
Limitations

Table of Contents

General Limitations	3-3
Cabin Emergency Exit	3-3
Cockpit Placards	3-3
Cabin Placards	3-3
Engine Instrument Markings	3-3
Ground Handling	3-3
Servicing	3-4
Operational Limitations	3-5
Airspeed Limitations	3-5
Number of Occupants	3-7
Weight/Balance Limitations	3-7
Maneuvering Load Factor Limitations	3-9
Takeoff	3-10
Enroute	3-11
Landing	3-11
Kinds of Operation	3-12
All Operations	3-12
System Limitations	3-17
Avionics System	3-17
Electrical System	3-25

CAE SimuFlite

Environmental	3-27
Flight Controls	3-27
Fuel System.	3-28
Ice Protection Limitations.	3-29
Hydraulic System Limitations.	3-30
JT15D-5 Power Plant Operating Limitations	3-31
Oxygen System Limitations	3-36
Stall Warning	3-37
Gear and Nitrogen Bottle.	3-38
Fire Extinguisher	3-38

General Limitations

Cabin Emergency Exit

- The internal cabin emergency exit locking pin, if fitted, must be removed and stowed before the commencement of each flight.

Cockpit Placards

- The flight compartment placards illustrate typical flight compartment placards pertinent to operations and safety of flight. For location and description of the placards, refer to Section II of the Pilot's Operating Manual.

Cabin Placards

- The passenger compartment placards illustrate typical placards which are of a limiting nature. For location and description of the placards, refer to Section II of the Pilot's Operating Manual.

Engine Instrument Markings

Red Radial Mark MAXIMUM OR MINIMUM LIMIT

Yellow Arc CAUTIONARY RANGE PERMISSIBLE
FOR SHORT DURATION OR IN
SPECIAL CIRCUMSTANCES

Green Arc NORMAL OPERATING RANGE

Ground Handling

- Always ensure the tow pin has been removed before any towing procedures are carried out.

- Always pull or push the towbar horizontally to keep the weight on the nose wheel for positive steering action. Do not lift the towbar.
- The minimum towing radius is approximately 15% less than the braked taxi-turning radius. For further details, refer to the Beechjet 400A Maintenance Manual.

Servicing

The following servicing procedures will help maintain the airplane.

Tires

- Maintain tire pressure to 125 \pm 5 PSI for the main landing gear tires and 120 \pm 5 PSI for the nose tire.

NOTE: Inflate tires with nitrogen.

Window Cleaning

- Never attempt to clean windows when dry. Flush the surface with clean water or a mild soap solution, then rub lightly with a grit-free soft cloth, sponge or chamois and dry. To remove stubborn grease and oil deposits, use Naptha TT-N-95A Type II as a detergent and rinse with clean water; avoid prolonged rubbing.

NOTE: Do not use ammonia based cleaners.

Operational Limitations

Airspeed Limitations

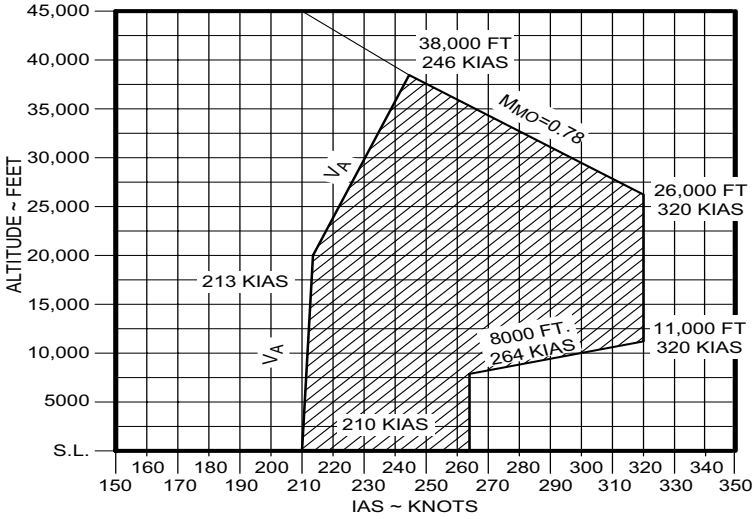
This airplane complies with FAR 25 and FAR 36. Operations in compliance with the limitations presented in this section and in the applicable supplements in Section 7 are required by Federal Aviation Regulations.

Speeds shown are Knots of Indicated Airspeed (KIAS) or Indicated Mach (M_I) as appropriate:

V_{MO} (S.L. to 8,000 ft)	264
V_{MO} (8,000 to 11,000 ft)	264 to 320 (1)
V_{MO} (11,000 to 26,000 ft)	320
M_{MO} (above 26,000 ft)	0.78
V_A	SEE AIRSPEED LIMITATIONS GRAPH
V_{FE}/V_{FO} (Flaps 10 Degrees and 20 Degrees)	200
V_{FO} (Flaps 30 Degrees)	170
V_{FE} (Flaps 30 Degrees)	165
V_{LE}/V_{LO} (Normal Operation)	200
V_{LO} (Emergency Operation)	150
V_{SB}	NO LIMIT
M_{SB}	NO LIMIT
V_{MCA} (Flaps 0 Degrees)	96
V_{MCA} (Flaps 10 Degrees and 20 Degrees)	89
V_{MCG} (Flaps 0 Degrees, 10 Degrees and 20 Degrees)	88
V_{WW} (if installed)	200

V_{TIRE} 165 (2)

- (1) Linear variation between points shown.
- (2) Stated in terms of true speed on the ground.



B4CRH-LM001i

Figure 3-1; Airspeed Limitations Graph

Number of Occupants

Flight Crew

- The minimum crew is one pilot and one copilot.

Passengers

- The total number of passengers carried shall not exceed nine (9), nor that for which approved seating accommodation is provided.

Weight/Balance Limitations

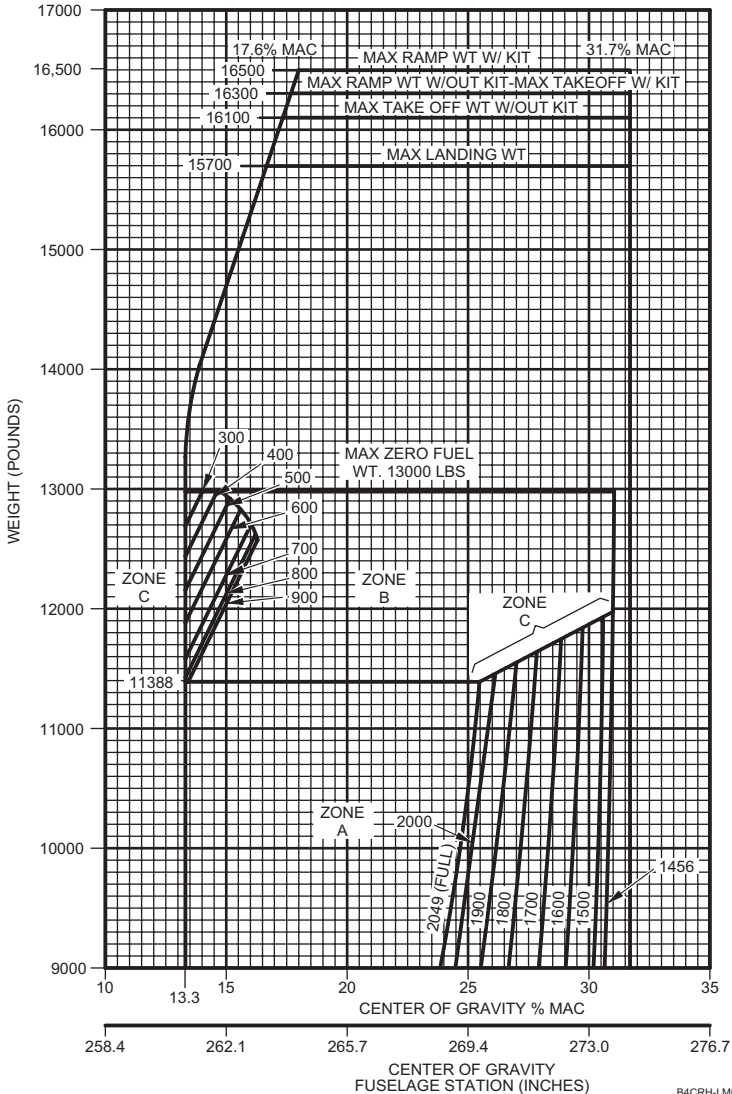
Center of Gravity Limitations

- The airplane weight and center of gravity (CG) for all flight and ground operations must be maintained within the applicable limits. The flight limits (gear up or down) are automatically complied with when the airplane, loaded to Zero Fuel Weight (ZFW), is within the zero fuel envelope with the landing gear down.

Compartment Loading Limitations

- The aircraft must be loaded in accordance with the Aircraft Weight and Balance Manual and as placarded in the baggage/stowage compartments.

FUSELAGE FUEL IS RESTRICTED AS SPECIFIED FOR ZONES A, B AND C WITH FULL WING FUEL:
 ZONE A - ANY AMOUNT OF FUSELAGE FUEL UP TO FULL TANKS.
 ZONE B - THE DIFFERENCE BETWEEN ZFW AND 13,437 POUNDS MAY BE LOADED IN FUSELAGE TANKS
 ZONE C - FUSELAGE TANKS LIMITED TO THE VALUE SHOWN ON THE GUIDELINE APPROPRIATE ZFW LOCATION.
 KIT - REFERS TO RAYTHEON AIRCRAFT COMPANY KIT 128-5052



B4CRH-LM002I

Figure 3-2; Loading Envelope Graph

Weight Limitations

For aircraft modified by Raytheon Aircraft Company Kit 128-5052 and Hawker 400XP:

Maximum Taxiing (Ramp) Weight . 16,500 LB (7,484.40 KG)

Maximum Takeoff Weight 16,300 LB (7,393.68 KG)

For aircraft NOT modified by Raytheon Aircraft Company Kit 128-5052:

Maximum Taxiing (Ramp) Weight . 16,300 LB (7,393.68 KG)

Maximum Takeoff Weight 16,100 LB (7,302.96 KG)

NOTE: Perform an inspection as specified in Section 05-50-00 of the Beechjet 400/400A Maintenance Manual in the event of an overweight landing.

All aircraft:

Maximum Landing Weight. 15,700 LB (7,121.52 KG)

Maximum Zero Fuel Weight 13,000 LB (5,869.80 KG)

Cabin Floor Loading 65 LB/SQ FT

Cabin Baggage Compartment (without galley) 150 LB

Cabin Baggage Compartment (with galley) 100 LB

Aft Cabin Baggage Compartment 350 LB

Aft Cabin Baggage Compartment

Floor Loading 125 LB/SQ FT

External Aft Baggage Compartment 450 LB

External Aft Baggage

Compartment Floor Loading 100 LB/SQ FT

Maneuvering Load Factor Limitations

Flaps 0 Degrees -1.0 to 3.2 G

Flaps 10 Degrees, 20 Degrees and 30 Degrees 0 to 2.0 G

Maximum accelerations can limit the allowable angle of bank in turns and the severity of pull-up maneuvers.

Takeoff

- Maximum Takeoff Weight is limited by the most restrictive of the following:
 - 16,300 lbs for aircraft modified by Raytheon Aircraft Company Kit 128-5052 and Hawker 400XP;
16,100 lbs for aircraft NOT modified by Raytheon Aircraft Company Kit 128-5052.
 - Maximum Takeoff Weight to Achieve Takeoff Climb requirements in Section 5 of the AFM.
 - Maximum Takeoff Weight Limited by Maximum Brake Energy in Section 5 of the AFM.
 - Maximum Takeoff Weight for the runway available and ambient conditions shown on the Takeoff Speeds and Field Length tables and Correction graphs in Section 5 of the AFM.
- Performance data is provided in the AFM for the three different takeoff flap settings: 0 degrees, 10 degrees, and 20 degrees. Each setting provides performance advantages under different circumstances. In situations where the maximum takeoff weight is being limited by climb requirements, brake energy limits, or available runway length, use of a different takeoff flap setting may allow a higher takeoff weight.
- The Environmental Control System (ECS) can be turned OFF to increase available thrust during takeoff, thereby sometimes permitting higher takeoff weights. If ECS OFF takeoff procedures are used, it is mandatory that ECS OFF be used for approach and landing in the event of an emergency return to the departure airport. The combined selection of ECS OFF and Engine Anti-Ice ON is not permissible operation.
- Takeoffs under icing conditions shall be conducted with an airplane free of ice, frost, and wet snow that is adhering to the airframe. The presence of such accumulations may result in significant changes in the aerodynamic characteristics, drag, and stalling speed of the airplane, which would invalidate published performance data.
- Maximum fuel imbalance (T/O) 100 lbs.

Enroute

Maximum Operating Altitude45,000 FT

Ambient Air Temperature -65°C to ISA +35°C

Extension of gear, flaps or landing lights is prohibited above 20,000 feet.

Yaw DamperOPERABLE AND ON FOR FLIGHT
IN ICING CONDITIONS, OR
FLIGHT ABOVE 28,000 FT

Maximum fuel imbalance (ENROUTE)300 lbs.

Refrigeration Air

Conditioning OperationPROHIBITED ABOVE 18,000 FT

Landing

- Maximum Landing Weight is limited by the most restrictive of the following:
 - 15,700 lb.
 - Maximum Landing Weight to Achieve Approach Climb Requirements.
 - Maximum Landing Weight Limited by Maximum Brake Energy.
 - Maximum Landing Weight for the runway available and ambient conditions shown on the Landing Distance Graph.
- If ECS OFF procedures have been utilized for takeoff, it is mandatory that ECS OFF thrust settings be used for approach and landing climb in the event of an emergency return to the airport of departure.
- The landing weight limits under icing conditions consider the effects of a typical icing encounter on the airplane drag and flying capabilities. Selection of the ECS OFF thrust setting combined with Anti-Ice ON is prohibited.
- Maximum fuel imbalance . . . (LANDING)300 lbs.

Kinds of Operation

- This aircraft is certified in the Transport Category and is eligible for the following kinds of operation when the appropriate instruments and equipment required by the airworthiness and/or operating certificate are installed and approved and are in operable condition:
 - Day
 - Night
 - VFR
 - IFR
 - Known Icing Conditions.

The following operations are not authorized:

- Acrobatic Maneuvers
- Spins
- Takeoffs and landings from unprepared surfaces
- Not approved for ditching under FAR 25.801.

All Operations

- The trim system must be checked and operable prior to flight in accordance with the procedure in Section 4 of the AFM. The Trim System check may be omitted for turn-around operations where only the left engine has been shut down.
- The stall warning system must be checked and operable prior to flight in accordance with the procedure in Section 4 of the AFM.
- The speed brakes must be operable prior to flight in accordance with the procedure in Section 4 of the AFM.
- Rudder Boost must be operable and armed for all operations.

- The cockpit voice recorder self-test must be successfully accomplished prior to flight.
- Except for preflight check, do not operate Engine Anti-Ice system during ground operations at temperatures above 10°C.
- Combined selection of ECS OFF and Engine Anti-Ice ON is prohibited.
- Windshield Anti-Ice system must be ON (LOW or HI) for all in-flight operations. Use of windshield heat high mode is prohibited during takeoff and landing.
- On airplanes RK-296 and after, and those airplanes modified by Raytheon Kit No. 128-3058-1, pilot and copilot audio SPKR switches must be ON if headsets are not worn.
- Do not operate strobe lights in clouds, fog, or on the ground near other aircraft.
- Do not operate weather radar on the ground in close proximity to ground personnel.
- Oxygen supply must be adequate for the intended flight. Quick-donning masks and smoke goggles must be on board for crew and accessible for each flight. Passenger masks must be serviceable when passengers are carried.
- Do not operate anti-ice systems at ram air temperatures greater than 10°C unless in actual icing conditions, as indicated by illumination of the ICING annunciator (if installed) or airframe ice accumulation.
- Refrigeration Air Conditioning operation below 5°C is prohibited.
- RK-1 thru RK-107 not modified by Kit 128-4014-1, 128-4014-3, 128-4014-5 or 128-4016-1.

Do not operate the Refrigeration Air Conditioning if any of the following conditions exist:

- Horizontal stabilizer anti-ice ON.
 - Horizontal stabilizer deice ON.
 - Horizontal stabilizer deice backup ON.
- RK-108 and after, RK-1 thru RK-107 modified by Kit 128-4014-1, 128-4014-3, 128-4014-5 or 128-4016-1

During flight in icing conditions:

- Do not select 30 degrees flaps within 15 seconds after selecting 10 degrees flaps.
- Operations using flap settings greater than 10 degrees are limited to within twenty minutes after initial flap extension. After twenty minutes, use 10 degrees flaps for landing.

Do not operate the Refrigeration Air Conditioning if any of the following conditions exist:

- Horizontal stabilizer deice ON.
- RK-212 and after, and those airplanes modified by Raytheon Aircraft Service Bulletin 28-3203 and Pratt & Whitney Service Bulletin 7526R1

If Hybrid Fuel Nozzles are installed on one or both engines, all air starts must be performed within the limits presented by AIR START ENVELOPE 2 in Section 3A of the AFM.

- Thrust reversers must be checked in accordance with the procedure in Section 4 of the AFM prior to flight.
- The LCD monitor in the Cabin Video Information System may cause interference to COMM-1 only, when tuned to 125.0 MHz. The ability to communicate on COMM-1 is not affected.
- On airplanes modified by MOD drawing 004359, the use of cabin auto temperature mode is prohibited.

■ Takeoff and Landing Operations:

Maximum Weights. SEE SECTION 5 OF THE AFM

Airfield Elevation (Pressure Altitude). . . . UP TO 10,000 feet

Ambient Temperature -40°C to ISA + 35°C

Maximum Tailwind Component

for Takeoff and Landing. 10 KT

Maximum fuel imbalance for Takeoff. 100 LB

Maximum fuel imbalance for Landing 300 LB

Windshield Anti-Ice/Deice

Switch (HI mode). PROHIBITED FOR TAKEOFF
AND LANDING

Jet Pumps and

Boost Pumps. OPERABLE FOR TAKEOFF

Engine Electronic Fuel Control (EEC). ON AND
OPERABLE FOR TAKEOFF

Engine Synchronizer. OFF FOR TAKEOFF,
APPROACH, LANDING, AND
ENGINE OUT OPERATION

Cabin Pressurization . . . UNPRESSURIZED FOR LANDING

Yaw Damper OFF FOR TAKEOFF AND LANDING

Battery Temperature

(RK-1 thru RK-48, except RK-45) NO TAKEOFF
PERMITTED IF ABOVE 120°F
AND CONTINUING TO RISE

Battery Temperature

(RK-45, RK-49 thru RK-97). . . NO TAKEOFF PERMITTED
IF ABOVE 135°F
AND CONTINUING TO RISE

Refrigeration Air Conditioning OFF FOR TAKEOFF
AND LANDING

System Limitations

Avionics System

- This avionics system is intended for use with Collins FMS Program Number:
 - RK-1 thru RK-64, except RK-52: 613-5470-017.
 - RK-52, RK-65 thru RK-77, and RK-79 thru RK-98: 613-5470-025.
 - RK-78, RK-99 and after: 613-5470-028.
- The following Beechjet Pilot's Operating Manual must be immediately available to the flight crew:
 - RK-1 thru RK-64, except RK-52: P/N 128-590001-97 or later revision,
 - RK-52, RK-65 thru RK-117, RK-119 thru RK-139: P/N 128-590001-149 or later revision.
 - RK-118, RK-140 and after: P/N 128-590001-205 or later revision.

Autopilot

- Approved for Category 1 ILS approaches only.
- The autopilot and yaw damper must be disengaged for take-off and landing.
- Do not manually override the autopilot in flight.
- Do not operate the autopilot during airplane trim malfunction.
- Maximum speed limit for autopilot operation is unchanged from the airplane maximum airspeed limit (V_{MO}/M_{MO}).
- Do not use autopilot below 200 feet above terrain.
- A pilot must be seated at the controls with the seat belt and shoulder harness fastened during autopilot operations.

- Autopilot preflight check must be conducted and found satisfactory prior to each flight on which the autopilot is to be used.
- Both AHRS are required for autopilot operation.
- Nav captures, including localizer captures, must be accomplished with an intercept angle of 90 degrees or less.
- Increase final approach speed to $V_{REF} + 5$ knots for autopilot coupled approaches.
- Localizer back course captures must be accomplished with an intercept angle of 70 degrees or less.
- Do not use 1/2 Bank mode when conducting FMS based approaches.
- RK-1 thru RK-91, except RK-78.
 - Use of speed brakes with autopilot engaged is prohibited. (When Kit P/N 128-3023 is installed, this limitation no longer applies).

EFIS

- The third attitude indicator and the standby power supply must be operative for takeoff.
- The MAP mode of navigation and checklist data on the Multi-function Display (MFD) are provided only as an aid and are not approved as primary information.
- The pilot's and copilot's PFDs (three and four tube systems) must be operative in the normal mode for takeoff.
- The pilot's and copilot's Air Data Computers must be operative for takeoff.
- After applying power to the AHRS, the aircraft must not be moved until the altitude and heading warnings have cleared.

TCAS-94 (if installed)

- Pilots are authorized to deviate from their current ATC clearance to the extent necessary to comply with a TCAS resolution advisory (RA).
- The following table lists the advisories or mode limits:

Advisory or Mode	Limits
Increased Descent RA	Prevented below 1,450 ft AGL (1,650 ft AGL during a climb and 1,450 ft AGL during a descent).
Descent RA	Prevented below 1,000 ft AGL during a descent and below 1,200 ft AGL during a climb.
Resolution Advisories	Prevented below 1,100 ft AGL during a climb and below 900 ft AGL during a descent. (TCAS automatically changes to the TA or TA ONLY mode).
TA Audio Annunciation	Prevented below 1,100 ft (600 ft. change 7.0) AGL during a climb and below 900 ft (400 ft. change 7.0) AGL during a descent.
Climb Command	Prevented in some configurations of the aircraft.
Increase Climb Command	Prevented in some configurations of the aircraft.
Self-Test	Depending on the system installation, self-test operation may be prevented when the aircraft is airborne.
Advisory Priority	Depending on the system installation, TCAS may automatically change to the TA or TA ONLY mode or to STBY mode to allow higher priority advisories to be given (i.e. GPWS, wind shear direction, etc.).

Flight Management System

- Collins AMS-5000 Avionics Management System Pilot's Guide, CPN 523-0778334, Second Edition, dated December 22, 1997 (or later applicable revision) must be immediately available to the flight crew whenever navigation is predicated on the use of the system.
- The system program number displayed on the STATUS page must be 832-4118-009.
- IFR navigation is prohibited unless the pilot verifies each selected waypoint and navaid for accuracy by reference to current approved data.
- When using the Multi-Sensor Area Navigation System, additional equipment required for the specific type of operation must be installed and operable. Minimum equipment for enroute FMS operation is one VOR, one DME, valid heading and TAS inputs or three VLF and/or Omega stations and valid heading and TAS inputs. Minimum equipment for FMS approach operation is one VOR, one DME, and valid heading and TAS inputs.
- The Multi-Sensor system position must be checked for accuracy prior to use as a means of navigation and under the following conditions:
 - At or prior to arrival at each enroute waypoint during FMS navigation along approved RNAV routes.
 - Prior to requesting off-airway routing, and at hourly intervals thereafter during FMS navigation off approved RNAV routes.
 - Prior to each compulsory reporting point during IFR operation when not under radar surveillance control.
- During periods of dead reckoning, the Flight Management System shall not be used for navigation.

- Following a period of dead reckoning navigation, the system position should be verified and updated, as required, by visually sighting a ground reference point and/or by using other installed navigation equipment, such as VOR, DME, TACAN, or a combination of such equipment.
- Acute angle FMS navigation course changes of ± 135 degrees or more will result in a turn which departs significantly from both the old and the new desired tracks. The direction of this turn will depend upon airplane heading when the leg change is initiated.
- Monthly updates of the FMS navigation data base must be loaded on or after the effective date.
- Published routes and procedures must be flown as point-to-point legs when FMS is the active navigation source (i.e., AUTO LEG or MAN LEG with a FROM and TO waypoint shown in the flight plan).
- Operation is degraded by magnetic heading errors near the magnetic poles.

Operation is acceptable between 60 degrees north latitude and 60 degrees south latitude at any longitude.

Operation to 70 degrees north latitude is acceptable east of 75 degrees west longitude and west of 120 degrees west longitude.

Operation to 80 degrees north latitude is acceptable east of 50 degrees west longitude and west of 70 degrees east longitude.

Operation to 70 degrees south latitude is acceptable except for the 45 degrees between 120 degrees east and 165 degrees east longitude.

- If the GPS sensor is unavailable, and following a period of CHK POS, dead reckoning or when a cross-check with other onboard approved navigation equipment reveals an error greater than 3 nm, the aircraft position should be verified by visually sighting ground reference points and/or by using other navigation equipment such as VOR, DME, NDB, and/or radar fix.
- Instrument approaches must be accomplished in accordance with approved instrument approach procedures that are retrieved from the AMS-5000 database. The AMS-5000 database must incorporate the current update cycle.
 - Instrument approaches must be conducted in the approach mode and GPS integrity monitoring (for system incorporating a GPS sensor) must be available at the Final Approach Fix.
 - Accomplishment of ILS, LOC, LOC-BC, LDA, and SDF approaches are not authorized utilizing the AMS-5000 system.
 - When an alternate airport is required by the applicable operating rules, it must be served by an approach based on other than GPS navigation, the aircraft must have operational equipment capable of using that navigation aid, and the required navigation aid must be operational.
- The FMS is approved for RNAV approaches under the following conditions:
 - Either VHF navigation receiver must be tuned to the reference VOR.
 - The FMS must be programmed with data from current published instrument approach procedures only.
- Fuel management parameters are advisory only, and do not replace the primary fuel quantity and fuel flow indicators.

- Provided the Multi-Sensor Area Navigation System is receiving adequate usable sensor inputs, it has been demonstrated capable of and has been shown to meet the accuracy specifications of VFR/IFR enroute RNAV operation worldwide in accordance with the criteria of AC 20-130A.
- VNAV (if installed)
 - Provided the VNAV system is receiving adequate usable signals, it has been demonstrated capable of and has been shown to meet the accuracy requirements of: VFR/IFR enroute VNAV operation within the contiguous United States and Alaska in accordance with the criteria of AC 20-129.
 - Use of VNAV mode is limited to enroute operations.
 - When using the VNAV system, the barometric altimeters must be used as the primary altitude reference for all operations.
 - 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.
 - Use of FMS to capture and track a DME arc outside the published end points is prohibited.
 - VNAV operation in the enroute phase is limited to an aircraft heading within 70 degrees of the desired track and lateral deviation less than 10 nm.
 - VNAV operation in GPS TERM or TERM (GPS disabled) is limited to an aircraft heading within 70 degrees of the desired track and lateral deviation less than full scale deflection.
 - VNAV operation in GPS APPR or APPR (GPS disabled) is limited to an aircraft heading within 30 degrees of the final approach course and lateral deviation less than full scale deflection.
 - DME arc procedures must be conducted with the arc displayed on the MFD map page.

- VNAV altitudes must be displayed on the MFD map page when utilizing VNAV for flight guidance.
- Use of VNAV while conducting a missed approach procedure is prohibited.
- GPS (if installed)
 - Provided the Multi-Sensor Area Navigation System incorporating a GPS sensor is receiving adequate usable sensor inputs, it has been demonstrated capable of and has been shown to meet the accuracy specifications of VFR/IFR enroute RNAV operation worldwide in accordance with the criteria of AC 20-130A.
 - Users are cautioned that the GPS satellite constellation may not meet the coverage, availability, and integrity requirements for civil aircraft navigation equipment. GPS satellite availability and accuracy are subject to change, and appropriate status information should be consulted.
 - GPS is not approved by the FAA for sole means of navigation. When the Flight Management System (FMS) is using GPS as the only position input, the message GPS will appear on the Primary Flight Display. Other means of navigation, if available, should be used. When in this mode, the FMS will continue to navigate normally.

Fairchild F1000 Series Flight Data Recorder

- The flight data recorder self-test must be successfully accomplished before each flight.

Electrical System

General

- External power requirements are 28V DC and 1,000 to 1,500 amps.
- The maximum permitted starter operating time is 30 seconds. After an aborted start, a minimum of five minutes cooling time must be allowed before making another attempt to start, A further fifteen minutes are required before making a third attempt. The cycle may be repeated after a further period of 60 minutes.
- Do not attempt a battery start if battery voltage is below 22 volts.
- No takeoff is permitted if battery temperature is above 120°F and continues to rise on airplanes RK-1 thru RK-48 except RK-45.
- No takeoff is permitted if battery temperature is above 135°F and continues to rise on airplanes RK-45, RK-49 thru RK-97.

Starter/Generator Limitation

- Maximum ground operation is 280 amps each generator.

Generator Assisted Start

- Do not attempt to start the second engine until the generator load is below 150 amps.
- Inflight operation (maximum) on RK-1 thru RK-107 not modified by Kit 128-4014-1, 128-4014-3, 128-4014-5 or 128-4016-1.

Both generators operating
up to 41,000 ft 280 AMPS EACH GENERATOR

Both generators operating
above 41,000 ft 260 AMPS EACH GENERATOR

One generator operating
up to 32,500 ft. 400 AMPS

One generator operating
from 32,500 to 41,000 ft 280 AMPS

One generator operating above 41,000 ft. 260 AMPS

- Inflight operation (maximum) on RK-108 and after, RK-1 thru RK-107 modified by Kit 128-4014-1, 128-4014-3, 128-4014-5 or 128-4016-1.

Both generators operating
up to 41,000 ft. 280 AMPS EACH GENERATOR

Both generators operating
above 41,000 ft. 260 AMPS EACH GENERATOR

One generator operating up to 29,000 ft. 400 AMPS

One generator operating up to 29,000 ft
(Icing Conditions) 440 AMPS

TRANSIENT (Below 20,000 ft,
30 seconds maximum) 525 AMPS

One generator operating
from 29,000 to 41,000 ft 280 AMPS

One generator operating
above 41,000 ft. 260 AMPS

Instrument	Green Arc	Yellow Arc	Red Arc/Red Line Maximum
Ammeter	0 to 400 amps	260 to 400 amps	400 amps
Voltmeter	–	–	32 to 35 volts
Battery Temp	Up to 120°F	120 to 150°F	150 to 190°F

Table 3-A; Instrument Markings

Environmental

- The maximum differential pressure (pressure relief valve setting) is 9.1 PSI.
- The cabin must be unpressurized for landing.
- Combined selection of ECS OFF and engine anti-ice ON is prohibited.

NOTE: The bleed air may be turned off when performing an ECS-off takeoff, provided the ventilation blower is operating.

- Except for preflight check, do not operate anti-ice/deice systems at ram air temperatures greater than 10°C unless in actual icing conditions.

Flight Controls

- With speed brakes extended, do not extend flaps beyond 10 degrees in flight.
- Trim system must be checked and operable in accordance with the procedure in section 4 of the AFM.
- On airplanes RK-52, RK-65 thru RK-92 not modified by Kit 128-5025-1, the flap control lever has three positions: 0°, 10° and 30°.
- On airplanes RK-93 and after, and those airplanes (RK-52, RK-65 thru RK-92) modified by Kit 128-5025-1, the flap control lever has four positions: 0°, 10°, 20° and 30°.

Instrument Markings (Pitch Trim)

Red arc/red line minimum	-1.5°
Green arc	-5.6 to 6.4°
Yellow arc	NONE
Red arc/red line maximum	-10.9°

Fuel System

	Wing Tanks (US gal)	Fuselage Tanks (US gal)	Total (US gal)
UNUSABLE FUEL	7.16	1.19	8.35
MAXIMUM USABLE FUEL	427.20	305.80	733.00
TOTAL FUEL CAPACITY	434.36	306.99	741.35

Table 3-B; Fuel Storage Quantities

Fuel remaining in the tanks when the quantity indicator reaches zero is not usable in flight.

Approved Engine Fuels

- Commercial Kerosene Jet A, Jet A-1, Jet B, JP-4, JP-5, JP-8, JP-8 +100 and RP-3 (Chinese) per Pratt & Whitney Service Bulletin 7144.

Approved Fuel Additives

- Fuels not containing icing inhibitors must have MIL-I-27686D or MIL-I-85470 fuel system icing inhibitor added in amounts of not less than 0.01% nor more than 0.15% by volume.

Fuel Temperature Limitations

Minimum fuel temperature -40°C

Maximum fuel temperature 50°C

Fuel Servicing, Crossfeed and Imbalance

Fuel may be serviced in any sequence.

Takeoff is prohibited with partial wing fuel and fuel in the fuselage tanks.

Fuel crossfeed with two engines operating is limited to level flight when less than 600 pounds of fuel remains in the tank supplying fuel.

Maximum fuel imbalance
for takeoff 100 LB

Maximum fuel imbalance
for enroute 300 LB

Maximum fuel imbalance
for landing 300 LB

Fuel Pumps

All wing fuel boost pumps and main jet pumps must be operable for takeoff.

Ice Protection Limitations

- Do not operate anti-ice systems at ram air temperatures greater than 10°C, unless in actual icing conditions.
- Windshield Anti-Ice system must be ON (LOW or HI) for all in-flight operations. Use of windshield heat high mode is prohibited during takeoff and landing.
- The magnetic compass is erratic and unreliable when the WINDSHIELD heat is selected to HIGH and/or the side window defog blowers are selected.
- Ground operation of wing heat is not permitted except for preflight check and landing rollout.

CAUTION: Flight in visible moisture without pitot heat may result in erratic operation of the airspeed indication.

- Ground operation of engine anti-ice is not permitted at temperatures above 10°C, except for preflight check.
- If either pitot heat system fails, the inoperative system should be identified.
- Combined operation of ECS OFF and Engine Anti-Ice ON is prohibited.

Hydraulic System Limitations

- Use MIL-H-5606 hydraulic fluid.
- The maximum allowable leakage from any component is 1 drop/25 cycles or 2 drops/1 minute in the pressurized condition of 1,000 PSI to 1,500 PSI.

Accumulator Pressure Gage

Precharge pressure 900 ± 50 PSI

Instrument Markings

Hydraulic Pressure Gage

Red arc/red line minimum NONE
Yellow arc 0 to 400 PSI
Green arc 1,350 to 1,550 PSI
Red arc/red line maximum 1,850 PSI

JT15D-5 Power Plant Operating Limitations

Operating Conditions		Engine Operating Limits				
Thrust Setting	Time Limit (Minutes)	ITT (°C)	N ₂ Turbine % RPM	N ₁ Fan % RPM	Oil Press PSI	Oil Temp (°C)
Takeoff	5	700	96	104 (2)	60-83 (3)	10-121
Maximum Continuous	---	680	96	104 (2)	60-83 (3)	10-121
Idle	---	---	(4)	---	40 (Min)	-40 121
Starting	---	(1)	---	---	(3)	-40 (Min)
Transient (Except Starting)	---	700	96	104	---	135 (Max) (15 Min over 121)

- 1 Engine starting conditions only. If starting ITT exceeds 550°C, the following time limitations apply:
 550°C to 600°C..... 4 Seconds Maximum
 600°C to 700°C..... 2 Seconds Maximum
 If the above time limitations are exceeded, refer to the JT15D-5 Maintenance Manual for inspection procedures.
- 2 Refer to Takeoff Thrust and Maximum Continuous Thrust Setting charts in Section 5 of the AFM for maximum allowable N₁ for ambient conditions.
- 3 Normal oil pressure is 60 to 83 PSI at N₂ speeds above 60%. Oil pressure below 60 PSI is undesirable and should be tolerated only for the completion of the flight, preferably at reduced power setting. Under cold conditions, oil pressure may exceed 83 PSI.
- 4 Engine idle conditions
 In icing conditions:
 Engine EFC ON 52% N₂ (Min)
 In non-icing conditions
 Engine EFC ON 52% N₂ (Min)
 Engine EFC OFF 46% N₂ (Min)

Engine Starting Limits

External Power-Assisted Start (Starter Limitation)

The starter-generator is capable of motoring three attempted engine starts of 30 seconds duration with a 5-minute rest period after the first attempt and a 15-minute rest after the second attempt. After the third attempt, a one-hour rest period is required.

NOTE: When either generator comes on-line, the external power unit goes off-line.

Battery Start (Battery Limitation)

Do not exceed the maximum of three engine starts per hour. Do not attempt a battery start if the battery voltage is below 22 volts. On airplanes RK-1 thru RK-48 except RK-45, with a nicad battery, takeoff is not permitted if the battery temperature is above 120°F and rising. On airplanes RK-45, RK-49 thru RK-97, with a nicad battery, takeoff is not permitted if battery temperature is above 135°F and continues to rise. At ambient temperatures of 100°F or above, the 120°F battery caution light may illuminate.

Generator-Assisted Start

NOTE: In-flight, starter-assisted airstarts are accomplished with the battery, regardless of the position of the generator reset switches.

Do not attempt to start the second engine until the generator load is below 150 amperes. Maximum N₂ on the operating engine for generator-assisted start is 54%.

Oil Limitations

- Approved Oils:
 - Use Synthetic Oil Type II per Pratt & Whitney Service Bulletin 7001.
 - Check oil level before each flight and service as required. An accurate oil level can only be obtained 10 to 30 minutes after engine shutdown. Service with an oil recommended in Pratt & Whitney Service Bulletin 7001.
 - If the same brand of oil is unavailable for replenishment, Synthetic Oil Type II per Pratt & Whitney Service Bulletin 7001 may be used provided the total quantity added does not exceed 2 US quarts per engine in any 400 hour period.
- Oil Temperature:
 - The normal oil temperature operating range is 10°C to 121°C.
 - Minimum oil temperature for engine starting is -40°C.
- Oil Consumption:
 - The maximum permissible oil consumption rate of an engine during any flight is 0.5 lb/hr over a 10 hour period or approximately 1 qt in 4 hours.

Engine Icing

- The ENGINE switches on the ANTI/DEICE portion of the overhead panel (engine intake ice protection system) may be ON at any engine speed, including the use of maximum takeoff thrust for takeoff and balked landing.
- Engine anti-Ice systems must be on for taxi and takeoff when in visible moisture at 5°C or colder.

NOTE: Engine anti-ice should be turned on prior to power settings of 90% or above.

Engine Synchronizer

- Engine synchronizer must be turned off during takeoff, landing and single engine operation.
- Engine synchronizer is inoperable when the electronic fuel control (EFC) is off.

Engine Fuel Control

- Except during taxi conditions in visible moisture at 5°C or colder, the engine EFC system may be selected OFF during ground operation provided the engine speed is manually maintained at a minimum of 46% N₂.
- With the EFC system selected OFF, a potential exists for the generators to fall off-line with the thrust levers at idle.

Thrust Reverser Limits

- Deployment of either thrust reverser is restricted to ground operations only.
- Reverse thrust must not be used to back the aircraft.
- Engine starts with thrust reversers deployed are prohibited.
- The maximum time for continuous reverse thrust above reverse idle is 30 seconds.
- The full reverse cutoff speed is 55 KIAS or above.
- The maximum deployed time for reverse idle during taxi operations is 5 seconds.
- The restow envelope is 30,000 ft or below and 135 KIAS or below.

Instrument Markings

Instrument	Red Arc/Red Line Minimum	Green Arc	Yellow Arc	Red Arc/Red Line Maximum
Fan RPM (N ₁)	–	20 to 104%	–	104%
Interturbine Temperature (ITT)	–	100 to 680°C	680 to 700°C	700°C
Turbine RPM (N ₂)	–	52 to 96%	–	96%
Oil Pressure	40 PSI	40 to 60 PSI (narrow) 60 to 83 PSI	–	83 PSI Red Line 150 PSI (Triangle)
Oil Temperature	–	10 to 121°C	-40 to 10°C	121° Red Line 135° (Triangle)
Fuel Temperature	-40°C	–	–	50°C
Engine Vibration Meter	Note: Use for monitoring vibration levels only.			

Table 3-C; Instrument Markings

Oxygen System Limitations

- The passenger oxygen system is not capable of providing an adequate oxygen supply for prolonged unpressurized flight at the maximum operating altitude. The highest recommended cabin altitude to which passengers should be exposed for extended flight is 25,000 ft.
- Quick-donning masks and smoke goggles must be on board and accessible to the crew for each flight.
- Passenger masks must be serviceable when passengers are carried.
- Passenger safety is not assured for prolonged unpressurized flight above 34,000 ft, since pressure breathing masks are not provided.

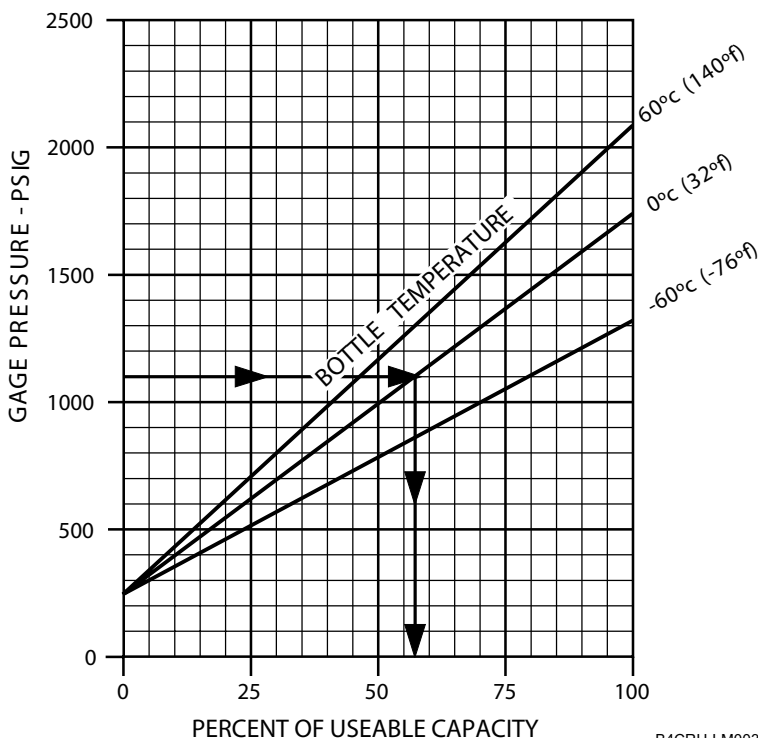


Figure 3-3; Oxygen Available with Partially Full Bottle

B4CRH-LM003i

Oxygen Duration (Minutes)

Based on 100% charge (1,850 PSI) (1,903 useable liters - NTDP) (crew masks on NORMAL)

No. of Users	Cabin Altitude (Feet)						
	10,000	15,000	20,000	25,000	30,000	35,000	40,000
Crew (2)	373	373	292	188	214	292	359
Psgrs							
1	207	209	182	136	150	186	211
2	143	145	132	107	116	136	150
3	109	111	104	88	94	107	116
4	89	90	86	75	80	89	95
5	74	76	72	65	69	75	80
6	64	65	63	57	61	66	69
7	56	57	56	51	54	58	61
8	50	51	50	47	49	52	55
9	45	46	45	45	45	47	49

Stall Warning

- The AOA indicator is divided into three areas:
 - Green Arc (normal operating area) 0 to 0.6
 - Yellow Arc (caution area) 0.6 to 0.85
 - Red Arc (warning area) 0.85 to 1.0
- Prior to flight, the Stall Warning system must be checked and operable in accordance with the procedure in section 4 of the AFM.

Gear and Nitrogen Bottle

- Prior to each flight, check the pressure indication on the Nitrogen Gage for servicing requirements. If the gage reads below full, recharge the cylinder with nitrogen to read 1,350-1,500 PSI or 1,350-1,650 PSI, depending on the gage installed.

Engine Fire Extinguisher Bottles

- Ensure the indication on the pressure gage reads between 580 and 600 PSIG. If the gage reads below 580 PSIG, replace the bottle. Most bottles have a chart on them for temperature variations