DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

1E11 Revision 5 AVCO LYCOMING IGO-540-A1A IGO-540-A1B IGO-540-B1A IGO-540-B1B IGO-540-B1C June 1, 1976

TYPE CERTIFICATE DATA SHEET NO. 1E11

Engines of models described herein conforming with this data sheet (which is part of type certificate No. 1E11) and other approved data on file with the Federal Aviation Administration, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Civil Air Regulations/Federal Aviation Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate Holder: AVCO Lycoming Division

AVCO Corporation

Williamsport, Pennsylvania 17701

Model:	Lycoming	IGO-540-A1A, -A1B, -B1A, -B1B, -B1C	IGO-540-A1C		
Type:	6HOA, reduction gear ratio	77:120			
Rating:					
Maxin	num continuous, hp., r.p.m., full throttle at:				
	evel pressure altitude	325-3000-S.L.	325-3000-S.L.		
Takeoff, 5	min., hp., r.p.m., full throttle at:				
Sea Le	evel Pressure altitude	350-3400-S.L.	350-3400-S.L.		
Fuel (minin	num grade aviation gasoline)	100/130			
Lubricating	g oil (lubricants should conform to the				
Specif	fications as listed or to subsequent				
revisi	ions thereto.)	Lycoming Spec. No. 301-F			
Bore and st	troke, in.	5.125 x 4.375			
Displaceme	ent, cu. in.	541.5			
Compression	on ratio	8.7:1			
Weight (dry	y), lb.	See NOTE 7			
C.G. location	on				
From 1	front face of thrust nut face, in.	19.59	20.23		
Off cra	ankshaft center line, in.	.56 below & .21 left	.41 below & .26 right		
Propeller sl	haft, SAE No.	30 spline			
Crankshaft	dampers (torsional)	Five 3rd order & one 6th or	der		
Fuel injecti	on	See NOTE 7			
Ignition, du	ıal	See NOTE 7			
Timing, °B'		25			
Spark plugs	S	See NOTE 4			
Oil sump ca	apacity	Dry sump			
NOTES.		12245679			

NOTES: 1,2,3,4,5,6,7,8

"- -" indicates "same as preceding model"

"—" indicates "does not apply"

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Certification basis:

Regulations & Amendments	<u>Model</u>	Date of Application	Date Type Certificate No. 1E11 Issued/Revised
Car 13 Effective June 15, 1956	IGO-540-B1A	July 5, 1960	October 28, 1960
As Amended by 13-1, 13-2	IGO-540-A1A	June 2, 1961	August 22, 1961
13-3	IGO-540-A1B	July 10, 1961	August 22, 1961
	IGO-540-B1B	July 10, 1961	August 22, 1961
13-4	IGO-540-B1C	April 18, 1963	May 20, 1963
	IGO-540-A1C	February 18, 1972	March 14, 1972

Production basis: Production Certificate No. 3

NOTE 1. Maximum permissible temperature:

	Cylinder Head type thermocouple) 7 (500°F for -A1C model)	Cylinder <u>base</u> (NOTE 8)		Oil <u>Inlet</u> 235°F		
NOTE 2.	Fuel pressure limits:					Injector in
		Min.	Max.		Idle (min.)	Idle cutoff
	Inlet to injector (except -A1C model)	20 p.s.i.	26 p.s.i.		_	_
	-A1C	25 p.s.i	40 p.s.i.		12 p.s.i.	55 p.s.i. (max.)
	Oil pressure limits:	-	-		-	
	(Normal operation)	65 p.s.i.	85 p.s.i.			
	(Idling)	25 p.s.i.	-			

NOTE 3. The following accessory drives are provided:

	-A1A, -A1B -B1A, -B1B,		Rotation Pacing	Speed Ratio to		m Torque n lb.)	Max. Overhang Moment
	, ,		U		`	,	
Accessory	-B1C	A1C	Drive Pad	Crankshaft	Cont.	Static	(in lb.)
Starter	*	*	C	1.000:1	_	12,000	300
Generator	*	_	C	2.600:1	500	2,200	400
Alternator	_	*	C	2.600:1	500	2,200	400
Vacuum Pump	*	*	C	1.083:1	200	800	25
Hydraulic Pump	*	*	C	1.083:1	400	1,650	175
Tachometer	*	*	CC	.500:1	7	50	_
Propeller Governor	*	_	C	.779:1	125	1,200	25
Fuel Pump	*	*	C	1.000:1	25	450	25

^{*} Standard

NOTE 4. The following spark plugs are approved.

AC SR83P, SR83IR, HSR83P, HSR83IR, HSR86L, HSR87LI, HSR87LP, SR93, HSR93,

171, 181, 271, 273, 281, 281IR, 283, 291, 293

BG RB39R, RB485S, RB955S

Champion REB36W, RHB36P, RHB36W, REB37N, REB37E, RHB37E, RHB37N, REM38E,

REM38P, REM38W, RHM38E, RHM38P, RHM38W

Autolite SH26, SH260, PL-300, PL-350

Lodge HS35-4R, RSE23-ER, RSH23-3R, RS35-8R, RSE-35-8R

NOTE 5. This engine incorporates provisions for absorbing propeller thrust in both tractor and pusher type installations.

NOTE 6. These engines incorporate the following additional characteristics:

^{**} Optional

[&]quot;C" Clockwise

[&]quot;CC" Counter Clockwise

IGO-540 Models

-B1A

-B1B

-B1C

	-A1A	Basis model.					
	-A1B	Similar to -A1A except incorporates low tension ignition system.					
	-A1C	Similar to -A1A except for fuel injector, magnetos, fuel pump, and alternator.					
	-B1A	Similar to -A1A except has exhaust ports on the top side of the cylinders and updraft cooling provisions.					
	-B1B	Similar to -B1A except incorporates low tension ignition system.					
	-B1C	Similar to -B1A except does not have servo-bleed in Bendix Injector servo-vent line and requires external servo-fuel restrictor in servo-vent line of aircraft fuel system.					
NOTE 7.	IGO-540 Models	Weight (dry lb.	Fuel Injection	Ignition, dual			
	-A1A -A1B -A1C	506 517 509	Bendix RS10ED1 Bendix RS10ED1 Bendix RSA10DB1	Bendix S6RN-204, S6RN-200 Bendix S6RN-604, S6RN-600 Bendix S6RN-1208, S6RN-1209			

NOTE 8. Cylinder base temperature limits are not applicable to engine models which incorporate internal piston cooling oil jets.

Bendix RS10ED2

Bendix RS10ED2

Bendix RS10ED2

Bendix S6RN-204, S6RN-200

Bendix S6RN-604, S6RN-600

Bendix S6RN-204, S6RN-200

500

511

500

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