

BE-76 DUCHESS
PREFLIGHT CHECKLIST



INTERIOR PREFLIGHT

Required Documents	ON BOARD
Landing Gear Lever	DOWN
Mixtures	CUTOFF
Avionics Master Switch	OFF
Trim	NEUTRAL
Cowl Flaps	OPEN
Magneto Switches	OFF
Circuit Breakers	IN
Master Battery Switch	ON
Landing Gear Lights	3 GREEN
Fuel Quantity	CHECK
Hobbs, Tach Time	CHECK
All Exterior Lights	ON
Pitot Heat	ON
Lights, Pitot Heat	CHECK
Stall Warning Horn	CHECK
Lights, Pitot Heat	OFF
Flaps	EXTEND
Stall Warning Horn	CHECK
Nav Lights	LEAVE ON
Master Battery Switch	OFF
Flight Controls	CHECK

EXTERIOR PREFLIGHT

LEFT SIDE	
Flap	CHECK
Aileron	CHECK
Wingtip, Lights	CHECK
Pitot Tube	CHECK
Leading Edge	CHECK
Stall Warning Vane	CHECK
Fuel Quantity	CHECK
Fuel Sump	DRAIN
Fuel Vent	CHECK
Engine Cowl	CHECK
Air Inlets	CHECK

LEFT SIDE (continued)	
Propeller	CHECK
Engine Oil	6 QUARTS
Cowl Flap	CHECK
Main Gear Assembly	CHECK
Crossfeed Fuel Sump	DRAIN

NOSE SECTION	
Nose Cowl	CHECK
Nose Cone	CHECK
Heater Air Intake	CHECK
Heater Exhaust	CHECK
Heater Vents	CHECK
Nose Gear Assembly	CHECK

RIGHT SIDE	
Crossfeed Fuel Sump	DRAIN
Main Gear Assembly	CHECK
Engine Cowl	CHECK
Air Inlets	CHECK
Propeller	CHECK
Engine Oil	6 QUARTS
Cowl Flap	CHECK
Fuel Quantity	CHECK
Fuel Sump	DRAIN
Fuel Vent	CHECK
Stall Warning Vane	CHECK
Wingtip, Lights	CHECK
Aileron	CHECK
Flap	CHECK

FUSELAGE	
Battery Vents	CHECK
Right Static Port	CHECK
ELT	CHECK
Elevator, Horiz Stabilizers	CHECK
Trim Tabs	CHECK
Cabin Air Inlet	CHECK
Left Static Port	CHECK
Cabin Air Outlet	CHECK
Antennas	CHECK
Aft Baggage Door	CHECK

Preflight Checklist Rev 08/04/2026

P
R
E
F
L
I
G
H
T

C
H
E
C
K
L
I
S
T

See reverse side

BE-76 Duchess NORMAL CHECKLIST



BEFORE START

Preflight Inspection	COMPLETE
Belts, Seats	SECURE
Doors	CLOSED
Brakes	SET
Fuel Selectors	ON
Avionics Masters	OFF
Circuit Breakers	CHECK
Cowl Flaps	OPEN

If OAT < 0C, CLOSED

ENGINE START

Throttles	½" OPEN
Propellers	FORWARD
Mixtures	RICH
Master Battery Switch	ON
Strobe Lights	ON

*Complete all steps below line for each engine.
Start right engine first, then left engine.*

Aux Fuel Pump	ON
Magnetos	ON
Engine	PRIME

If desired, hold PRIME for 3s

Propeller Area	CLEAR
Engine Starter	ENGAGE
Oil Pressure	POSITIVE
Throttle	1000 RPM
Alternator Switch	ON

AFTER START

Avionics Master Switches	ON
Aux Fuel Pumps	OFF
Mixtures	LEAN
Flight Instruments/Nav	SET
Transponder	ALT
Flaps	RETRACT
Aircraft Lights	SET
Brakes	TEST

ENGINE RUN-UP

Brakes	HOLD
Flight Controls	CHECK
Mixtures	RICH
Throttles	1500 RPM
Propeller Feathering	CHECK
Throttles	2200 RPM
Propellers	EXERCISE
Magnetos	CHECK

Max drop 175 RPM

Max differential 50 RPM

Carburetor Heat	CHECK
Engine Instruments	CHECK
Ammeters	CHECK
Throttles	IDLE
Throttles	1000 RPM
Mixtures	SET

BEFORE TAKEOFF

Transponder	ALT
Flaps	SET
Carburetor Heat	OFF
Cowl Flaps	OPEN
Fuel Selectors	ON
Stabilator Trim	SET
Flight Instruments	SET
Doors/Windows	LATCHED
Mixtures	SET
Propellers	FORWARD
Aux Fuel Pumps	ON
Aircraft Lights	SET
Takeoff Briefing	COMPLETE

CLIMB

Speed	85-100
Landing Gear	UP
Flaps	UP
Cowl Flaps	SET
Climb Power	SET
<i>Full throttle, 2600 RPM</i>	
Aux Fuel Pumps	SET

CRUISE

Cruise Power	SET
Aux Fuel Pumps	SET
Mixtures	SET
Cowl Flaps	SET
Aircraft Lights	SET

APPROACH

Altimeters	SET
Aux Fuel Pumps	ON
Mixtures	RICH
Cowl Flaps	SET
Carburetor Heat	SET
Fuel Selectors	ON
Approach Briefing	COMPLETE
Aircraft Lights	SET

BEFORE LANDING

Mixtures	RICH
Propellers	FORWARD
Landing Gear	DOWN
<i>Confirm 3 green lights</i>	
Flaps	SET

AFTER LANDING

Flaps	RETRACT
Mixtures	LEAN
Carburetor Heat	OFF
Cowl Flaps	OPEN
Trim	SET
Aux Fuel Pumps	OFF
Pitot Heat	OFF
Aircraft Lights	SET

SHUTDOWN

Throttles	IDLE
Magnetos	CHECK
Hobbs, Tach Times	NOTE
Avionics Master Switches	OFF
Mixtures	CUTOFF
Magnetos	OFF
All Electrical Switches	OFF
Nav Lights	LEAVE ON
Master Switches	OFF

CRUISE DATA

Alt	RPM	MAP	KTAS
3000	2300	20.0	132
6000	2300	20.0	140

REFERENCE SPEEDS

VS0	60 KIAS
VS1	70 KIAS
VMCA	65 KIAS
VSSE	71 KIAS
VX	71 KIAS
VY	85 KIAS
VYSE	85 KIAS
VFE	110 KIAS
VLE	140 KIAS
VA	132 KIAS
VNO	154 KIAS
VNE	194 KIAS

Normal Checklist Rev 08/04/2026

BE-76 Duchess EMERGENCY CHECKLIST



ENGINE FAILURE IN FLIGHT

Directional Control	MAINTAIN
Airspeed	85 KIAS
Mixtures	RICH
Propellers	FORWARD
Throttles	FULL
Flaps	UP
Landing Gear	UP
Inop Engine	IDENTIFY
Inop Engine Throttle	VERIFY
Inop Engine Propeller	FEATHER/FIX

Go to Engine Shutdown/Feather Checklist or Engine Roughness/Failure Checklist as appropriate.

ENGINE FAILURE ON TAKEOFF

Throttles	IDLE
Brakes	APPLY

Stop or land safely on remaining runway. Immediately declare RTO to ATC.

EMERGENCY DESCENT

Throttles	IDLE
Propellers	FORWARD
Mixtures	RICH
<i>In event of Engine Fire, Inop Mixture CUTOFF</i>	
Landing Gear	DOWN
Bank	30-45 DEG
Airspeed	140 KIAS

ENGINE FIRE ON START

Affected Engine Starter	CRANK
Mixture	CUTOFF
Fuel Selector	OFF
Throttle	FULL
Fuel Pump	OFF

When fire is extinguished...

Master Switches	OFF
-----------------	------------

Evacuate Aircraft immediately.

ENGINE FIRE IN FLIGHT

Perform the following actions on the affected engine's controls only.

Fuel Selector	OFF
Mixture	CUTOFF
Propeller	FEATHER
Aux Fuel Pump	OFF
Magnetos	OFF
Alternator	OFF
Throttle	IDLE

If fire does not extinguish, proceed to Emergency Descent Checklist (except Mixtures) and land as soon as possible.

If fire extinguishes, land as soon as practical. Go to Engine Secure/Feather Checklist as desired.

ELECTRICAL FIRE

Master Switches	OFF
All Electrical Switches	OFF
Heater/Defroster Vents	CLOSE

If fire extinguishes, land as soon as possible.

If electrical power is necessary for safety of flight...

Master Switches	ON
Circuit Breakers	CHECK

Turn on individual electrical components one at a time.

If fire does not extinguish, land as soon as possible. Consider off-airport landing if necessary.

EMERGENCY GEAR EXTENSION

Bulbs/Dimmers	TEST
Circuit Breakers	CHECK
Master Switches	ON
Voltmeter, Ammeters	CHECK
Airspeed	<100 KIAS
Landing Gear Motor CB	PULL
Landing Gear Lever	DOWN
Emer Extension Valve	OPEN
Landing Gear Lights	CHECK

If landing gear is not down and locked, use abrupt rudder or stabilator inputs to move landing gear into place. When gear is verified down and locked, do not manipulate any further landing gear controls.

ENGINE ROUGHNESS/FAILURE

Aux Fuel Pumps	ON
Carburetor Heat	ON
Fuel Selectors	ON
Mixtures	ADJUST
Magnetos	CHECK

If roughness continues or failure does not resolve, land as soon as practical.

ALTERNATOR FAILURE

Inop Alternator Switch	CYCLE
<i>If power is not restored...</i>	
Electrical Load	REDUCE
<i>Turn off all electrical components not necessary for the safety of flight.</i>	
12V Charging Port	UNPLUG
Circuit Breakers	CHECK
<i>If no circuit breakers tripped...</i>	
Inop Alternator Master	CYCLE
<i>If power is not restored, land as soon as practical.</i>	

LOW OIL PRESS/HIGH OIL TEMP

Prepare for a loss of engine power or engine failure.

Altitude	MAINTAIN
Throttles	18" MAP
Mixture	FULL RICH

If oil pressure does not return to normal and/or oil temperature is high, land as soon as practical.

CARBON MONOXIDE IN CABIN

Cabin Heat	OFF
Defroster	OFF
Fresh Air Inlets	OPEN
<i>If indication/alert continues, land as soon as practical.</i>	

Emergency Checklist Rev 08/04/2026

BE-76 Duchess SINGLE-ENGINE OPERATING PROCEDURES



ENGINE FAILURE IN FLIGHT

Directional Control	MAINTAIN
Airspeed	85 KIAS
Mixtures	RICH
Propellers	FORWARD
Throttles	FULL
Flaps	UP
Landing Gear	UP
Inop Engine	IDENTIFY
Inop Engine Throttle	VERIFY
Inop Engine Propeller	FEATHER/FIX

Go to Engine Shutdown/Feather Checklist or Engine Roughness/Failure Checklist as appropriate.

ENGINE SECURE/FEATHER

Directional Control	MAINTAIN
Maintain zero-side-slip flight attitude.	
Trim	AS REQD
Inop Engine Fuel Pump	OFF
Inop Engine Mixture	CUTOFF
Inop Engine Magnetos	OFF
Inop Engine Cowl Flap	CLOSE
Inop Engine Alternator	OFF
Electrical Load	REDUCE
Inop Engine Fuel Selector	OFF

FUEL CROSSFEED

Conduct crossfeeding operations in level flight only.

Inop Engine Fuel Pump	OFF
Good Engine Fuel Pump	ON
Good Engine Fuel Select	XFEED
Fuel Flow, Pressure	MONITOR

Good Engine Fuel Pump	ON
Good Engine Fuel Select	ON
Fuel Flow, Pressure	MONITOR
Good Engine Fuel Pump	AS REQD

ENGINE AIR START

Perform the following actions on the affected engine's controls only.

Fuel Selector	ON
Throttle	½" OPEN
Fuel Pump	ON
Magnetos	BOTH
Airspeed	>100 KIAS
Propeller	FORWARD

If engine begins windmilling...

Propeller	MID RANGE
Mixture	RICH

Proceed to Engine Warm-Up Checklist.

If engine does not windmill...

Propeller	MID RANGE
Mixture	RICH
Starter	ENGAGE

If engine starts, proceed to Engine Warm-Up Checklist.

If engine does not start, prepare for Single Engine Approach and Landing.

ENGINE WARM-UP

Use this procedure after starting an engine in flight.

Throttle	15" MAP
Propeller	2000 RPM
Cowl Flaps	SET
Alternator	ON
Engine Instruments	MONITOR

Wait 2 minutes or until 200 CHT before adding additional power on the engine.

ENGINE ROUGHNESS/FAILURE

Aux Fuel Pumps	ON
Carburetor Heat	ON
Fuel Selectors	ON
Mixtures	ADJUST
Magnetos	CHECK

If roughness continues or failure does not resolve, land as soon as practical.

APPROACH – SINGLE ENGINE

Inop Engine Cowl Flap	CLOSED
Good Engine Fuel Select	ON
Good Engine Fuel Pump	ON
Good Engine Mixture	RICH
Good Engine Propeller	FORWARD
Altimeters	SET
Approach Briefing	COMPLETE
Aircraft Lights	SET

MTOW Single Engine Ceilings

Service Ceiling	5800' MSL
Absolute Ceiling	7700' MSL