120	130
30	32	130	140
40	43	140	151
50	54	150	162
60	65	160	173
70	76	170	184
80	86	180	194
90	97	190	205
100	108	200	216

CARGO
AFT OF SPAR
(CENTER & AFT SEATS REMOVED)
ARM 145

Weight	Moment 100	Weight	Moment 100
10	15	150	218
20	29	160	232
30	44	170	247
40	58	180	261
50	73	190	276
60	87	200	290
70	102	210	305
80	116	220	319
90	131	230	334
100	145	240	348
110	160	250	363
120	174	260	377
130	189	270	392
140	203	280	406

6-20

October 1976

**Section VI
Wt and Bal/Equip List**

**BEECHCRAFT Baron 58
Serial TH 773 and After**

INTENTIONALLY LEFT BLANK

SECTION VII

SYSTEMS DESCRIPTION

TABLE OF CONTENTS

SUBJECT	PAGE
Airframe	7-5
Flight Controls	7-5
Control Surfaces	7-5
Control Column	7-5
Rudder Pedals	7-6
Trim Controls	7-6
Electric Elevator Trim	7-6
Instrument Panel	7-7
Flight Instruments	7-7
Power Plant Instruments	7-7
Ground Control	7-7
Typical Instrument Panel	7-8, 7-9
Wing Flaps	7-10
Landing Gear System	7-10
Control Switch	7-10
Position Indicators	7-11
Safety Switch	7-11
Warning Horn	7-12
Manual Extension	7-12
Brakes	7-12
Baggage/Cargo Compartments	7-15
Aft Baggage/Cargo Compartment	7-15
Nose Baggage/Cargo Compartment	7-16
Seating	7-16
Seat Belts and Shoulder Harnesses	7-17

TABLE OF CONTENTS (Continued)

<i>SUBJECT</i>	<i>PAGE</i>
Doors, Windows, and Exits	7-18
Forward Cabin Door	7-18
Utility Door	7-19
Openable Cabin Windows	7-20
Emergency Exits	7-20
Control Locks	7-21
Power Plants	7-22
Power Plant Controls	7-22
Propeller, Throttle and Mixture	7-22
Induction Air	7-22
Engine Ice Protection	7-23
Lubrication System	7-23
Cowl Flaps	7-24
Propellers	7-24
Hartzell Air-Charged Propeller Domes	7-25
Propeller Synchronizer	7-25
Propeller Synchroscope	7-26
Fuel System	7-26
Fuel Flow Indicator	7-27
Schematic	7-28
Fuel Crossfeed	7-28
Auxiliary Fuel Pumps	7-29
Partial Fuel Loading	7-29
Fuel Required for Flight	7-29
Fuel System, 142 Gallon Capacity, Schematic	7-30, 7-31
Fuel System, 172 Gallon Capacity, Schematic	7-32, 7-33
Fuel System, 200 Gallon Capacity, Schematic	7-34, 7-35
Electrical System	7-36
Battery	7-36
Alternators	7-36

TABLE OF CONTENTS (Continued)

<i>SUBJECT</i>	<i>PAGE</i>
Starters	7-37
External Power	7-37
Schematic	7-38
Lighting System	7-39
Interior Lighting	7-39
Exterior Lighting	7-39
Heating and Ventilation System	7-40
Cabin Heating	7-40
Heater Operation	7-40
Heat Regulation	7-41
Heater Blower	7-42
Cabin Ventilation	7-42
Exhaust Vents	7-42
Individual Fresh Air Outlets	7-42
Environmental Schematic	7-43, 7-44
Oxygen System	7-45
Pitot and Static System	7-45
Pitot System	7-46
Normal Static System	7-46
Pressure System	7-47
Stall Warning	7-47
Ice Protection Systems	7-48
Surface Deice System	7-48
Propeller and Windshield	
Anti-ice System (Fluid Flow)	7-49
Electrothermal Propeller Deice	
(2 and 3 Blades)	7-50
Pitot Heat	7-50
Stall Warning Anti-ice	7-50
Heated Fuel Vents	7-51
Engine Break-in Information	7-51

**Section VII
Systems Description**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

INTENTIONALLY LEFT BLANK

AIRFRAME

The BEECHCRAFT BARON 58 is a four to six place all-metal, low-wing, twin-engine airplane with retractable tri-cycle landing gear, and a conventional horizontal and vertical stabilizer.

FLIGHT CONTROLS

CONTROL SURFACES

Control surfaces are bearing supported and operated through push-pull rods and conventional cable systems terminating in bellcranks.

CONTROL COLUMN

The throw-over type control column for elevator and aileron control can be placed in front of either front seat. Pull the T-handle latch at the back of the control arm and position the control wheel as desired. Check for full freedom of movement after repositioning the control.

NOTE

(TH-312 thru TH-772)

If a reduced power throttle position exists when throwing over the control column, it will be necessary to momentarily move the throttle levers forward for passage of the control column.

The optional dual control column is required for flight instruction.

RUDDER PEDALS

To adjust the rudder pedals, press the spring-loaded lever on the side of each pedal arm and move the pedal to its forward or aft position. The adjustment lever can also be used to place the right set of rudder pedals against the floor, (when the copilot brakes are not installed) when not in use.

TRIM CONTROLS

Trim tabs on the rudder, left aileron, and elevator are adjustable with the controls mounted on the center console through closed cable systems. Mechanical position indicators for each of the trim tabs are integrated with their respective controls. The left aileron tab incorporates servo action in addition to its trimming purpose. Elevator trim is accomplished through either the electric or the manual pitch trim system.

ELECTRIC ELEVATOR TRIM

The electric elevator trim system is controlled by the ON-OFF switch located on the instrument panel, a thumb switch on the control wheel and a circuit breaker on the left sidewall. The ON-OFF switch must be in the ON position to operate the system. The thumb switch is moved forward for nose down, aft for nose up and when released returns to the center OFF position. When the system is not being electrically actuated, the manual trim control wheel may be used.

Incorporated in the system is an emergency release button located on the left handle grip of the pilot's control wheel. This button can be depressed to deactivate the system quickly in case of a malfunction in the system. The system will remain deactivated only while the release button is being held in the depressed position.

INSTRUMENT PANEL

FLIGHT INSTRUMENTS

The flight instruments are located on a floating panel directly in front of the pilot's seat. Standard flight instrumentation includes attitude and directional gyros, air-speed, altimeter, vertical speed, turn coordinator, and a clock. A magnetic compass is mounted above the instrument panel and an outside air temperature indicator is located on the left side panel. Located on the right side of the instrument panel is the standard pressure gage for the instrument air system.

POWER PLANT INSTRUMENTS

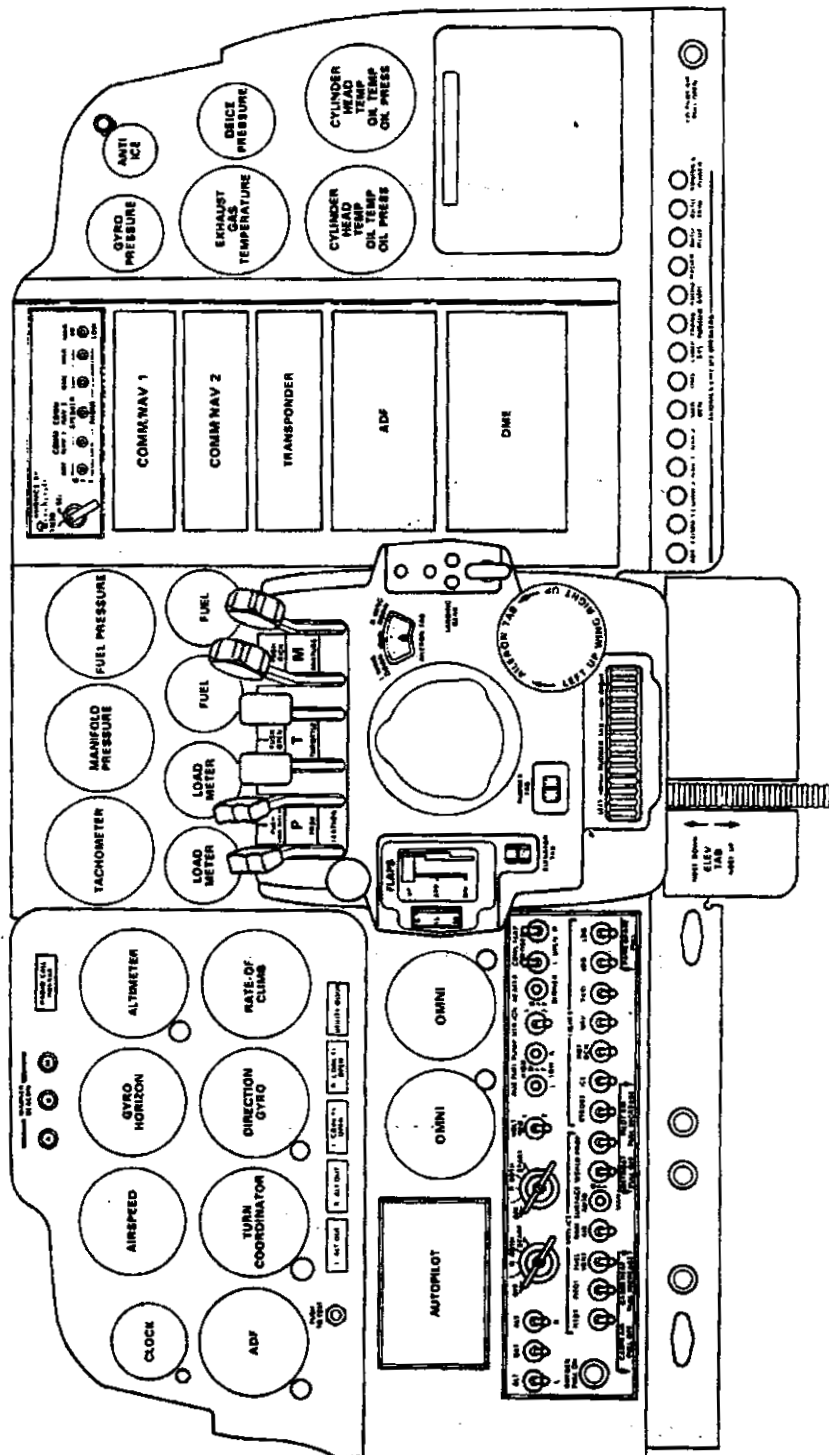
Most of the engine instruments are located in the upper center of the instrument panel. The standard indicators for each engine are as follows: tachometers, manifold pressure, fuel flow, fuel quantity, and loadmeters. Other indicators such as the exhaust gas temperature system, the propeller deice ammeter (or propeller alcohol quantity and deice pressure) are usually installed on the right side of the instrument panel. Two multi-purpose instruments, one for each engine, indicate cylinder head temperature, oil pressure, and oil temperature.

GROUND CONTROL

Spring-loaded linkage from the nose gear to the adjustable rudder pedals allows for nose wheel steering. Smooth turning is accomplished by allowing the airplane to roll while depressing the appropriate rudder pedal. The minimum wing tip turning radius, using partial braking action and differential power, is 31 feet 6 inches.

**Section VII
Systems Description**

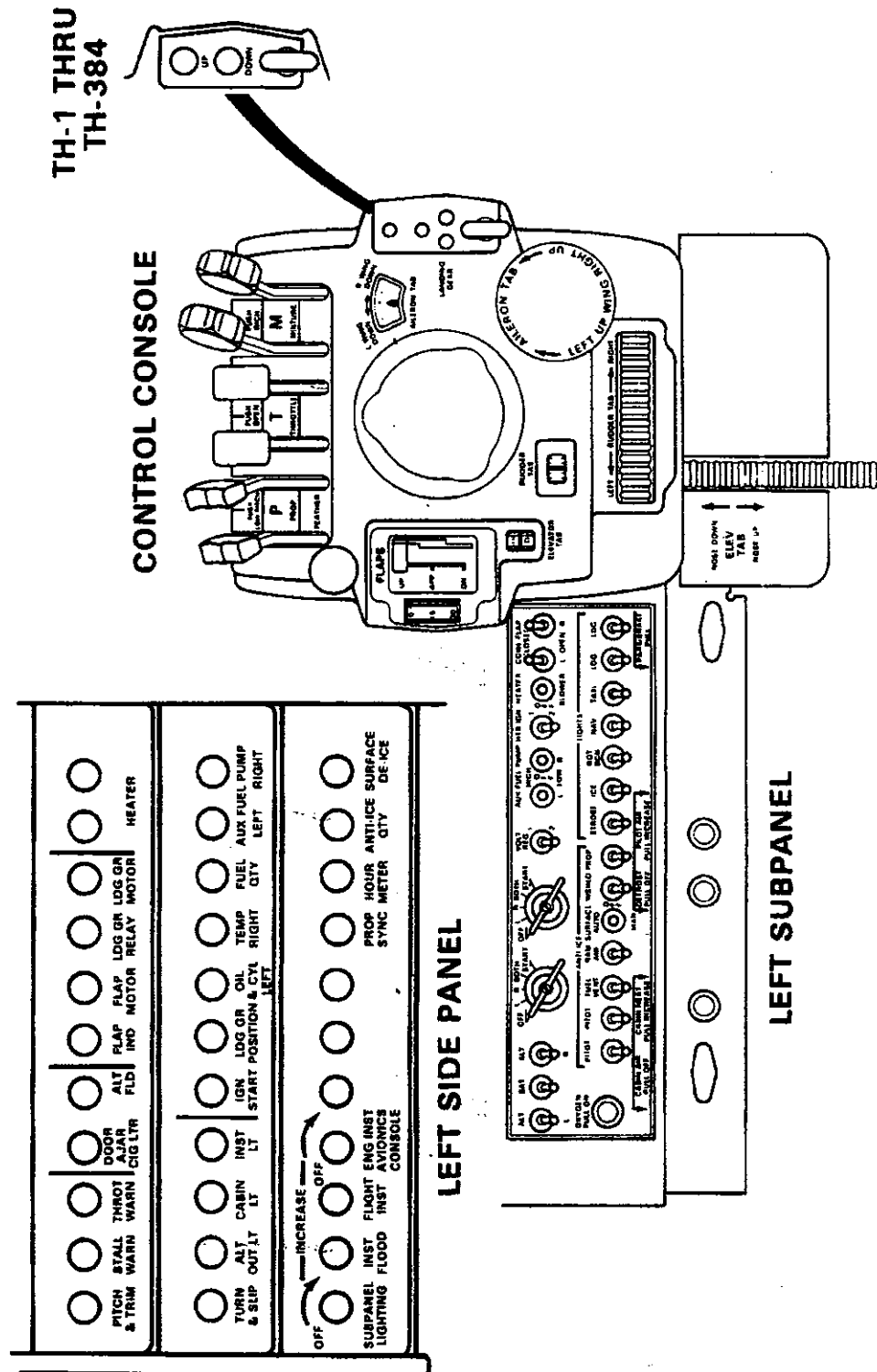
**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**



TYPICAL INSTRUMENT PANEL

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section VII
Systems Description



January 1983

7-9

WING FLAPS

The wing flaps have three positions; UP, APP (15°), and DOWN (30°), with no intermediate positions. A flap position indicator and a control switch are located on the left side of the control console. The switch must be pulled out of a detent to change the flap position. The flaps will move to either position selected from any previously selected position.

LANDING GEAR SYSTEM

CAUTION

Never taxi with a flat strut.

The landing gear is operated through adjustable linkage connected to an actuator assembly mounted beneath the front seats. The actuator assembly is driven by an electric motor. The landing gear may be electrically retracted and extended, and may be extended manually.

CONTROL SWITCH

The landing gear is controlled by a two-position switch on the right side of the control console. The switch handle must be pulled out of the safety detent before it can be moved to the opposite position. Never operate the landing gear electrically with the handcrank engaged.

CAUTION

Do not change the position of the control switch to reverse the direction of the landing gear while the gear is in transit, as this could cause damage to the retract mechanism.

POSITION INDICATORS *(TH-1 thru TH-384)*

Landing gear position lights are located above the control switch. The lights, red for gear up and green for gear down, illuminate only when the gear has reached the fully retracted or extended position. In addition, a mechanical pointer at the base of the console shows the position of the nose gear during transit and in the full up or full down position.

POSITION INDICATORS *(TH-385 thru TH-772)*

The landing gear position indicator lights are located above the landing gear switch handle. Three green lights, one for each gear, are illuminated whenever the landing gear are down and locked. The red light illuminates anytime one or all of the landing gear are in transit or in any intermediate position. All of the lights will be extinguished when the landing gear are up and locked. Pressing the warning light test button on the instrument panel will verify the landing gear lamp bulbs are illuminating. The intensity of the lamps are automatically lowered for night flights when the navigation lights are turned on.

SAFETY SWITCH

To prevent inadvertent retraction of the landing gear on the ground, a main strut safety switch opens the control circuit when the strut is compressed.

CAUTION

Never rely on the safety switch to keep the gear down during taxi or on take-off, landing roll, or in a static position. Always make certain that the landing gear switch is in the down position during these operations.

WARNING HORN

If either or both throttles are retarded below an engine setting sufficient to sustain two engine flight with the landing gear retracted, a warning horn will sound intermittently. During one engine operation, the horn can be silenced by advancing the throttle of the inoperative engine until the throttle warning horn switch opens the circuit.

MANUAL EXTENSION

The landing gear can be manually extended, but not retracted, by operating the handcrank at the rear of the pilot's seat. Make certain that the landing gear handle is in the down position and pull the landing gear MOTOR circuit breaker before manually extending the gear. When the electrical system is operative, the landing gear may be checked for full down with the gear position lights, provided the landing gear RELAY circuit breaker is engaged. After the landing gear is down, disengage the handcrank. For electrical retraction of the landing gear after a practice manual extension use procedures outlined in the EMERGENCY PROCEDURES Section.

If the landing gear was extended for emergency reasons, do not move any landing gear controls or reset any switches or circuit breakers until the airplane is on the ground and the malfunction has been determined and corrected, to prevent a gear retraction on the ground. These procedures are outlined in the EMERGENCY PROCEDURES section.

BRAKES

The brakes on the main landing gear wheels are operated by applying toe pressure to the top of the rudder pedals.

CAUTION

Continuous brake application of either the pilot's or copilot's brake pedals in conjunction with an overriding pumping action from the opposite brake pedals could result in the loss of braking action on the side which continuous pressure is being applied.

The parking brake T-handle control is located just left of the elevator tab wheel on the pilot's subpanel. To set the parking brakes, pull the control out and depress the pilot's toe pedals until firm. Push the control in to release the brakes.

CAUTION

The parking brake should be left off and wheel chocks installed if the airplane is to be left unattended. Changes in ambient temperature can cause the brakes to release or to exert excessive pressures.

NOTE

Only the pilot's brake pedals can be used in conjunction with the parking brake system to set the parking brake.

The brakes hydraulic fluid reservoir is accessible through the nose baggage door. Fluid level is checked with the dipstick attached to the reservoir cap. The brakes require no adjustments, since the pistons move outward to compensate for lining wear.

INTENTIONALLY LEFT BLANK

BAGGAGE/CARGO COMPARTMENTS

AFT BAGGAGE/CARGO COMPARTMENT

The aft baggage/cargo compartment is accessible through the utility door on the right side of the fuselage. This area extends aft of the pilot's seats to the rear bulkhead. Because of structural limitations, this area is divided into three sub-compartments, each having a different weight limitation. Loading within the baggage/cargo compartment must be in accordance with the data in the WEIGHT AND BALANCE Section. All baggage/cargo must be secured with the approved cargo retention systems.

WARNING

Do not carry hazardous material anywhere in the airplane.

Do not carry passengers in the baggage or cargo area unless secured in a seat.

NOSE BAGGAGE/CARGO COMPARTMENT

The forward baggage/cargo compartment is easily accessible through a large door on the right side of the nose. The door, hinged at the top, swings upward, clear of the loading area. Loading within this area must be within the limitations according to the **WEIGHT AND BALANCE** section. The nose baggage/cargo compartment incorporates the full width of the fuselage as usable space. This compartment also affords accessibility to the oxygen cylinder and to some of the airplane's avionics. Straps are provided and should be used to secure any baggage or cargo loaded into the nose baggage/cargo compartment.

SEATING

To adjust any of the four standard seats forward or aft, pull up on the release bar below the seat and slide the seat to the desired position. The seat backs of all standard seats can be placed in any of four positions by operating a release lever on the inboard side of each seat. An option is available that provides for the seat backs on all seats (except the pilot's) to be placed in any position from vertical to fully reclined. Outboard armrests for all standard seats are built into the cabin sidewalls. Center armrests can be elevated or positioned flush with the seat cushions. On airplanes TH-733 and after, the 3rd and 4th place chairs are equipped with a locking back to accommodate the shoulder harness, and the seat back can be folded over for access by rotating the red handle located on the lower inboard side of the seat back. The optional fifth and sixth seats can be folded up to provide additional floor space, or folded down to provide access to the optional extended baggage/cargo compartment.

Club seating is available. When occupied, aft facing chairs in the club seating arrangement must have the headrests in the fully raised position during takeoff and landing. When aft facing seats are reversed to the forward facing configuration, maintenance personnel must refer to the shop manual before making the conversion in order to assure proper installation.

SEAT BELTS AND SHOULDER HARNESSSES

PRIOR TO TH-733

The optional shoulder harness installation is available for the pilot seats only. The belt is in the "Y" configuration with the single strap being contained in an inertia reel attached to the overhead canopy structure of the cockpit. The two straps are worn with one strap over each shoulder and fastened by metal loops into the seat belt buckle. The harness should be used with the seats in the upright position. The spring loading at the inertia reel keeps the harness snug but will allow normal movement required during flight operations. The inertia reel is designed with a locking device that will secure the harness in the event of sudden forward movement or an impact action.

TH-733 AND AFTER

The shoulder harness is a standard installation for all seats and must be used with the seats in the upright position. The spring loading at the inertia reel keeps the harness snug but will allow normal movement during flight operations. The inertia reel is designed with a locking device that will secure the harness in the event of sudden forward movement or an impact action.

**Section VII
Systems Description**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

The strap is worn over the shoulder and down across the body, where it is fastened by a metal loop into the seat belt buckle. For the pilot seats, the harness strap is contained in an inertia reel attached to the side canopy structure of the cockpit. The inertia reel is covered with an escutcheon and the strap runs up from the reel location to a looped fitting attached to the window frame just aft of the pilot seats. For the third and fourth passenger seats, the inertia reel is attached into the seat back structure and is covered with the seat back upholstery. The strap runs up the seat back and over the outboard corner of the seat back. For the fifth and sixth passenger seats, the strap is contained in an inertia reel attached to the upper fuselage side structure, just aft of the seat back and is covered with an escutcheon.

NOTE

The seat belt is independent of the shoulder harness, but the outboard seat belt and the shoulder harness must be connected for stowage when the seat is not occupied.

DOORS, WINDOWS AND EXITS

FORWARD CABIN DOOR

The airplane has a conventional cabin door on the forward right side of the fuselage and when closed, the outside cabin door handle is spring loaded to fit into a recess in the door to create a flat aerodynamically clean surface. The door may be locked with a key. To open the door from the outside, lift the handle from its recess and pull until the door opens.

To close the cabin door from the inside, observe that the door handle is in the unlocked position. In this position, the latch handle is free to move approximately one inch in

either direction before engagement of the locking mechanism. Then grasp the door and firmly pull the door closed. Rotate the door handle fully counterclockwise into the locked position. When the door is properly locked, the door latch handle is free to move approximately one inch in either direction.

NOTE

When checking the door latch handle, do not move it far enough to engage the door latch release mechanism.

Press firmly outward at the top rear corner of the door. If any movement of the door is detected, completely open the door and close again following the above instructions.

To open the door from the inside, depress the lock button and rotate the handle clockwise.

UTILITY DOOR

A utility door aft of the cabin door is provided for loading bulky cargo or to accommodate passengers. The utility door is a double door with each half hinged at the forward and aft edge of the door opening. The rear half of the door must be closed first. A latch on the forward edge of the door moves downward to a locked position to secure the hooks at the top and bottom of the door to the door frame. The front half of the door cannot be fully closed until the latch of the aft door is latched and flush with the edge of the door. After the forward half of the door is closed, it can be latched from the outside by rotating the half-moon shaped handle to the CLOSED position. A conventional handle on the inside of this door provides for opening or closing from the inside.

Section VII
Systems Description

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

A BEECH approved kit is available to provide for operation with the cargo doors removed. A baffle is to be installed on the forward edge of the door and placards installed in the airplane. With the doors removed, assure that all registration numbers are visible on the side of the airplane. With doors removed, all occupants not wearing parachutes must wear restraining belts.

The utility door ajar warning light is tested by a PRESS-TO-TEST switch. When the switch is held in, the light is energized in order to verify that it illuminates.

OPENABLE CABIN WINDOWS

To open window; release latch front of bar, pull bar at the bottom of the window out and upward. Window will open approximately two inches.

Close window by pulling inward and down on the bar at the bottom of the window. Resistance will be felt as the bar moves downward. Continue moving bar downward to its lowest position. Check that bar is locked by the latch.

NOTE

Windows are to be closed before takeoff and during flight. While closing window, ascertain that the emergency release pin (which allows the window to open fully for emergency exit) is securely in place.

EMERGENCY EXITS

To open the emergency exit provided by the openable middle window on each side of the cabin:

1. Lift the latch.
2. Pull out the emergency release pin and push the window out.

The above procedure is described on a placard installed below the left and right middle windows after compliance with BEECHCRAFT Service Instructions 1241.

CONTROL LOCKS

CONTROL COLUMN TYPE

1. Insert the spring end of the rudder control locking pin into the hole at the top of the pilot's left rudder pedal.
2. Neutralize the pedals and insert the opposite end of the locking pin into the right pedal by compressing the spring.
3. Place the elevator and aileron controls in an approximately neutral position.
4. Insert the elevator-aileron control locking pin into the hole in the control column hanger and the hole in the underside of the control column tube.
5. Close the throttles and place the throttle lock over the throttle control knobs.

To lessen the possibility of taxi or takeoff with the control lock installed, remove the locking components in the following order: rudder, throttle and elevator-aileron.

OR

THROTTLE TYPE

The control column pin assembly is placarded with the installation instructions. Install the assembly with the instructions facing the instrument panel. Placard reading **CONTROLS LOCKED, REMOVE BEFORE FLIGHT** will be facing pilot if properly installed.

1. Close throttles, install pin between levers, through collar lock and control column. (Rotate control wheel approximately 12° to the right.)
2. Route cable and rudder lock around right side of control column, position pedals in aft position and install lock in rudder pedals.

POWER PLANTS

The BEECHCRAFT BARON 58 is powered by two Continental IO-520-C six-cylinder, horizontally opposed, fuel injected engines rated at 285 hp at 2700 rpm.

POWER PLANT CONTROLS

PROPELLER, THROTTLE, AND MIXTURE

The control levers are grouped along the upper face of the control console. Their knobs are shaped so they can be identified by touch. A single controllable friction knob below and to the left of the control levers prevents creeping.

INDUCTION AIR

(TH-1 thru TH-384)

The induction air controls are located near the bottom of the control console. Individual control levers for each engine provide three sources of induction air: unfiltered ram, alternate, and filtered ram. The UNFILTERED RAM position is at the lower limit of lever travel and provides unfiltered ram air. Detents placarded ALTERNATE and FILTERED are located above the UNFILTERED RAM position. Moving the control to the ALTERNATE position blocks the induction system from operating on filtered or unfiltered air. This causes a spring-loaded door on the alternate air box to be sucked open and the engine draws air from the engine compartment. If the filtered ram air is blocked due to ice or foreign material against the filter, or the entire induction system is blocked at the air scoop, the spring-loaded door will suck open regardless of the position selected, providing the engine with alternate air.

Unfiltered ram air provides slightly better engine performance. However, where dusty conditions prevail, filtered air should be selected.

(TH-385 thru TH-772)

Induction air is available from filtered ram air or unfiltered alternate air. Filtered ram air enters from the intake air scoop on top of the cowling. Should the filter become obstructed, a spring-loaded door on the alternate air intake will open automatically and the induction system will operate on alternate air taken from the engine accessory section.

ENGINE ICE PROTECTION

Engine ice protection consists of electrothermal fuel vent heaters controlled by a switch on the left panel, and an automatic alternate air induction system.

The only significant ice accumulation is impact ice on the inlet scoop and filter. Should the induction air scoop or filter become clogged with ice, a spring-loaded door on the firewall will open automatically, and the induction system will operate on alternate air.

LUBRICATION SYSTEM

The engine oil system for each engine is the full pressure, wet sump type, with a full flow, integrally mounted oil filter and has a 12-quart capacity. Oil operating temperatures are controlled by an automatic thermostat bypass control. The bypass control will limit oil flow through the oil cooler when operating temperatures are below normal and will permit the oil to bypass the cooler if it should become blocked.

The oil system may be checked through access doors in the engine cowling. A calibrated dip stick attached to the filler cap indicates the oil level. Due to the canted position of the engines, the dip sticks are calibrated for either right or left engines and are not interchangeable.

Section VII
Systems Description

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

The oil grades listed in the Approved Engine Oils in the SERVICING section are general recommendations only, and will vary with individual circumstances. The determining factor for choosing the correct grade of oil is the average ambient temperature.

COWL FLAPS

(TH-1 thru TH-384)

The cowl flap for each engine is controlled by a separate switch located on the pilot's subpanel to the left of the control console. The cowl flap is closed when the switch is in the up position and open when the switch is down. An amber annunciator light on the floating instrument panel illuminates when its respective cowl flap is between one third and full open.

(TH-385 thru TH-772)

The cowl flap for each engine is controlled by a manual control lever located on the lower center console. The cowl flap is closed when the lever is in the up position and open when the lever is down.

PROPELLERS

The engines are equipped with either two or three blade, full feathering, constant speed, propellers. Springs aided by counterweights move the blades to high pitch. Engine oil under governor-boosted pressure moves the blades to low pitch.

The propellers should be cycled occasionally during cold weather operation. This will help maintain warm oil in the propeller hubs so that the oil will not congeal.

HARTZELL AIR-CHARGED PROPELLER DOMES

If propeller air dome pressure is lost during flight, the following symptoms may be noticed: sluggish propeller rpm reduction; overspeed and poor synchronization during higher rpm operation; and propeller overspeed upon the instant opening of the throttle, followed by poor rpm recovery.

NOTE

In the event of pressure loss, feathering capability is lost, but flight can be continued by reducing air speed to regain rpm control. The malfunction should be corrected by an authorized service center before further flight.

PROPELLER SYNCHRONIZER

(TH-467 thru TH-772 except TH-473 and TH-474)

The propeller synchronizer automatically matches the rpm of both propellers. The system's range of authority is limited to approximately 25 rpm. Normal governor operation is unchanged but the synchronizer will continuously monitor propeller rpm and adjust one governor as required.

A magnetic pickup mounted in each propeller governor transmits electric pulses to a transistorized control box installed behind the pedestal. The control box converts any pulse rate differences into correction commands, which are transmitted to the appropriate governor.

A toggle switch installed on the pedestal turns the system on. To operate the system, synchronize the propellers in the normal manner and turn the synchronizer on. To change rpm, adjust both propeller controls at the same time. This will keep the setting within the limiting range of the system. If the synchronizer is on but unable to adjust the propeller rpm, the system has reached its range limit. Turn the synchronizer switch off, synchronize the propellers manually, and turn the synchronizer switch on.

PROPELLER SYNCHROSCOPE

A propeller synchroscope, located in the tachometer case, operates to give an indication of synchronization of propellers. If the right propeller is operating at a higher rpm than the left, the face of the synchroscope, a black and white cross pattern, spins in a clockwise rotation. Counterclockwise rotation indicates a higher rpm of the left propeller. This instrument aids the pilot in accomplishing manual synchronization of the propellers.

FUEL SYSTEM

The fuel system is an OFF-ON-CROSSFEED arrangement. The fuel selector panel, located on the floor forward of the front seats, contains the fuel selector for each engine and a schematic diagram of fuel flow.

The standard wing fuel system has a total capacity of 142 gallons. Two optional systems are available. The first has a total capacity of 172 gallons; the second, comprising the 172 gallon system plus wet wing tip tanks, provides a total capacity of 200 gallons. The fuel value placarded adjacent to each filler cap indicates fuel capacity and usable fuel when that wing fuel system is full. Refer to the LIMITATIONS section for usable fuel in each system.

A vapor return line returns excess fuel from the engine to its respective wing system. All of the fuel cells, standard or optional, in each wing are interconnected in order to make all the usable fuel in each wing available to its engine when the fuel selector valve is turned to ON. The standard 142 gallon and optional 172 gallon fuel systems are filled through a single filler located in each wing. When the wet wing tip option is installed (200 gallons total), there are two additional filler caps, one per wing. Refer to the SERVICING section for additional information.

CAUTION

When the wet wing tip tanks are filled with fuel, DO NOT open the outboard wing leading edge filler caps, as fuel will exit from those opening.

The standard 142 gallon fuel system and the optional 172 gallon fuel system have six drain locations. There are two additional drain locations when the wet wing tip tanks are installed.

Fuel quantity is measured by float type transmitter units which transmit the common level indication to a single indicator for each respective wing system.

When the wet wing tip fuel system is installed, the fuel quantity indicators will read FULL until the fuel quantity remaining is less than 75 gallons. When this occurs, the quantity indicated is coordinated to the total usable fuel supply.

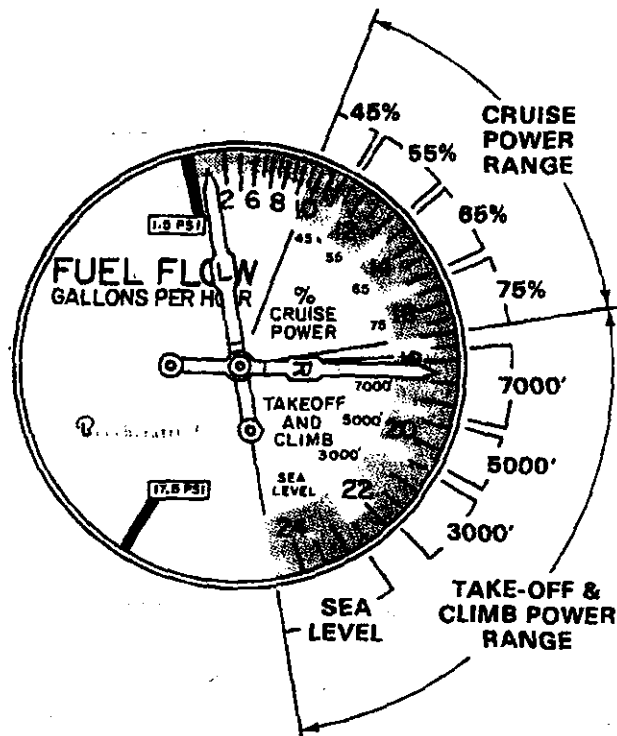
FUEL FLOW INDICATOR

The dual fuel flow indicator on the instrument panel is calibrated in gallons per hour, the green arc indicating fuel flow for normal operating limits. Red radials are placed at the minimum and maximum allowable fuel pressures.

In the cruise power range the green sectors cover the fuel flow from 45% to 75% power. The lower edge of each sector is the cruise-lean setting and the upper edge is the best power setting for that particular power range. When cruise RPM is set in accordance with cruise power setting tables in the PERFORMANCE section, these sectors provide approximate percent power information.

Section VII
Systems Description

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772



The takeoff and climb range is covered by green radials for climb at various altitudes. These markings represent the mixtures which should be set for the altitudes shown and correspond to fuel flow settings in the performance section.

FUEL CROSSFEED (One Engine Inoperative Only)

The fuel lines for the engines are interconnected by cross-feed lines. During normal operation each engine uses its own fuel pumps to draw fuel from its respective wing fuel system. However, on emergency crossfeed operations either engine can consume the available fuel from the opposite side.

The fuel crossfeed system is provided for use during emergency conditions. The system cannot be used to transfer fuel from one wing system to the other. The procedure for using the crossfeed system is described in the EMERGENCY PROCEDURES section.

AUXILIARY FUEL PUMPS

An individual two-speed electric auxiliary fuel pump is provided for each engine. HIGH pressure, OFF or LOW pressure is selected with each auxiliary fuel pump switch on the pilot's subpanel. High pressure is used for providing fuel pressure before starting, and provides near maximum engine performance, should the engine-driven pump fail. Low pressure may be used in any operating mode to eliminate pressure fluctuations resulting from high ambient temperatures and/or high altitudes. The high pressure position should not be selected while the engine is operating except in the event of engine-driven pump failure since the high pressure mode supplies a greater pressure than can be accepted by the injection system during normal operation.

PARTIAL FUEL LOADING *(TH-385 thru TH-772)*

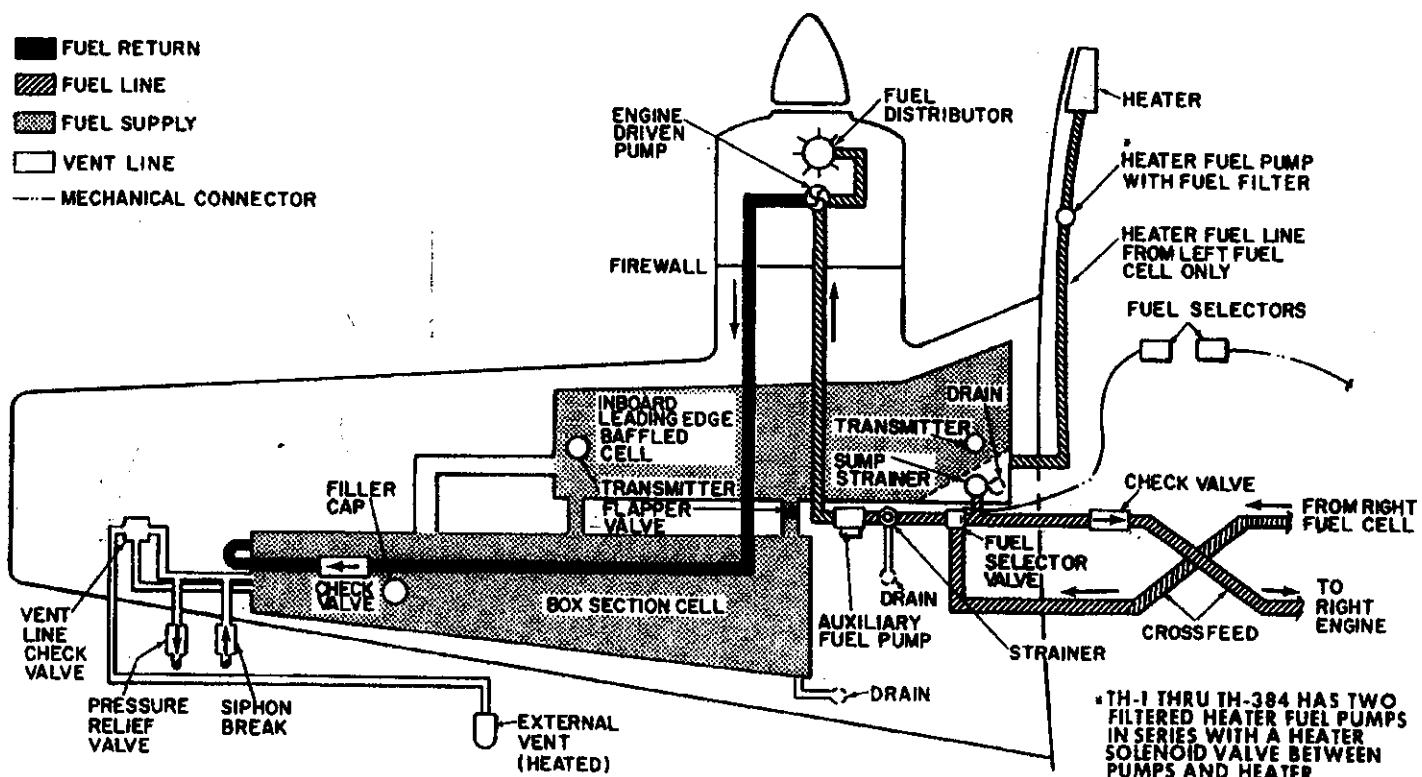
A visual fuel level sight gage in each wing leading edge, outboard of the engine nacelle, can be used for partial filling or off-loading of fuel. This gage is to be used only when it reads within the calibrated areas.

FUEL REQUIRED FOR FLIGHT

Flight planning and fuel loading is facilitated by the use of fuel quantity indicators that have been coordinated with the usable fuel supply. It is the pilot's responsibility to ascertain that the fuel quantity indicators are functioning and maintaining a reasonable degree of accuracy, and be certain of ample fuel for a flight. A minimum of 13 gallons of fuel is required in each wing system before takeoff. An inaccurate indicator could give an erroneous indication of fuel quantity. If the pilot is not sure that at least 13 gallons are in each wing system, add necessary fuel so that the amount of fuel will not be less than 13 gallons per wing system at takeoff. Plan for an ample margin of fuel for any flight.

7-30

January 1983



FUEL SYSTEM, 142 Gallon Capacity
(136 Gallons Usable, TH-1 thru TH-384)

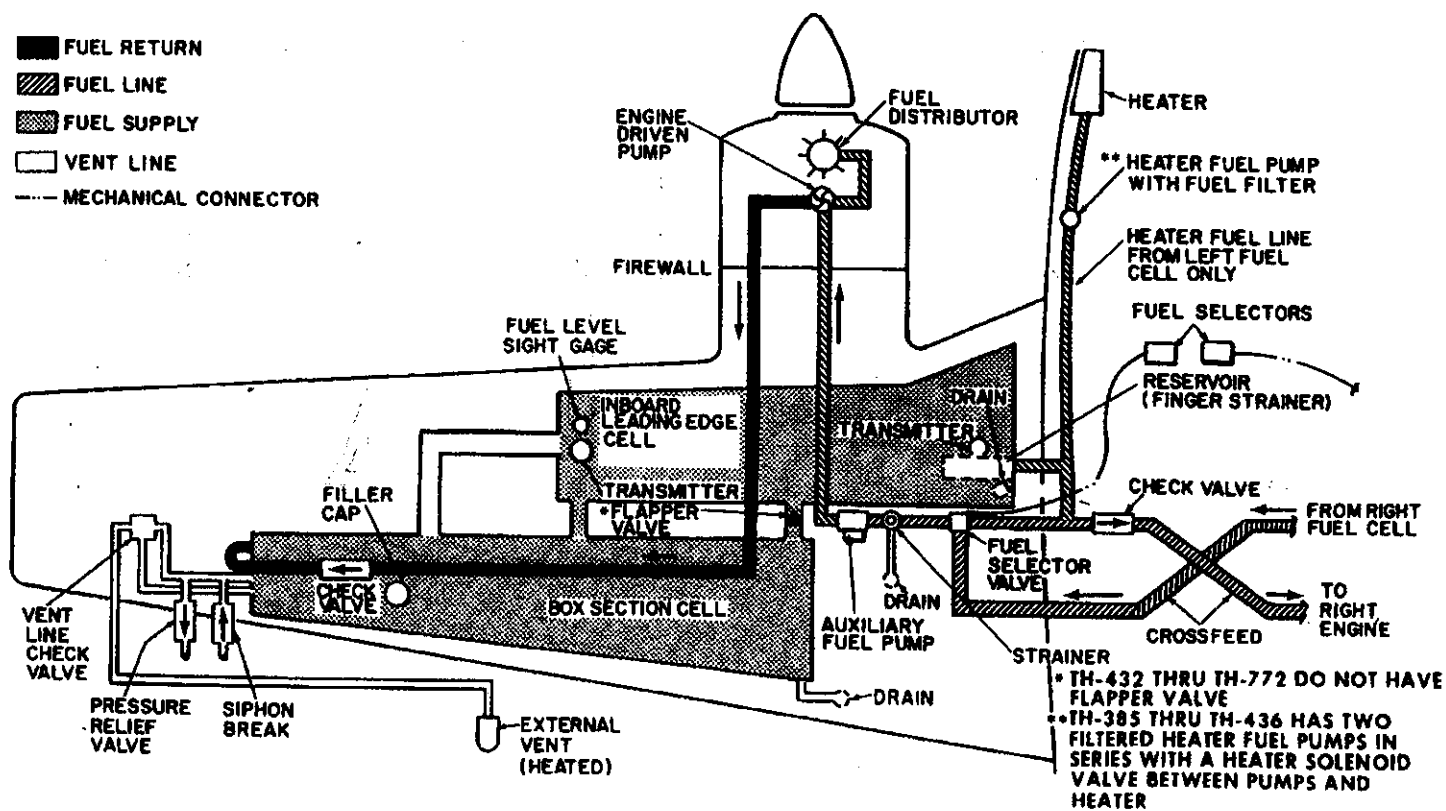
35-605-76

Section VII
Systems Description

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

January 1983

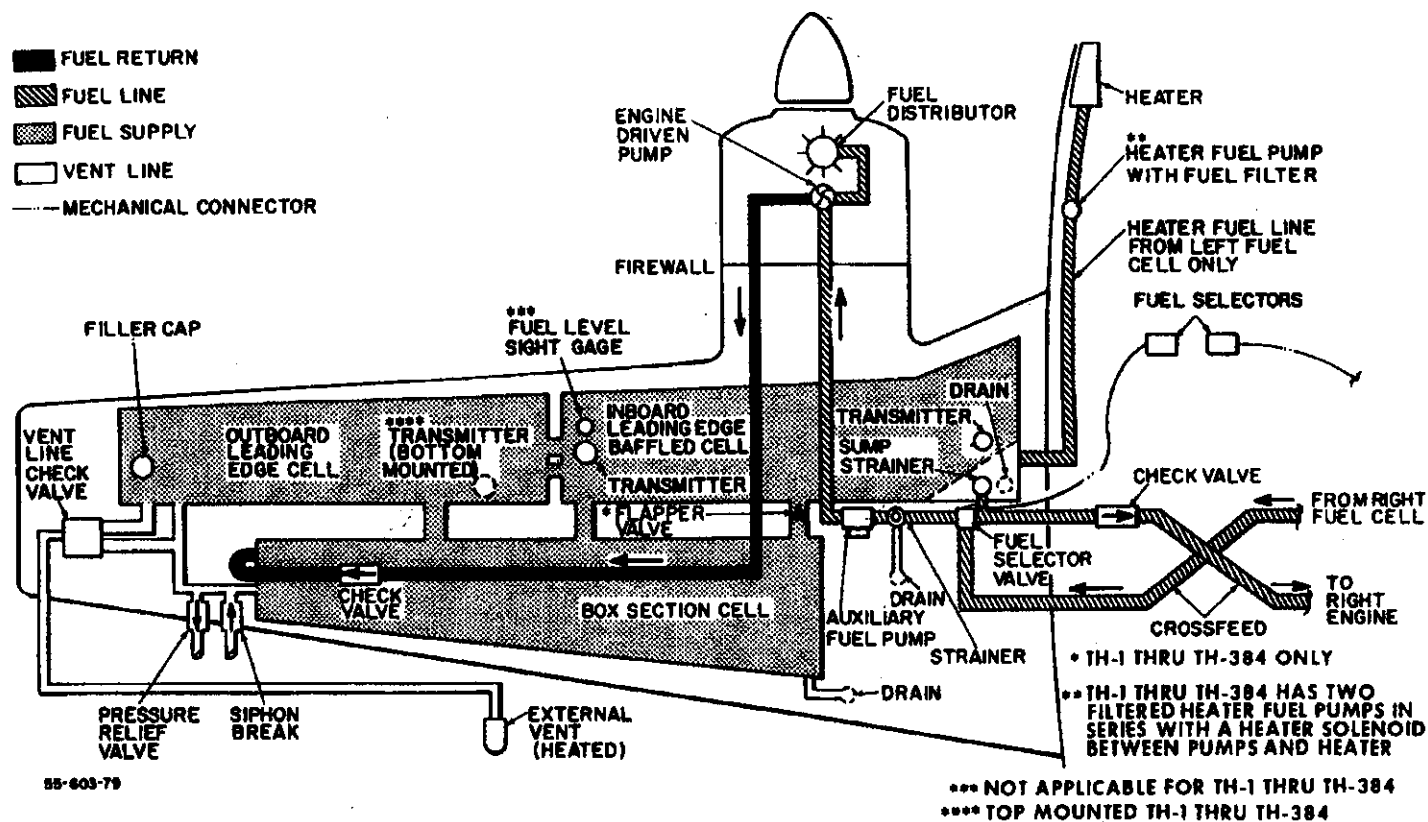
7-31



FUEL SYSTEM, 142 Gallon Capacity
(136 Gallons Usable, TH-385 thru TH-772)

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

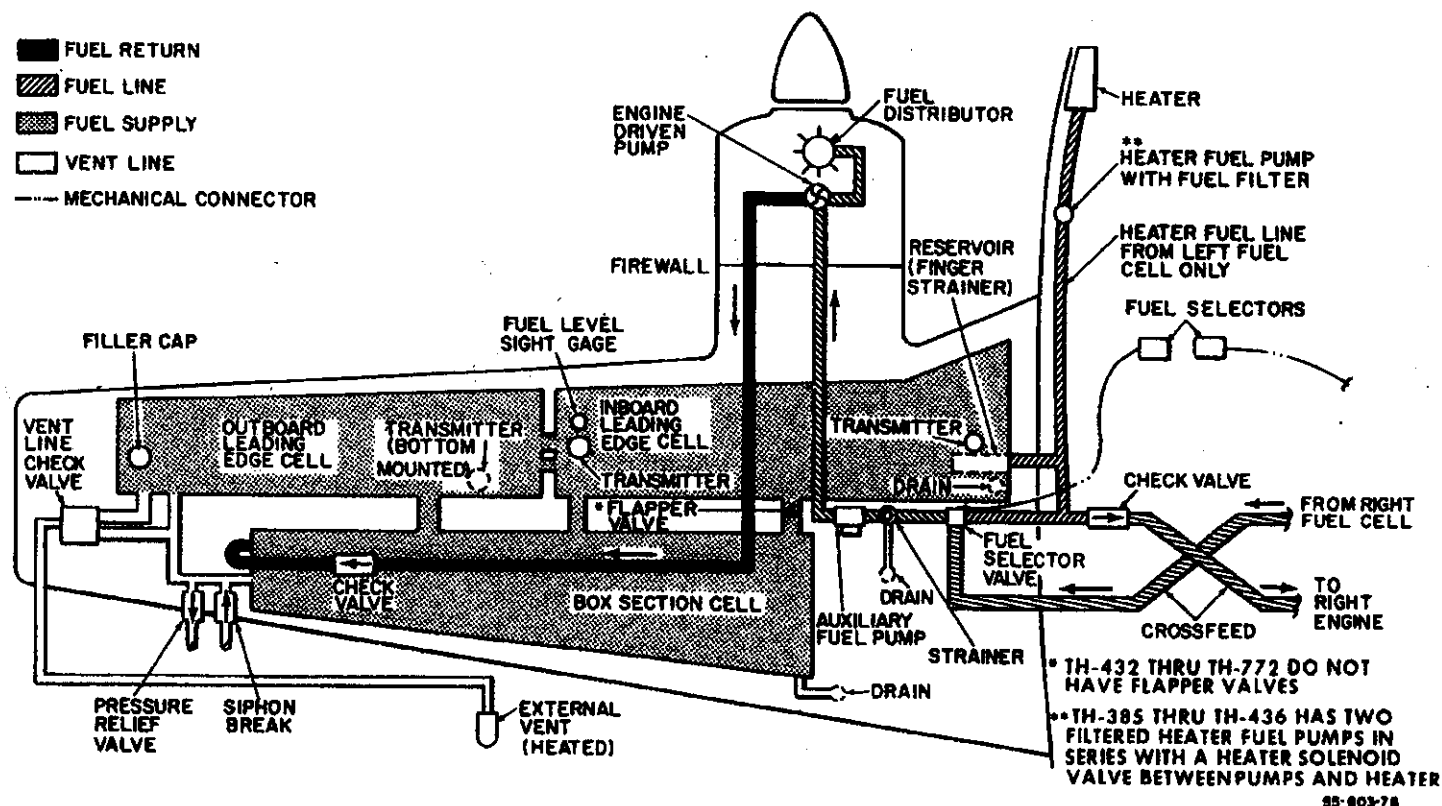
Section VII
Systems Description



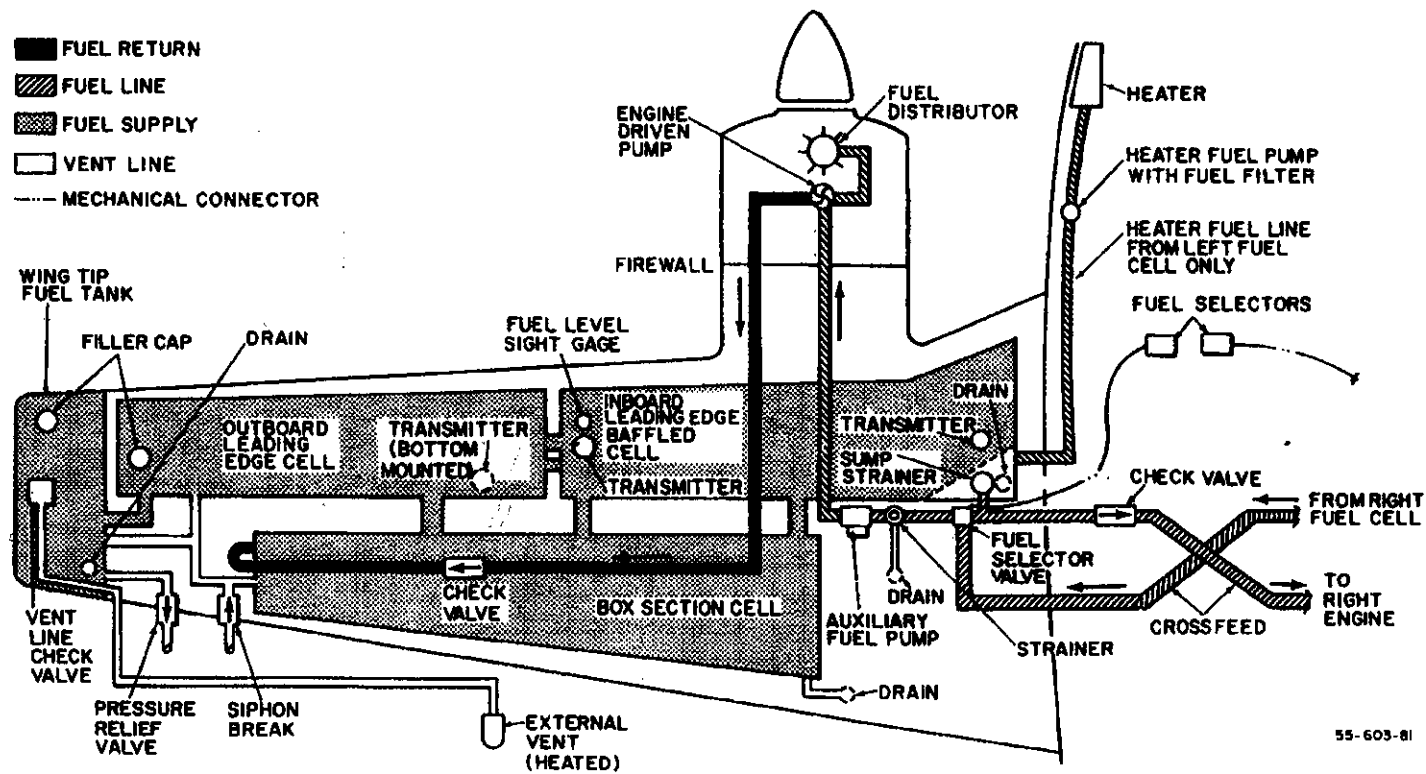
FUEL SYSTEM, 172 Gallon Capacity
(166 Gallons Usable, TH-1 thru TH-384, TH-766)

7-32

January 1983



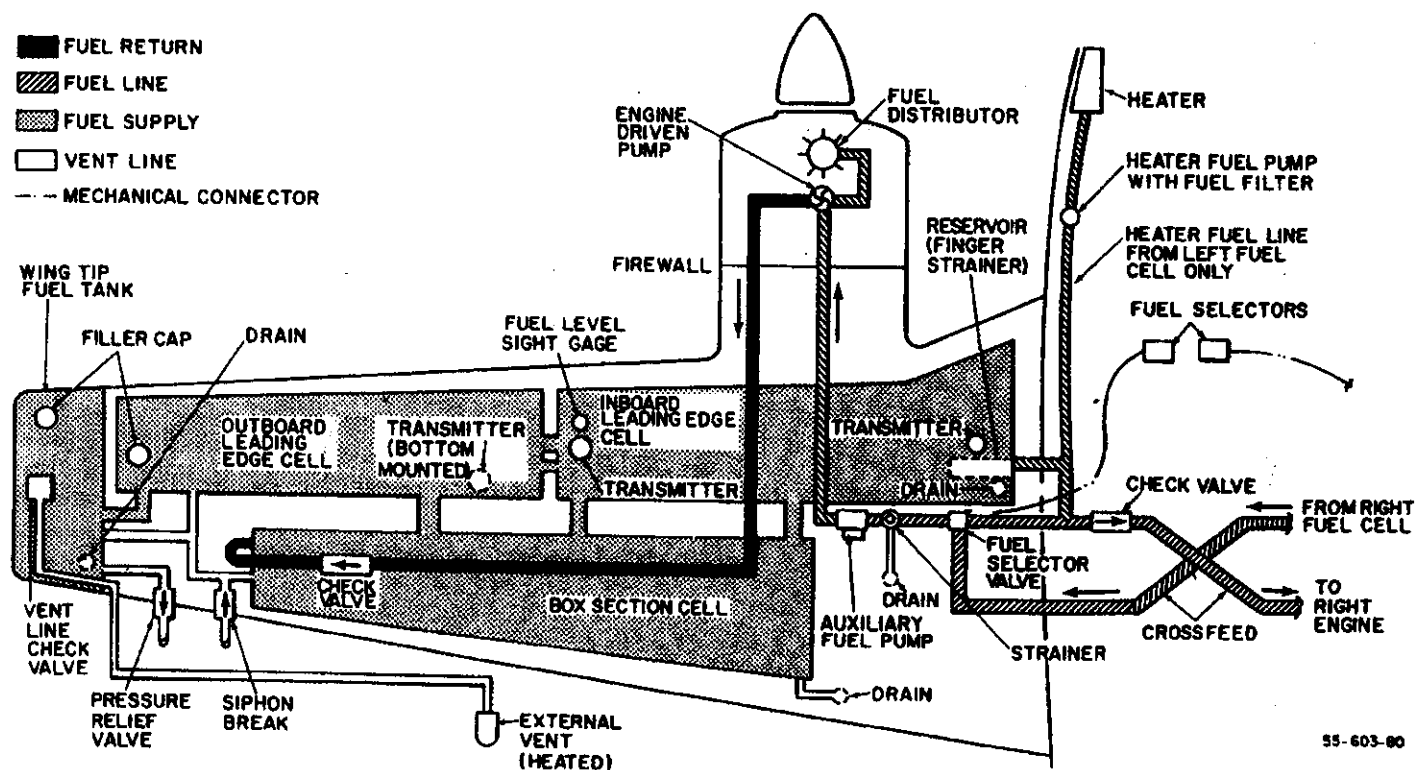
FUEL SYSTEM, 172 Gallon Capacity
(166 Gallons Usable, TH-385 thru TH-772 except TH-766)



FUEL SYSTEM, 200 Gallon Capacity
 (194 Gallons Usable, TH-1 thru TH-384 and TH-766)

January 1983

7-35



FUEL SYSTEM, 200 Gallon Capacity
(194 Gallons Usable, TH-385 thru TH-772 except TH-766)

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772

Section VII
Systems Description

55-603-80

ELECTRICAL SYSTEM

In general, the airplane's circuitry is the single-wire, ground return type. The battery, magneto/start, and alternator switches are located on the left subpanel. This panel contains most of the electrical system switches and switch type circuit breakers. Each is placarded as to its function. The remainder of the electrical equipment circuit breakers are located on the pilot's side panel. Avionics circuit breakers are located on the right subpanel.

BATTERY

One 17 ampere-hour, 24-volt lead acid battery is standard. Two 25 ampere-hour, 12-volt lead acid batteries, connected in series, are offered as options. The battery installation is located beneath the floor of the nose baggage compartment. Battery servicing procedures are described in the **SERVICING** section. The battery switch can be turned off in flight and the alternator will remain on the line.

ALTERNATORS

Two 50-ampere, 24-volt, gear-driven alternators are controlled by two transistorized voltage regulators. Only one regulator is operable in the system at any one time. The remaining regulator is used as an alternate or standby unit. When switched into the circuit, either regulator will adjust alternator output to the required electrical load, including battery recharging. Selection of the regulators is provided by a two-position selector switch on the pilot's subpanel. The alternators are protected by current limiters.

Individual alternator output is indicated by two loadmeters on the instrument panel. The loadmeters give a percentage reading of the load on the system.

Two warning lights, placarded ALTERNATOR-L-R, located in the floating instrument panel, will illuminate whenever the respective alternator is disconnected from the bus by low voltage or an over-voltage condition or with the switch in the OFF position. Any time a failure is detected, the appropriate alternator should be turned off. These lights can be tested by the PRESS-TO-TEST - WARN LIGHT switch, located on the floating instrument panel.

STARTERS

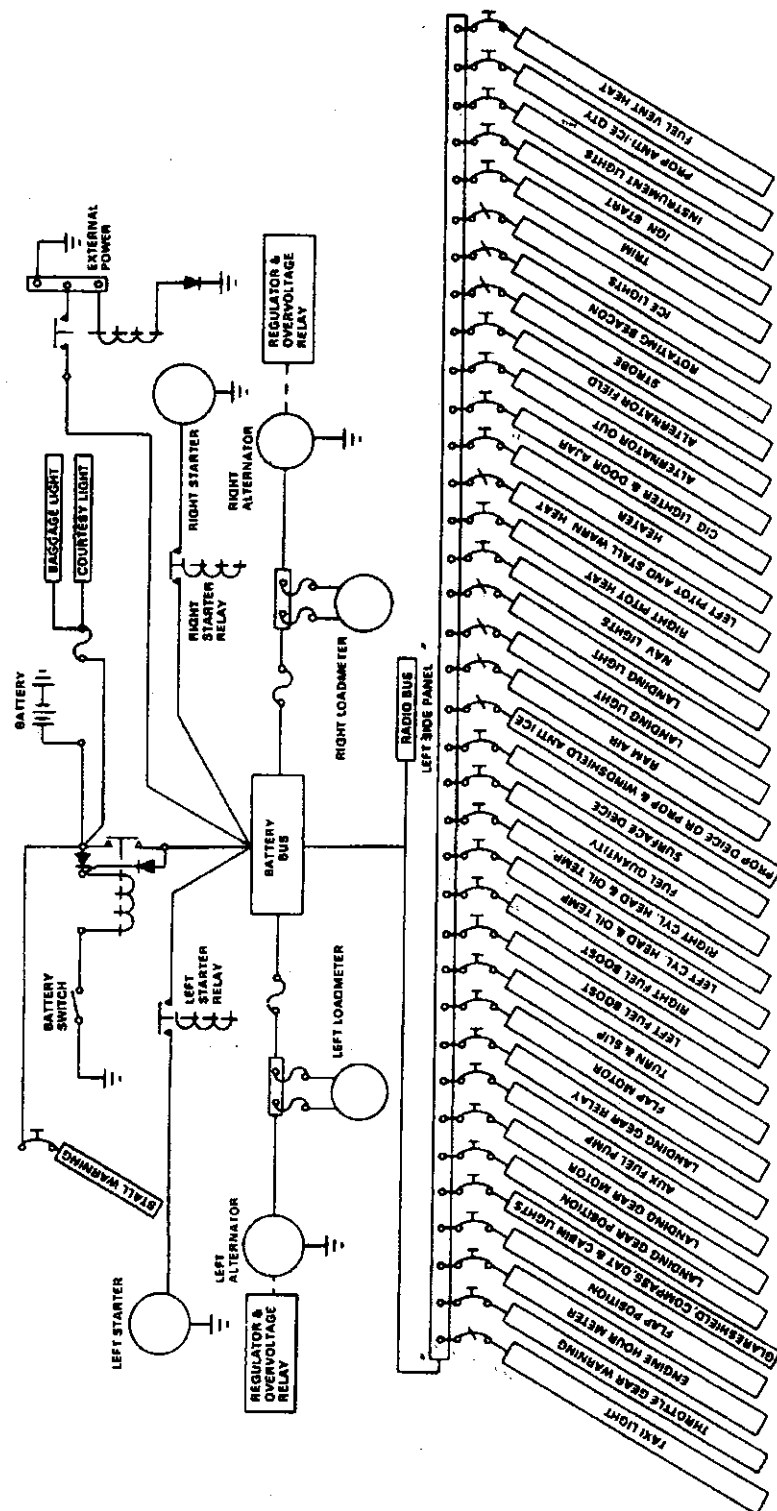
The starters are relay-controlled and are actuated by rotary type, momentary-on switches incorporated in the magneto/start switches located on the pilot's subpanel. To energize the starter circuit, hold the magneto/start switch in the START position. After starting, release the switch to the BOTH position.

EXTERNAL POWER

The external power receptacle is located in the outboard side of the left nacelle and accepts a standard AN type plug. The power unit should be capable of delivering at least 300 amperes for starting. Before connecting an external power unit, turn the electrical systems and avionics off to avoid damage due to electrical surges. If the unit does not have a standard AN type plug, check the polarity (negative ground) and connect the positive lead from the external power unit to the center and aft post of the airplane's receptacle. The negative lead connects to the front post. When external power is connected, the battery switch should be turned on. If polarity is reversed, a diode in the coil circuit will prevent contactor operation.

Section VII Systems Description

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772



POWER DISTRIBUTION SCHEMATIC

LIGHTING SYSTEM

INTERIOR LIGHTING

A courtesy light located in the door will be illuminated any time the door is in the open position. The cabin dome light is operated by an OFF-ON switch forward of the light. Individual reading lights above the standard third and fourth or the optional fifth and sixth seats are operated by switches between the air and light outlets. Four rheostat switches are located on the lower level of the circuit breaker panel. One switch adjusts the intensity of the individual instrument lights for the instruments directly above the pilot's subpanel. The second switch regulates the lighting for the avionics panel, the fuel selector panel, and the trim tab indicators. The third switch controls the intensity of the instrument lights in the glareshield. The fourth switch controls the electroluminescent lighting in the pilot's subpanel.

On aircraft with serials TH-1 thru TH-174, the magnetic compass light and the outside air temperature indicator light are controlled by a momentary PUSH-ON switch located above the outside air temperature indicator. On aircraft TH-175 thru TH-772, the switch for these lights is located on the pilot's control wheel.

EXTERIOR LIGHTING

The switches for the navigation lights, landing light(s), rotating beacons, nose gear taxi light (if installed), and wing ice light(s) are at the top of the pilot's subpanel. The two wing leading edge landing lights are operated by separate switches. With optional wing tip fuel tanks a single nose gear landing light replaces the two leading edge landing lights and the optional nose gear taxi light. For longer

Section VII Systems Description

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

battery and lamp service life, use the landing light(s) only when necessary. Avoid prolonged operation, during ground maneuvering, which could cause overheating. The optional taxi light is offered for use during ground operation. At night, reflections from rotating anti-collision lights on clouds, dense haze, or dust can produce optical illusions and vertigo. The use of these lights is not advisable under instrument or limited VFR conditions.

HEATING AND VENTILATION SYSTEM

CABIN HEATING

A combustion heater in the nose supplies heated air to the cabin. Outlets are located forward of the pilot and copilot seats, at the rear of the copilot's seat, and at the rear of the right passenger seat. The fifth outlet provides heated air for windshield defrosting.

In flight, fresh ram air enters an intake on each side of the nose cone, passes through the heater, and is distributed to the cabin outlets. For ground operation, a blower maintains airflow through the system.

If a malfunction resulting in dangerously high temperatures should occur, a thermostat will trip a circuit breaker in the heater power circuit. This circuit breaker cannot be reset in flight. **MAKE CERTAIN ANY MALFUNCTION CAUSING THE OVERHEAT CIRCUIT BREAKER TO TRIP IS CORRECTED BEFORE ATTEMPTING TO OPERATE THE HEATER AGAIN.**

HEATER OPERATION

1. A three-position switch, placarded **BLOWER, OFF, and HEATER**, is located on the pilot's subpanel. To place the heating system in operation, move the switch to the **HEATER** position.

2. The CABIN AIR control, which regulates the amount of intake air, is below the left side of the pilot's subpanel. Push the CABIN AIR control full forward.
3. Pull out the CABIN HEAT control to the right of the CABIN AIR control to increase the temperature of the heated air. Push the CABIN HEAT control in to decrease temperature.
4. For windshield defrosting, push in the DEFROST control located to the right of the CABIN HEAT control.
5. To direct heated air onto the pilot's feet, pull out the PILOT AIR control to the right of the DEFROST control.
6. The COPILOT AIR control, identical to the PILOT AIR control, is located below the right side of the instrument panel.

HEAT REGULATION

For maximum heat, the CABIN AIR control can be pulled partially out to reduce the volume of incoming cold air and permit the heater to raise the temperature of the admitted air. However, if the CABIN AIR control is pulled out more than halfway, the heater will not operate.

The volume of air available for the pilot outlet and the copilot outlet can be divided between the two outlets as desired by adjusting each control individually.

More heated air will be available for defrosting by reducing the flow of air from the pilot outlet, copilot outlet, or both.

The PILOT AIR and COPILOT AIR controls can be used to regulate the amount of air distributed to the two rear outlets.

HEATER BLOWER

When the three-position switch on the pilot's subpanel is placed in either the HEATER position or the BLOWER position, the blower will operate if the landing gear is in the extended position and the CABIN AIR control is more than halfway in. The blower will automatically shut off if the landing gear is retracted or the CABIN AIR control is pulled out more than halfway.

CABIN VENTILATION

In flight, to provide unheated air for the same cabin outlets used for heating, push the CABIN AIR and CABIN HEAT controls forward.

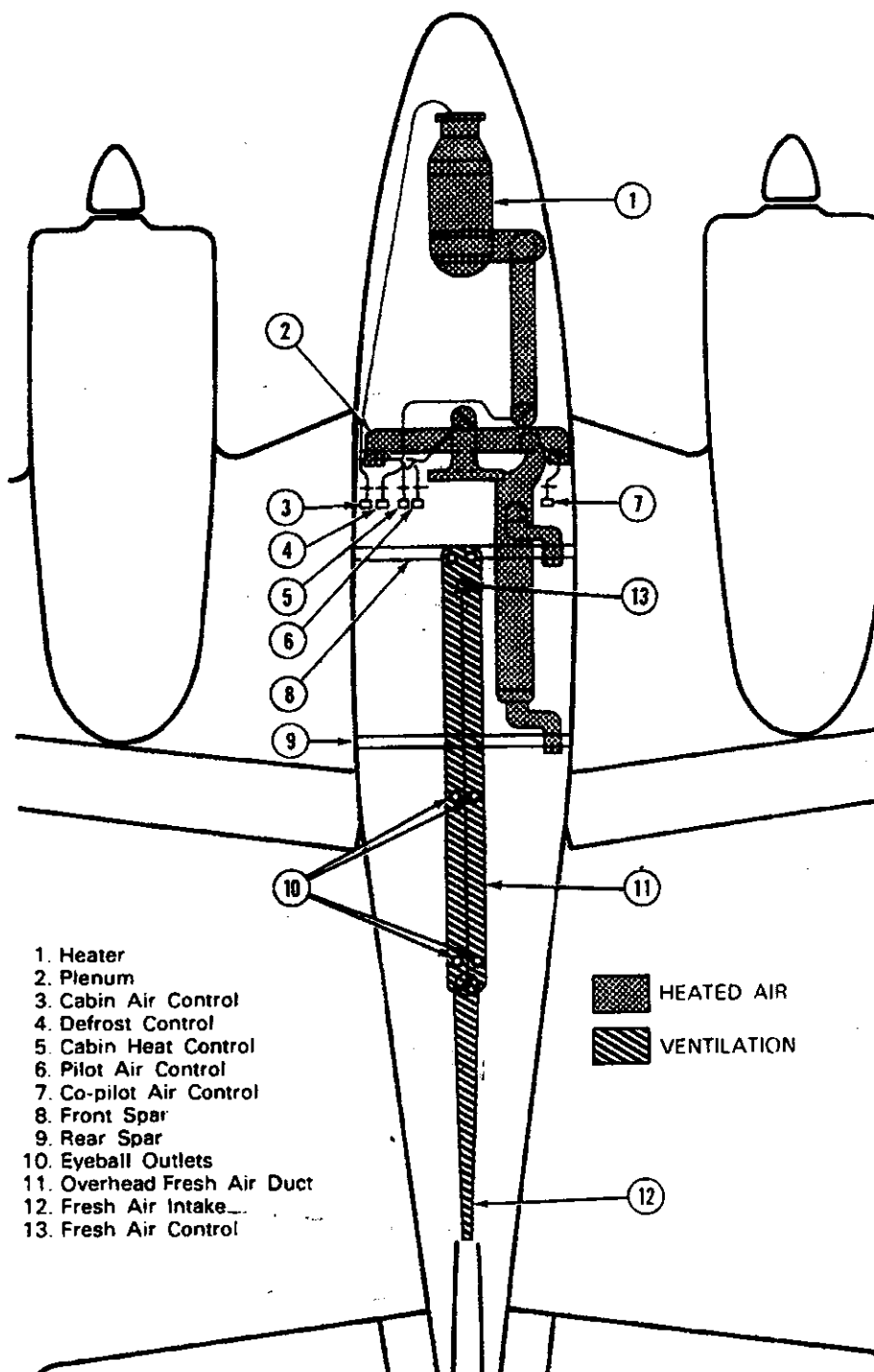
For ventilation during ground operation, push the CABIN AIR control forward and place the three position switch on the pilot's subpanel in the BLOWER position.

EXHAUST VENTS

ON Serials TH-1 thru TH-765, an adjustable cabin air exhaust vent is located aft of the radio speaker in the overhead panel. The overhead vent can be closed by a control located in the overhead panel. In addition, a fixed exhaust vent is located in the aft cabin (effective TH-264 and after).

INDIVIDUAL FRESH AIR OUTLETS

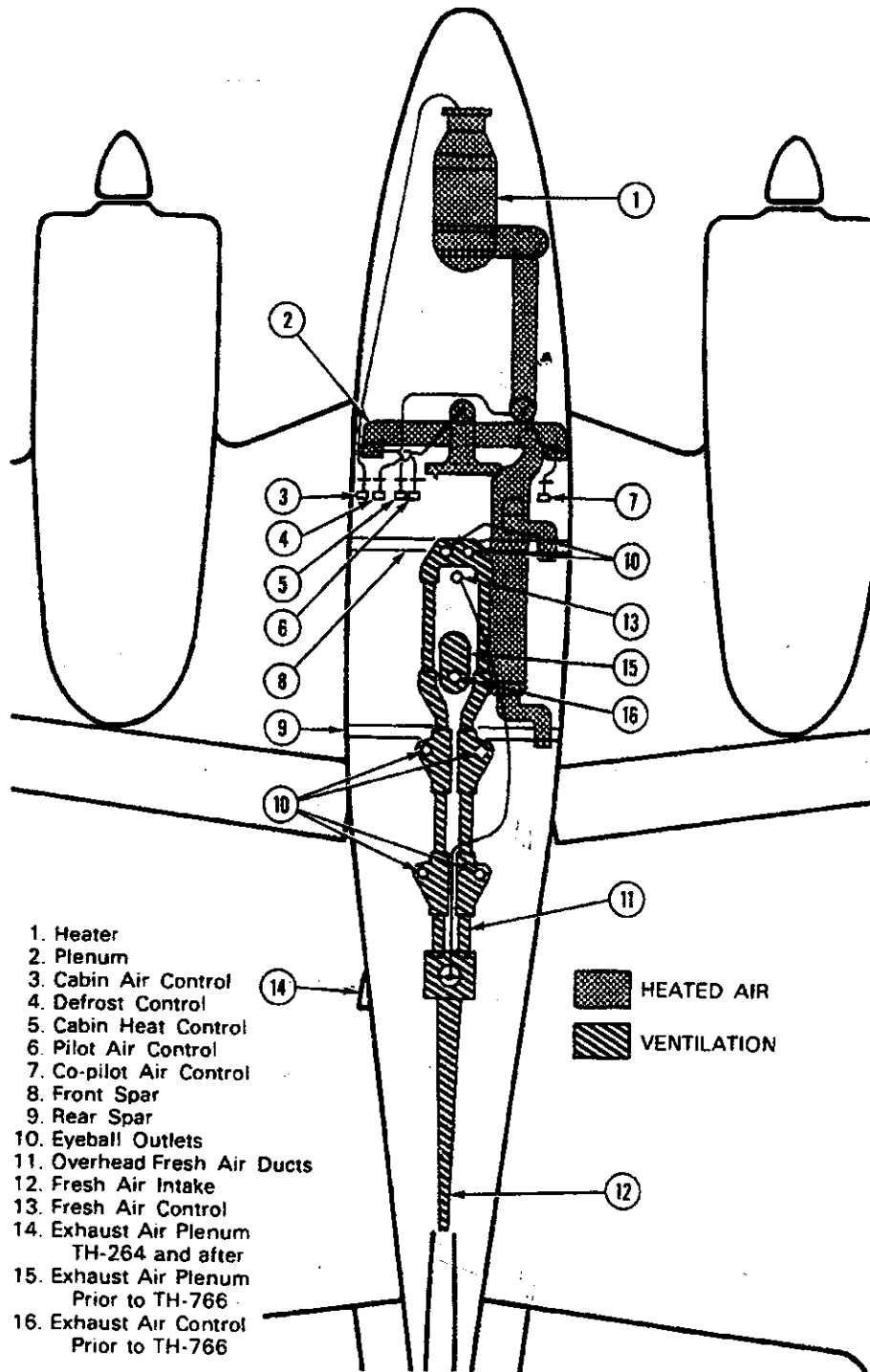
Fresh ram air from the intake on the left side of the dorsal fairing is ducted to individual outlets above each seat, including the optional fifth and sixth seats. A master control in the overhead panel just aft of the front air outlets enables the pilot to adjust the amount of ram air available to all outlets. The volume of air at each outlet can be regulated by rotating the outlet. Each outlet can be positioned to direct the flow of air as desired.



ENVIRONMENTAL SCHEMATIC
(TH-1 thru TH-174)

Section VII
Systems Description

BEECHCRAFT Baron 58
Serial TH 1 thru TH 772



ENVIRONMENTAL SCHEMATIC
(TH-175 thru TH-772)

OXYGEN SYSTEM

WARNING

Proper safety measures must be employed when using oxygen, or a serious fire hazard will be created. **NO SMOKING PERMITTED.**

DESCRIPTION

The recommended masks are provided with the system. The masks are designed to be adjustable to fit the average person.

The oxygen cylinder is located at the aft end of the forward baggage compartment. The system is available with either four, five, or six outlets and with a 49.8 or 66 cu ft oxygen bottle. Supply of oxygen to the system is controlled by a push-pull control on the pilot's subpanel. The pressure indicator shows the supply of oxygen available (1850 psi is nominal pressure for a full supply in the cylinder).

The system regulator is altitude compensated to provide a varying flow of oxygen with altitude. Flow is varied automatically from 0.5 liters per minute at 5,000 feet to 3.5 liters per minute at 30,000 feet. The use of oxygen is recommended to be in accordance with current FAR operating rules.

PITOT AND STATIC SYSTEM

The pitot and static system provides a source of impact and static air for the operation of flight instruments.

PITOT SYSTEM

A standard pitot tube for the pilot's flight instruments is located immediately to the left of the nose gear doors. The optional pitot tube for the copilot's instrument is located to the right of the nose gear doors.

Left and right pitot heat switches, located on the pilot's left subpanel, supply heat to the left and right pitot masts respectively.

The pitot system needs no drain because of the location of the components.

STATIC SYSTEM

Static air is taken from a flush static port located on each side of the aft fuselage. The static air is routed to the rate-of-climb indicator, altimeter and airspeed indicator.

The static air line is drained at the emergency static air source by raising the lever to the emergency static air source position. Return the lever to normal position after the line is completely drained.

The alternate static air source is designed to provide a source of static pressure to the instruments from inside the fuselage should the outside static air ports become blocked. An abnormal reading of the instruments supplied with static air could indicate a restriction in the outside static air ports. A lever on the lower sidewall adjacent to the pilot, is placarded OFF NORMAL, ON EMERGENCY. When it is desired or required to use this alternate source of static air, select the ON EMERGENCY position. To recognize the need and procedures for the use of alternate static air, refer to EMERGENCY PROCEDURES. Airspeed Calibrations and Altimeter Corrections charts are in the PERFORMANCE section.

PRESSURE SYSTEM

Pressure for the flight instruments, deice boots, and autopilot (if installed) is supplied by two, engine-driven, dry, pressure pumps interconnected to form a single system. If either pump fails, check valves automatically close and the remaining pump continues to operate all gyro instruments. A pressure gage on the instrument panel indicates pressure in inches of mercury. Two red buttons on the pressure gage serve as source failure indicators, each for its respective side of the system. The pressure system incorporates two filters per engine. One is located on the rear baffle of the engine to filter intake air to the pressure pump. The other is down stream of the pump and is located aft of the firewall in the upper nacelle. This filter protects the instruments.

STALL WARNING

A stall warning horn on the cabin forward bulkhead sounds a warning signal while there is time for the pilot to correct the attitude. The horn is triggered by a sensing vane on the leading edge of the left wing and is effective in all flight attitudes and at all weights and airspeeds. Irregular and intermittent at first, the warning signal will become steady as the airplane approaches a complete stall.

In icing conditions, stalling airspeeds should be expected to increase due to the distortion of the wing airfoil when ice has accumulated on the airplane. For the same reason, stall warning devices tend to lose their accuracy. The sensing vane is installed on a plate that can be electrically heated, preventing ice from forming on the vane of the transducer. A switch on the pilot's subpanel, placarded PITOT HEAT, supplies power to the heated pitot mast and to the heating plate at the stall warning transducer. However, any accumulation of ice in the proximity of the stall

warning vane reduces the probability of accuracy in the stall warning system whether or not the vane itself is clear of ice. For this reason, it is advisable to maintain an extra margin of airspeed above the stall speed.

ICE PROTECTION SYSTEMS

SURFACE DEICE SYSTEM

Deice boots bonded to the leading edges of the wings and the tail surfaces are operated by engine-driven pump pressure. Compressed air, after passing through the pressure regulator, goes to the distributor valve. When the deice system is not in operation, the distributor valve applies vacuum to the boots to deflate and hold the boots flat against the surface. Then, when the deice system is operated, the distributor valve changes from vacuum to pressure and the boots inflate. After the cycle is completed, the valve returns to vacuum hold down.

A three-position, spring loaded switch, with a center OFF position, a MAN (manual) down position, and an up AUTO (automatic) position, controls the system. When the switch is in the AUTO position, the deice boots inflate for a period of five to six seconds, then deflate automatically and return to the vacuum hold down position. The switch must be tripped for each complete cycle. In the MAN position the deice boots inflate as long as the switch is held in this position. When the switch is released, the boots deflate and go to the vacuum hold down condition.

Deice boots are designed to remove ice after it has accumulated, rather than prevent its formation. If the rate of ice accumulation is slow, best results are obtained by leaving the deice system off until 1/2 to 1 inch of ice accumulates. Bridging can occur if boots are actuated too early or too frequently.

The wing ice light(s), used to check for ice accumulation during night operation, illuminates the wing leading edge. The light switch is on the pilot's subpanel.

PROPELLER AND WINDSHIELD ANTI-ICE SYSTEM (FLUID FLOW)

The system is designed to prevent the formation of ice. Always place the system in operation before encountering icing conditions.

Ice is prevented from forming on the propeller blades by wetting the blade anti-ice boots with anti-icing fluid. The anti-ice pump delivers a constant flow of fluid from the supply tank to the blade boots. The pump is controlled by an ON-OFF switch located on the pilot's subpanel.

Windshield anti-ice (when installed) receives anti-ice fluid from the same source as the propeller anti-ice system. Ice is prevented from forming on the windshield by wetting the windshield surface with anti-ice fluid. This combined system is controlled by a three position switch, MOM ON-OFF-ON, located on the pilot's subpanel. The system will not function unless the propeller anti-ice pump switch is turned ON. For windshield system only, the flow is controlled by an ON-OFF switch. An indicator on the right side of the instrument panel indicates the amount of fluid in the supply tank.

With a full reservoir, system endurance is:

Windshield	approx. 36 min.
Prop Anti-ice Only	approx. 120 min.
Prop & Windshield	approx. 28 min.

ELECTROTHERMAL PROPELLER DEICE (2 and 3 BLADES)

Propeller ice removal is accomplished by the electrically heated deice boots bonded to each propeller blade. The system uses the aircraft electrical power to heat portions of the deice boots in a sequence controlled by a timer. The system is controlled by an ON-OFF switch on the pilot's subpanel. When the system is turned on the ammeter will register 7 to 12 amperes on the 2 blade propeller, or 14 to 18 amperes on the 3 blade propeller. The system can be operated continuously in flight; it will function automatically until the switch is turned off. Propeller imbalance can be relieved by varying rpm. Increase rpm briefly, then return to the desired setting. Repeat if necessary.

CAUTION

Do not operate the system with the engines inoperative.

PITOT HEAT

Heating elements are installed in the pitot mast(s). Each heating element is controlled by an individual switch located on the pilot's subpanel. The switches are placarded PITOT HEAT - LT - RT, and should remain off during ground operations, except for testing or for short intervals of time to remove ice or snow from the mast(s).

STALL WARNING ANTI-ICE (Optional)

The mounting pad and the stall warning vane are equipped with a heating element that is activated any time the switch placarded PITOT HEAT - LT, is on.

HEATED FUEL VENTS

The fuel system vents, one located on the underside of each wing outboard of the nacelle, are provided with heating elements controlled by the FUEL VENT switch on the pilot's subpanel.

ENGINE BREAK-IN INFORMATION

Use a straight mineral oil as recommended by the engine manufacturer throughout the break-in period. Drain the initial oil at 20 to 30 hours, replace with new mineral oil which is to be used until oil consumption stabilizes, usually a total of about 50 hours.

Drain and replace the engine oil as recommended in **HANDLING, SERVICING AND MAINTENANCE**. If operating conditions are unusually dusty or dirty, more frequent oil changes may be necessary. Oil changes are more critical during the break-in period than at any other time.

Use full throttle at recommended rpm for every take-off and maintain until at least 400 feet AGL, then reduce as necessary for cruise climb or cruise. Maintain the highest power recommended for cruise operations during the break-in period, avoiding altitudes above 8000 feet. Interrupt cruise power every 30 minutes or so by smoothly advancing to take-off power settings for about 30 seconds, then returning to cruise power settings.

Avoid long power-off descents especially during the break-in period. Maintain sufficient power during descent to permit cylinder head temperatures to remain in the green arc.

Minimize ground operation time, especially during warm weather. During the break-in period, avoid engine idling in excess of 15 minutes, especially in high ambient temperatures.

**Section VII
Systems Description**

**BEECHCRAFT Baron 58
Serial TH 1 thru TH 772**

INTENTIONALLY LEFT BLANK