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ROBERTSON AIRCRAFT CORPORATION  
PILOT'S OPERATING HANDBOOK SUPPLEMENT  
FOR CESSNA MODEL T210M  
SERIAL NUMBERS 21061574 AND UP

SIERRA INDUSTRIES  
830-278-4381

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 SA1525WE.

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 \_\_\_\_\_

Serial Number \_\_\_\_\_

Approved by: \_\_\_\_\_

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ROBERTSON AIRCRAFT CORPORATION  
Robertson-Approved Pilot's Operating Handbook Supplement  
to  
Cessna T210M

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## SECTION 1: GENERAL

No Changes

## SECTION 2: LIMITATIONS

No Changes Except:

## AIRSPEED LIMITATIONS

Maximum Flaps Extended Speed:

|            |          |
|------------|----------|
| to 10°     | 140 KIAS |
| 10° to 30° | 85 KIAS  |

## AIRSPEED INDICATOR MARKINGS

|           |               |                           |
|-----------|---------------|---------------------------|
| White Arc | 85 to 50 KIAS | Full Flap Operating Range |
|-----------|---------------|---------------------------|

## PLACARDS:

Adjacent to Wing Flap Position Switch

White Segment -- 85 KIAS 10° to 30°

## SECTION 3: EMERGENCY PROCEDURES

AIRSPEED FOR EMERGENCY OPERATION

No Changes Except

## ENGINE FAILURE AFTER TAKEOFF:

Wing Flaps Up 85 KIAS

Wing Flaps Down 69 KIAS

PRECAUTIONARY LANDING WITH ENGINE POWER AND FLAPS 58 KIAS

## LANDING WITHOUT ENGINE POWER:

Wing Flaps Up 90 KIAS

Wing Flaps Down 69 KIAS

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## SECTION 3: EMERGENCY PROCEDURES - continued -

Abbreviated Check ListENGINE FAILURE DURING TAKEOFF RUN

No Changes

ENGINE FAILURE SHORTLY AFTER TAKEOFF

- (1) Airspeed -- If flaps are up - 85 KIAS.  
Flaps still 20° - 69 KIAS.
- (2) Mixture -- IDLE CUT-OFF.
- (3) Fuel Selector Valve -- OFF.
- (4) Ignition Switch -- OFF.
- (5) Wing Flaps -- AS REQUIRED (30° flaps and 69 KIAS recommended)
- (6) Master Switch -- OFF.

ENGINE FAILURE DURING FLIGHT

- (1) Airspeed -- 85 KIAS (Flaps UP, gross weight, best glide speed).
- (2) Fuel Quantity -- CHECK.
- (3) Fuel Selector Valve -- FULLEST TANK.
- (4) Mixture -- RICH.
- (5) Auxiliary Fuel Pump -- ON for 3-5 seconds with throttle 1/2 open;  
then OFF.
- (6) Ignition Switch -- BOTH (or START if propeller is stopped).
- (7) Throttle -- SLOWLY ADVANCE.

FORCED LANDINGSEMERGENCY LANDING WITHOUT ENGINE POWER

- (1) Airspeed -- 90 KIAS (flaps UP).  
-- 69 KIAS (flaps DOWN).
- (2) Mixture -- IDLE CUT-OFF.
- (3) Fuel Selector Valve -- OFF.
- (4) Ignition Switch -- OFF.
- (5) Landing Gear -- DOWN (UP if terrain is rough or soft).
- (6) Wing Flaps -- 30° (on final approach).
- (7) Airspeed -- 69 KIAS.
- (8) Master Switch -- OFF.
- (9) Doors -- UNLATCH PRIOR TO TOUCHDOWN.
- (10) Touchdown -- SLIGHTLY TAIL LOW.
- (11) Ignition Switch -- OFF.
- (12) 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.

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## SECTION 3: EMERGENCY PROCEDURES - continued -

- (3) Landing Gear -- UP.
- (4) Wing Flaps -- 30°.
- (5) Power -- ESTABLISH 300 FT/MIN DESCENT at 58 KIAS.
- (6) Approach -- High Winds, Heavy Seas -- INTO THE WIND.  
Light Winds, Heavy Swells -- PARALLEL TO SWELLS.

## NOTE

If no power is available, approach at 85 KIAS with flaps up or at 69 KIAS with 10° flaps.

- (7) Cabin Doors -- UNLATCH.
- (8) Touchdown -- LEVEL ATTITUDE AT 300 FT/MIN DESCENT.
- (9) Face -- CUSHION at touchdown with folded coat or seat cushion.
- (10) Airplane -- EVACUATE through cabin doors. If necessary, open vent window and flood cabin to equalize pressure so doors can be opened.
- (11) Life Vests and Raft -- INFLATE.

## SECTION 4: NORMAL PROCEDURES

BEFORE ENTERING THE AIRPLANE

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

BEFORE STARTING THE ENGINE

- (1) Pilot's Check List -- Review check list on left front door post.
- (2) Seats and Seat Belts -- ADJUST and LOCK.
- (3) Brakes -- TEST and SET.
- (4) Cowl Flaps -- OPEN. (Move lever out of locking hole to reposition.)
- (5) Fuel Selector -- FULLEST TANK.
- (6) Radios and Electrical Equipment -- OFF.
- (7) Landing Gear Handle -- DOWN.
- (8) Master Switch -- ON.
- (9) Landing Gear Lights and Horn -- PRESS TO TEST.

STARTING THE ENGINE

- (1) Mixture -- RICH.
- (2) Propeller -- HIGH RPM.
- (3) Throttle -- CLOSED.
- (4) Auxiliary Fuel Pump Switch -- ON.
- (5) Throttle -- ADVANCE to obtain 50-60 lbs/hr fuel flow; then RETURN to IDLE POSITION.
- (6) Auxiliary Fuel Pump Switch -- OFF.
- (7) Propeller Area -- CLEAR.
- (8) Ignition Switch -- START.
- (9) Throttle -- ADVANCE slowly.
- (10) Ignition Switch -- RELEASE when engine starts.

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## SECTION 4: NORMAL PROCEDURES - continued -

## NOTE

The engine should start in two to three revolutions. If it does not continue running, start again at step 3. If the engine does not start, leave auxiliary fuel pump switch off, set mixture to idle cut-off, open throttle, and crank until engine fires (or for approximately 15 seconds). If still unsuccessful, start again using the normal starting procedure after allowing the starter motor to cool.

- (11) Throttle -- RESET to desired idle speed.
- (12) Oil Pressure -- CHECK.

BEFORE TAKEOFF

- (1) Parking Brake -- SET.
- (2) Cowl Flaps -- FULL OPEN.
- (3) Flight Controls -- FREE and CORRECT.
- (4) Elevator and Rudder Trim -- TAKEOFF.
- (5) Mixture -- RICH.
- (6) Throttle 1700 RPM.
  - a. Magnetos -- CHECK (RPM drop should not exceed 150 RPM on either magneto or 50 RPM differential between magnetos).
  - b. Propeller -- CYCLE from high to low RPM; return to high RPM (full forward).
  - c. Engine Instruments and Ammeter -- CHECK.
  - d. Suction Gage -- CHECK in green arc.
- (7) Cabin Doors and Windows -- CLOSED and LOCKED.
- (8) Flight Instruments and Radios -- SET.
- (9) Autopilot (if installed) -- OFF.
- (10) Flashing Beacon, Navigation Lights And/Or Strobe Lights -- ON as required.
- (11) Throttle Friction Lock -- ADJUST.

TAKEOFF

- (1) Wing Flaps -- 20°.
- (2) Elevator trim -- TAKEOFF.
- (3) Rudder trim -- 1/2 RIGHT.
- (4) Cowl flaps -- OPEN.
- (5) Brakes -- APPLY.
- (6) Power -- 36.5 INCHES Hg and 2700 RPM (5 minute limitation).
- (7) Mixture -- RICH (186 lbs/hr).
- (8) Brakes -- RELEASE.
- (9) Elevator Control -- ROTATE AT 52 KIAS.
- (10) Initial Climb -- 60 KIAS WHILE CLEARING OBSTACLES.
- (11) After clearing obstacles -- ACCELERATE TO 78 KIAS.
- (12) Landing gear -- RETRACT IN CLIMB OUT.
- (13) Flaps -- RETRACT.
- (14) Enroute climb -- STANDARD PROCEDURES.

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## SECTION 4: NORMAL PROCEDURES - continued -

NORMAL CLIMB

- (1) Airspeed -- 104 to 113 KIAS.
- (2) Power -- 30 INCHES Hg and 2500 RPM.
- (3) Mixture -- LEAN to 126 lbs/hr.
- (4) Cowl flaps -- OPEN as required.

MAXIMUM PERFORMANCE CLIMB

- (1) Airspeed -- 98 KIAS.
- (2) Power -- 35 INCHES Hg and 2600 RPM.
- (3) Mixture -- ADJUST to 162 lbs/hr.
- (4) Cowl flaps -- FULL OPEN.

CRUISING

- (1) Power -- 15 to 30 INCHES Hg of manifold pressure and 2200 to 2500 RPM.
- (2) Cowl Flaps -- OPEN as required.
- (3) Elevator and Rudder Trim -- ADJUST.
- (4) Mixture -- LEAN for cruise fuel flow as determined from your Cessna Power Computer or the CRUISE PERFORMANCE in Section 5.

LET-DOWN

- (1) Power -- AS DESIRED.
- (2) Mixture -- LEAN for smoothness in power descents. Use full rich mixture for idle power.
- (3) Cowl Flaps -- CLOSED.

BEFORE LANDING

- (1) Fuel Selector -- FULLEST TANK.
- (2) Landing Gear Lever -- DOWN (below 140 KIAS).
- (3) Landing Gear Light -- GREEN.
- (4) Mixture -- RICH.
- (5) Propeller -- HIGH RPM.
- (6) Wing Flaps -- DOWN 0° - 10° (below 140 KIAS), 10° - 30° (below 85 KIAS).
- (7) Initial approach -- FLAPS 20° AT 85 KIAS.
- (8) Final approach -- FLAPS 30° AT 58 KIAS.
- (9) Elevator Trim -- ADJUST.

BALKED LANDING

- (1) Power -- 36.5 INCHES Hg and 2700 RPM.
- (2) Wings Flaps -- RETRACT IMMEDIATELY to 20°
- (3) Climb past obstacles at 60 KIAS.

---AFTER CLEARING OBSTACLES---

- (4) ACCELERATE to 78 KIAS and RETRACT flaps slowly.
- (5) Cowl Flaps -- OPEN.

## SECTION 4: NORMAL PROCEDURES - continued -

LANDING

- (1) Power -- AS REQUIRED FOR NORMAL RATE OF DESCENT.
- (2) Elevator and Rudder Trim -- AS REQUIRED.
- (3) Touchdown -- MAIN WHEELS FIRST.
- (4) Touchdown Speed -- 46 KIAS.
- (5) Deceleration -- CLOSE THROTTLE, RETRACT FLAPS, APPLY BRAKES.

AFTER LANDING

- (1) Cowl Flaps -- OPEN.
- (2) Wing Flaps -- RETRACT.

SECURING AIRCRAFT

- (1) Parking Brake -- SET.
- (2) Radios and Electrical Equipment -- OFF.
- (3) Mixture -- IDLE CUT-OFF (pulled full out).
- (4) Ignition and Master Switch -- OFF.
- (5) Control lock -- INSTALLED.

## 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 operating handbook may or may not be affected by the modification.

|                     | <u>FIGURE</u> |
|---------------------|---------------|
| AIRSPED CALIBRATION | 5-1           |
| STALL SPEEDS        | 5-2           |
| * TAKE OFF          | 5-3           |
| * LANDING           | 5-4           |

\* Robertson Cessna T210M will meet or exceed the performance in these charts.

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## AIRSPEED CORRECTION TABLE

(GROSS WEIGHT - 3800 Lbs.)

| AIRSPEED CORRECTION TABLE                                                          |    |    |    |    |     |     |     |     |
|------------------------------------------------------------------------------------|----|----|----|----|-----|-----|-----|-----|
| (GROSS WEIGHT - 3800 Lbs.)                                                         |    |    |    |    |     |     |     |     |
| FLAPS 0°                                                                           |    |    |    |    |     |     |     |     |
| IAS - MPH                                                                          | -- | 50 | 60 | 80 | 100 | 120 | 140 | 160 |
| CAS - MPH                                                                          | -- | 44 | 64 | 79 | 98  | 118 | 117 | 157 |
| FLAPS 20° & 30°                                                                    |    |    |    |    |     |     |     |     |
| IAS - MPH                                                                          | 35 | 40 | 50 | 60 | 70  | 80  | 90  | 100 |
| CAS - MPH                                                                          | 45 | 48 | 53 | 61 | 70  | 80  | 90  | 100 |
| MAXIMUM FLAP SPEEDS:<br>Flaps 0° to 10° -- 140 KIAS<br>Flaps 10° to 30° -- 85 KIAS |    |    |    |    |     |     |     |     |

Figure 5-1

## STALL SPEEDS, ZERO THRUST

|                                    | CONDITION | ANGLE OF BANK           |     |     |     |
|------------------------------------|-----------|-------------------------|-----|-----|-----|
|                                    |           | 0°                      | 20° | 40° | 60° |
| 3800 LBS<br>GROSS<br>WEIGHT        | FLAPS UP  | 59 <sup>CAS</sup><br>64 | 60  | 68  | 86  |
|                                    | FLAPS 20° | 53                      | 54  | 60  | 74  |
|                                    | FLAPS 30° | 46                      | 47  | 54  | 66  |
| SPEEDS ARE KIAS<br>Gear Up or Down |           |                         |     |     |     |

Figure 5-2

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ROBERTSON TAKEOFF DATA - ROBERTSON R/STOL CESSNA T210M  
CENTURION

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

| GROSS<br>WEIGHT<br>LBS. | KIAS<br>@ 50' | HEAD<br>WIND<br>KNOTS | @ S.L. & 59°F. |                          | @ 2500' & 50°F. |                          | @ 5000' & 41°F. |                          | @ 7500' & 32°F. |                          |
|-------------------------|---------------|-----------------------|----------------|--------------------------|-----------------|--------------------------|-----------------|--------------------------|-----------------|--------------------------|
|                         |               |                       | GROUND<br>RUN  | TOTAL<br>TO 50'<br>ELEV. | GROUND<br>RUN   | TOTAL<br>TO 50'<br>ELEV. | GROUND<br>RUN   | TOTAL<br>TO 50'<br>ELEV. | GROUND<br>RUN   | TOTAL<br>TO 50'<br>ELEV. |
| 3800                    | 60            | 0                     | 760            | 1318                     | 850             | 1435                     | 950             | 1575                     | 1070            | 1730                     |
|                         |               | 10                    | 565            | 1045                     | 640             | 1145                     | 725             | 1265                     | 825             | 1400                     |
|                         |               | 20                    | 400            | 795                      | 460             | 885                      | 525             | 985                      | 610             | 1100                     |
| 3400                    | 56            | 0                     | 600            | 1040                     | 655             | 1135                     | 740             | 1235                     | 830             | 1355                     |
|                         |               | 10                    | 430            | 815                      | 485             | 895                      | 555             | 980                      | 630             | 1085                     |
|                         |               | 20                    | 300            | 615                      | 340             | 675                      | 390             | 755                      | 455             | 840                      |
| 3000                    | 51            | 0                     | 445            | 825                      | 495             | 895                      | 555             | 970                      | 625             | 1060                     |
|                         |               | 10                    | 315            | 640                      | 360             | 695                      | 410             | 765                      | 465             | 840                      |
|                         |               | 20                    | 215            | 470                      | 240             | 515                      | 280             | 575                      | 325             | 635                      |

- 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'") by 5% of the "total to 50'" distance.
3. For operations in gusty or severe crosswind conditions, increase speeds 4 KIAS for each 10 knot wind increment.

Figure 5-3

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ROBERTSON LANDING DATA - Robertson R/STOL Cessna T210M  
Centurion

Landing Distance with 30° Flaps on Hard Surfaced Runway (feet)

| GROSS<br>WEIGHT<br>LBS. | KIAS<br>@ 50' | @ S.L. & 59°F. |                          | @ 2500' & 50°F. |                          | @ 5000' & 41°F. |                          | @ 7500' & 32°F. |                          |
|-------------------------|---------------|----------------|--------------------------|-----------------|--------------------------|-----------------|--------------------------|-----------------|--------------------------|
|                         |               | GROUND<br>ROLL | TOTAL<br>TO CLEAR<br>50' | GROUND<br>ROLL  | TOTAL<br>TO CLEAR<br>50' | GROUND<br>ROLL  | TOTAL<br>TO CLEAR<br>50' | GROUND<br>ROLL  | TOTAL<br>TO CLEAR<br>50' |
| 3800<br>3800            | 57            | 490            | 960                      | 525             | 1020                     | 555             | 1085                     | 590             | 1155                     |
| 3400<br>3400            | 53            | 440            | 905                      | 470             | 955                      | 495             | 1010                     | 530             | 1075                     |
| 3000<br>3000            | 49            | 390            | 845                      | 415             | 890                      | 440             | 940                      | 470             | 995                      |

- NOTES: 1. Distances 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 5-4

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SECTION 6: WEIGHT AND BALANCE

See FAA Form 337 in the airplanes 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 Change.

SECTION 9: SUPPLEMENTS

No Changes.

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