

DUCHESS 76 NORMAL PROCEDURES

AIRSPEED (IAS) FOR SAFE OPERATIONS

Maximum demonstrated crosswind	25 KIAS
Take-off:	
Lift-off	71 KIAS
50ft	80 KIAS
Two-engine best angle of climb (Vx)	71 KIAS
Two-engine best rate of climb (Vy)	85 KIAS
Cruise climb	100 KIAS
Turbulent air	132 KIAS
Landing approach:	
Flaps UP	87 KIAS
Flaps DOWN	76 KIAS
One-engine inoperative speed	71 KIAS
Minimum control speed (VMCA)	65 KIAS

PRE-FLIGHT

Cockpit

Parking brake	SET
Avionics	OFF
Mixtures	IDLE CUT-OFF
Magneto/start switches	OFF
Battery switch	ON
Fuel gauges	CHECK QUANTITY
Warning lights	CHECK
Flaps	CHECK OPERATION
Battery switch	OFF
Flight controls	CHECK OPERATION
Trims	NEUTRAL
Baggage door	CLOSED

Left/right wing

Flap and aileron	CHECK
Wing tip and lights	UNDAMAGED
Tie-down	REMOVED
Fuel tank	CHECK LEVEL
Propeller	GOOD CONDITION
Oil	CHECK LEVEL
Air inlets	CLEAR
Landing lights	CHECK

Nose section

Chocks	REMOVED
Towbar	REMOVED (NOSE GEAR)

Tail section

Fin	CHECK CONDITION
Rudder	CHECK CONTROLS
Stabiliser and trim tab	CHECK CONDITION
Tail cone	CHECK CONDITION

BEFORE STARTING ENGINES

Brakes	SET
Landing gear handle	DOWN
Circuit breakers	IN
Carburettor heat	OFF
Cowl flaps	OPEN
Avionics	OFF
Fuel selectors	ON
Light switches	OFF
Battery/alternator switches	ON

ENGINE STARTING

- *Caution: If a positive oil pressure is not indicated within 30 seconds after an engine start, stop the engine and determine the cause of the trouble. In cold weather it will take a few seconds longer to get a positive oil pressure indication.*

Battery switch	ON
Alternator-out under-voltage lights	ILLUMINATED
Mixture	FULL RICH
Propeller	HIGH RPM
Throttle ¼	OPEN
Auxiliary fuel pump	ON
Magneto/start switch	BOTH
Prime	PUSH
Magneto/start switch	START

- *If engine does not start within 10 seconds, prime and repeat starting procedure.*
- *In case of engine flooding, engage the starter with mixture in the fully lean position, then repeat the normal startup sequence.*

When the engine starts:

Magneto/start switch	BOTH
Throttle	1,000-1,200 RPM
Oil pressure	ABOVE RED RADIAL WITHIN 30 SECS
Starter warning light	EXTINGUISHED

- *Repeat for other engine.*

Left alternator and battery switch	OFF
Left alternator-out under-voltage light	ILLUMINATED
Left alternator and battery switch	ON

- *Repeat for right alternator.*

TAXIING

Avionics	ON, AS REQUIRED
Lights	AS REQUIRED
Warning lights	CHECK
Auxiliary fuel pumps	OFF, THEN ON (check fuel pressure)
Engine instruments	CHECK
Taxi area	CLEAR
Parking brake	RELEASE
Throttles	APPLY SLOWLY
Brakes	CHECK
Steering	CHECK

- *Steering the aircraft with the rudder pedals only is generally sufficient. The combined use of rudder pedals and brakes and differential engine power permits, if necessary, tight turns.*
- *Check the operation of gyroscopic instruments (horizontal attitude, heading and turn and bank indicators) by means of alternate turns.*

BEFORE TAKE-OFF

Parking brake	SET
Radios	CHECK
Flight instruments	CHECK AND SET
Starter warning lights	EXTINGUISHED
Fuel selectors	ON
Controls	FREE
Flaps	CHECK OPERATION
Trim	CHECK OPERATION
Throttles	2,200 RPM
Propellers	EXERCISE (100-200 RPM drop)
Magnetos	CHECK (max. drop 175 RPM)
Carburettor heat	CHECK and set OFF
Throttles	IDLE
Auxiliary fuel pumps	ON
Doors/windows	CLOSED
Parking brake	RELEASE

TAKE-OFF

Lined up on runway	CHECK COMPASS
Flaps	SET
Trim	SET
Throttles	FULL, 2,700 RPM

Accelerate to 71 KIAS.

Yoke	Back pressure to rotate smoothly to climb attitude
Landing gear	RETRACT, CONFIRM UP
Airspeed	Establish desired climb speed
Flaps	UP

CLIMB

Maximum climb	FULL, 2,700 RPM
Cruise climb	FULL, 2,600 RPM
Engine temperatures	MONITOR
Mixtures	LEAN AS REQUIRED
Cowl flaps	AS REQUIRED
Auxiliary fuel pumps	OFF

CRUISE

- Refer to the OPERATING DATA MANUAL for cruise power settings.

Maximum cruise power	24.0 inHg or full throttle, 2,700 RPM
Recommended cruise power ..	24.0 inHg or full throttle, 2,500 RPM
Economy cruise power	20.0 inHg or full throttle, 2,300 RPM
Power	SET AS DESIRED
Mixtures	LEAN AS REQUIRED
Cowl flaps	AS REQUIRED

- For level flight at 75% power or less, the EGT gauge can be used to lean the mixture for economy.
- Cruise (lean) mixture – enrich mixture (push mixture control forward) until EGT indicator shows a drop of 25-50°F on rich side of peak.
- Best power mixture – enrich mixture (push mixture control forward) until EGT indicator shows a drop of 75-100°F on rich side of peak.
- The pilot should monitor weather conditions while flying and should be alert to conditions which might lead to icing. If icing is expected, place the carburettor heat controls in the ON position.

DESCENT

Altimeter	SET
Cowl flaps	CLOSE
Carburettor heat	ON
Power	AS REQUIRED
Mixtures	ENRICH AS REQUIRED

- Apply engine power every 1,500ft to prevent excess engine cooling and spark plug fouling.

APPROACH AND LANDING

Airspeed	87 KIAS
Fuel selectors	CHECK ON
Auxiliary fuel pumps	ON
Mixtures	FULL RICH
Cowl flaps	AS REQUIRED
Landing gear	DOWN (140 KIAS max.)
Landing lights	AS REQUIRED
Flaps	FULL DOWN (110 KIAS max.)
Airspeed	76 KIAS
Propellers	HIGH RPM

AFTER LANDING

Landing lights	AS REQUIRED
Wing flaps	UP
Trims	SET TO TAKE-OFF RANGE
Cowl flaps	OPEN

SHUTDOWN

Parking brake	SET
Auxiliary fuel pumps	OFF
Avionics	OFF
Propellers	HIGH RPM
Throttles	1,000 RPM
Mixtures	IDLE CUT-OFF
Propellers	LOW RPM
Magneto/start switches	OFF
Battery/alternator switches	OFF
Wheel chocks	INSTALL