Specifications/Performance/
Standard Equipment

# STARSHIP 1
## SERIES 2000


Beechcraft
A Raytheon Company

# SPECIFICATIONS

## WEIGHTS

Maximum Ramp Weight . . . . . 12,610 lbs.
Maximum Takeoff . . . . . 12,500 lbs.
Maximum Landing Weight . . . . . 11,875 lbs.
Maximum Zero Fuel Weight . . . . . 10,800 lbs.
Basic Empty Weight (With Unusable Fuel, Oil and Standard Avionics) . . . . . 8,011 lbs.
Useful Load (Standard Airplane) . . . . . 4,599 lbs.

## WING AREA AND LOADINGS

Wing Area . . . . . 280.88 sq. ft.
Wing Loading . . . . . 44.5 lbs./sq. ft.
Power Loading (PT6A-67) . . . . . 6.25 lb./shp.

## PRESSURIZATION

| (8.4 Differential) | Cabin Altitude |
|---|---|
| *Actual Aircraft Altitude - 21,400 ft. | Sea Level |
| *Actual Aircraft Altitude - 25,000 ft. | 1560 ft. |
| *Actual Aircraft Altitude - 30,000 ft. | 3860 ft. |
| *Actual Aircraft Altitude - 35,000 ft. | 5940 ft. |
| *Actual Aircraft Altitude - 41,000 ft. | 8060 ft. |

*Nominal Max Capability - Not Per Pre-Program

## DIMENSIONS

Aft Wing Span . . . . . 54 ft.
Fwd Wing Span
Cruise . . . . . 20.92 ft.
Landing . . . . . 23.96 ft.
Length . . . . . 46 ft./1 in.
Height to Top of Vertical Stabilizer . . . . . 12 ft./10 in.
Cockpit Height . . . . . 58.18 in.
Cockpit Width . . . . . 67 in.
Cockpit Door Width . . . . . 18.5 in.
Cabin Length (Include Aft Baggage) . . . . . 253.5 in.
(Excludes Pilot's Compartment)
Cabin Width . . . . . 66 in.
Cabin Height . . . . . 65.5 in.
Entrance Door . . . . . 28 x 50.39 in.
Electronic Compartment
Volume . . . . . 17.5 Actual, 13.4 Useable
Fwd Baggage Compartment . . . . . 20 cu. ft./250 lbs.
Aft Baggage Compartment . . . . . 35 cu. ft./385 lbs.
Total Baggage Capacity . . . . . 55 cu. ft.

# PERFORMANCE

## MAXIMUM SPEED . . . . . 352 kts. (405 mph) (25,000 ft.)

## CRUISING SPEEDS (TAS) - AVERAGE CRUISE WEIGHT

**MAXIMUM CRUISE POWER (1550 RPM)**

At 20,000 ft. . . . . 350 kts. (403 MPH)
At 25,000 ft. . . . . 352 kts. (405 MPH)
At 30,000 ft. . . . . 350 kts. (403 MPH)
At 35,000 ft. . . . . 341 kts. (392 MPH)
At 39,000 ft. . . . . 325 kts. (374 MPH)

**MAXIMUM RANGE POWER - (1550 RPM)**

At 20,000 ft. . . . . 212 kts. (244 MPH)
At 25,000 ft. . . . . 225 kts. (259 MPH)
At 30,000 ft. . . . . 238 kts. (274 MPH)
At 35,000 ft. . . . . 255 kts. (294 MPH)
At 39,000 ft. . . . . 266 kts. (306 MPH)

## CRUISE RANGE FOR 508 GAL. (3400 LB) USEABLE FUEL

**MAXIMUM CRUISE POWER (1550 RPM)**

At 20,000 ft. . . . . 1166 nm. (1342 MI)
At 25,000 ft. . . . . 1361 nm. (1567 MI)
At 30,000 ft. . . . . 1610 nm. (1853 MI)
At 35,000 ft. . . . . 1915 nm. (2204 MI)
At 39,000 ft. . . . . 2257 nm. (2598 MI)

**MAXIMUM RANGE POWER (1550 RPM)**

At 20,000 ft. . . . . 1747 nm. (2011 MI)
At 25,000 ft. . . . . 2004 nm. (2307 MI)
At 30,000 ft. . . . . 2281 nm. (2625 MI)
At 35,000 ft. . . . . 2515 nm. (2895 MI)
At 39,000 ft. . . . . 2625 nm. (3021 MI)

## RATE OF CLIMB AT SEA LEVEL - TWO ENGINES

At 12,500 lbs. . . . . 3250 ft./min.

## RATE OF CLIMB AT SEA LEVEL - ONE ENGINE

At 12,500 lbs. . . . . 1180 ft./min.

## SERVICE CEILING - TWO ENGINES

(100 ft./min.) at 12,500 lbs. . . . . 39,900 ft.

## SERVICE CEILING - ONE ENGINE

(50 ft./min.) At 12,500 lbs. . . . . 29,400 ft.

## STALL SPEEDS (CAS)

Flaps 100% . . . . . 79 kts. (91 MPH)
Flaps Up . . . . . 94 kts. (108 MPH)

## TAKEOFF DISTANCE - FLAPS UP (12,500 lb.)

Rotation Speed (CAS) . . . . . 97 kts.
Ground Run . . . . . 1595 ft.
Total Distance Over 50 ft. Obstacle . . . . . 2400 ft.

## LANDING DISTANCE

Approach Speed . . . . . 103 kts.
Ground Roll . . . . . 1990 ft.
Total Distance Over 50 ft. Obstacle . . . . . 2880 ft.

## ACCELERATE - GO DISTANCE - 12,500 LBS.

Decision Speed ($V_1$) . . . . . 93 kts.
Obstacle Speed ($V_2$) . . . . . 106 kts.
Total Distance Over 35 ft. Obstacle . . . . . 2960 ft.

## ACCELERATE - STOP DISTANCE - 12,500 LBS

Decision Speed (CAS) . . . . . 93 kts.
Total Distance . . . . . 2990 ft.

# STANDARD EQUIPMENT

## AVIONICS/FUNCTIONS

**COMM No. 1** Collins VHF Communications 20 Watt Transceiver with Frequency Range from 118.000 to 136.975 MHZ.

**COMM No. 2** Collins VHF Communications 20 Watt Transceiver with Frequency Range from 118.000 to 136.975 MHZ.

**NAV No. 1** Collins Navigation Receiver provides VOR/Localizer from 108.000 to 117.95 MHZ in 50 KHZ increments, 40 Channel Glideslope Receiver and Marker Receiver.

**NAV No. 2** Collins Navigation Receiver provides VOR/Localizer from 108.000 to 117.95 MHZ in 50 KHZ increments, 40 Channel Glideslope Receiver and Marker Receiver.

**ADF** Collins Single ADF Receiver provides ANT, ADF and Tone Modes. Tunes the range from 190 KHZ to 1749.5 KHZ in 0.5 KHZ steps. It also tunes the 2181 KHZ Emergency Frequency.

**DME** Collins Dual DME Receivers providing distance up to 300 nautical miles, rate, closure time and station identifier.

**Transponder Nos. 1 & 2** Collins Mode A/C Transponder Units with 4096 Codes and altitude reporting capability. Ident Button - Pilot and Copilot Control Wheel.

**Radio Altimeter** Collins Radio Altimeter System provides height up to 2500 feet and is displayed on Pilot and Copilot's Panel.

**Radio Tuning** Collins Radio Tuning Units provide the Pilots with central displays of the VHF COMM, VHF NAV, ATC and ADF Frequencies and the easy ability to change both the frequencies and modes of operation. A Concentric Knob Tuning Control provides easy operation in turbulence. Dual controls with access to both the Pilot and Copilot's radios provide full redundancy.

**Compass System No. 1** Collins Strap-down Reference System providing attitude and heading measurements as well as angular rates and linear accelerations in the three aircraft axes. Provides heading and attitude to the Pilot's Flight Director Instruments and Autopilot.

**Compass System No. 2** Collins Strap-down Reference System providing attitude and heading measurements as well as angular rates and linear accelerations in the three aircraft axes. Provides heading and attitude to the Copilot's Flight Director Instruments and Autopilot. Provides heading to the Pilot's Sensor Display Unit.

**Weather Radar** Collins Solid-State Weather Radar with Turbulence Detection capability displayed on the Pilot and Copilot's Navigation and Multifunction Displays of the Electronic Flight Instrument Systems. Incorporates a dual channel Weather Radar with Control Functions to independently control the dual display capability which makes it appear to the Pilots as if there were two Radars in the aircraft.

**Pilot's EFIS/ EICAS Displays** An Electronic Multicolor Display System consisting of four display units with integral symbol generators is provided. These displays provide all the primary flight, navigation, engine and system presentations, including conventional functions for Attitude Director Indicator, Horizontal Situation Indicator and Engine Instruments. In addition, these displays provide for the display of map data, weather radar, flight mode annunciation, flight path information, checklist and caution/warning messages. Reversionary capability is provided for EFIS and EICAS data.

**Copilot's EFIS Flight Director System** Two (2) Primary Flight and Navigation Displays identical to those of the Pilot tied to the No. 2 Attitude-Heading Reference System. Provides Copilot with Independent Flight Director System. Autopilot has capability to couple to either Flight Director System.

**Flight Management** A Flight Management System provides automatic point-to-point geographic-based navigation using VOR/DME sensor inputs plus signals from a Long-Range Navigation Sensor, position computation in the FMS is based on latitude and longitude irrespective of the Position Fixing Sensor used. Thus the system is capable of worldwide point-to-point, great circle navigation at all times so long as sensors are available suitable to the particular location. An extensive built-in non-volatile memory data base is included, which can be updated on board the aircraft, VNAV capability is included and either CDU can be used to keyboard tune all of the radios if desired by the pilot.

**Air Data**

Dual Digital Air Data Computers for the Flight Control Systems calculate the Air Data Parameters, True Airspeed and Encoded Altitude Information.

Pilot's displays include two (2) 4 x 4 Multicolor CRT's. One provides Mach Airspeed, Predicted Airspeed, Digital Display of True Airspeed and Standard Air Temperature. The second CRT display provides Analog and Digital Altitude and Vertical Speed Displays, along with Digital Display of Selected Altitude and Baro-Correction.

Copilot's displays include two (2) 4 x 4 Multicolor CRT's which provide identical information as Pilot's CRT Air Data Displays.

**Autopilot**

A Digital Fail Passive Autopilot System with integrated mode select and engage panel offering minimum workload. The system provides enhanced conventional Flight Control Systems Modes plus additional modes designed to increase performance without burdening the pilot.

**Sensor Display Unit**

Pilot's Monochromatic CRT Sensor Display which provides heading and VOR/FMS/ADF Bearing, also provides secondary display of NAV information.

**Altitude Awareness**

Provides control for the selection of decision height, minimum decision altitude and reporting altitude.

**Audio**

Dual Audio System to provide voice and transmission from all receivers and transmitters in the aircraft. Provides interphone between Pilot and Copilot, aural warnings to the cockpit and announcements from cockpit over cabin speaker system.

**Standby Horizon**

2-Inch Standby Gyro Horizon with Battery Pack.

**Standby Airspeed**

2-Inch Airspeed Indicator.

**Standby Altimeter**

2-Inch Counter-Pointer Altimeter.

**System includes:**

All necessary antennas
Mike Key Buttons Pilot and Copilot's Wheel
Line Advance Buttons Pilot and Copilot's Wheel
Dual Cockpit Speakers
Dual Hand-Held Mikes
Dual Boom/Mic/Headsets
Avionics Master Switch
Ground Clearance Switch tied to Comm No. 1 and Pilot's Audio

## LANDING GEAR AND BRAKES

Tricycle Type Steerable Nose Wheel equipped with shimmy damper, Beech oil-air struts designed for smooth taxiing.
Dual Main Wheel Tires (each side)
Standard Wheels and Tires - H19.5 x 6.75-10-6 ply rated
Nose Wheel Tire - 19.5 x 6.75-8-10 ply rated
Two Disc Brakes on Each Main Wheel
Landing Gear Position Lights, Down and Locked
Landing Gear Warning Horn and In-Transit Light

## ENGINES

Two Pratt & Whitney PT6A-67 Free Turbine Engines flat rated at 1000 Shaft Horsepower each
Propellers - 100" Diameter, Four Blade Composite, Full Feathering, Hydraulically Controlled Constant Speed
Fuel Crossfeed System
Submerged Electric Standby Fuel Boost Pumps
Jet Type Fuel Transfer Pumps
Low Fuel Quantity Warning System
Engine Driven Fuel Pumps
Engine Driven Fuel Boost Pumps
Fuel Control Units
Primary Propeller Governors
Overspeed Propeller Governors
Fuel Topping Governors
Automatic Fuel Heater System
Complete Engine Anti-Icing System with Bleed Air Heated Engine Inlet
Engine Fire Detection System
Magnetic Chip Detector
Auto Ignition System
EPA Fuel Drain Collection System

## CONTROLS

Dual Conventional 3-Axis Control System
Dual Adjustable Rudder Pedals and Toe-Operated Brakes
Parking Brakes with Hand Control
Two Power Levers, two Propeller rpm Selectors and two Cut-Off and Condition Levers
Hydraulic Landing Gear
Hand-Pump Type Auxiliary Landing Gear Extension Control
Elevon Trim Tabs (Pitch and Roll)
Electric Rudder Trim Tabs
Yaw Damper System
Electric Flap Controls

## FLIGHT PACKAGE

PRIMARY FLIGHT DISPLAY (PFD) -
Presents a forward view of flight situation.
Pitch and Bank Attitude
Slip
Flight Director Steering
Flight Guidance/autopilot Mode/Status
Glideslope Deviation
Lateral Deviation (VOR, LOC, FMC)
Marker Beacon
Radio Altitude and DH
MDA and Reporting Altitude Readout

# STANDARD EQUIPMENT

## FLIGHT PACKAGE (continued)

NAVIGATION DISPLAY (ND) -
- Presents a plan view situation in a tactical time frame.
- Heading (MAG)
- Lateral Deviation (Localizer, VOR, FMS)
- VNAV Vertical Deviation
- Bearing (VOR, ADF, FMS Waypoint)
- Distance (DME, FMS Waypoint)
- Ground Speed (DME, FMS)
- IDENT (DME, Waypoint)
- Time-to-Go (DME, FMS Waypoint)
- Flight Plan Waypoint (Labeled with Identifier)
- Drift Angle
- Wind Vector
- Selected Categories of MAP Data
- Weather Radar Display Data
- Weather Radar Mode/Status Data
- Select Active and Preset Courses
- FMS Desired Track
- Selected Heading
- Compass Slaving Indication
- VNAV Distance to Path/Waypoint
- VNAV Waypoint Altitude
- VNAV V/S Required

ALTIMETER/VERTICAL SPEED (ALI)
- Barometrically-derived Altitude - (Conventional full-size circular display with large numerical readout-rotating Drum.)
- Altitude Preselector/Alerter
- Reference "Bug" Function on Vertical Speed Scale

ALTITUDE AWARENESS PANEL
- Select Decision Height
- Select Minimum Decision Altitude
- Select Reporting Altitude

AIRSPEED DISPLAY (ASI) -
- Conventional Circular display with digital presentation.
- Conventional - Calculated Airspeed
  - Maximum Allowable Airspeed
  - Airspeed Trend
  - Airspeed Reference Bug
- Digital Readout - True Airspeed (TAS)
  - Static Air Temp (SAT) with Momentary Total Air Temperature (TAT)

SENSOR DISPLAY UNIT (SDU)
- Basic RMI function with bearing pointer from ADF or VOR or FMS

CONTROL AND DISPLAY UNIT (CDU) - Keyboard Controller for:
- PFD/ND Modes and Data Selection
- Weather Radar
- Radio Tuning
- Data Input/Display for FMS
- Long Range NAV Sensor Control and Status Display

ENGINE INDICATION AND CREW ALERTING SYSTEM (EICAS)
- Engine Related Readouts:
  - Torque
  - ITT
  - $N_1$
  - Propeller Speed
  - Prop Speed Synchronization
  - Oil Temp
  - Oil Pressure
  - Fuel Flow
  - Crew Alerting Readouts:
    - Caution/Advisory

MULTIFUNCTION DISPLAY (MFD)
- Weather Display
- Checklist
- FMS Formatted Map
- FMS Tabular Formats
- Avionics Fault Status and Diagnostic Formats
- Backup Display for ND/EICAS

## ELECTRICAL

Starter Generator (Two 300 amp - 28 volt)
Solid State Generator Control Panel - Two
4 Electric Motors for Operating Flaps
1 Electric Motor for Forward Wing
Landing Gear Warning System with Manual Over-Ride and Automatic Reset
Heated Stall Warning System with Preflight Self Test System
Dual Heated Pitot & Static Heads - Nose Mounted
External Power Receptacle with Annunciation and Overvoltage Protection
Automatic Solid State Master Warning and Annunciators, with Self Test and Dimmer System (integrated into EICAS)
Heated Fuel Vents
Static Wicks
Air Cooled NiCad Battery - 34 AH
Triple Busing System with Cockpit Checkout Capability/Auto Load Shedding
Nose Gear Mic and Phone Jack (part of Avionics)
Two Loadmeters
One Voltmeter

## LIGHTS

Wing Ice Light
Two Landing Lights
Nose Gear Taxi Light
Flush Position Lights
Dual Map Lights
Adjustable Reading Light for each Cabin Chair
Indirect Cabin Lighting (with Passenger Dimming Feature)
Two Cockpit Overhead Reading Lights
Cabin Door Inspection Lights
Aisle Courtesy Light
Entrance Door Light
Aft Compartment Lights
Primary and Secondary Instrument Lighting Systems
Lighting Controlled from Overhead Panel
EL Indirect Cockpit Lighting
Flush Anti-Collision Strobe System (high and low intensity selectable)

## COCKPIT

Electrically Heated, Safety Plate Glass Windshields with Redundant Pilot Element & Control
Hot Air Windshield Defroster
Fail Safe (Dual Pane) Side Cockpit Windows - Pilot's Side Window Defrost
Dual Adjustable Sun Visors
Map Pocket
Cigarette Lighter, Two Ash Trays
Fresh Air Outlets
Oxygen Outlets and Console Mounted Diluter Demand Masks w/Mic
Sub Panel Mounted Oxygen Controls
Coffee Cup Holders
Dual Cockpit Speakers
Pilot and Copilot 4-Way Adjustable Seats with Shoulder Harness Restraint System and Reclining Feature
POH Storage Container
Two Fuel Quantity Indicators
One Anti-Ice Fluid Quantity Indicator (Time Remaining)

## SERVICE

Tow Bar
Service Information Kit
Two Pitot Tube Covers
Sump Drain Wrench
Two Engine Log Books
Airplane Log Book
Six Coat Hangers
Pilot's Check List
Power Chart
Flight Bag
Battery Manual
Beechcraft Warranty ID Card

## CABIN

Fresh Air Outlets for All Occupants
Air Conditioning (Standard)
Ash Trays for All Occupants
Automatic Bleed Air Type Heating and Vapor Cycle Cooling System with High Capacity Ventilation System
Fail Safe (Dual Pane) Cabin Windows with Shades
"No Smoking - Fasten Seat Belt" Signs with Audible Chime
Wall-to-Wall Carpet
Six Cabin Chairs, Fully Adjustable, Swivel and Shoulder Harness, Lap Belt, and Retractable Inboard and Outboard Arm Rest
Cupholder for Each Cabin Chair
Forward Partition with Doors Separating Entry Way from Cabin and Cockpit
Forward Luggage and Coat Closet
Aft Partition with Door Separating Baggage Compartment from Cabin
Private Lavatory with Relief Tube
Emergency Exit
Pressurization - 8.4 Differential
Oxygen System (77 cu. ft.) complete with 1 Automatic Deployment Mask per Passenger
Airstair Door with Hydraulic Snubber
Airstair Door Courtesy Light
Occupants Briefing Cards
Emergency Exit
Forward and Aft Cabin Blower
4 Cabin Speakers

## SPECIAL FEATURES

Capacitance Type High Accuracy Temperature Compensating Fuel Gaging System
Fuel Filter Anti-Syphon Valves
Weather Avoidance Radar
Inertial Separator Engine Anti-Icing System, with Dual Electric Ice Vane Actuators
Anti-Icing Equipment
Automatic Fuel Transfer System
Complete Exterior Urethane Paint
Dual Bleed Air Heating and Pressurization
Dual Pitot and Static Systems
Electroluminescent Lighted Control Panels
508 Gallon Usable Fuel
Battery Charging Current Sensor (Safety Sentinel)
Emergency Locator Transmitter
Pilot's Chartholder
External Oxygen Filler Ports and Pressure Gage

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