

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A3SW
Revision 19

THRUSH AIRCRAFT, INC.
(Snow, Rockwell, Ayres)

600 S-2D
S2R
S2R-T34
S2R-T15
S2R-T11
S2R-R3S
S2R-R1340

December 11, 2014

TYPE CERTIFICATE DATA SHEET NO. A3SW

This data sheet which is a part of Type Certificate No. A3SW prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Civil Air Regulations (See NOTE 4).

Type Certificate Holder Thrush Aircraft, Inc.
300 Old Pretoria Road
P.O. Box 3149
Albany, Georgia 31706-3149

Type Certificate Holder Record Snow Aeronautical Company transferred TC to North American Rockwell Corporation on February 18, 1970
North American Rockwell Corporation transferred TC to Rockwell International, Albany Aircraft Division on April 3, 1973
Rockwell International, Albany Aircraft Division transferred TC to Rockwell International, Commander Aircraft Division on July 27, 1973
Rockwell International, Commander Aircraft Division transferred TC to Ayres Corporation on November 28, 1977
Ayres Corporation transferred TC to Quality Aerospace on November 26, 2001
Quality Aerospace transferred TC to Thrush Aircraft on July 30, 2003

I. - Model 600 S-2D 1 PCLM (Normal Category Only). Approved November 1, 1965

Engine Pratt & Whitney WASP R1340 AN1 (S3H1 Commercial designation) with carburetor parts list settings 395118-3 or A-18639-7

Fuel 80/87 minimum grade aviation gasoline

<u>Engine Limits</u>	<u>H.P.</u>	<u>R.P.M.</u>	<u>M.P. IN. HG.</u>	<u>ALT.</u>
Takeoff (5 min.)	600	2250	36.0	S.L.
Max. Continuous	550	2200	34.0	S.L.
Max. Continuous	550	2200	32.5	5000

Propeller and Propeller Limits Hamilton Standard, constant speed, 12D40 Hub, 6101-12 blades.
Diameter: 109 inches maximum, 107 inches minimum.
Pitch settings 11.5° low and 27.0° high at 42 inch station

<u>Airspeed Limits</u>	V_{ne} (Never exceed)	159 mph	(138 knots)
	V_n (Maneuvering)	126 mph	(109 knots)
	V_{no} (Max. structural cruising)	126 mph	(109 knots)

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Reformatted 5/94.

<u>C. G. Range</u>	(+22.5) to (+29.0)												
<u>Maximum Weight</u>	6000 lbs.												
<u>Number of Seats</u>	1 (+89.0)												
<u>Maximum Cargo Load</u>	See weight and balance data												
<u>Fuel Capacity</u>	109 gallons (+38.5) (100 gallon usable capacity, one 54.5 gallon tank in each wing, tanks interconnected). See NOTE 1 for data on unusable fuel.												
<u>Oil Capacity</u>	11.4 gallons total. 84 lb. at (-13.6) (9 gallons usable)												
<u>Control Surface Movements</u>	<table border="0"> <tr> <td>Elevator</td> <td>Up 27°</td> <td>Down 17°</td> </tr> <tr> <td>Elevator tab</td> <td>Up 12°</td> <td>Down 18°</td> </tr> <tr> <td>Rudder</td> <td>Left 24°</td> <td>Right 24°</td> </tr> <tr> <td>Aileron</td> <td>Up 21°</td> <td>Down 17°</td> </tr> </table>	Elevator	Up 27°	Down 17°	Elevator tab	Up 12°	Down 18°	Rudder	Left 24°	Right 24°	Aileron	Up 21°	Down 17°
Elevator	Up 27°	Down 17°											
Elevator tab	Up 12°	Down 18°											
Rudder	Left 24°	Right 24°											
Aileron	Up 21°	Down 17°											
<u>Serial Numbers Eligible</u>	600-1311D and subsequent												
<u>Equipment</u>	<p>The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for certification. In addition, the following equipment is required:</p> <p>(a) FAA approved flight manual dated November 1965, Revision C, dated December 8, 1967.</p> <p>(b) 12 Volt Electrical System, Snow Dwg. No. 90111.</p> <p>(c) Operative pre-stall warning system per Snow Dwg. No. 90095.</p>												

II. - Model S2R (S2-R, S-2R)*. 1 PCLM (Normal Category Only). Approved November 2, 1967

*See NOTE 8 regarding model names.

<u>Engine</u>	Pratt & Whitney WASP R1340 AN1 (S3H1 or S1H1 Commercial designation) with carburetor parts list settings 395118-3 or A-18639-7. Manifold pressure gauge is to be modified per Drawing 60600 when the S1H1 engine is used. (See NOTE 5 for optional engine installation).						
<u>Fuel</u>	80/87 minimum grade aviation gasoline						
<u>Engine Limits</u>		<u>H.P.</u>	<u>R.P.M.</u>	<u>S3H1 M.P. IN. HG.</u>	<u>ALT.</u>	<u>S1H1 M.P. IN. HG.</u>	<u>ALT.</u>
	Takeoff (5 min.)	600	2250	36.0	S.L.	36.5	S.L.
	Max. Continuous	550	2200	34.0	S.L.	35.0	S.L.
	Max. Continuous	550	2200	32.5	5000	33.0	8000
<u>Propeller and Propeller Limits</u>	<p>Hamilton Standard, constant speed, 12D40 Hub, 6101-12 blades. Diameter 109 inches maximum, 107 inches minimum. Pitch settings 11.5° low and 27.0° high at 42 in. stations. Alternate settings - 11.5° low and 21.5° at 42 in. stations. Alternate blades, EAC AG100-2 - Diameter: 106 inches (2 percent cutoff permitted). Pitch settings 11.5° inches low and 20° high at 42 inch station.</p>						
<u>Airspeed Limits</u>	V_{ne} (Never exceed)	159 mph	(138 knots)				
	V_n (Maneuvering)	126 mph	(109 knots)				
	V_{no} (Max. structural cruising)	126 mph	(109 knots)				
	V_{fe} (Flap extended)	123 mph	(107 knots)				
<u>C. G. Range</u>	(+22.5) to (+29.)						

<u>Maximum Weight</u>	6000 lbs.
<u>Number of Seats</u>	1 (+89.0)
<u>Maximum Cargo Load</u>	See weight and balance data. Maximum baggage compartment, 60 lbs. (+112). Maximum hopper load, 3336 lbs. (+29.9)
<u>Fuel Capacity</u>	S/N 1380R - 70 gallons (+38.5) (66 gallon usable capacity, one 35 gallon tank in each wing, tanks interconnected). S/N 1416R and subsequent - 106 gallons (38.5) S/N 1416R thru 1418R - (100 gallon usable capacity, one 53 gallon tank in each wing, tanks interconnected) S/N 1419R thru 1499R, S/N 1501R thru 1510R - (98 gallon usable capacity, one 53 gallon tank in each wing, tanks interconnected.) S/N 1500R, 1511R and subsequent - (104 gallon usable, one 53 gallon tank in each wing, tanks interconnected) See NOTE 1 for data on unusable fuel.
<u>Oil Capacity</u>	11.4 gallons total (84 lbs. at (-13.6) (9 gallons usable)
<u>Control Surface Movements</u>	Elevator Up $27^{\circ} \pm 1^{\circ}$ Down $17^{\circ} \pm 1^{\circ}$ Elevator tab Up $13^{\circ} \pm 1^{\circ}$ Down $18^{\circ} \pm 1^{\circ}$ Rudder Left $24^{\circ} \pm 1^{\circ}$ Right $24^{\circ} \pm 1^{\circ}$ Aileron Up $21^{\circ} \pm 1^{\circ}$ Down $17^{\circ} \pm 1^{\circ}$ Flaps Down $26^{\circ} - 30^{\circ}$
<u>Serial Numbers Eligible</u>	1380R, 1416R thru 4999R
<u>Equipment</u>	The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for certification. In addition, the following equipment is required: (a) 24 Volt electrical system, Rockwell Dwg. No. 90159 effective 1380R, 1416R through 1590R. (b) 24 Volt Electrical System, Rockwell Dwg. 90326, effective 1591R and subsequent. (c) Operative pre-stall warning system per Rockwell Dwg. 90095, Eff. 1416R through 1440R.

III. - Model S2R-T34 1 PCLM (Normal Category Only). Approved August 28, 1977

<u>Engine</u>	United Aircraft of Canada PT6A-34AG		
<u>Fuel</u>	Jet A, Jet B, JP-4, JP-5 (If jet fuel is not available, gasoline MIL-G-5572, all grades, may be used for a maximum of 150 hours between overhauls.)		
<u>Oil</u>	UACL PT6 Engine Service Bulletin Number 1001 lists approved brands of oil.		
<u>Engine Limits</u>	<u>Takeoff and Max. Cont.</u>	<u>Transient Start/Accel.</u>	<u>Reverse Idle</u>
SHP	750		
Torque (PSI)	64.5	68.4 Trans (2 sec.)	64.5
ITT (°C)	790	1090 Start (2 sec.)	790
Ng (%)	101.5	102.7 Trans (10 sec.)	101.5
Np (RPM)	2200	2420 Trans (10 sec.)	2100
Oil Press (PSIG)	85 to 100	85 to 100	85 to 100 40 min.
Oil Temp (°C)	10 to 99	-40 min. 104 5 min.	-0 to 99 -40 to 99

The ratings shown on the United Aircraft of Canada PT6A-34AG engine are based on

the static sea level standard condition with no external accessory loads and no air bleed.

Propeller and Propeller Limits Hartzell HC-B3TN-3C propellers, constant speed, feathering and reversing: Hub Model HC-B3TN-3C; Blade Model T-10282.
Diameter 102.5 inches maximum 92.5 inches minimum.

<u>Airspeed Limits</u>	V _{ne} (Never exceed)	159 mph	(138 knots)
	V _n (Maneuvering)	126 mph	(109 knots)
	V _{no} (Max. structural cruising)	126 mph	(109 knots)
	V _{fe} (Flap Extended)	123 mph	(107 knots)

C. G. Range Forward limit at 6,000 lbs. +26.5 inches aft of datum
Forward limit at 4,000 lbs. and below +24.0 inches aft of datum
(Straight line variation in the forward limit between 4,000 pounds and 6,000 pounds.)

Aft limit +29.0 inches aft of datum
Datum is the leading edge of the wing.

Maximum Weight 6000 lbs.

Maximum Operating Altitude 12,000 feet

Number of Seats 1 (+89.)

Maximum Cargo Load See weight and balance data.
Maximum baggage compartment, 60 lbs. (+112).
Maximum Hopper Load, 3336 pounds at (+29.9)

Fuel Capacity Tank Capacity and usable capacity for aircraft S/N 6000 and Up, same as in Section II for Model S2R. See NOTE 1 for data on unusable fuel.

Oil Tank Capacity 11 quarts - Usable oil tank capacity 6 quarts.

<u>Control Surface Movements</u>	Elevator	Up 27° ± 1°	Down 17° ± 1°
	Elevator tab	Up 13° ± 1°	Down 18° ± 1°
	Rudder	Left 24° ± 1°	Right 24° ± 1°
	Aileron	Up 21° ± 1°	Down 17° ± 1°
	Flaps		Down 15° ± 1°

Serial Numbers Eligible 6000-6049 and T34-001 and up.

Required Equipment The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. This equipment must include a current Airplane Flight Manual. Refer to NOTE 6 for information on required placards for flight and operating instructions and limitations.

IV. - Model S2R-T15, 1 PCLM (Normal Category Only). Approved April 3, 1979

Engine United Aircraft of Canada PT6A-15AG

Fuel Jet A, Jet B, JP-4, JP-5 (If jet fuel is not available, aviation gasoline MIL-G-5572, all grades, may be used for a maximum of 150 hours between overhauls.)

Oil UACL PT6 Engine Service Bulletin Number 1001 lists approved brands of oil

<u>Engine Limits</u>	<u>Takeoff and Max. Cont.</u>	<u>Transient Start/Accel.</u>	<u>Reverse Idle</u>
SHP	680		
Torque (PSI)	53.0	68.8 Trans (2 sec.)	53.0
ITT (°C)	725	1090 Start (2 sec.)	725
Ng (%)	101.5	102.7 Trans (10 sec.)	101.5
Np (RPM)	2200	2420 Trans (10 sec.)	2100
Oil Press (PSIG)	80 to 100	80 to 100	80 to 100 40 min.
Oil Temp (°C)	10 to 99	-40 min.. 99 5 min.	0 to 99 -40 to 99

The ratings shown on the United Aircraft of Canada PT6A-15AG engine are based on the static sea level standard condition with no external accessory loads and no air bleed.

Propeller and Propeller Limits Hartzell HC-B3TN-3C propeller, constant speed, feathering and reversing: Hub Model HC-B3TN-3C; Blade Model T-10282. Diameter 102.5 inches maximum 92.5 inches minimum.

<u>Airspeed Limits</u>			
V _{ne} (Never exceed)		159 mph	(138 knots)
V _n (Maneuvering)		126 mph	(109 knots)
V _{no} (Max. structural cruising)		126 mph	(109 knots)
V _{fe} (Flap Extended)		123 mph	(107 knots)

C. G. Range Forward limit at 6,000 lbs. +26.5 inches aft of datum
Forward limit at 4,000 lbs. and below +24.0 inches aft of datum
(Straight line variation in the forward limit between 4,000 pounds and 6,000 pounds.)

Aft limit +29.0 inches aft of datum
Datum is the leading edge of the wing.

Maximum Weight 6000 lbs.

Maximum Operating Altitude 12,000 feet

Number of Seats 1 (+89)

Maximum Cargo Load See weight and balance data.
Maximum baggage compartment, 60 pounds at (+112).
Maximum Hopper Load, 3336 pounds at (+29.9)

Fuel Capacity Tank Capacity and usable capacity for aircraft S/N T15-001 and Up, same as in Section II for Model S2R. See NOTE 1 for data on unusable fuel.

Oil Tank Capacity 11 quarts - Usable oil tank capacity 6 quarts.

<u>Control Surface Movements</u>			
Elevator	Up	27° ± 1°	Down 17° ± 1°
Elevator tab	Up	13° ± 1°	Down 18° ± 1°
Rudder	Left	24° ± 1°	Right 24° ± 1°
Aileron	Up	21° ± 1°	Down 17° ± 1°
Flaps			Down 15° ± 1°

Serial Numbers Eligible T15-001 and subsequent

Required Equipment The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. This equipment must include a current Airplane Flight Manual. Refer to NOTE 6 for information on required placards for flight and operating instructions and limitations.

V. - Model S2R-T11, 1 PCLM (Normal Category Only), Approved October 26, 1979

Engine United Aircraft of Canada PT6A-11AG

Fuel Jet A, Jet B, JP-4, JP-5 (If jet fuel is not available, aviation gasoline, MIL-G-5572, all grades, may be used for a maximum of 150 hours between overhauls.)

Oil UACL PT6 Engine Service Bulletin Number 1001 lists approved brands of oil.

<u>Engine Limits</u>	<u>Takeoff and</u>	<u>Transient</u>	<u>Reverse Idle</u>
	<u>Max. Cont.</u>	<u>Start/Accel.</u>	
SHP	500		
Torque (PSI)	38.6	48.5 (2 sec.)	38.6
ITT (°C)	700	1090 Start (2 sec.)	700
Ng (%)	101.5	102.6 Trans (10 sec.)	101.5
Np (RPM)	2200	2420 Trans (10 sec.)	2068
Oil Press (PSIG)	80 to 100	80 to 100	80 to 100 40 min.
Oil Temp (°C)	10 to 99	-40 min.	-0 to 99 -40 to 99

The ratings shown on the United Aircraft of Canada PT6A-11AG engine are based on the static sea level standard condition with no external accessory loads and no air bleed.

Propeller and Propeller Limits Hartzell HC-B3TN-3C propellers, constant speed, feathering and reversing: Hub Model HC-B3TN-3C; Blade Model T-10282. Diameter 102.5 inches maximum, 92.5 inches minimum.

<u>Airspeed Limits</u>	V _{ne} (Never exceed)	159 mph (138 knots)
	V _n (Maneuvering)	126 mph (109 knots)
	V _{no} (Max. structural cruising)	126 mph (109 knots)
	V _{fe} (Flap extended)	123 mph (107 knots)

C. G. Range Forward limit at 6,000 lbs. +26.5 inches aft of datum
Forward limit at 4,000 lbs. and below +24.0 inches aft of datum
(Straight line variation in the forward limit between 4,000 pounds and 6,000 pounds.)

Aft limit +29.0 inches aft of datum
Datum is the leading edge of the wing.

Maximum Weight 6000 lbs.

Maximum Operating Altitude 12,000 feet

Number of Seats 1 (+89.)

Maximum Cargo Load See weight and balance data. Maximum baggage compartment, 60 pounds at (+112). Maximum Hopper Load, 3336 pounds at (+29.9).

Fuel Capacity Tank Capacity and usable capacity for aircraft S/N T11-001 and Up, same as in Section II for Model S2R.

Oil Tank Capacity 11 quarts - Usable oil tank capacity 6 quarts.

<u>Control Surface Movements</u>	Elevator	Up 27° ± 1°	Down 17° ± 1°
	Elevator tab	Up 13° ± 1°	Down 18° ± 1°
	Rudder	Left 24° ± 1°	Right 24° ± 1°
	Aileron	Up 21° ± 1°	Down 17° ± 1°
	Flaps		Down 15° ± 1°

Serial Numbers Eligible T11-001 and subsequent.

Required Equipment The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. This

equipment must include a current Airplane Flight Manual. Refer to NOTE 6 for information on required placards for flight and operating instructions and limitations.

VI. - Model S2R-R3S, 2 PCLM (Normal Category Only) Approved March 28, 1980

<u>Engine</u>	Wsk - "Pezetel" PZL-3S				
<u>Fuel</u>	100/103 Minimum grade aviation gasoline				
<u>Engine Limits</u>	<u>Condition</u>	<u>HP</u>	<u>RPM</u>	<u>MP.IN.HG.</u>	<u>ALT. (FT.)</u>
	Takeoff (1 min.)	592	2200	37.0	S.L.
	Max.	542	2050	36.2	S.L.
	Continuous				
<u>Propeller and Propeller Limits</u>	One Dowty Rotol, Ltd., Model (C) R, 289/3-110-F/1, Constant Speed, Hydraulic, Non-Feathering, Non-Reversing Pitch Control with Pezetel Governor 0719-812008. Blade model 660705200, Diameter: 102" ± 0.0 Pitch Setting at .7 Blade Radius Low 12° ± ¼°: High 20° ± ¼°.				
<u>Airspeed Limits</u>	V _{ne}	(Never exceed)	159 mph	(138 knots)	
	V _n	(Maneuvering)	126 mph	(109 knots)	
	V _{no}	(Max. structural cruising)	126 mph	(109 knots)	
	V _{fe}	(Flap Extended)	123 mph	(107 knots)	
<u>C. G. Range</u>	(+22.5) to (+30.0) with Elevator Down Spring, P/N 19661-1 installed. (+22.5) to (27.7) without P/N 19661-1				
<u>Maximum Weight</u>	6000 lbs.				
<u>Number of Seats</u>	1 (+89) 1 (+127 - Forward Facing) or 1 (+111 - Aft Facing)				
<u>Maximum Cargo Load</u>	See weight and balance data. Maximum baggage compartment, 200 pounds at (+120). Maximum Hopper Load, 3336 pounds at (+29.9)				
<u>Fuel Capacity</u>	S/N R3S-009DC and subsequent - (104 gallon usable, one 53 gallon tank in each wing, tanks interconnected). See NOTE 1 for data on unusable fuel.				
<u>Oil Capacity</u>	11.4 gallons total (84 lbs. at -13.6) (9.0 gallons usable)				
<u>Control Surface Movements</u>	Elevator	Up 27° ± 1°	Down	17° ± 1°	
	Elevator tab	Up 8° ± 1°	Down	22° ± 1°	
	Rudder	Left 24° ± 1°	Right	24° ± 1°	
	Aileron	Up 21° ± 1°	Down	17° ± 1°	
	Flaps		Down	15° ± 1°	
<u>Serial Numbers Eligible</u>	R3S-009DC and subsequent				
<u>Required Equipment</u>	The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. This equipment must include a current Airplane Flight Manual. Refer to NOTE 6 for information on required placards for flight and operating instructions and limitations.				

VII. - Model S2R-R1340, 2 PCLM (Normal Category Only), Approved May 6, 1980

Engine Pratt & Whitney WASP R1340 AN1 (S3H1 or S1H1 Commercial designation) with carburetor part list setting 395118-3 or A-18639-7. Manifold pressure gauge is to be modified per Drawing 60600 when the S1H1 engine is used.

Fuel 80/87 minimum grade aviation gasoline.

<u>Engine Limits</u>			<u>S3H1</u>		<u>S1H1</u>	
	<u>H.P.</u>	<u>R.P.M.</u>	<u>M.P.</u>	<u>ALT.</u>	<u>M.P.</u>	<u>ALT.</u>
Takeoff (5 min.)	600	2250	<u>IN. HG.</u>	36.0	<u>IN. HG.</u>	36.5
Max. Continuous	550	2200		S.L.		S.L.
Max. Continuous	550	2200		34.0		35.0
				S.L.		S.L.
				5000		33.0
						8000

Propeller and Propeller Limits Hamilton Standard, constant speed, 12D40 Hub, 6101-12 blades.
Diameter 109 inches maximum, 107 inches minimum.
Pitch settings 11.5° low and 27.0° high at 42 inch stations.
Alternate settings - 11.5° low and 21.5° high at 42 in stations.
Alternate blades, EAC AG100-2 - Diameter 106 inches (2 percent cutoff permitted).
Pitch settings 11.5° inches low and 20° high at 42 inches.

<u>Airspeed Limits</u>			
V_{ne} (Never exceed)	159 mph	(138 knots)	
V_n (Maneuvering)	126 mph	(109 knots)	
V_{no} (Max. structural cruising)	126 mph	(109 knots)	
V_{fe} (Flap Extended)	123 mph	(107 knots)	

C. G. Range (+22.5) to (+30.0) with Elevator Down Spring, P/N 19661-1 installed.
(+22.5) to (27.7) without P/N 19661-1 installed.

Maximum Weight 6000 lbs.

Number of Seats 1 (+89.0)
1 (+127 - Forward Facing) or 1 (+111 - Aft Facing)

Maximum Cargo Load See weight and balance data.
Maximum baggage compartment, 200 lbs. (+120).
Maximum Hopper Load, 3336 lbs. (+29.9)

Fuel Capacity S/N R1340-001DC and subsequent - (104 gallon usable, one 53 gallon tank in each wing, tanks interconnected).
See NOTE 1 for data on unusable fuel.

Oil Capacity 11.4 gallons total (84 lbs. at -13.6) (9.0 gallons usable)

<u>Control Surface Movements</u>	Elevator	Up $27^\circ \pm 1^\circ$	Down $17^\circ \pm 1^\circ$
	Elevator tab	Up $8^\circ \pm 1^\circ$	Down $22^\circ \pm 1^\circ$
	Rudder	Left $24^\circ \pm 1^\circ$	Right $24^\circ \pm 1^\circ$
	Aileron	Up $21^\circ \pm 1^\circ$	Down $17^\circ \pm 1^\circ$
	Flaps		Down $15^\circ \pm 1^\circ$

Serial Numbers Eligible R1340-001DC and subsequent

Required Equipment The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. This equipment must include a current Airplane Flight Manual. Refer to NOTE 6 for information on required placards for flight and operating instructions and limitations.

DATA PERTINENT TO ALL MODELS

Certification Basis CAR 3 effective May 15, 1956, with Amendments 3-1 through 3-8. Type Certificate A3SW issued November 1, 1965, revised November 2, 1967, to add Model S2R. Application for Type Certificate May 10, 1965. Revised August 28, 1978, to add Model S2R-T34; Revised April 3, 1979, to add Model S2R-T15; Revised October 26, 1979, to add Model S2R-T11; Revised March 28, 1980 to add Model S2R-R3S; Revised May 6, 1980 to add Model S2R-R1340; Certification basis CAR 3 with amendments as above, plus FAR 23, effective February 1, 1965, including Amendments 23-1 through 23-16 only as applies to turboprop engine installations on Model S2R-T34, S2R-T15 and S2R-T11, and Special Federal Aviation Regulation SFAR 27, effective January 1, 1975, including Amendment 27-1.

Production Basis Production Certificate Number 5SO.

Export Eligibility Aircraft will be eligible for issuance of an Export Certificate of Airworthiness subject to compliance with Federal Aviation Regulations Part 21, Subpart L. Sections 21.321 through 21.339. Special requirements of specific foreign countries are contained in Advisory Circular 21-2D.

NOTE 1. Current weight and balance report including list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification. The empty weight and the corresponding center of gravity location must include the following unusable fuel:

Model 600 S-2D		54 lbs.	at	(+38.5)
Model S2-R	S/N 1380R	24 lbs.	at	(+38.5)
Model S-2R	S/N 1416R and 1418R	36 lbs.	at	(+38.5)
Model S-2R	S/N 1419R through 1499R, 1501R through 1510R	48 lbs.	at	(+38.5)
Model S-2R	S/N 1500R, 1551R through 4999R	18 lbs.	at	(+38.5)
Model S2R	S/N 5000R and subsequent	18 lbs.	at	(+38.5)
Model S2R-34	S/N 6000 - 6049 and subsequent and T34-001 and subsequent	18 lbs.	at	(+38.5)
Model S2R-T15	S/N T15-001 and subsequent	18 lbs.	at	(+38.5)
Model S2R-R3S	S/N R3S-009DC and subsequent	18 lbs.	at	(+38.5)
Model S2R-T11	S/N T11-001 and subsequent	18 lbs.	at	(+38.5)
Model S2R-R1340	S/N R1340-001DC and subsequent	18 lbs.	at	(+38.5)

NOTE 2. The following information on placards pertaining to flight and operating instructions and limitations must be displayed in full view of the pilot:

- (a) This airplane must be operated as a normal category airplane in accordance with the operating limitations stated in the form of placards, and the Airplane Flight Manual.
- (b) No acrobatic maneuvers including spins approved.
- (c) (1) Model 600 S-2D: The operation of this airplane is limited to Day VFR conditions. Flight into known icing conditions prohibited. (See NOTE 3).
(2) Model S2R: The operation of this airplane is limited to Day and Night-VFR conditions. Flight into known icing conditions prohibited.
- (d) Design Maneuvering Speed: 126 mph
Maximum Crosswind Velocity: 15 mph
Maximum flap-down speed: 123 mph
- (e) Avoid continuous ground operation between 1280 and 1900 rpm.
- (f) When stall warning system is installed: Stall warning switch must be on in flight. Stall warning is inoperative with generator and battery switches off.

- (g) When stall warning system is installed: Test stall warning light daily before flight by moving lift indicator until light comes on.
- (h) When canopy is installed: No smoking
- (i) Park brake: On, depress pedals and pull lever.
Off, depress pedals.
- (j) When locking tail wheel is installed: Push stick forward to unlock tail wheel.
- (k) Usable tank capacity (See "Fuel Capacity")

The following placard must be displayed on the wings and adjacent to the fuel filler caps:

"FUEL (*) U. S. GAL. MIN. OCTANE 87
FUEL TANKS ARE INTERCONNECTED, ALLOW SUFFICIENT TIME FOR FUEL LEVEL TO
EQUALIZE BEFORE TOP-OFF OF TANKS. NO AROMATIC FUEL."

* 54.5 for 600 S-2D
33 for S/N 1380R and
53 for all other S2R.

The following placard must be displayed adjacent to the oil filler cap:

OIL TANK
(*) GAL. CAP
*10.9 FOR 600 S-2D
9.2 FOR S2R

NOTE 3. Model 600 S-2D is eligible for Day and Night VFR conditions with approved light system, Snow Drawing 90110 and 90132, in which case placard under NOTE 2(c)(2) applies.

NOTE 4. Refer To Type Certificate Data Sheet Number A4SW for conditions and limitations applicable to the "Restricted Category," Ayres Models 600 S-2D, S2R, S2R-T34, S2R-T15, S2R-R3S, S2R-T11, and S2R-R1340.

NOTE 5. Model S2R, Optional Engine Installation
(Only sections different from II are shown)

Engine Wright R-1300-1B

Fuel 100/130 minimum grade aviation gasoline

<u>Engine Limits</u>	<u>H.P.</u>	<u>R.P.M.</u>	<u>IN.HG.</u>	<u>ALT.</u>
Takeoff	800	2600	44.0	S.L.
(5 minute)	800	2600	42.5	3500
Max. Continuous	700	2400	39.5	S.L.
Max. Continuous	700	2400	38.0	5000

Straight line variation between points given.

Propeller and Propeller Limits Hamilton Standard, constant speed, 3D40 Hub, (as modified by STC SP148NW)
EAC-AG100-OS blade.
Diameter 108-5/16 in. max., 106-5/16 in. min.
Pitch settings 23° low, and 38° high at 42 in. sta.
Governor, Hamilton Standard 4M-12-5
or
Hamilton Standard, constant speed, 23D40 Hub, 6601A-30S blades.

Diameter 108 in. max., 106 in. min.
Pitch setting 24.5° low and 44.5° high at 42 in. sta.

Governor, Hamilton Standard 4G10-5

C. G. Range

(+22.5) to (+28.0)

Control Surface Movements

Elevator	Up	27° ± 1°	Down	17° ± 1°
Elevator tab	Up	8° ± 1°	Down	22° ± 1°
Rudder	Left	24° ± 1°	Right	24° ± 1°
Aileron	Up	21° ± 1°	Down	17° ± 1°
Flaps			Down	18° ± 22°

Serial Numbers Eligible

5000R and subsequent

Certification Basis

CAR 3 effective May 15, 1956, with Amendments 3-1 through 3-8. Type Certificate A3SW issued November 1, 1965, revised November 2, 1967, to add Model S2R. Application for Type Certificate, May 10, 1963. Engine installed per STC SA2969WE.

Required Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. This equipment must include a current airplane flight manual. In addition, the following equipment is required:

- (1) FAA approved Flight Manual Supplement No. 1.
- (2) 24 Volt Electrical System, Rockwell Drawing 90326.

Weight and balance

See NOTE 1.

Placards

Remove the following placards previously installed:

- (1) "AVOID CONTINUOUS GROUND OPERATION BETWEEN 1280 AND 1900 RPM."
- (2) If alternator was installed:
"DO NOT TURN OFF ALTERNATOR IN FLIGHT EXCEPT IN CASE OF EMERGENCY."
"75 AMP MAX." (on left instrument panel)
"C/B - ALT." (on left instrument panel)
- (3) At fuel filler caps:
"87 OCTANE"

Add the following placards:

- (1) Adjacent to manifold pressure gauge:

	<u>H.P.</u>	<u>R.P.M.</u>	<u>IN.HG.</u>	<u>ALT.</u>
Takeoff	800	2600	44.0	S.L.
(1 min.)	800	2600	42.5	3500
Max. Continuous	700	2400	39.5 S.L.	
Max. Continuous	700	2400	38.0	5000

Straight line variation between points given.

"100/130 MINIMUM GRADE AVIATION GASOLINE"

- (2) At auxiliary fuel pump/circuit breaker:
"AUXILIARY FUEL PUMP ON/OFF."
- (3) At primer switch:
"PRIMER ON/OFF"
- (4) At generator circuit breaker:
"CB GEN"

- (5) At fuel filler cap:
"100/130 MINIMUM GRADE AVIATION GASOLINE"

- (6) Flaps
"USE 5° TO 20° FOR TAKE-OFF."

NOTE 6. For the Models S2R-T34, S2R-T15, S2R-T11, S2R-R3S and S2R-R1340, the placards listed in the Airplane Flight Manual must be displayed.

NOTE 7. The following models and serial numbers have been produced by the Ayres Corporation at its Albany, Georgia, facility (later serial numbers not listed below were manufactured after July 2003 by Thrush Aircraft, Inc.):

1. Model S2R (600 HP), S/N 1526 through 3002
2. Model S2R (800 HP), S/N 5000 through 5099
3. Model S2R-T34, S/N 6000 - 6049 and S/N T34-001 through T34-272
4. Model S2R-T15, S./N T15-001 through T15-044
5. Model S2R-R3S, S/N R3S-009DC through R3S-011
6. Model S2R-T11, S/N T11-001 through T11-005
7. Model S2R-R1340, S/N R1340-001DC through R1340-035

NOTE 8. The Model S2R may also be designated as a S-2R or S2-R. These three designations for the same model are all official model names and were used interchangeably by Snow, Rockwell, and Ayres on airplane identification data plates, manuals, and drawings.

...END...