

King Air 250 | Limitations

TRAINING REFERENCE ONLY — NOT A SUBSTITUTE FOR THE AFM

This document is a training summary compiled from the aircraft's POH/AFM. In any conflict, the FAA Approved Airplane Flight Manual for the specific airplane, including all applicable Temporary Changes and Supplements, is the governing authority. Verify limitations against the AFM for the serial number being flown. This summary pertains to the King Air 250 (B200GT/B200CGT).

Source: Hawker Beechcraft Corporation Model B200GT/B200CGT (King Air 250) Pilot's Information Manual, dated October, 2007 (P/N not printed within Section 2) — Section 2, Limitations (pages 2-3 through 2-39).
Engines: two Pratt & Whitney Canada PT6A-52.

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1. AIRSPEED

AIRSPEED LIMITATIONS

POH 2-3

The limitations included in this section have been approved by the Federal Aviation Administration, and they must be observed in the operation of the Super King Air B200GT/B200CGT.

SPEED	KCAS	KIAS	REMARKS
Maneuvering Speed (Va) (12,500 pounds)	182	181	Do not make full or abrupt control movements above this speed.
Maximum Flap Extension/Extended Speed (Vfe) — Approach - 40%	200	200	Do not extend flaps or operate with flaps extended above these speeds.
Maximum Flap Extension/Extended Speed (Vfe) — Full Down - 100%	155	157	Do not extend flaps or operate with flaps extended above these speeds.
Maximum Landing Gear Operating Speed (Vlo) — Extension	182	181	Do not extend or retract landing gear above these speeds.
Maximum Landing Gear Operating Speed (Vlo) — Retraction	164	163	Do not extend or retract landing gear above these speeds.
Maximum Landing Gear Extended Speed (Vle)	182	181	Do not exceed this speed with landing gear extended.
Air Minimum Control Speed (Vmca)	92	86	This is the lowest airspeed at which the airplane is directionally controllable when one engine suddenly becomes inoperative, and the other engine is at take-off power. (See definition in Section 1.)
Maximum Operating Speed — Vmo	260	259	Do not exceed this airspeed or Mach Number in any operation.
Maximum Operating Speed — Mmo	0.52 Mach	0.52 Mach	Do not exceed this airspeed or Mach Number in any operation.

DISPLAY	KIAS VALUE OR RANGE	SIGNIFICANCE
Red Line	86	Air Minimum Control Speed (V_{mca}).
Solid Red Bar (at bottom of airspeed scale)	75 / 85 / 99	ISS LSC* Marker. The top of the marker changes with flap position to reflect the following stall speeds. Stalling speed (V_{so}) at maximum weight with flaps down and idle power (75). Stalling speed (V_{s1}) at maximum weight with flaps approach and idle power (85). Stalling speed (V_{s1}) at maximum weight with flaps up and idle power (99).
◀ DN (white)	157	Maximum speed permissible with flaps extended beyond approach.
◀ APP (white)	200	Maximum speed permissible with flaps in approach position.
Blue Line	121	One-Engine-Inoperative Best Rate-of-Climb Speed.
Solid Red Bar (at top of airspeed scale)	259 or value equal to 0.52 Mach, whichever is lower	V_{mo} Marker. The bottom of the Marker represents the Maximum Operating Speed. These speeds may not be deliberately exceeded in any flight regime.

NOTE

* Impending Stall Speed Low Speed Cue

2. POWER PLANT**POWER PLANT LIMITATIONS**

Number of Engines	Two
Engine Manufacturer	Pratt & Whitney Canada Corp. (Longueuil, Quebec, Canada)
Engine Model Number	PT6A-52

Power Levers: Do not lift power levers in flight. Lifting the power levers in flight, or moving the power levers in flight below the flight idle position, could result in a nose-down pitch and a descent rate leading to aircraft damage and injury to personnel.

ENGINE OPERATING LIMITS

POH 2-5

The following limitations shall be observed. Each column presents limitations. The limits presented do not necessarily occur simultaneously. Refer to the Pratt & Whitney Engine Maintenance Manual for specific actions required if limits are exceeded.

OPERATING CONDITION	SHp	TORQUE FT-LBS (1)	MAXIMUM OBSERVED ITT °C	GAS GENERATOR RPM N1 — RPM	GAS GENERATOR RPM N1 — %	PROP RPM N2	OIL PRESS PSI (2)	OIL TEMP °C (3) (4)
STARTING	---	---	1000 (5)	---	---	---	---	-40 (min)
LOW IDLE	---	---	750 (6)	22,875	---	1180	60 (min)	-40 to +110
HIGH IDLE	---	---	---	---	(7)	---	---	-40 to +110
TAKEOFF & MAX CONT	850	2230 (14)	820	38,100	104	2000 (13)	90 to 135	0 to +110
MAX CRUISE	850	2230 (8) (14)	820	38,100	104	2000 (13)	90 to 135	10 to +99
CRUISE CLIMB AND REC (NORMAL) CRUISE	850	2230 (8) (14)	775	38,100	104	2000 (13)	90 to 135	0 to +110
MAX REVERSE (9)	800	---	750	---	88	1900	90 to 135	0 to +99
TRANSIENT	---	2750 (5)	850	38,500 (10)	104	2200 (5)	40 to 200	0 to +110 (12)

1.	Torque limit applies within range of 1600 - 2000 propeller rpm (N2). Below 1600 propeller rpm, torque is limited to 1100 ft-lbs.
2.	When gas generator speeds are above 27,000 rpm (72% N1) and oil temperatures are between +60°C and +71°C, normal oil pressures are: 100 to 135 psi below 21,000 feet; 85 to 135 psi at 21,000 feet and above. Oil pressure between 60 and 85 psi is undesirable; it should be tolerated only for the completion of the flight, and then only at a reduced power setting not exceeding 1100 ft-lbs torque. Oil pressure below 60 psi is unsafe; it requires that either the engine be shut down, or that a landing be made at the nearest suitable airport, using the minimum power required to sustain flight. Fluctuations of plus or minus 10 psi are acceptable. During extremely cold starts, oil pressure may reach 200 psi.
3.	A minimum oil temperature of +55°C is recommended for fuel heater operation at take-off power.
4.	Oil temperature limits are -40°C and +110°C. However, temperatures of between +99°C and +110°C are permitted for a maximum time of 10 minutes.
5.	These values are time limited to 5 seconds.
6.	High ITT at ground idle may be corrected by reducing accessory load and/or increasing N1 rpm.
7.	At approximately 70% N1.
8.	Cruise torque values vary with altitude and temperature.
9.	This operation is time limited to 1 minute.
10.	These values are time limited to 10 seconds.

11.	Values above +99°C are time limited to 10 minutes.
12.	To account for power setting accuracy and steady state fluctuations, inadvertent propeller excursions up to 2040 rpm are time limited to 7 minutes.
13.	To account for power setting accuracy and steady state fluctuations, inadvertent torque excursions up to 2275 ft-lbs are time limited to 7 minutes.

NOTE

Footnotes 12 and 13 in the handbook are accompanied by prop-speed and torque transient-limit graphs (Green/Yellow/Red regions vs. time), not reproduced here. The engine table cites footnote (14) for the takeoff/cruise torque values, but no footnote numbered 14 appears in the printed footnote list (footnotes 1 through 13 only) — transcribed as printed.

EXTERNAL POWER LIMITS

POH 2-7

External power carts will be set to 28.0 - 28.4 volts and be capable of generating a minimum of 1000 amps momentarily and 300 amps continuously.

GENERATOR LIMITS

POH 2-7

Maximum sustained generator load is limited as follows:

In Flight — Sea Level to 31,000 feet altitude	100%
In Flight — Above 31,000 feet altitude	88%
Ground Operation	85%

During ground operation, also observe the following limitations:

MINIMUM GAS GENERATOR RPM - N1 — WITHOUT AIR CONDITIONING	MINIMUM GAS GENERATOR RPM - N1 — *WITH AIR CONDITIONING	MAXIMUM GENERATOR LOAD
61%	62%	0 to 80%
65%	65%	80% to 85%

NOTE

* Right engine only.

STARTER LIMITS

POH 2-7

Use of the starter is limited to 40 seconds ON, 60 seconds off, 40 seconds ON, 60 seconds OFF, 40 seconds ON, then 30 minutes OFF.

INSTRUMENT	GREEN DISPLAY NORMAL OPERATING RANGE	YELLOW DISPLAY CAUTION RANGE	RED DISPLAY MINIMUM/MAXI MUM
ITT (starting) °C	≤ 820 or $\geq 820 < 850 \leq 20$ sec or $> 850 < 1000 < 5$ sec	---	$> 820 < 850 > 20$ sec or $> 850 < 1000 > 5$ sec or > 1000
ITT (running) °C	< 820	$> 820 < 850 < 20$ sec	$> 820 < 850 > 20$ sec or > 850
Torque Ft-lbs (Prop RPM greater than 1600)	< 2230 or $> 2030 < 2270$ for < 5 min	$> 2275 < 2750 < 5$ sec or $> 2230 < 2270$ for > 5 min & < 7 min	$> 2275 < 2750 > 5$ sec or $> 2230 < 2270 > 7$ min or > 2750
Torque Ft-lbs (Prop RPM less than 1600)	< 1100	$> 1100 < 2750 < 5$ sec	$> 1100 < 2750 > 5$ sec or > 2750
PROP RPM (starting)	< 2000 or $> 2000 < 2040 < 5$ min	$> 2040 < 2200 < 5$ sec or $> 2000 < 2040$ for > 5 min < 7 min	$> 500 < 1180$ or $> 2040 < 2200 > 5$ sec or $> 2000 < 2040 > 7$ min or > 2200
PROP RPM (running)	$> 1180 < 2000$ or $> 2000 < 2040 < 5$ min	$> 2040 < 2200 < 5$ sec or $> 2000 < 2040$ for > 5 min < 7 min	$> 500 < 1180$ or $> 2040 < 2200 > 5$ sec or $> 2000 < 2040 > 7$ min or > 2200
% N1 (starting)	< 104	---	> 104
% N1 (running)	$> 60 < 104$	< 60	> 104
FUEL FLOW	$> 0 < 800$	---	---
OIL TEMP (starting) °C	$> -40 < 99$	$> 99 < 110 < 10$ minutes	$> 99 < 110 > 10$ min or < -40 or > 110
OIL TEMP (running) °C	$> 0 < 99$	$> 99 < 110 < 10$ minutes or < 0	$> 99 < 110 > 10$ min or > 110
OIL PRESS (psi)	$> 90 < 135$	$> 60 < 90$ or $> 135 < 200$	< 60 or > 200

The pilot is responsible for monitoring all engine limits, including transient limits not accounted for by the EIS as defined in Engine Operating Limits.

PROPELLER MANUFACTURER

POH 2-11

Hartzell Propeller, Inc., (Piqua, Ohio)

PROPELLER HUB AND BLADE MODEL NUMBERS

POH 2-11

HUBS	BLADES
HC - E4N - 3G	D9390SK - 1R

PROPELLER DIAMETER

POH 2-11

Maximum Diameter	93.0 inches
Minimum Diameter	92.0 inches

PROPELLER BLADE ANGLES AT 30-INCH STATION

POH 2-11

Feathered + 87.9°, Reverse -11.2°

PROPELLER ROTATIONAL SPEED LIMITS

POH 2-11

Transients not exceeding 5 seconds	2200 rpm
Reverse	1900 rpm
All other conditions	2000 rpm
Minimum Idle Speed	1180 rpm

WARNING

Stabilized ground operation within the propeller restricted RPM range (500 - 1180 RPM) can generate high propeller stresses and result in propeller failure and loss of control of the aircraft.

PROPELLER ROTATIONAL OVERSPEED LIMITS

POH 2-11

The maximum propeller overspeed limit is 2200 rpm and is time-limited to five seconds. Sustained propeller overspeeds faster than 2000 rpm indicate failure of the primary governor. Flight may be continued at propeller overspeeds up to 2120 rpm, provided torque is limited to 1800 foot-pounds. Sustained propeller overspeeds faster than 2120 rpm indicate failure of both the primary governor and the secondary governor, and such overspeeds are unapproved.

PROPELLER AUTOFEATHER

POH 2-11

The propeller autofeather system must be operable for all flights and must be armed for takeoff, climb, approach and landing.

3. FUEL

FUEL LIMITS — APPROVED ENGINE FUELS

POH 2-7

Commercial Grades	Jet A, Jet A-1, Jet B
Military Grades	JP-4, JP-5, JP-8

EMERGENCY ENGINE FUELS

POH 2-8

Commercial Aviation Gasoline Grades	80 Red (Formerly 80/87); 100LL Blue; 100 Green (Formerly 100/130)
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Limitations on the Use of Aviation Gasoline:

1.	Operation is limited to 150 hours between engine overhauls.
2.	Operation is limited to 20,000 feet pressure altitude (FL 200) or below if either standby pump is inoperative.
3.	Crossfeed capability is required for climbs above 20,000 feet pressure altitude (FL 200).
4.	Operation above 31,000 feet (FL 310) is prohibited.

APPROVED FUEL ADDITIVES — ANTI-ICING ADDITIVES

POH 2-8

Engine oil is used to heat the fuel on entering the fuel control. Since no temperature measurement is available for the fuel at this point, it must be assumed to be the same as the OAT. The graph (in the handbook) is used to determine the minimum oil temperature required to maintain the fuel temperature above the freezing point of water, and thus prevent ice accumulations in the fuel control unit. Enter the graph at the known or forecast OAT and determine the minimum oil temperature required for each phase of flight. If the anticipated actual oil temperature is not equal to, or above this minimum temperature, anti-icing additive conforming to MIL-I-27686 or MIL-I-85470 must be added to the fuel. Refer to Section 4, NORMAL PROCEDURES, for blending procedures.

CAUTION

Prior to refueling, check with the fuel supplier to determine whether or not anti-icing additive has already been added to the fuel. If anti-icing additive is required, it must be properly blended with the fuel to avoid deterioration of the fuel cell sealant. The additive concentration shall be a minimum of 0.10% and a maximum of 0.15% by volume. To assure proper concentration by volume of fuel on board, blend only enough additive for the unblended fuel.

FUEL BIOCIDAL ADDITIVE

POH 2-9

Fuel biocide-fungicide BIOBOR JF in concentrations of 135 ppm or 270 ppm may be used in the fuel. BIOBOR JF may be used as the only fuel additive, or it may be used with the anti-icing additive conforming to MIL-I-27686 or MIL-I-85470 specification. Used together, the additives have no detrimental effect on the fuel system components.

Refer to the Super King Air 200 Series Maintenance Manual and to the latest revision of Pratt and Whitney Canada Engine Service Bulletin No. 13044 for concentrations to use and for procedures, recommendations and limitations pertaining to the use of biocidal/fungicidal additives in turbine fuels.

FUEL MANAGEMENT — USABLE FUEL

POH 2-10

Usable Fuel (Gallons x 6.7 = Pounds)

Total Usable Fuel Quantity	544 gallons (3645 pounds)
Each Main Fuel Tank System	193 gallons (1293 pounds)
Each Auxiliary Fuel Tank	79 gallons (529 pounds)

FUEL IMBALANCE

POH 2-10

Maximum allowable fuel imbalance between wing fuel systems is 1000 pounds.

FUEL CROSSFEED

POH 2-10

Crossfeeding of fuel is permitted only when one engine is inoperative.

WARNING

The airplane is approved for takeoff with one standby boost pump inoperative, but in such a case, crossfeed of fuel will not be available from the side of the inoperative standby boost pump.

FUEL GAGES IN THE YELLOW ARC

POH 2-10

Do not take off if fuel quantity gages indicate in yellow arc or indicate less than 265 pounds of fuel in each main tank system.

AUXILIARY FUEL

POH 2-10

Do not put any fuel into the auxiliary tanks unless the main tanks are full.

OPERATING WITH LOW FUEL PRESSURE

POH 2-10

Operation of either engine with its corresponding fuel pressure annunciator (L FUEL PRESS or R FUEL PRESS) illuminated is limited to 10 hours before overhaul or replacement of the engine-driven fuel pump. Windmilling time need not be charged against this time limit.

4. OIL

OIL SPECIFICATION

POH 2-10

Any oil specified by brand name in the latest revision of Pratt & Whitney Service Bulletin Number 13001 is approved for use in the PT6A-52 engine.

5. INSTRUMENT MARKINGS

MISCELLANEOUS INSTRUMENT MARKINGS

POH 2-13

Fuel Quantity Indicators — Yellow Arc (No-Takeoff Range)	0 to 265 pounds
Cabin Differential Pressure Gage — Green Arc (Approved Operating Range)	0 to 6.6 psi
Cabin Differential Pressure Gage — Red Arc (Unapproved Operating Range)	6.6 psi to end of scale
Pneumatic Pressure Gage — Green Arc (Normal Operating Range)	12 to 20 psi
Pneumatic Pressure Gage — Red Line (Maximum Operating Limit)	20 psi
Vacuum Gage — Narrow Green Arc (Normal from 35,000 to 15,000 feet)	2.8 to 4.3 in. Hg
Vacuum Gage — Wide Green Arc (Normal from 15,000 feet to Sea Level)	4.3 to 5.9 in. Hg
Vacuum Gage — 35K marked on face of gage at	3.0 in. Hg
Vacuum Gage — 15K marked on face of gage at	4.3 in. Hg

PROPELLER DEICE AMMETER

POH 2-13

Green Arc (Normal Operating Range)	18 to 24 amperes
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6. WEIGHT AND BALANCE

WEIGHT LIMITS

POH 2-13

Maximum Ramp Weight	12,590 pounds
Maximum Take-off Weight — All Except 14 CFR Part 135 Operations	12,500 pounds
Maximum Take-off Weight — 14 CFR Part 135 Operations	As Limited by SERVICE CEILING - ONE-ENGINE-INOPERATIVE Graph in Section 5, PERFORMANCE
Maximum Landing Weight	12,500 pounds
Maximum Zero Fuel Weight	11,000 pounds
Maximum Weight in Baggage Compartment — When Equipped with Fold-up Seats	510 pounds
Maximum Weight in Baggage Compartment — When Not Equipped with Fold-up Seats	550 pounds

CENTER OF GRAVITY LIMITS

POH 2-14

Aft Limit	196.4 inches aft of datum at all weights.
Forward Limits	185.0 inches aft of datum at 12,500 pounds, with straight line variation to 181.0 inches aft of datum at 11,279 pounds. 181.0 inches aft of datum at 11,279 pounds or less.

DATUM

POH 2-14

The reference datum is located 83.5 inches forward of the center of the front jack point.

MEAN AERODYNAMIC CHORD (MAC)

POH 2-14

The leading edge of the MAC is 171.23 inches aft of the datum. The MAC length is 70.41 inches.

7. FLIGHT AND OPERATING LIMITS

MANEUVER LIMITS

POH 2-14

The Super King Air B200GT and B200CGT are Normal Category Airplanes. Acrobatic maneuvers, including spins, are prohibited.

FLIGHT LOAD FACTOR LIMITS

POH 2-14

FLAPS UP	FLAPS DOWN
3.17 positive g's	2.00 positive g's
1.27 negative g's	0.00 g

MINIMUM FLIGHT CREW

POH 2-14

One Pilot

MAXIMUM OPERATING PRESSURE-ALTITUDE LIMITS

POH 2-14

Normal Operation	35,000 feet
Operation with Yaw Damp System Inoperative	17,000 feet

MAXIMUM OUTSIDE AIR TEMPERATURE LIMITS

POH 2-15

Sea Level to 25,000 feet pressure altitude	ISA + 37°C
Above 25,000 feet pressure altitude	ISA + 31°C

CABIN PRESSURIZATION LIMIT

POH 2-15

Maximum Cabin Pressure Differential	6.6 psi
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Maximum Occupancy Limit (Including Crew)	Eleven (11)
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SYSTEMS AND EQUIPMENT LIMITS

Landing Gear Cycle Limits: Landing gear cycles (1 up - 1 down) are limited to one every 5 minutes for a total of 6 cycles followed by a 15 minute cool-down period.

Aft-Facing Seats: The seat back of each occupied aft-facing seat must be in the upright position and the headrest fully extended for takeoff and landing.

Brake Deice (If Installed): Brake Deice system is not to be operated above 15°C.

Air Conditioning Limitations: 1. The supplemental electric heater must be off for at least two minutes prior to and during engine start. 2. Do not operate the electric heat with the pedestal floor outlet blocked or the cockpit door closed.

AVIONICS LIMITS — GENERAL

1.	The following guides must be immediately available to the pilot at all times: Operators Guide, Collins Pro Line 21 Avionics System for the Hawker Beechcraft King Air, P/N 523-0790065-003117, dated August 15, 2003 or later revision; Operators Guide, Collins FMS-3000 Flight Management System for the Hawker Beechcraft King Air B200/B300, P/N 523-0790066-003117, dated August 15, 2003 or later revision; Pilot's Guide for the Electronic Standby Instrument System, Model GH-3100, Goodrich Avionics Systems or L3 Communications P/N TP-560, Rev (-), or later revision; Pilot's Guide for the Skywatch HP Traffic Alert/Advisory System, Model SKY899, Goodrich or L3 Communications PN 009-11901-001, Rev A, dated August 29, 2001, or later revision (if installed); MK VI and MK VIII Enhanced Ground Proximity Warning System Pilot's Guide, Honeywell P/N 060-4314-0000, Rev B, dated February, 2002, or later revision.
2.	Operating in the composite mode is limited to training and display failure conditions.
3.	This POH/AFM is approved for use with Collins FMS-3000 software version SCID 832-4120-012 or later.
4.	The pilot's and copilot's Air Data Computers must be operative for takeoff.
5.	AHRS 1 and 2 must be operative for takeoff.
6.	The pilots PFD and MFD and copilot PFD must be installed and operational in the normal mode for takeoff.
7.	The MFD must be operational prior to engine start.

1.	During autopilot operations, a pilot must be seated at the controls with the seat belt and shoulder harness fastened.
2.	An autopilot preflight check must be conducted and found satisfactory prior to each flight on which the autopilot is to be used.
3.	The autopilot minimum engage height after takeoff is 400 feet AGL.
4.	The autopilot minimum use height during cruise is 1000 feet AGL.
5.	The autopilot minimum use height during approach is 79 feet AGL.
6.	Maximum airspeed for autopilot operation is unchanged from the airplane maximum airspeed (V_{mo}/M_{mo}).
7.	The autopilot and yaw damper must not be used for takeoff and landing.
8.	Operation of the autopilot system with a pitch trim malfunction is prohibited.
9.	Do not manually override the autopilot during normal flight.
10.	The maximum coupled intercept angles are: Nav and Localizer - Less than 90°; Back Course - 70°.

WARNING

Overriding the autopilot in pitch does not cancel the autopilot automatic trim. If a force is applied to the control column with the autopilot engaged, then automatic trim will run to oppose the applied force. This can lead to a severe out-of-trim condition during any phase of flight.

AVIONICS LIMITS — ENHANCED GROUND PROXIMITY WARNING SYSTEM (EGPWS)

1.	Navigation must not be predicated upon use of the Terrain (or Obstacle) Awareness Display. The terrain display is intended to serve as a situational awareness tool only, and may not provide the accuracy and/or fidelity on which to solely base terrain avoidance maneuvering.
2.	The Terrain Awareness and Display (TAD) must be inhibited by selecting the TERR INHIBIT switch when within 15 nm of takeoff, approach, or landing at an airport not contained in the EGPWS Airport Database. Refer to Honeywell document 060-4326-0000 for airports contained in the database. (See "Database" in www.EGPWS.com .)
3.	When the FMS is operating in the DR mode, the Terrain Awareness alerting must be inhibited by selecting the TERR INHIB switchlight.

1.	IFR enroute and terminal navigation is prohibited unless the pilot verifies either the currency of the database or the accuracy of each selected waypoint and navaid by reference to current approved data.
2.	The FMS position must be checked for accuracy prior to use as a means of navigation.
3.	During periods of dead reckoning, the FMS shall not be used for navigation.
4.	All FMS navigation operations (with AHRS installed) are approved within the U.S. National Airspace System and latitudes bounded by 60° North latitude and 60° South latitude at any longitude. The WGS-84 coordinate reference datum in accordance with the criteria of AC 20-130A, AC 91-49 CHG 1, and AC 120-33 must be used. Satellite navigation data is based upon use of only the Global Positioning System (GPS) operated by the United States. The FMS is not approved and does not operate above 73° North or 60° South latitude. Operation to 70° North latitude is acceptable East of 75° West longitude and West of 120° West longitude. Operation to 73° North latitude is acceptable East of 50° West longitude and West of 70° East longitude.
5.	FMS based instrument approaches must be accomplished in accordance with approved instrument approach procedures that are retrieved from the FMS-3000 database. GPS instrument approaches must be conducted with GPS integrity monitoring (RAIM) and must be available by the Final Approach Fix. During FMS instrument approaches, the FMS annunciator APPR (green) or the FMS annunciator GPS APPR (green) must be displayed on the PFD at the FAF to indicate that the FMS is in the Approach Mode. Use of FMS guidance for conducting instrument approach procedures is prohibited with the FMS annunciator NO APPR (white or amber) displayed on the PFD. Accomplishment of ILS, LOC, LOC-BC, LDA and SDF approaches are not authorized utilizing the FMS from the FAF to the MAP. When an alternate airport is required by the applicable rules, it must be served by an approach based on other than GPS navigation, the airplane must have operational equipment capable of using that navigation aid, and the required navigation aid must be operational. FMS based approaches that are retrieved from the navigation database with an approach name of RNVxxx or VORxxx may be flown provided the VHF navigation receiver is tuned to the reference facility. IFR Non-Precision Approach is limited to published approaches within the US National Airspace System. Approaches to airports in other airspace are not approved unless authorized by the appropriate governing authority.

6.	Provided the FMS is receiving adequate usable sensor inputs, it has been demonstrated capable of, and has been shown to meet the accuracy specifications for: a. VFR/IFR enroute RNAV operation in accordance with the criteria of AC 20-130A. b. VFR/IFR enroute, terminal, and approach operations. c. GPS primary means of navigation in oceanic and remote airspace in accordance with AC 20-130A and FAA Notice 8110.60 if the following conditions are met: 1) Dual FMS-3000 Flight Management Systems and dual GPS-4000A receivers are installed and operable; Or 2) A single FMS-3000 Flight Management System and a single GPS-4000A receiver are installed and operable when operating along routes approved for single GPS navigation. And, in either case, the Collins Prediction Program, "Predeparture GPS Coverage Predictor (FDE Tool), P/N 832-3443-005, or equivalent, has been run with satisfactory results. Compliance with the above does not constitute operational approval to operate in oceanic and remote airspace. d. Operation in European B-RNAV airspace in accordance with AC 90-96, AC 20-130A, and JAA Temporary Guidance Material, Leaflet No. 2, Rev. 1. This does not constitute an operational approval to operate in such airspace. e. Minimum Navigation Performance Specification (MNPS) airspace for each of the following configurations. 1) When dual FMS-3000 Flight Management Systems and dual GPS-4000A GPS receivers are installed and operable. 2) When a single FMS-3000 Flight Management System and a single GPS-4000A receiver are installed and operable when operating along routes approved for single GPS navigation. Availability of the above equipment does not constitute operational approval to operate in MNPS airspace.
7.	Use of FMS to capture and track a DME arc outside the published end points is prohibited.
8.	Fuel management parameters are advisory only and must not replace the primary fuel quantity indications.

AVIONICS LIMITS — ATTITUDE HEADING REFERENCE SYSTEM (AHRS)

POH 2-20

Operation within the U.S. National Airspace System and latitudes bounded by 60° North latitude and 60° South latitude at any longitude are approved. Operation to 70° North latitude is acceptable East of 75° West longitude and West of 120° West longitude. Operation to 80° North latitude is acceptable East of 50° West longitude and West of 70° East longitude. Operation to 70° South latitude is acceptable except for the 45° between 120° East and 165° East longitude.

1.	When using the IFIS-5000, the Collins IFIS-5000 Integrated Flight Information System Operator's Guide, Document 523-0806347-003117, dated 7 June 2005, or later revision, must be available to the flight crew.
2.	When using Universal Weather, the Collins Corporate Datalink System CMU-4000 / RIU-40X0 Operator's Guide, Document 523-07090499, dated 14 July 2003, or later revision, must be available to the flight crew.
3.	The IFIS-5000 system provides supplemental airplane situational awareness information. Its use as a means for navigational or weather avoidance is not approved.
4.	Display ranges less than 50 miles must not be used when the GEO-POL data is selected for display. At shorter ranges, the situational picture provided by this data (i.e. rivers, lakes, oceans and political boundaries) may appear erroneous.
5.	The use of the airplane symbol on the Electronic Charts is prohibited for navigation.
6.	The database utilized for the Electronic Charts must incorporate the current update cycle.
7.	When using the Electronic Charts, a paper equivalent (or electronic flight bag) must be on board and accessible to the pilot.
8.	Data-linked graphical weather (either XM Radio or Universal Weather) is for informational purposes and should not be used for tactical decision making. By its nature, graphical weather is delayed from real time weather conditions. Use the aircraft's primary weather radar for all tactical decisions about weather avoidance.
9.	Digital Automatic Terminal Information Service (available only when Universal Weather is installed): The flight crew shall verify that the D-ATIS numeric and alpha altimeter setting values are identical, e.g., "...ALTIMETER SETTING 29.95 (TWO NINER NINER FIVE)..." If the D-ATIS numeric and alpha altimeter setting values are different, the flight crew must not accept the D-ATIS Altimeter Setting nor rely on any other D-ATIS information.

AVIONICS LIMITS — TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS I) (IF INSTALLED)

POH 2-21

1.	The pilot must not maneuver the airplane based only on the traffic display. The traffic display is intended to assist in visually locating traffic and lacks the resolution necessary for use in evasive maneuvering.
2.	If the pilot is advised by Air Traffic Control to disable the altitude reporting function of the transponder, the Traffic Advisory System must be turned off.

AVIONICS LIMITS — TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS II) (IF INSTALLED)

POH 2-21

1.	Pilots are authorized to deviate from their current ATC clearance to the extent necessary to comply with a TCAS II resolution advisory (RA).
2.	If the pilot is advised by Air Traffic Control to disable the altitude reporting function of the transponder, the TCAS II System must be placed in STBY.

AVIONICS LIMITS — VNAV

POH 2-21

1.	When using the VNAV system, the barometric altimeters must be used as the primary altitude reference for all operations.
2.	Use of VNAV guidance for a V-MDA approach that includes a step-down fix between the final approach fix and missed approach point is prohibited.
3.	VNAV altitudes must be displayed on the MFD map page or CDU legs page when utilizing VNAV for flight guidance.
4.	Use of VNAV while conducting a missed approach procedure is prohibited.
5.	Provided the FMS is receiving adequate usable sensor inputs, it has been demonstrated capable of and has been shown to meet the accuracy specifications of VNAV operation in accordance with AC 20-129. Such VNAV approaches must be flown utilizing either the flight director or autopilot.
6.	VNAV approach guidance to a DA is not authorized if the reported surface temperature is below the Baro-VNAV minimum temperature limitation specified on the applicable RNAV approach procedure chart.

NOTE

Barometric VNAV guidance during approach including the approach transition, final approach segment and the missed approach procedure is not temperature compensated. Operating at uncompensated minimum IFR altitudes will not provide expected terrain and obstacle clearance for temperature below ISA.

AVIONICS LIMITS — WEATHER RADAR

POH 2-22

WARNING

The area within the scan arc and within 2 feet of an operating TWR-852 system can be a hazardous area. Do not operate the systems in any mode other than standby (STBY) or test (TEST) when the antenna might scan over personnel within that range. Turning the transmitter on while inside the hangar is not advisable.

OTHER LIMITATIONS — STRUCTURAL LIMITATIONS

POH 2-22

Refer to Chapter Four of the Super King Air 200 Series Maintenance Manual for structural limitations.

1.	All cargo shall be properly secured by an FAA-approved cargo restraint system.
2.	Cargo must be arranged to permit free access to all exits and emergency exits.

LIMITATIONS WHEN ENCOUNTERING SEVERE ICING CONDITIONS (REQUIRED BY FAA AD 96-09-13)

POH 2-23

WARNING

Severe icing may result from environmental conditions outside of those for which the airplane is certificated. Flight in freezing rain, freezing drizzle, or mixed icing conditions (supercooled liquid water and ice crystals) may result in ice build-up on protected surfaces exceeding the capability of the ice protection system, or may result in ice forming aft of the protected surfaces. This ice may not be shed using the ice protection systems, and may seriously degrade the performance and controllability of the airplane.

1.	During flight, severe icing conditions that exceed those for which the airplane is certificated shall be determined by the following visual cues. If one or more of these visual cues exists, immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the icing conditions. a. Unusually extensive ice accumulation of the airframe and windshield in areas not normally observed to collect ice. b. Accumulation of ice on the upper surface of the wing, aft of the protected area. c. Accumulation of ice on the engine nacelles and propeller spinners farther aft than normally observed.
2.	Since the autopilot, when installed and operating, may mask tactile cues that indicate adverse changes in handling characteristics, use of the autopilot is prohibited when any of the visual cues specified above exist, or when unusual lateral trim requirements or autopilot trim warnings are encountered while the airplane is in icing conditions.
3.	All wing icing inspection lights must be operative prior to flight into known or forecast icing conditions at night. [NOTE: This supersedes any relief provided by the Master Minimum Equipment List (MEL).]

8. ICE AND RAIN PROTECTION

ICING LIMITATIONS

POH 2-15

Minimum Ambient Temperature for Operation of Deicing Boots	-40°C
Minimum Airspeed for Sustained Icing Flight	140 Knots

Sustained Flight in icing conditions with flaps extended is prohibited except for approach and landings.

ENGINE ANTI-ICE, LEFT and RIGHT, shall be ON for operation in ambient temperatures of +5°C or below when flight free of visible moisture cannot be assured.

ENGINE ANTI-ICE, LEFT and RIGHT, shall be OFF for all takeoff and flight operations in ambient temperatures of above +15°C.

APPROVED AIRPLANE DEICING/ANTI-ICING FLUIDS

POH 2-16

ISO 11075	Type I
ISO 11078	Type II
SAE AMS 1424	Type I
SAE AMS 1428	Type II
SAE AMS 1428	Type III
SAE AMS 1428	Type IV

9. WINDSHIELD AND WINDOWS

CRACKED OR SHATTERED WINDSHIELD

POH 2-24

The following limitations apply when continued flight is required with a cracked outer or inner ply of the windshield.

1.	Continued flight with a cracked windshield is limited to 25 flight hours.
2.	Windshields which have a shattered inner ply will have numerous cracks which will obstruct forward vision and may produce small particles or flakes of glass that can break free of the windshield and interfere with the crew's vision. These windshields must be replaced prior to the next flight unless a special flight permit is obtained from the local FAA Flight Standards District Office.
3.	Crack(s) must not impair visibility.
4.	Crack(s) must not interfere with the use of windshield wipers for flights requiring the use of the wipers.
5.	Windshield Anti-ice must be operational for flights in icing conditions.
6.	The following placard must be installed in plain view of the pilot: MAXIMUM AIRPLANE ALTITUDE IS LIMITED TO 25,000 FEET. CABIN ΔP MUST BE MAINTAINED BETWEEN 2.0 AND 4.6 PSI DURING FLIGHT

Windshields that have cracks in both the inner and outer plies must be replaced prior to the next flight unless a special flight permit is obtained from the local FAA Flight Standards District Office.

The following limitations apply when continued flight is required with a cracked outer or inner ply in any side window. These limitations do not apply to minor compression-type chips (Clamshell) which may occur on the milled edge of cockpit side windows. Refer to the maintenance manual for the disposition of such chips.

1.	Continued flight is limited to 25 flight hours.
2.	Flights must be conducted with the cabin depressurized. The following placard must be installed in clear view of the pilot: PRESSURIZED FLIGHT IS PROHIBITED DUE TO A CRACKED SIDE WINDOW. CONDUCT FLIGHT WITH THE CABIN PRESSURE SWITCH IN THE DUMP POSITION.

10. PLACARDS

PLACARDS

On Overhead Panels in Pilot's Compartment	OPERATION LIMITATIONS — THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS MARKINGS AND MANUALS. NO ACROBATIC MANEUVERS INCLUDING SPINS ARE APPROVED. THIS AIRPLANE APPROVED FOR VFR, IFR, & DAY & NIGHT OPERATION & IN ICING CONDITIONS. CAUTION — STALL WARNING IS INOPERATIVE WHEN MASTER SWITCH IS OFF. STANDBY COMPASS IS ERRATIC WHEN WINDSHIELD ANTI-ICE AND/OR AIR-CONDITIONER AND/OR HIGH VENT BLOWER AND/OR LANDING LIGHTS ARE ON.
On Overhead Panels in Pilot's Compartment (Airspeeds)	AIRSPEEDS (IAS) — MAX GEAR EXTENSION 181 KNOTS; MAX GEAR RETRACT 163 KNOTS; MAX GEAR EXTENDED 181 KNOTS; MAX APPROACH FLAP 200 KNOTS; MAX FULL DOWN FLAP 157 KNOTS; MAX MANEUVERING 181 KNOTS
On Pilot's Window Sill	TURN OFF STROBE LIGHTS WHEN TAXIING IN VICINITY OF OTHER AIRCRAFT OR DURING FLIGHT THROUGH FOG OR CLOUDS. STD POSITION LIGHTS TO BE TURNED ON FOR ALL NIGHT OPERATIONS.
On Pilot's and Copilot's Window Sills	WARNING — DO NOT SMOKE WHILE OXYGEN IS IN USE. WITH DILUTER-DEMAND CREW MASK FLOW STOPS WHEN BREATHING STOPS.

PLACARDS (continued)

POH 2-26

On Upper Fuel Control Panel	SEE MANUAL FOR FUEL CAPACITY
Center on Pedestal	PULL ON — SYSTEM READY / OXYGEN / PASSENGER MANUAL DROP OUT
On Curved Pedestal Adjacent to Power Levers	CAUTION — REVERSE ONLY WITH ENGINES RUNNING
On Pedestal Near Cabin Pressurization Controller	WARNING — DE-PRESSURIZE CABIN BEFORE LANDING

PLACARDS (continued)

POH 2-27

On Floor Aft of Pedestal	LANDING GEAR ALTERNATE EXTENSION — 1. REMOVE HANDLE FROM SECURING CLIP AND PUMP. 2. AFTER ALL THREE GREEN INDICATOR LIGHTS ARE ILLUMINATED AND FURTHER RESISTANCE IS FELT, SECURE HANDLE IN STOWED POSITION.
Below Latch on Forward Side of Forward and Aft Partitions (B200GT); Below Latch on Forward Side of Forward Partition and on Aft Side of Aft Partition (B200CGT)	KICK HERE FOR EMERGENCY EVACUATION
Below Right Circuit Breaker Panel	PILOT'S STATIC AIR SOURCE — NORMAL / ALTERNATE — SEE FLIGHT MANUAL PERFORMANCE SECTION FOR INSTR CAL ERROR

PLACARDS (continued)

POH 2-28

On Cabin Side of Forward Partition and Both Sides of Aft Partition	[No-smoking symbol and fasten-seat-belt symbol placard]
On Inside Surface of Each Oxygen Access Door	WARNING - DO NOT SMOKE WHILE OXYGEN IS IN USE — TO USE: - PULL LANYARD PIN - DON MASK

PLACARDS (continued)

POH 2-29

Below Emergency Exit Handle on Exit Lock Lever (Visible only when Lever is in Locked Position) (B200GT)	MUST BE UNLOCKED BEFORE TAKEOFF / LOCKED / EXIT LOCK
On Emergency Exit Handle	EXIT - PULL
On Cabinet Aft of Couch	AFT COUCH LOCATION NOT TO BE OCCUPIED DURING TAKEOFF OR LANDING
On Inside Bottom of Couch Drawer (airplanes equipped with a one-place couch)	COUCH LIMITATIONS — MAX WT OF DRAWER CONTENTS 30 LBS PER DRAWER
On Shoulder Harness Assembly For All Cabin Chairs	SHOULDER HARNESS MUST BE WORN DURING TAKE-OFF AND LANDING WITH SEAT IN OUTBD POSITION, SEAT BACK UPRIGHT AND HEADREST FULLY EXTENDED

PLACARDS (continued)

POH 2-30

On Tables When Installed	STOW BEFORE TAKE-OFF AND LANDING
On Outside Surface of First Aid Oxygen Access Door	FIRST AID OXYGEN ——— PULL
On Inside Surface of First Aid Oxygen Access Door	WARNING - DO NOT SMOKE WHILE OXYGEN IS IN USE — TO USE: - TURN VALVE ON - DON MASK — NOTE: CREW SYS MUST BE ON
On Aft Compartment Sidewall Adjacent to Fold-up Seats	FASTEN SHOULDER HARNESS AND SEAT BELT DURING TAKEOFF AND LANDING

PLACARDS (continued)

POH 2-31

On Center of Aft Bulkhead (When Not Equipped with Fold-up Seats)	COMPARTMENT CAPACITY 550 LBS — THIS INCLUDES BAGGAGE AND/OR EQUIPMENT AND/OR OPTIONAL FURNISHINGS — SEE WEIGHT AND BALANCE SECTION OF FLIGHT MANUAL FOR LOADING INSTRUCTIONS
On Center of Aft Bulkhead (When Equipped with Fold-up Seats)	COMPARTMENT CAPACITY — TOTAL COMPARTMENT CAPACITY (INCLUDING BAGGAGE AND/OR PASSENGER) NOT TO EXCEED 510 POUNDS — SEE WEIGHT AND BALANCE SECTION OF FLIGHT MANUAL FOR LOADING INSTRUCTIONS
Below Emergency Exit Window	SEAT MUST BE LOCATED IN FULL FWD AND FULL OUTBD POSITION FOR TAKE OFF AND LANDING — FWD ←
Above Coat Rod (Aft Compartment)	CLOTHING ONLY

PLACARDS (continued)

POH 2-32

Inside Airstair Door Behind Handle (B200GT)	CAUTION — DO NOT OPEN DOOR WHEN CABIN IS PRESSURIZED. CAUTION — DO NOT ATTEMPT TO CHECK SECURITY OF CABIN DOOR BY MOVING DOOR HANDLE UNLESS CABIN IS DEPRESSURIZED AND AIRCRAFT IS ON THE GROUND. PUSH BUTTON & TURN HANDLE TO OPEN DOOR. (OPEN / LATCH / LOCK)
Inside Airstair Door Behind Handle (B200CGT)	CAUTION — DO NOT OPEN OR CHECK SECURITY BY MOVING DOOR HANDLE WHILE AIRCRAFT IS PRESSURIZED AND/OR IN FLIGHT. PUSH BUTTON & TURN HANDLE TO OPEN DOOR. (OPEN / LOCK)
Inside Airstair Door On Folding Step (B200GT and B200CGT)	LIFT STEP TO INSPECT DOOR LOCK

PLACARDS (continued)

POH 2-33

Inside Airstair Door Between Folding Steps (B200GT and B200CGT)	WHEN HANDLE IS IN LOCKED POSITION-ARM SHOULD BE AROUND PLUNGER AS SHOWN
On Escutcheon Near Upper Access Cover of Cargo Door (B200CGT)	LOAD CARGO PER PILOT'S OPERATING HANDBOOK

On Upper Access Cover of Cargo Door (B200CGT)	CAUTION — DO NOT OPEN OR CHECK SECURITY BY MOVING DOOR HANDLE WHILE AIRCRAFT IS PRESSURIZED AND/OR IN FLIGHT
On Upper Access Cover of Cargo Door (B200CGT) (label)	CARGO DOOR LATCH HANDLE ACCESS
On Cargo Door Upper Latch Handle (B200CGT)	PUSH TO RELEASE
On Lower Access Cover of Cargo Door (B200CGT)	CARGO DOOR LOWER LATCH HANDLE ACCESS

PLACARDS (continued)

Inside Lower Access Cover of Cargo Door (B200CGT)	CAUTION — DO NOT OPEN OR CHECK SECURITY BY MOVING DOOR HANDLE WHILE AIRCRAFT IS PRESSURIZED AND/OR IN FLIGHT — OPEN ↔ CLOSED — LIFT HOOK TO RELEASE HANDLE
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11. KINDS OF OPERATION

KINDS OF OPERATIONS

The Super King Air B200GT and B200CGT are approved for the following types of operations when the required equipment, as shown in the KINDS OF OPERATIONS EQUIPMENT LIST, is installed and operable.

1.	VFR Day
2.	VFR Night
3.	IFR Day
4.	IFR Night
5.	Icing Conditions

KINDS OF OPERATIONS EQUIPMENT LIST

This airplane may be operated in day or night VFR, day or night IFR, and icing conditions when the required systems and equipment are installed and operable.

The following equipment list identifies the systems and equipment upon which type certification for each kind of operation was predicated. The systems and equipment listed must be installed and operable for the particular kind of operation indicated unless: 1. The airplane is approved to be operated in accordance with a current Minimum Equipment List (MEL) approved by the FAA. or; 2. An alternate procedure is provided in the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual for the inoperative state of the listed system or equipment and all limitations are complied with.

Numbers in the Kinds of Operations Equipment List refer to quantities required to be operative for the specified condition. The list does not include all equipment that may be required by specific operating rules. It also does not include components obviously required for the airplane to be airworthy, such as wings, empennage, engine, etc.

SYSTEM and/or EQUIPMENT	VFR DAY	VFR NIGHT	IFR DAY	IFR NIGHT	ICING CONDITION S	REMARKS and/or EXCEPTION S
ELECTRICAL POWER						
1. Battery	1	1	1	1	1	
2. Standby Battery (ESIS)	1	1	1	1	1	
3. Battery Ammeter	1	1	1	1	1	
4. DC Generator	2	2	2	2	2	
5. L & R DC GEN Annunciators	2	2	2	2	2	
6. DC Load Meter	2	2	2	2	2	
ENGINE INDICATIONS						
1. Multifunctional Display (MFD)	1	1	1	1	1	
ENGINE OIL						
1. Chip Detector System Including L & R CHIP DETECT Annunciators	2	2	2	2	2	
2. Oil Pressure Indicator in MFD	2	2	2	2	2	
3. Oil Temperature Indicator in MFD	2	2	2	2	2	
4. L & R OIL PRESS Annunciator	2	2	2	2	2	
ENVIRONMENTAL						
1. L & R BL AIR FAIL Annunciator	2	2	2	2	2	
2. Bleed Air Shutoff Valve	2	2	2	2	2	
3. ALT WARN Annunciator (Cabin)	1	1	1	1	1	
4. Cabin Rate of Climb Indicator	1	1	1	1	1	
5. Outflow Valve/Safety Valve	2	2	2	2	2	
6. Pressurization Controller	1	1	1	1	1	
7. Differential Pressure/Cabin Altitude Indicator	1	1	1	1	1	
8. DUCT OVERTEMP Annunciator	1	1	1	1	1	
FIRE PROTECTION						
1. Engine Fire Detector System and Annunciators	2	2	2	2	2	
FLIGHT CONTROLS						
1. Flap Position Indicator	1	1	1	1	1	
2. Flap System	1	1	1	1	1	

SYSTEM and/or EQUIPMENT	VFR DAY	VFR NIGHT	IFR DAY	IFR NIGHT	ICING CONDITION S	REMARKS and/or EXCEPTION S
3. Trim Tab Position Indicator (Rudder, Aileron, Elevator)	3	3	3	3	3	
4. Stall Warning System	1	1	1	1	1	
5. Yaw Damp	1	1	1	1	1	

KINDS OF OPERATIONS EQUIPMENT LIST (continued)

POH 2-38

SYSTEM and/or EQUIPMENT	VFR DAY	VFR NIGHT	IFR DAY	IFR NIGHT	ICING CONDITION S	REMARKS and/or EXCEPTION S
FLIGHT INSTRUMENTS						
1. Primary Flight Display (PFD)	2	2	2	2	2	
2. Magnetic Compass	1	1	1	1	1	
3. Electronic Standby Instrument System (ESIS)	1	1	1	1	1	
4. AHRS	2	2	2	2	2	
5. Air Data Computer (ADC)	2	2	2	2	2	
6. Outside Air Temperature	1	1	1	1	1	
FUEL						
1. Engine Driven Boost Pump	2	2	2	2	2	
2. Fuel Crossfeed System including Annunciator	1	1	1	1	1	
3. Standby Electric Fuel Pump	2	2	2	2	2	
4. FUEL PRESS Annunciator	2	2	2	2	2	
5. Fuel Quantity Indicating System including Annunciator	2	2	2	2	2	
6. Firewall Fuel Shutoff System including Annunciators	2	2	2	2	2	
7. Jet Transfer Pump	2	2	2	2	2	
8. Motive Flow Valve	2	2	2	2	2	
ICE AND RAIN PROTECTION						
1. Alternate Static Air System	0	0	1	1	1	
2. Engine Auto-Ignition System including Annunciators	2	2	2	2	2	
3. Engine Anti-Ice System including Annunciators	2	2	2	2	2	
4. Heated Fuel Vent	0	0	0	0	2	
5. Heated Windshield (Left)	0	0	0	0	1	
6. Pitot Heat System including Annunciators	0	0	2	2	2	
7. Pneumatic Pressure Indicator	0	0	1	1	1	
8. Propeller Deicer System	0	0	0	0	1	
9. Stall Warning Heat (Lift Transducer and Mounting Plate)	0	0	0	0	1	
10. Surface Deicer System	0	0	0	0	1	

SYSTEM and/or EQUIPMENT	VFR DAY	VFR NIGHT	IFR DAY	IFR NIGHT	ICING CONDITION S	REMARKS and/or EXCEPTION S
11. Wing Ice Light (Left)	0	0	0	0	1	

KINDS OF OPERATIONS EQUIPMENT LIST (continued)

POH 2-39

SYSTEM and/or EQUIPMENT	VFR DAY	VFR NIGHT	IFR DAY	IFR NIGHT	ICING CONDITION S	REMARKS and/or EXCEPTION S
LANDING GEAR						
1. Landing Gear Position Lights	3	3	3	3	3	
2. Landing Gear Handle Light	1	1	1	1	1	
3. Landing Gear Aural Warning	1	1	1	1	1	
4. Landing Gear Hydraulic Power Pack	1	1	1	1	1	
5. HYD FLUID LOW Annunciator	1	1	1	1	1	
6. Alternate Landing Gear Extension System	1	1	1	1	1	
LIGHTS						
1. Cockpit and Instrument Lighting System	0	1	0	1	0	
2. DOOR UNLOCKED Annunciator	1	1	1	1	1	
3. Landing Lights	0	2	0	2	0	
4. Position Lights	0	3	0	3	0	
5. Anticollision Lights System	0	1	0	1	0	
OXYGEN						
1. Oxygen System	1	1	1	1	1	
PROPELLER						
1. Autofeather System including Annunciators	1	1	1	1	1	
2. Propeller Reversing System including Annunciators	2	2	2	2	2	
3. Propeller Governor Test Switch	1	1	1	1	1	
4. Propeller Overspeed Governor	2	2	2	2	2	
5. Propeller Low-Pitch Stop	2	2	2	2	2	
VACUUM SYSTEM						
1. Vacuum Gage	1	1	1	1	1	

12. V-SPEED DEFINITIONS (GENERAL REFERENCE)

Takeoff and Initial Climb

V-Speed	Name	Meaning
V1	Takeoff decision speed	Maximum speed at which a reject may be initiated; at or above it the takeoff must be continued.
Vr	Rotation speed	Speed at which the pilot rotates to raise the nose.
Vlof	Lift-off speed	Speed at which the aircraft first becomes airborne.
V2	Takeoff safety speed	Target climb speed with the critical engine inoperative.
V2min	Minimum takeoff safety speed	Lowest allowable V2 .
Vef	Engine-failure speed	Speed at which the critical engine is assumed to fail (certification).
Vmu	Minimum unstick speed	Slowest speed at which the aircraft can safely lift off.
Vfto	Final takeoff speed	Speed in the final takeoff / climb segment.

Climb Performance

V-Speed	Name	Meaning
Vx	Best angle of climb	Most altitude gained per distance over the ground.
Vy	Best rate of climb	Most altitude gained per unit of time.
Vxse	Best angle, single-engine	Vx with one engine inoperative (multiengine).
Vyse	Best rate, single-engine	Vy with one engine inoperative — the blue line .

Stall Speeds

V-Speed	Name	Meaning
Vs	Stall speed	Minimum steady flight speed at which the aircraft is controllable.
Vs0	Stall speed, landing configuration	Stall with full flaps and gear down — bottom of the white arc.
Vs1	Stall speed, clean configuration	Stall in a specified (usually clean) configuration — bottom of the green arc.
Vsr	Reference stall speed	Certification reference stall speed.
Vsse	Safe single-engine speed	Minimum speed for intentionally cutting one engine.
Vsw	Stall warning speed	Speed at which the stall warning activates.

Airspeed Indicator Limit Speeds

V-Speed	Name	Meaning
Va	Design maneuvering speed	Maximum speed for full or abrupt control inputs without overstress.
Vno	Maximum structural cruising speed	Normal operating limit — top of the green arc, start of the yellow arc.
Vne	Never-exceed speed	The red line — never exceed.
Vfe	Maximum flap-extended speed	Top of the white arc.
Vle	Maximum landing-gear-extended speed	Maximum speed flying with the gear down.
Vlo	Maximum landing-gear-operating speed	Maximum speed to extend or retract the gear.
Vmo / Mmo	Maximum operating limit speed / Mach	Maximum operating airspeed and Mach number.

Approach and Landing

V-Speed	Name	Meaning
Vref	Landing reference speed	Threshold-crossing speed, typically 1.3 x Vs0 .
Vapp	Approach speed	Target speed on final approach.
Vbg	Best glide speed	Speed for maximum glide distance (best lift-to-drag ratio).

Multiengine Control

V-Speed	Name	Meaning
Vmc / Vmca	Minimum control speed (airborne)	Minimum speed to maintain control with the critical engine inoperative — red radial line.
Vmcg	Minimum control speed (ground)	Minimum control speed on the takeoff roll.
Vmcl	Minimum control speed (landing)	Minimum control speed in the landing configuration.
Vmbe	Maximum brake energy speed	Maximum speed from which the brakes can absorb a rejected takeoff.

Design and Certification Speeds

V-Speed	Name	Meaning
Vb	Design gust-intensity speed	Turbulence-penetration design speed.
Vc	Design cruising speed	Certification design cruising speed.
Vd / Vdf	Design / demonstrated diving speed	Certification dive speed.
Vf	Design flap speed	Certification design flap speed.
Vh	Maximum level-flight speed	Maximum speed in level flight at maximum continuous power.

NOTE

These are certification design speeds. They are rarely referenced in day-to-day operations.

Airspeed Indicator Colour Markings

V-Speed	Name	Meaning
White arc	Flap operating range	Vs0 to Vfe .
Green arc	Normal operating range	Vs1 to Vno .
Yellow arc	Caution range	Vno to Vne — smooth air only.
Red line	Never exceed	Vne .
Blue line	Best rate, single-engine	Vyse (multiengine).
Red radial	Minimum control speed	Vmc (multiengine).

NOTE

The colour markings are defined by the V-speeds above, so a change to a limitation speed changes the arc.