

Beech 76 Duchess

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Cockpit Interior

Maintenance Status/Weight & Balance	CHK
Windshield	CHK CLEAN
Aircraft Paper/POH	CHK
Hobbs Hour.....	NOTE
Control Locks.....	REMOVE
Parking Brake	as required
Mags/All Switches.....	OFF
Battery	ON
Gear	3 GREEN
Flaps	EXTEND
Fuel Quantity.....	CHK
• if flight takes place at night	
Exterior & Interior Lights.....	CHK
Flashlight.....	CHK
Battery	OFF
Circuit breakers.....	CHK
Trim.....	SET 0
Emergency Gear Extension.....	CLOSED/VERTICAL
All Articles, Survival Kit, Fire Extinguisher	CHK

Exterior Check

Left wing

*Flaps/Aileron.....	CHK
*Wing Tip and Lights.....	CHK
Pitot Tube.....	CHK
*Landing/Taxi Lights	CHK
*Stall Warning	CHK
*Fuel Qty, Vents, Wing Tank.....	CHK/CLOSED
*Wing Tie-down.....	REMOVE
*Landing Gear, Chocks.....	CHK/REMOVE
Door, Wheel, Strut, Brake Line, Wheel Well	
*Fuel Tank Sump/Fuel Selector.....	DRAIN
*Engine Cowling.....	CLOSED
*Air Intakes.....	CLEAR
*Oil Qty/Filler Cap	CHK/SECURED
min. 8 Qts	
*Cowl Flap.....	CHK
*Crossfeed Lines.....	DRAIN

Nose

Heater Air Intake	CLEAR
Heater Exhaust	CHK
Landing Gear, Chocks	CHK/REMOVE
Door, Wheel, Strut, Brake Line, Wheel Well	

Right wing (see Left Wing * as applicable)

Right Fuselage

Battery Vents	CHK
ELT	ARMED

Tail Section/Empennage

Cabin Air Intake	CHK
Control Surfaces/Trim tab.....	CHK
Tail Position Light.....	CHK
Tail Skid/Tail Tie-down.....	CHK/REMOVE

Exterior Check [cont]

Left Fuselage

Static Port	CLEAN
Cabin Air Outlet.....	CHK
Antennas.....	CHK
Load Dist.....	CHK/SECURE
Baggage Door.....	CHK/SECURE

Before Start

Seat/Seat Belts	ADJUST & LOCKED
Parking Brake	as required
Battery/Alternator.....	BOTH ON
Alt. Undervoltage Lights	ON
Gear.....	DOWN/3 GREEN
Carburetor Heat.....	OFF
Cowl Flap.....	PULL/FULL OPEN
Fuel Selectors & Qty.....	CHK, then ON
Beacon.....	ON

Engine Start

- if Start with External Power (Check Alternator OFF)

Left Generator.....	OFF
Electrical Equipment.....	OFF
External Power.....	CONNECT/ON

14V-Unit: 13,5 - 14,25V

Mixtures.....	FULL RICH
Props.....	FULL FORWARD
___ Throttle.....	1/4 OPEN
Prop. Area.....	"CLEAR"
___ Aux. Fuel Pump.....	ON
___ Magneto/Start Switch.....	ENGAGE

max. 30 sec ON; then 2 minutes OFF
PUSH to PRIME as engine is cranking (3 seconds)

- if Hot Start and OAT > 32°C / 90°F

___ Fuel Boost Pump.....	OFF
___ Starter.....	ENGAGE

Do NOT prime

- if Flooded Engine

___ Mixture.....	CUT-OFF
___ Magneto/Start Switch.....	ENGAGE
___ Mixture.....	Advance to RICH
___ Throttle.....	1000-1200 RPM
___ Oil Pressure.....	CHK

Rise within 30 sec (cold day 60 sec)

___ Aux. Fuel Pump.....	OFF
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- if used: External Power..... OFF, then DISCONNECT

- Repeat for other Engine

Mixtures.....	SET
Battery/Alternator.....	one at a time OFF/CHK/ON

Check Alt. Undervoltage Light On, other Loadmeter picks up load

After Start

Avionics Master & Radios.....	ON
Transponder	TEST/ALT
	VFR US: 1200, Europe: 7000
HSI/Attitude Ind.....	SET
Altimeters.....	SET
Flaps.....	UP
Aux. Fuel Pump.....	OFF, then ON
Circuit Breaker.....	CHK

Lights	as required
Flight controls	CHK
Elevator Trim	FREE/0°

Run-Up

Brakes.....	SET
Engine Instruments.....	CHK
Fuel Selectors.....	ON
Throttles.....	2200 RPM
Magnetos	CHK
	RPM drop \leq 175, differential \leq 50
Prop Governors.....	CHK/BOTH
	100-200 RPM drop
Carburetor Heat.....	CHK/OFF
Throttles.....	1500 RPM
Propellers.....	CHK FEATHER
	RPM drop \leq 500 (cold weather: 3-4 times)
Gyro Pressure/Loadmeters.....	CHK
Throttles.....	IDLE, then 1.000 RPM
Aux Fuel Pumps	CHK ON

+ Before Takeoff +

Fuel Selector & Quantity	CHK
HDG/Radios/ <i>VOR-Check</i>	CHK/SET
<i>Autopilot (if installed)</i>	OFF
Flaps	UP/10°
Trim	SET/NEUTRAL
Props	FULL FORWARD
Mixtures	SET
	DA>3.000 ft: Lean as required
<i>Air Condition (if installed)</i>	OFF
Doors/Windows	CLOSED/LOCKED
Tracking/Timing	START

Pitot Heat	as required
Landing & Strobe Lights	ON
V _R	71 kts

+ Climb +

Gear (V _{LR} 113 kts)	UP
Speed (V _Y , E/O)	85 kts
	Obstacle (V _x): 71 kts - Cruise: 100 kts
Climb Power	25"/25000 RPM
Cowl Flaps	OPEN as required
Engine Instruments	CHK
Taxi/Landing Lights	as required

+ Cruise +

Cruise Power	18" or 23"/2300 RPM
	max: 24"/2700 RPM
Mixtures	LEAN
	25°F < Peak max Power: 100°F < Peak
Fuel Pumps	OFF one at a time

+ Descent +

Cowl Flaps CLOSE as required
 Mixtures ENRICH
 if leaned add 3 GPH;>3.000 ft set 15 GPH (2500 RPM ; 15" at TPA)
 Altimeter..... SET
 Lights ON as required
 Fuel Selectors & Quantity SET/CHK
 Cabin READY
 Windshield Defroster as required

+ Landing +

Carburetor Heat CYCLE
 Gear (V_{LO} 140 kts) DOWN/3 GREEN
 Mixtures SET
 Aux Fuel Pumps ON
Air Condition (if installed) OFF
 Flaps/Speed
 Flaps Up..... 90 kts
 Flaps 0° - 20° (V_{FE} 120 kts) 85 kts
 Flaps 35° (V_{FE} 110 kts) 76 kts
 Props FULL FWD

+ Landing with Flaps Up +

Approach Speed 87 kts

+ Go Around +

Props FULL FWD
 Speed (V_Y , E/O) 85 kts
 Obstacle (V_x): 71 kts
 Flaps UP
 Gear (V_{LO} 140 kts) UP
 Cowl Flaps OPEN

After Landing

Flaps	UP
Pitot Heat	OFF
Strobe/Landing Lights	OFF
Trim	SET
Cowl Flaps	OPEN
Heater Switch	BLOWER ONLY
	Min. 5 minutes
Mixture	SET
Tracking/Timing	STOP

Shutdown

Parking Brake	as required
Aux Fuel Pumps	OFF
Transponder/Avionics Master	STBY/OFF
Prop	FULL FORWARD
Throttles	1000 RPM
Mixtures	CUT-OFF
Mags/Start Switches	OFF
All Light and Heat Switches	OFF
Battery & Alternators	OFF
Hobbs Hours	NOTE

Securing the Airplane

Trim.....	NOSE DOWN
	To prevent Rudder Control Lock Damage
Control Lock.....	INSTALL
• if Hot and Parking \leq 2 hours	
Parking Position.....	A/C INTO THE WIND
Cowl Flap/Cowlings	OPEN
	To assist cooling
Headset/Ext. GPS.....	Remove
Tablet/Kneeboard/Camera(s)	Remove
Charts/Checklists.....	Remove
Windows (Storm/Rear)	CLOSE
Pitot Tube Cover.....	INSTALL
Airplane.....	TIE DOWN, CHOCK, SECURE

ENG Failure

Speed (V_{MCA} 65 kts)	V_{YSE} 85 kts
Power	MAX
	Mixtures – Props – Throttle FORWARD
Gear	UP
Flaps	UP

- if Restart required
 - ___ Fuel Selector
 - ___ Cowl Flaps
 - Carburetor Heat
 - Aux Fuel Pumps
 - Mags
- if Engine does not Start
 - ENG Shutdown/Securing (7).....

ENG Fire

- if in Flight
 - ___ Throttle
 - ___ Mixture
 - ___ Fuel Selector
 - ___ Prop
 - ___ Aux Fuel Pump
 - ___ Mags
 - ___ Alternator
- if on Ground/during Engine Start
 - Parking Brake
 - Mixture
 - ___ Engine
 - Fuel Selector
 - Battery & Alternator

Evacuate Airplane

Smoke/Fire

- Vents, Cabin Heat & Air CLOSE/OFF
- if Fire in Engine Compartment
ENG Fire (6)..... CONSIDER
Land as soon as possible
 - if Fire in Cabin or Electrical Fire suspected
 Battery & Alternator..... OFF
 Electrical Equipment ALL OFF
Leave Mags On
Fire extinguisher (if installed).....ACTIVATE
Land as soon as possible
 - if Smoke or Fire OUT
 Vents, Cabin Air OPEN
 Battery ON
 Alternator ON
 Circuit breakersCHK
Do NOT reset
 Essential Electrical Equipment..... ON
 One at a time; turn off all radios prior turning on Avionics Master switch
 Defective Equipment ISOLATE
 Cabin Heat & Air as required
 - if Wing/External Fire
 External Lights & Pitot Heat OFF
 Sideslip PERFORM
Land as soon as possible

Maximum Glide

- Props FEATHER
 Flaps UP
 Gear (V_{LO} 140 kts) UP
 Cowl Flaps CLOSE
 Speed 95 kts

ENG Shutdown/Securing

___ Throttle.....	IDLE
___ Mixture.....	CUT-OFF
___ Prop.....	FEATHER
___ Fuel Selector.....	OFF
___ Aux Fuel Pump.....	OFF
___ Mags.....	OFF
___ Cowl Flap.....	CLOSE
___ Alternator.....	OFF
Speed.....	85 KTS
Electrical Load.....	MONITOR
	100% max on good alternator
<u>ENG Out Cruise</u>	APPLY

ENG Out Cruise

<i>Cruise Power.....</i>	<i>max. 24"/2700 RPM</i>
Mixtures.....	LEAN
	25°F < Peak max Power: 100°F < Peak
Cowl Flaps (Operative Engine).....	as required
Aux Fuel Pump (Operative Engine).....	ON
• if Crossfeed required	
Fuel Selector (Operative Engine).....	CROSSFEED
	Use only in Level Flight
	Do not use if tank on operative side is full
Aux Fuel Pump (Operative Engine).....	as required

ENG Restart

- ___ Fuel Selector..... ON
 ___ Throttle..... 1/4 Travel OPEN
 Aux Fuel Pumps ON
 ___ Mags ON
 Speed 100 kts
 ___ Mixture CUT-OFF
 ___ Prop FULL FORWARD
- if Speed below 100 kts use Starter
 - when Engine windmills
 - ___ Prop Set MIDRANGE
 - if Engines does NOT Start
 - ___ Mixture FULL LEAN
 - if Engines does NOT Start
 - Speed..... min. 85 kts
 - ENG Shutdown/Securing.....APPLY
 - if Engine Starts
 - ___ Mixture FULL RICH
 - ___ Throttle..... 15 inch
 - ___ Prop 2000 RPM
 - ___ Alternator ON
 - Engine Instruments CHK

Emergency Descent

- Throttle..... CLOSE
 Prop 2700 RPM/FULL FWD
 Speed 140 kts
 Gear DOWN/3 GREEN

ELEC Alternator Failure

- Load Meter & Alternator Out LightCHK
- if Load Meter shows NO load
 - Affected Alternator OFF
 - Electrical Load REDUCE
 - Reduce to Single Alternator Capacity
 - Affected Alternator ON
 - if Alternator Out Light Re-Illuminates
 - Affected Alternator OFF
 - if BOTH Alternator Out Light Illuminated
 - ELEC Total FailureAPPLY

ELEC Total Failure

- Alternators BOTH OFF
- Battery OFF
- BUS-ISO CBs BOTH PULL
- Avionics Master OFF
- Non essential equipment OFF
- Alternators BOTH ON
- GEAR Manual ExtensionAPPLY

Land as soon as possible

GEAR Manual Extension

- Speed max. 100 kts
- Ldg Gear CB PULL
- Gear Lever DOWN
- Extension Valve OPEN
 - Use Emergency Extension Wrench
 - Turn Counterclockwise
- Gear Indication 3 GREEN
 - Inop without Electrical power
- Extension ValveRETURN to VERTICAL
- Caution: Do not move Gear Handle or Reset CB

GEAR Partial/Up Landing

Normal Checklist Integrated

Gear Indication CHK BULBS
 Battery/Alternator CHK ON
 Circuit breakers CHK
 Gear Selector (V_{Lo} 140 kts) consider CYCLE
GEAR Manual Extension (8) APPLY

- Descent/Approach

Cowl Flaps CLOSE
 Mixture ENRICH
 Altimeter SET
 Lights ON as required
 Fuel Selector & Quantity CHK/ON
 Cabin READY
 Windshield Defroster as required
 Flaps/Speed
 Flaps Up 87 kts
 Flaps 0° - 20° (V_{FE} 120 kts) ___ kts
 Flaps 35° (V_{FE} 110 kts) 76 kts
 Doors UNLOCK

- if landing is assured

Prop PULL/LOW RPM
 Aux Fuel Pump OFF
 Throttle CLOSE
 Mixture CUT-OFF
 Mags/Ignition OFF
 Fuel Selector OFF
 Battery & Alternator OFF

Speeds

Takeoff & Climb		E/O
V _Y (Best Rate).....	85	85 kts
V _X (Best Angle)	71	85 kts
V _R	71	71 kts
Enroute	100	85 kts
Maneuvering		
V _A		132 kts
V _{SSE}		71 kts
V _{MCA}		65 kts
Operating		
V _{NE}		194 kts
V _{NO}		154 kts
V _{FE} (Flaps 20°)		120 kts
V _{FE} (Flaps 35°)		110 kts
V _{LE/LO}		140 kts
V _{LR}		112 kts
Descent		E/O
Approach.....	76	85 kts
Flaps Up Approach	87	90 kts
V _{GLIDE} (Flaps Up).....		95 kts
Emergency Descent.....		140 kts
Max. CWC (demonstrated).....		25 kts

Weights

Fuel Capacity	
Both Tanks.....	103 USG (usable 100 USG)

Airwork

Cabin READY
Air Condition (if installed) OFF
 Fuel Pumps BOTH ON
 Fuel Selector BOTH ON
 Carburetor Heat as required
 Mixture RICH
 Clearing turn Perform
 Power 20"/2300 RPM

Steep Turns

Power 19"/2300 RPM
 add 1" while rolling in
 Speed 110 kts
 Bank 50°
 Rollout appr. 25° prior Hdg

Slow Flight (Clean)

Power 17"/2300 RPM
 Speed 70 kts
 Power 19"/2300 RPM

Slow Flight (Dirty)

Power 17"/2300 RPM
 Gear (V_{LO} 140 kts) DOWN/3 GREEN
 Flaps 0° - 10° (V_{FE} 120 kts) 10°
 Flaps (V_{FE} 110 kts) FULL
 Power 19"/2300 RPM
 Speed 60 kts

Airwork [Cont]

Power Off Stall

Power..... 17"/2300 RPM
 Gear (V_{LO} 140 kts) DOWN/3 GREEN
 Flaps 0° - 10° (V_{FE} 120 kts)..... 10°
 Flaps (V_{FE} 110 kts) FULL
 Speed.....85 kts
 Power..... 17"/FULL FWD
 At first indication of Stall
 Power FULL
 Flaps 20°
 Gear UP
 Path/Speed Recover

Power On Stall (T/O and Departure Stall)

Power..... 17"/FULL FWD
 T/O: Gear (V_{LO} 140 kts) DOWN/3 GREEN
 Speed 71 kts
 DEP: Speed 85 kts
 Power..... 20"/FULL FWD
 At first indication of Stall
 Power FULL
 Gear UP
 Path/Speed Recover

VMC Demo

Power..... 20"/2300 RPM
 LH Engine IDLE
 Slow Down 1 kts/sec
 At first indication of Stall or VMC
 Pitch Nose Down
 Power REDUCE

Before Takeoff

Fuel Selector & Quantity	CHK
HDG/Radios/ <i>VOR-Check</i>	CHK/SET
<i>Autopilot (if installed)</i>	OFF
Flaps	UP/10°
Trim	SET/NEUTRAL
Props	FULL FORWARD
Mixtures	SET
	DA>3.000 ft: Lean as required
<i>Air Condition (if installed)</i>	OFF
Doors/Windows	CLOSED/LOCKED
Tracking/Timing	START

Pitot Heat	as required
Landing & Strobe Lights	ON
V _R	71 kts

Climb

Gear (V _{LR} 113 kts)	UP
Speed (V _Y , E/O)	85 kts
	Obstacle (V _X): 71 kts - Cruise: 100 kts
Climb Power	25"/25000 RPM
Cowl Flaps	OPEN as required
Engine Instruments	CHK
Taxi/Landing Lights	as required

Cruise

Cruise Power	18" or 23"/2300 RPM
	max: 24"/2700 RPM
Mixtures	LEAN
	25°F < Peak max Power: 100°F < Peak
Fuel Pumps	OFF one at a time

Descent

Cowl Flaps	CLOSE as required
Mixtures	ENRICH
if leaned add 3 GPH;>3.000 ft set 15 GPH (2500 RPM ; 15" at TPA)	
Altimeter.....	SET
Lights	ON as required
Fuel Selectors & Quantity	SET/CHK
Cabin	READY
Windshield Defroster	as required

Landing

Carburetor Heat.....	CYCLE
Gear (V _{LO} 140 kts).....	DOWN/3 GREEN
Mixtures	SET
Aux Fuel Pumps	ON
<i>Air Condition (if installed)</i>	<i>OFF</i>
Flaps/Speed	
Flaps Up.....	87 kts
Flaps 0° - 20° (V _{FE} 120 kts)	kts
Flaps 35° (V _{FE} 110 kts).....	76 kts
Props	FULL FWD

Landing with Flaps Up

Approach Speed.....	87 kts
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Go Around

Props	FULL FWD
Speed (V _Y , E/O).....	85 kts
	Obstacle (V _x): 71 kts
Flaps	UP
Gear (V _{LO} 140 kts).....	UP
Cowl Flaps.....	OPEN