

FEDERAL AVIATION AGENCY

E-186
Revision 4
PRATT & WHITNEY
Twin Wasp
SC-G
SC3-G
S1C-G
S1C3-G
S3C4-G
S4C4-G

March 4, 1960

AIRCRAFT ENGINE SPECIFICATION

Engines of models described herein conforming with this specification and approved data on file with the Federal Aviation Agency meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft specifications and applicable portions of the Civil Air Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Manufacturer	Pratt & Whitney Aircraft Division of United Aircraft Corporation East Hartford, Conn				
Model Type	Twin Wasp 14RA	<u>SC-G & SC3-G</u> 3:2 and 16:9 reduction gears	<u>S1C-G & S1C3-G</u> - -	<u>S3C4-G</u> - -	<u>S4C4-G</u> - -
Rating: (with low imp. gear ratio)		7.15:1	- -	- -	- -
Max continuous, hp, rpm, in.Hg.at: Critical alt. (ft.)		900-2550-34-12000	1050-2550-39.5-7500 1000-2700-37.5-10000	1100-2550-41.0-6200	1050-2550-39.0-7500
Sea level press. alt.		900-2550-36-S.L.	1050-2550-41.5-S.L. See Note 3.	1100-2550-43.5-S.L.	1050-2550-41.5-S.L.
Takeoff (5 min.), hp, rpm, in.Hg. at: Sea level press. a.t		1050-2700-42-S.L.	1200-2700-48-S.L. 1200-2750-47-S.L.	- - - -	- - - -
(With high imp. gear ratio)		—	—	8.47:1	- -
Max. continuous, hp, rpm, in.Hg.,at: Critical altitude (ft.)		—	—	1000-2700-39.0-14500 1000-2700-40.0-9000	900-2550-35.5-15400
Low critical press. alt. (ft.)		—	—	—	—
Fuel (min. grade aviation fuel)		87	91/98	100/130	91/98
(Lubricating oil		See P&WA Service Bulletin 118)	- -	- -	- -
Bore and stroke, in.		5.5 X 5.5	- -	- -	- -
Displacement, cu. in.		1830	- -	- -	- -
Compression ratio		6.7:1	- -	- -	- -
Weight (dry), lb.		3:2-1438 16:9-1450	- - - -	3:2-1460 16:9-1490	- - - -
Propeller shaft, SAE No.		50	- -	- -	- -
Carburetion		Stromberg NA-C12B, NA-C12D1 or 2, NA- C12DX, NA-C12E1, or PD-12B4, 6 or 8, carburetor, with 3-3/16 in. venturis, or PD12H1, H4 or H7 with 3-1/4 in. venturis, or Chandler Evans 1375 DB-1 or 3 carburetor	- -	Stromberg PD-12F2 or F5 carburetor with 3-1/4 in. venturis	- -

Page No.	1	2	3
Rev. No.	4	4	4

Model	Twin Wasp	<u>SC-G & SC3-G</u>	<u>S1C-G & S1C3-G</u>	<u>S3C4-G</u>	<u>S4C4-G</u>
Ignition, dual		Scintilla SF14LN4, SF14L6, SF14L3, SF14LN3 or SF14RN-8 magnetos, or Bosch SF-14LU-6, 07, or -8 magnetos	- -	Scintilla SF14L3 or SF14LN3 magnetos	- -
Ignition timing, °BTC		20	25 (37-cruising)	25	20
Spark plugs		See Note 8.	- -	- -	- -
NOTES		1,2,3,4,5,8	1,2,3,4,5,6,8	1,2,3,5,8	1,2,3,5,8

"- -" indicates "same as preceding model."

"—" indicates "does not apply."

Certification basis Type Certificate No. 186
Production basis Production Certificate No. 2

NOTE 1. Maximum permissible temperatures are as follows:

<u>Cylinder Head</u>	<u>Cylinder Base</u>	<u>Oil Inlet</u>
500°F spark plug gasket	335°F	220°F single speed supercharger
475°F cylinder head well		212°F two-speed supercharger

NOTE 2. Fuel and oil pressure limits:

	<u>Max.</u>	<u>Min.</u>
Fuel pressure (psi)	16	14 with 5 lb. discharge nozzle spring
	23	21 with 10 lb. discharge nozzle spring
Oil pressure (psi)	100	50

NOTE 3. The following accessory provisions are available:

	Direction of Rotation (Clockwise or Counter- Clockwise)	Speed Ratio (Times Crankshaft Speed)	Maximum Torque (in. lb.)		Maximum Overhang (in.-lb.)
			Cont.	Static	
Starter	C	1.0	2500	16500	200
Generator	C	1.4	600	6000	260
Vacuum or hydraulic pump	C	1.4	250	1200	40
Vacuum or hydraulic pump	C	1.0	125	500	20
Fuel pump	CC	.875	150	450	10
Governor	C	.958	100	600	—

NOTE 4. Model S1C3-G eligible with applicable setting to give Automatic Rich mixture performance as follows:

Maximum continuous hp, rpm, in.Hg., at:	
Rated pressure altitude (ft.)	1000-2700-38-10000 1050-2550-41-7000
Sea level pressure altitude (ft.)	1050-2550-42-S.L.

NOTE 5. Models SC-G, SC3-G, and S3C4-G become models S1C-G, S1C3-G and S4C4-G or vice versa respectively, depending only on the octane rating of the fuel used and the ignition timing where applicable in which case the pertinent model designation and rating applies without changing the engine nameplate.

NOTE 6. S1C3-G engines with nose mounted magnetos and PD 12H7 carburetors incorporate a built-in automatic spark advance mechanism.

NOTE 7. Models 2SC9-G and SSC7-6 formerly listed hereon have been deleted since no engines of these models are used in civil aircraft.

NOTE 8. The following spark plugs are approved for use on these engines:

AC LS-87*, LS-88, 161, 171, 181, 261, 271, 281.

BG 240, 245, 340, 341, 345, 346, RB19R-2, RB21R-1, RB27R-1, RB39R.

Champion C34S, C35S, RC35S, R37S-1, REA37N, REB37N, R115, RHA37N, RHA37E, RHB37N,
RHB37E

Lodge RS19-2R.

*Limited to use with engines of 1200 hp and under 170 hours service with no reconditioning permitted.

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