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OWNER'S MANUAL SUPPLEMENT

FOR

ROBERTSON R/STOL CESSNA 180 SKYWAGON

S/N 30000 THRU 50911 AND 18050912 THRU 18052620

You have made a prudent investment in increased safety, performance, and forgiveness characteristics of your airplane. Treated with the same respect you would give any fine piece of equipment, your Robertson R/STOL Cessna 180 will pay you continuous dividends, including the day you decide to sell. If ever you have a specific question, or wish to take advantage of our lifetime guarantee, you need only call or write our Headquarters.

This Owner's Manual Supplement is designed to complement, rather than replace, your Cessna 180 Owner's Manual. Those changed areas in specifications, performance, and operating procedures are detailed herein.

ROBERTSON AIRCRAFT CORPORATION

Headquarters:

839 West Perimeter Road  
Renton, Washington 98055

ROBERTSON NORMAL OPERATION

For Your

R/STOL-Equipped Naturally-Aspirated Cessna 180 Skywagon

Robertson NORMAL Operation is specifically tailored for the average pilot who desires increased safety margins, utility, and peace of mind.

This check list and associated performance data are designed to provide comfortable margins to allow for normal tolerance in the proficiencies of the average pilot. It replaces Section I of your Cessna Owner's Manual.

It is recommended that Robertson NORMAL Operation contained in this check list be utilized except for conditions as described in your check list marked "ROBERTSON STOL OPERATION."

BEFORE ENTERING THE AIRPLANE.

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

BEFORE STARTING THE ENGINE.

- (1) Seats and Seat Belts -- Adjust and lock.
- (2) Brakes -- Test and set
- (3) Radios and Electrical Equipment -- "OFF".
- (4) Fuel Selector Valve -- "BOTH ON".
- (5) Wing Flaps -- Check all positions.
- (6) Cowl Flaps -- "OPEN". (Move lever out of locking detent to reposition.)

STARTING THE ENGINE.

- (1) Master Switch -- "ON".
- (2) Carburetor Heat -- Cold.
- (3) Mixture -- Rich.
- (4) Primer -- As required.
- (5) Propeller -- High RPM.
- (6) Throttle -- Cracked (one-half inch).
- (7) Propeller Area -- Clear.

R/STOL-Equipped Cessna 180 Skywagon

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- (8) Ignition Switch -- "START" (hold until engine fires, but not longer than 30 seconds).
- (9) Ignition Switch -- Release to "BOTH" (immediately after engine fires).

## NOTE

If engine has been overprimed, start with throttle open 1/4 to 1/2 full open. Reduce throttle to idle when engine fires.

## 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) Parking Brake -- Set.
- (2) Fuel Selector Valve -- "BOTH ON".
- (3) Flight Controls -- Check for free and correct movement.
- (4) Stabilizer and Optional Rudder Trim Control Wheels -- Take-off settings.
- (5) Cowl Flaps -- Check full "OPEN".
- (6) Throttle Setting -- 1700 RPM.
- (7) Magnetos -- Check (50 RPM maximum differential between magnetos).
- (8) Propeller -- Cycle from high to low RPM; return to high RPM (full in).
- (9) Carburetor Heat -- Check operation.
- (10) Engine Instruments -- Check.
- (11) Suction Gage -- Check (4.6 to 5.4 inches of mercury).
- (12) Ammeter -- Check.
- (13) Throttle -- Closed (check idle).
- (14) Flight Instruments and Radios -- Set.
- (15) Optional Autopilot or Wing Leveler -- "OFF".
- (16) Cabin Doors and Windows -- Closed and locked.
- (17) Parking Brake -- Release.

ROBERTSON NORMAL TAKEOFF.

- (1) Wing Flaps -- 20°.
- (2) Elevator Trim -- NEUTRAL.
- (3) Rudder Trim -- 1/2 RIGHT.
- (4) Carburetor Heat -- COLD.
- (5) Brakes -- APPLY.
- (6) Power -- Full throttle and 2600 RPM.
- (7) Brakes -- RELEASE.
- (8) Elevator Control -- BEGIN LIFTOFF AT 48 MPH IAS. **42 KIAS**
- (9) Initial Climb -- 56 MPH IAS WHILE CLEARING OBSTACLES. **49 KIAS**
- (10) After clearing obstacles -- ACCELERATE TO 72 MPH IAS. **63 KIAS!**
- (11) Flaps -- RETRACT. *- 500 feet above ground* **RETRACT**
- (12) Enroute climb -- STANDARD PROCEDURES.

a) red. Power  
b) reverse prop

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NORMAL CLIMB.

- (1) Airspeed -- 100 to 120 MPH. ~~87 KIAS~~ → 104 KIAS
- (2) Power -- 23 inches and 2450 RPM.
- (3) Fuel Selector Valve -- "BOTH ON".
- (4) Mixture -- Full rich (unless engine is rough due to excessively rich mixture).
- (5) Cowl Flaps -- Open as required.

MAXIMUM PERFORMANCE CLIMB.

- (1) Airspeed -- 95 MPH (sea level) to 87 MPH (10,000 feet).
- (2) Power -- Full throttle and 2600 RPM.
- (3) Fuel Selector Valve Handle -- "BOTH ON".
- (4) Mixture -- Full rich (unless engine is rough).
- (5) Cowl Flaps -- Full "OPEN".

CRUISING.

- (1) Engine Power -- 15 to 23 inches of manifold pressure and 2200-2450 RPM.
- (2) Cowl Flaps -- Adjust to maintain normal cylinder head temperature.
- (3) Stabilizer and Optional Rudder Trim Control Wheels -- Adjust.
- (4) Mixture -- Lean.

LET-DOWN.

- (1) Mixture -- Rich.
- (2) Power -- As desired.
- (3) Carburetor Heat -- Apply (if icing conditions exist).

BEFORE LANDING.

- (1) Fuel Selector Valve -- "BOTH ON".
- (2) Mixture -- Rich.
- (3) Propeller -- High RPM.
- (4) Cowl Flaps -- "CLOSED".
- (5) Carburetor Heat -- Apply before closing throttle.
- (6) Wing Flaps -- 0° to 20° (below 110 MPH). ~~96 KIAS~~ 100 KIAS
- (7) Initial approach -- Flaps 20° at 100 MPH IAS. ~~87 KIAS~~ 75 KIAS.
- (8) Final approach -- Flaps 40° at 60 MPH IAS. ~~53 KIAS~~ 70 KIAS
- (9) Power -- As required for normal rate of descent.
- (10) Stabilizer and Optional Rudder Trim Control Wheels -- Adjust for landing. (back)

## NOTE

The ability of the airplane to land three-point is dependent upon the stabilizer being adjusted for hands-off trim in the glide.

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BALKED LANDING (GO-AROUND).

- (1) Power -- Full throttle and 2600 RPM.
- (2) Carburetor Heat -- Cold.
- (3) Wing Flaps -- Retract to 20°.
- (4) Cowl Flaps -- "OPEN".
- (5) Upon reaching an airspeed of approximately 65 MPH IAS, retract flaps slowly.

ROBERTSON NORMAL LANDING.

- (1) Touchdown -- FLARE WITH ELEVATOR IN NORMAL FASHION.
- (2) Touchdown Speed -- 51 MPH IAS.
- (3) Deceleration -- CLOSE THROTTLE, RETRACT FLAPS, APPLY BRAKES.

NOTE: For operation in moderate to heavy turbulence and cross-winds in excess of 20 MPH, increase speeds 10 to 15 MPH. 10 KTS

AFTER LANDING.

- (1) Cowl Flaps -- "OPEN".
- (2) Wing Flaps -- Retract.
- (3) Carburetor Heat -- Cold.

SECURING AIRCRAFT.

- (1) Parking Brake -- Set.
- (2) Radios and Electrical Equipment -- "OFF".
- (3) Mixture -- Idle cut-off (pulled full out).

## NOTE

Do not open throttle as engine stops since this actuates the accelerator pump.

- (4) Ignition and Master Switch -- "OFF".
- (5) Control Lock -- Installed.

## ROBERTSON NORMAL TAKEOFF DATA - ROBERTSON R/STOL Cessna 180 Skywagon

Take-off distance with 20° flaps from hard surfaced runway (feet)

GROSS WEIGHT LBS.	IAS @50' MPH	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.
2800		0	410	785	490	930	590	1110	720	1375
	56	10	280	600	345	710	415	855	515	1075
	49K	20	180	425	220	515	275	630	350	805
2400		0	290	585	345	680	415	795	500	955
	52	10	195	435	235	505	285	600	350	730
	45K	20	115	300	140	360	180	430	225	530
2000		0	195	430	230	490	275	560	330	655
	48	10	125	310	150	360	180	415	225	490
	42K	20	70	210	85	245	105	285	135	345

- NOTES:
1. Increase distances 10% for each 25°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'") by 7% of the "total to 50'" distance.
  3. For operations in gusty or severe crosswind conditions, increase speeds 5 MPH for each 10 knot wind increment.

- Maximum Rate-of-Climb Data
- Cruise Performance
- Maximum Glide

Your Robertson-equipped aircraft will perform in climb, cruise, and glide according to the charts in your Cessna Owner's Manual. Therefore, use the data directly.

ROBERTSON NORMAL LANDING DATA - ROBERTSON R/STOL Cessna 180 Skywagon

Landing Distance with 40° Flaps on Hard Surfaced Runway (feet)

GROSS WEIGHT LBS.	IAS @50' MPH	@ 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	<del>52 KTS</del> 60 52 K	295	835	310	885	335	940	355	995
2400	<del>49 KTS</del> 56 49 K	255	780	270	820	290	870	305	915
2000	<del>44 KTS</del> 51 44 K	215	715	225	750	240	790	255	830

- NOTES:
1. Distances shown are based on zero wind, power off, and heavy braking.
  2. Reduce landing distances 10% for each 4 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 operation in moderate to heavy turbulence and cross winds in excess of 20 mph, increase speeds 10 to 15 MPH.

AIRSPEED CORRECTION TABLE

(Gross Weight - 2800 Lbs.)

AIRSPEED CORRECTION TABLE (Gross Weight - 2800 Lbs.)								
FLAPS 0°								
IAS - MPH	50	60	80	100	120	140	160	180
CAS - MPH	61	68	82	100	119	138	158	178
FLAPS 20°								
IAS - MPH	40	50	60	70	80	90	100	110
CAS - MPH	54	59	65	73	82	91	100	110
FLAPS 40°								
IAS - MPH	40	50	60	70	80	90	100	110
CAS - MPH	49	56	63	72	81	91	101	110

MAXIMUM FLAP SPEEDS: Flaps 0° to 40° -- 110 MPH - CAS

STALL SPEEDS, ZERO THRUST

CONDITION		ANGLE OF BANK			
		0°	20°	40°	60°
2800 LBS. GROSS WEIGHT	FLAPS UP	61 <sup>MPH</sup> <del>53</del>	63	70	88
	FLAPS 20°	52 <del>45</del>	53	60	76
	FLAPS 40°	50 <del>43</del>	51	57	72

SPEEDS ARE MPH - CAS



ROBERTSON STOL OPERATION

For Your

R/STOL-Equipped Naturally-Aspirated Cessna 180 Skywagon

Robertson "STOL" Operation is for use by the experienced pilot when emergency conditions or operation into austere fields require the utmost from your aircraft consistent with safety.

BEFORE ENTERING THE AIRCRAFT.

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

BEFORE STARTING THE ENGINE.

- (1) Seats and Seat Belts -- Adjust and lock.
- (2) Brakes -- Test and set.
- (3) Radios and Electrical Equipment -- "OFF".
- (4) Fuel Selector Valve -- "BOTH ON".
- (5) Wing Flaps -- Check all positions.
- (6) Cowl Flaps -- "OPEN". (Move lever out of locking detent to reposition.)

STARTING THE ENGINE.

- (1) Master Switch -- "ON".
- (2) Carburetor Heat -- Cold.
- (3) Mixture -- Rich.
- (4) Primer -- As required.
- (5) Propeller -- High RPM.
- (6) Throttle -- Cracked (one-half inch).
- (7) Propeller Area -- Clear.
- (8) Ignition Switch -- "START" (hold until engine fires, but not longer than 30 seconds).
- (9) Ignition Switch -- Release to "BOTH" (immediately after engine fires).

NOTE

If engine has been overprimed, start with throttle open 1/4 to 1/2 full open. Reduce throttle to idle when engine fires.

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) Parking Brake -- Set.
- (2) Fuel Selector Valve -- "BOTH ON".
- (3) Flight Controls -- Check for free and correct movement.
- (4) Stabilizer and Optional Rudder Trim Control Wheels -- Take-off settings.
- (5) Cowl Flaps -- Check full "OPEN".
- (6) Throttle Setting -- 1700 RPM.
- (7) Magnetos -- Check (50 RPM maximum differential between magnetos).
- (8) Propeller -- Cycle from high to low RPM; return to high RPM (full in).
- (9) Carburetor Heat -- Check operation.
- (10) Engine Instruments -- Check.
- (11) Suction Gage -- Check (4.6 to 5.4 inches of mercury).
- (12) Ammeter -- Check.
- (13) Throttle -- Closed (check idle).
- (14) Flight Instruments and Radios -- Set.
- (15) Optional Autopilot or Wing Leveler -- "OFF".
- (16) Cabin Doors and Windows -- Closed and locked.
- (17) Parking Brake -- Release.

*Maximum performance take off*

ROBERTSON ~~STOL~~ TAKEOFF.

**30° FLAPS**

**LIFT OFF @ 38 KIAS**

- (1) Wing Flaps -- UP.
- (2) Elevator trim -- SLIGHTLY NOSE-UP. **INITIAL CLIMB 44 KIAS**
- (3) Rudder trim -- FULL RIGHT. **20° FLAPS**
- (4) Carburetor Heat -- COLD. **ACCELERATE TO 63 KIAS**
- (5) Brakes -- APPLY. **RETRACT FLAPS**
- (6) Power -- Full throttle and 2600 RPM.
- (7) Brakes -- RELEASE.
- (8) Flaps -- SELECT 30° JUST AFTER BRAKE RELEASE.
- (9) Elevator Control -- BEGIN LIFTOFF AT 44 MPH IAS. **38 KIAS**
- (10) Initial Climb ~~50~~ 50 MPH IAS WHILE CLEARING OBSTACLES; RETRACT FLAPS TO 20°.
- (11) After clearing obstacles -- ACCELERATE TO 72 MPH IAS. **38 KIAS**
- (12) Flaps -- RETRACT.
- (13) Enroute Climb -- STANDARD PROCEDURES.

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NORMAL CLIMB.

- (1) Airspeed -- 100 to 120 MPH. ~~80 KIAS~~ → 100 KIAS
- (2) Power -- 23 inches and 2450 RPM.
- (3) Fuel Selector Valve -- "BOTH ON".
- (4) Mixture -- Full rich (unless engine is rough due to excessively rich mixture).
- (5) Cowl Flaps -- Open as required.

MAXIMUM PERFORMANCE CLIMB.

- (1) Airspeed -- 95 MPH (sea level) to 87 MPH (10,000 feet).
- (2) Power -- Full throttle and 2600 RPM.
- (3) Fuel Selector Valve Handle -- "BOTH ON".
- (4) Mixture -- Full rich (unless engine is rough).
- (5) Cowl Flaps -- Full "OPEN".

CRUISING.

- (1) Engine Power -- 15 to 23 inches of manifold pressure and 2200 to 2450 RPM.
- (2) Cowl Flaps -- Adjust to maintain normal cylinder head temperature.
- (3) Stabilizer and Optional Rudder Trim Control Wheels -- Adjust.
- (4) Mixture -- Lean.

LET-DOWN.

- (1) Mixture -- Rich.
- (2) Power -- As desired.
- (3) Carburetor Heat -- Apply (if icing conditions exist).

BEFORE LANDING.

- (1) Fuel Selector Valve -- "BOTH ON".
- (2) Mixture -- Rich.
- (3) Propeller -- High RPM.
- (4) Cowl Flaps -- "CLOSED".
- (5) Carburetor Heat -- Apply before closing throttle.
- (6) Wing Flaps -- 0° to 40° (below 110 MPH). ~~80 KIAS~~
- (7) Initial approach -- Flaps 20° at 100 MPH IAS. ~~80 KIAS~~
- (8) Final approach -- Flaps 40° at 55 MPH IAS. ~~80 KIAS~~
- (9) Power -- AS REQUIRED FOR STOL APPROACH (POWER-ON).
- (10) Stabilizer and Optional Rudder Trim Control Wheels -- Adjust for landing.

< 96 KIAS  
87 KIAS  
48 KIAS

## NOTE

The ability of the airplane to land three-point is dependent upon the stabilizer being adjusted for hands-off in the glide.

R/STOL-Equipped Cessna 180 Skywagon  
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BALKED LANDING (GO-AROUND).

- (1) Power -- Full throttle and 2600 RPM.
- (2) Carburetor Heat -- Cold.
- (3) Wing Flaps -- Retract to 20°.
- (4) Cowl Flaps -- "OPEN".
- (5) Upon reaching an airspeed of approximately 65 MPH IAS, retract flaps slowly.

ROBERTSON STOL LANDING.

- (1) Touchdown -- ~~FLARE WITH ELEVATOR AND POWER TO ARREST RATE-OF-SINK.~~
- (2) Touchdown Speed -- 47 MPH IAS.
- (3) Deceleration -- CLOSE THROTTLE, RETRACT FLAPS, APPLY HEAVY BRAKING.

NOTE: For operation in moderate to heavy turbulence and crosswinds in excess of 20 MPH, increase speeds 15 to 20 MPH.

AFTER LANDING.

- (1) Cowl Flaps -- "OPEN".
- (2) Wing Flaps -- Retract.
- (3) Carburetor Heat -- Cold.

SECURING AIRCRAFT.

- (1) Parking Brake -- Set.
- (2) Radios and Electrical Equipment -- "OFF".
- (3) Mixture -- Idle cut-off (pulled full out).

## NOTE

Do not open throttle as engine stops since this actuates the accelerator pump.

- (4) Ignition and Master Switch -- "OFF".
- (5) Control Lock -- Installed.

$$50^{\circ}F = 10^{\circ}C$$

ROBERTSON STOL TAKEOFF DATA - ROBERTSON R/STOL Cessna 180 SkywagonTake-off distance with 30° flaps from hard surfaced runway (feet)

GROSS WEIGHT LBS.	IAS @50' MPH	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.
2800	50 <i>44k</i>	0	370	710	445	840	535	1005	650	1245
		10	255	540	310	640	375	775	470	970
		20	160	385	200	465	250	570	315	725
2400	47 <i>41k</i>	0	260	530	<sup>525</sup> 310	<sup>1020</sup> 615	375	715	455	865
		10	175	395	210	460	260	545	320	660
		20	105	275	130	325	160	385	205	480
2000	43 <i>38k</i>	0	175	390	210	440	245	505	300	595
		10	115	280	135	325	165	375	205	445
		20	65	190	80	220	95	260	125	310

- NOTES:
1. Increase distances 10% for each 25°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'") by 7% of the "total to 50'" distance.
  3. For operations in gusty or severe crosswind conditions, increase speeds 5 MPH for each 10 knot wind increment.

- Maximum Rate-of-Climb Data
- Cruise Performance
- Maximum Glide

Your Robertson-equipped aircraft will perform in climb, cruise, and glide according to the charts in your Cessna Owner's Manual. Therefore, use the data directly.

ROBERTSON STOL LANDING DATA - ROBERTSON R/STOL Cessna 180 SkywagonLanding Distance with 40° Flaps on Hard Surfaced Runway (feet)

GROSS WEIGHT LBS.	IAS @50' MPH	@ 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	55 48K	245	688	260	730	275	775	290	820
2400	51 44K	215	655	225	690	240	730	250	765
2000	47 41K	175	610	190	640	200	670	210	705

- NOTES:
1. Distances shown are based on zero wind, power off, and heavy braking.
  2. Reduce landing distances 10% for each 4 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 operation in moderate to heavy turbulence and crosswinds in excess of 20 MPH, increase speeds 15 to 20 MPH.