



ROBERTSON AIRCRAFT CORPORATION

Snohomish County Airport, North Complex C-72 Everett, Washington 98204 USA

ROBERTSON AIRCRAFT CORPORATION
PILOT'S OPERATING HANDBOOK SUPPLEMENT
FOR CESSNA MODEL 182Q
SERIAL NUMBERS 18265176 THRU 18265965 AND
18265966 AND UP

This document includes material required to be furnished to the pilot by CAR Part 3. It also contains supplemental data supplied by Robertson Aircraft Corporation.

This document must be carried in the airplane at all times when the airplane is Robertson-equipped in accordance with STC SA1382WE.

The information in this document supersedes the basic POH only where covered in the items contained herein. For limitations, procedures, and performance not contained in this supplement, consult the manual proper.

Aircraft Registration N121M
Serial Number 18265624

Approved by:

 02-24-94

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ROBERTSON AIRCRAFT CORPORATION

Robertson-Approved Pilot's Operating Handbook Supplement

Date 5-9-78 *JH*

to

Cessna 182Q

Rev _____

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Rev _____

L O G O F P A G E S

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SECTION 1: GENERAL

No Changes.

SECTION 2: LIMITATIONS

No Changes Except:

AIRSPEED INDICATOR MARKINGS		
White Arc	95 to 40 KIAS	Full Flap Operating Range.

SECTION 3: EMERGENCY PROCEDURES

AIRSPEED FOR EMERGENCY OPERATION:

No Changes Except:

ENGINE FAILURE AFTER TAKEOFF:	
Wing Flaps Up	69 KIAS
Wing Flaps Down (40°)	60 KIAS
PRECAUTIONARY LANDING WITH ENGINE POWER AND FLAPS.	53 KIAS
LANDING WITHOUT ENGINE POWER:	
Wing Flaps Up	69 KIAS
Wing Flaps Down	60 KIAS

Abbreviated Check List:

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

- (1) Airspeed -- If flaps are up - 69 KIAS.
Flaps still 20° - 60 KIAS.
- (2) Mixture -- IDLE CUT-OFF.
- (3) Fuel Selector Valve -- OFF.
- (4) Ignition Switch -- OFF
- (5) Wing Flaps -- AS REQUIRED (40° Flaps and 60 KIAS recommended).
- (6) Master Switch -- OFF.

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ENGINE FAILURE DURING FLIGHT

- (1) Airspeed -- 69 KIAS (FLAPS UP, gross weight, best glide speed).
- (2) Carburetor Heat -- ON.
- (3) Fuel Selector Valve -- BOTH.
- (4) Mixture -- RICH.
- (5) Ignition Switch -- BOTH (or START if propeller is stopped).
- (6) Primer -- IN and LOCKED.

FORCED LANDINGSEMERGENCY LANDING WITHOUT ENGINE POWER

- (1) Airspeed -- 69 KIAS (Flaps UP).
-- 60 KIAS (Flaps DOWN).
- (2) Mixture -- IDLE CUT-OFF.
- (3) Fuel Selector Valve -- OFF.
- (4) Ignition Switch -- OFF.
- (5) Wing Flaps -- 40° (On final approach).
- (6) Master Switch -- OFF.
- (7) Doors -- UNLATCH PRIOR TO TOUCHDOWN.
- (8) Touchdown -- SLIGHTLY TAIL LOW.
- (9) Ignition Switch -- OFF.
- (10) Brakes -- APPLY HEAVILY.

PRECAUTIONARY LANDING WITH ENGINE POWER

- (1) Wing Flaps -- 20°.
- (2) Airspeed -- 53 KIAS.
- (3) Selected Field -- FLY OVER, noting terrain and obstructions, then retract flaps upon reaching a safe altitude and airspeed.
- (4) Radio and Electrical Switches -- OFF.
- (5) Wing Flaps -- 40° (on final approach).
- (6) Airspeed -- 53 KIAS.
- (7) Master Switch -- OFF.
- (8) Doors -- UNLATCH PRIOR TO TOUCHDOWN.
- (9) Touchdown -- SLIGHTLY TAIL LOW.
- (10) Ignition Switch -- OFF.
- (11) Brakes -- APPLY HEAVILY.

DITCHING

- (1) Radio -- TRANSMIT MAYDAY on 121.5 MHZ, giving location and intentions.
- (2) Heavy Objects (in baggage area) -- SECURE or JETTISON.
- (3) Wing Flaps -- 40°.
- (4) Power -- ESTABLISH 300 FT/MIN DESCENT at 53 KIAS.
- (5) Approach -- High Winds, Heavy Seas -- INTO THE WIND.
-- Light Winds, Heavy Swells -- PARALLEL TO SWELLS.
- (6) Cabin Doors -- UNLATCH.
- (7) Touchdown -- LEVEL ATTITUDE AT 300 FT/MIN DESCENT.

DITCHING: Continued

- (8) Face -- CUSHION at touchdown with folded coat or seat cushion.
- (9) Airplane -- EVACUATE through cabin doors. If necessary, open vent window and flood cabin to equalize pressure so doors can be opened.
- (10) Life Vents and Raft -- INFLATE.

SECTION 4: NORMAL PROCEDURES

BEFORE ENTERING THE AIRPLANE

- (1) Make an exterior inspection in accordance with Figure 4-1.

BEFORE STARTING THE ENGINE

- (1) Preflight Inspection -- COMPLETE.
- (2) Seats and Seat Belts -- ADJUST and LOCK.
- (3) Brakes -- TEST and SET.
- (4) Circuit Breakers -- CHECK IN.
- (5) Fuel Selector -- BOTH.
- (6) Radios and Electrical Equipment -- OFF.
- (7) Cowl Flaps -- OPEN (move lever out of locking hole to reposition).
- (8) Master Switch -- ON.

STARTING THE ENGINE

- (1) Mixture -- RICH.
- (2) Propeller -- HIGH RPM.
- (3) Carburetor Heat -- COLD.
- (4) Throttle -- OPEN $\frac{1}{2}$ inch.
- (5) Prime -- AS REQUIRED.
- (6) Master Switch -- ON.
- (7) Propeller Area -- CLEAR.
- (8) Ignition Switch -- START (Release when engine starts).

-- NOTE --

If engine has been overprimed, start with throttle $\frac{1}{4}$ to $\frac{1}{2}$ open. Reduce throttle to idle when engine fires.

- (9) Oil Pressure -- CHECK.

-- NOTE --

After starting, check for oil pressure indication within 30 seconds in normal temperatures and 60 seconds in cold temperatures. If no indication appears, shut off engine and investigate.

BEFORE TAKEOFF

- (1) Cabin Doors and Windows -- CLOSED and LOCKED.
- (2) Flight Controls -- FREE and CORRECT.
- (3) Elevator and Rudder Trim -- TAKEOFF.

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Glide Ratio 10:1
Achieve best glide = 70 knots
no flaps

BEFORE TAKEOFF Continued

feather for better glide

- (4) Flight Instruments -- SET.
- (5) Radios -- SET.
- (6) Autopilot (If installed) -- OFF.
- (7) Fuel Selector Valve -- BOTH.
- (8) Mixture -- RICH.
- (9) Parking Brake -- SET.
- (10) Throttle -- 1700 RPM.
 - a. Magnetos -- CHECK (RPM drop should not exceed 150 RPM either magneto or 50 RPM differential between magnetos).
 - b. Propeller -- CYCLE from high to low RPM, return to high RPM (full in).
 - c. Carburetor Heat -- CHECK for RPM drop.
 - d. Engine Instruments and Ammeter -- CHECK.
 - e. Suction Gage -- CHECK.
- (11) Flashing Beacon, Navigation Lights and/or Strobe Lights -- ON as required.
- (12) Throttle Friction Lock -- ADJUST.
- (13) Wing Flaps -- 20°.

TAKEOFF

- (1) Wing Flaps -- 20°.
- (2) Elevator Trim -- NEUTRAL.
- (3) Rudder Trim -- ½ RIGHT.
- (4) Carburetor Heat -- COLD.
- (5) Brakes -- APPLY.
- (6) Power -- FULL THROTTLE and 2400 RPM.
- (7) Brakes -- APPLY. ~~RELEASE~~
- (8) Elevator Control -- ROTATE AT 44 KIAS.
- (9) Initial Climb -- 50 KIAS while clearing obstacles.
- (10) After Clearing Obstacles -- ACCELERATE TO 68 KIAS.
- (11) Flaps -- RETRACT.
- (12) Enroute Climb -- STANDARD PROCEDURES.

NORMAL CLIMB

- (1) Airspeed -- 85 - 95 KIAS.
- (2) Power -- 23 INCHES HG. and 2400 RPM.
- (3) Fuel Selector Valve -- BOTH.
- (4) Mixture -- FULL RICH (Mixture may be leaned above 5000 feet).
- (5) Cowl Flaps -- OPEN as required.

MAXIMUM PERFORMANCE CLIMB

- (1) Airspeed -- 78 KIAS at sea level to 72 KIAS at 10,000 feet.
- (2) Power -- FULL THROTTLE and 2400 RPM.
- (3) Mixture -- FULL RICH (Mixture may be leaned above 5000 feet).
- (4) Cowl Flaps -- FULL OPEN.

CRUSING

- (1) Power -- 15-23 INCHES HG. 2100 - 2400 RPM (no more than 75% power).
- (2) Elevator and Rudder Trim -- ADJUST.
- (3) Mixture -- LEAN.
- (4) Cowl Flaps -- CLOSED.

LET-DOWN

- (1) Mixture -- ENRICHEN AS REQUIRED.
- (2) Power -- AS DESIRED.
- (3) Carburetor Heat -- AS REQUIRED (to prevent carburetor icing).
- (4) Cowl Flaps -- CLOSED.

BEFORE LANDING

- (1) Seats, Belts, Shoulder Harnesses -- ADJUST and LOCK.
- (2) Fuel Selector Valve -- BOTH.
- (3) Mixture -- RICH.
- (4) Propeller -- HIGH RPM.
- (5) Cowl Flaps -- CLOSED.
- (6) Carburetor Heat -- ON (Apply full heat before throttle).
- (7) Airspeed -- 71 - 81 KIAS (Flaps UP).
- (8) Wing Flaps -- 0° - 40° (Below 95 KIAS).
- (9) Airspeed -- 57 KIAS (Flaps DOWN).
- (10) Elevator and Rudder Trim -- ADJUST.
- (11) Power -- AS REQUIRED for normal rate of descent.
- (12) Autopilot (If installed) -- OFF.

BALKED LANDING

- (1) Power -- FULL THROTTLE and 2400 RPM.
- (2) Carburetor Heat -- COLD.
- (3) Wing Flaps -- RETRACT to 20°.
- (4) Airspeed -- 60 KIAS.
- (5) Wing Flaps -- RETRACT slowly, after clearing obstacles.
- (6) Cowl Flaps -- OPEN.

LANDING

- (1) Touchdown -- MAIN WHEELS FIRST.
- (2) Landing Roll -- LOWER NOSE WHEEL GENTLY.
- (3) Brakes -- APPLY.

AFTER LANDING

- (1) Carburetor Heat -- COLD.
- (2) Wing Flaps -- RETRACT.
- (3) Cowl Flaps -- OPEN.

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SECURING AIRCRAFT

- (1) Parking Brake -- SET.
- (2) Radios, Electrical Equipment, Autopilot -- OFF.
- (3) Throttle -- IDLE.
- (4) Mixture -- IDLE CUT-OFF (pulled full out).
- (5) Ignition Switch -- OFF.
- (6) Master Switch -- OFF.
- (7) Control Lock -- INSTALL.
- (8) Fuel Selector Valve -- RIGHT.

SECTION 5: PERFORMANCE

No Change Except:

The minimum performance required by the applicable certification regulations has been demonstrated to the FAA. However, the precise performance information in the basic Pilot's Operating Handbook may or may not be affected by the modification.

	<u>Figure</u>
STALL SPEEDS	5-1
TAKE OFF	5-2
LANDING	5-3

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For AIRSPEED CORRECTION TABLE, See Pilot's Operating Handbook, Figure 5-1.

STALL SPEEDS, ZERO THRUST					
	CONDITION	ANGLE OF BANK			
		0°	20°	40°	60°
2950 LBS.	FLAPS UP	44	50	64	83
GROSS	FLAPS 20°	37	40	51	70
WEIGHT	FLAPS 40°	36	40	51	68
SPEEDS ARE KIAS					

Figure 5-1

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ROBERTSON TAKEOFF DATA - ROBERTSON R/STOL CESSNA 182Q SKYLANE

Take-off Distance with 20° Flaps from Hard Surfaced Runway (Feet)

GROSS WEIGHT LBS.	KIAS @ 50'	HEAD WIND KNOTS	@ S.L. & 59° F.		@ 2500' & 50° F.		@ 5000' & 41° F.		@ 7500' & 32° F.	
			GROUND RUN	TOTAL TO 50' ELEV.	GROUND RUN	TOTAL TO 50' ELEV.	GROUND RUN	TOTAL TO 50' ELEV.	GROUND RUN	TOTAL TO 50' ELEV.
2950	49	0	470	885	555	1070	665	1305	815	1695
		10	325	670	390	820	480	1020	590	1340
		20	205	485	255	600	320	755	400	1015
2500	45	0	320	625	380	735	455	875	555	1070
		10	215	465	260	555	315	660	390	825
		20	130	325	165	390	200	475	250	600
2000	40	0	195	430	230	490	275	565	330	660
		10	125	305	150	350	185	410	220	490
		20	70	200	90	240	105	280	135	340

- NOTES: 1. Increase distances 10% for each 20° F. above standard temperature for particular altitude.
2. For take-off on a dry, grass runway, increase distances (both "ground run" and "total to 50'").
3. For operations in gusty or severe crosswind conditions, increase speeds 4 KIAS for each 10 knots wind increment.

Figure 5-2

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ROBERTSON LANDING DATA - Robertson R/Stol Cessna 182Q Skylane
Landing Distance with 40° Flaps on Hard Surfaced Runway (Feet)

GROSS WEIGHT LBS.	KIAS @ 50'	@ S.L. & 59° F.		@ 2500' & 50° F.		@ 5000' & 41° F.		@ 7500' & 32° F.	
		GROUND ROLL	TOTAL TO CLEAR 50'	GROUND ROLL	TOTAL TO CLEAR 50'	GROUND ROLL	TOTAL TO CLEAR 50'	GROUND ROLL	TOTAL TO CLEAR 50'
2800	57	405	920	440	975	465	1025	505	1090
2400	52	350	850	380	895	400	940	435	995
2000	49	295	775	315	810	335	850	360	895

- NOTES:
1. Distance shown are based on zero wind, power off, and heavy braking.
 2. Reduce landing distances 10% for each 5 knots headwind.
 3. For operation on a dry, grass runway, increase distances (both "ground roll" and "total to clear 50'" by 20% of the "total to clear 50'" figure.
 4. For operating in gusty or severe crosswind conditions, increase speeds 4 KIAS for each 10 knot wind increment.

Figure 5-3

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SECTION 6: WEIGHT AND BALANCE

See FAA Form 337 in the airplane records for the weight and C.G. of the weight added for this modification.

SECTION 7: DESCRIPTION AND OPERATION

No Change.

SECTION 8: HANDLING, SERVICING AND MAINTENANCE

No Changes.

SECTION 9: SUPPLEMENTS

No Changes.

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