DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A-737
Revision 9
INTERSTATE
S-1A
S-1A-65F
S-1A-85F
S-1A-90F

October 31, 2007

AIRCRAFT SPECIFICATION NO. A-737

Type Certificate Holder	STOL Aviation LLC c/o Downs Rachlin Martin P.O. Box 191 Lebanon, NH 03766
Type Certificate Ownership Record	Interstate Aircraft and Engineering Corporation transferred ownership of Aircraft Type Certificate No. 737 to Harlow Aircraft Company on July 23, 1945. Harlow Aircraft Company transferred ownership of Aircraft Type Certificate No. 737 to Call Aircraft Company on July 15, 1950. Call Aircraft Company transferred ownership of Aircraft Type Certificate No. 737 to Nikiski Marine Corporation on May 14, 1969. Nikiski Marine Corporation transferred ownership of Aircraft Type Certificate No. 737 to Arctic Aircraft Company, Inc., on May 15, 1970. Arctic Aircraft Company, Inc., transferred ownership of Aircraft Type Certificate No. 737 to Interstate Engineering & Type Design Company, Inc., on June 23, 1999. Interstate Engineering & Type Design Company, Inc., transferred ownership of Aircraft Type Certificate No. 737 to STOL Aviation LLC, on October 31, 2007.

I - Model S-1A, 2 PCLM (Normal Category), Approved February 26, 1941

Engine	Continental A-65-8, Engine Type Certificate No. 205		
Fuel	73 min. octane aviation gasoline		
Engine limits	For all operations, 2300 rpm (65 hp)		
Airspeed limits	Level flight or climb Glide or dive	103 mph (90 knots) 139 mph (121 knots)	TIAS TIAS
Propeller limits	Static rpm at maximum permissible throttle setting: Not over 2200, not under 1900. No additional tolerance permitted. Diameter: Not over 76 in., not under 72 in. No further reduction permitted.		
C.G. range	(+9.3) to (+19.6). When larger vertical tail surfaces in accordance with Interstate Aircraft and Engineering Corporation Drawings No. D-3-3002 and No. G-3-3006 are installed, rear limit may be (+20.3).		
Empty weight C.G. range	(+13.9) to (+14.4) for standard airplane. (+13.9) to (+15.3) with larger vertical surfaces. When empty weight C.G. falls within pertinent range, computation of critical fore and aft C.G. positions is unnecessary. Ranges are not valid for non-standard arrangements except as noted.		

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Maximum weight	1200 lb. When larger vertical tail surfaces in accordance with Interstate Aircraft and Engineering Corporation Drawings No. D-3-3002 and No. G-3-3006 are installed, maximum weight is 1250 lb.				
No. of seats	2 (one at +7 and one at +37)				
Maximum baggage	40 lb. (+70)				
Fuel capacity	15 gal. (-18)				
Oil capacity	4 qt. (-38.2)				
Control surface movements	Elevator	30°	Up	30°	Down
	Elevator tab	23.5°	Up	29°	Down
	Ailerons	20°	Up	19.5°	Down
	Rudder	30° right and left from centerline			
Serial Nos. (S/N) eligible	2 and up				
Required equipment	In addition to the pertinent basic required equipment as prescribed in the applicable airworthiness regulations (see Certification basis), the following items of equipment must be installed in the aircraft for certification: Items 1(a), 201, and 202.				

II - Model S-1A-65F, 2 PCLM (Normal Category), Approved October 1, 1941

(Same as Model S-1A except for powerplant and engine mount.)

Engine	Franklin 4AC-176-B2, Engine Type Certificate No. 221		
Fuel	73 min. octane aviation gasoline		
Engine limits	For all operations, 2200 rpm (65 hp)		
Airspeed limits	Level flight or climb	103 mph (90 knots)	TIAS
	Glide or dive	139 mph (121 knots)	TIAS
Propeller limits	Static rpm at maximum permissible throttle setting: Not over 2120, not under 2020. No additional tolerance permitted. Diameter: Not over 76 in., not under 72 in. No further reduction permitted.		
C.G. range	(+9.3) to (+19.6). When larger vertical tail surfaces in accordance with Interstate Aircraft and Engineering Corporation Drawings No. D-3-3002 and No. G-3-3006 are installed, rear limit may be (+20.3).		
Empty weight C.G. range	(+13.9) to (+14.4) for standard airplane. (+13.9) to (+15.3) with larger vertical surfaces. When empty weight C.G. falls within pertinent range, computation of critical fore and aft C.G. positions is unnecessary. Ranges are not valid for non-standard arrangements except as noted.		
Maximum weight	1200 lb. When larger vertical tail surfaces in accordance with Interstate Aircraft and Engineering Corporation Drawings No. D-3-3002 and No. G-3-3006 are installed, maximum weight is 1250 lb.		
No. of seats	2 (one at +7 and one at +37)		
Maximum baggage	40 lb. (+70)		
Fuel capacity	15 gal. (-18)		
Oil capacity	5 qt. (-43.5)		

Control surface movements	Elevator	30°	Up	30°	Down
	Elevator tab	23.5°	Up	25°	Down
	Ailerons	21°	Up	22°	Down
	Rudder	30° right and left from centerline			

Serial Nos. (S/N) eligible: 2 and up

Required equipment: In addition to the pertinent basic required equipment as prescribed in the applicable airworthiness regulations (see Certification basis), the following items of equipment must be installed in the aircraft for certification: Items 1(c), 201, and 202.

III - Model S-1A-85F, 2 PCLM (Normal Category), Approved January 5, 1942

(Same as Model S-1A-65F S/N 180 and up except for wing, control surfaces, fuselage, and powerplant.)

Engine: Franklin 4AC-199-D2, Engine Type Certificate No. 226

Fuel: 73 min. octane aviation gasoline

Engine limits: For all operations, 2500 rpm (85 hp)

Airspeed limits	Level flight or climb	117 mph (102 knots)	TIAS
	Glide or dive	158 mph (137 knots)	TIAS

Propeller limits:

Range 1: Static rpm at maximum permissible throttle setting:
Not over 2350, not under 2250. No additional tolerance permitted.
Diameter: Not over 76 in., not under 74 in.
No further reduction permitted.

Range 2: Static rpm at maximum permissible throttle setting:
Not over 2480, not under 2380. No additional tolerance permitted.
Diameter: Not over 72 in., not under 70 in.
No further reduction permitted.

C.G. range: (+9.9) to (+20.3)

Empty weight C.G. range: (+14.2) to (+17.1). When empty weight C.G. falls within this range, computation of critical fore and aft C.G. positions is unnecessary. Range is not valid for non-standard arrangements.

Maximum weight: 1300 lb.

No. of seats: 2 (one at +7 and one at +37)

Maximum baggage: 40 lb. (+70)

Fuel capacity: 15 gal. (-18)

Oil capacity: 5 qt. (-43.5)

Control surface movements	Elevator	30°	Up	29°	Down
	Elevator tab	24°	Up	29°	Down
	Ailerons	19.5°	Up	20.5°	Down
	Rudder	30° right and left from centerline			

Serial Nos. (S/N) eligible: 180 and up provided ailerons are balanced and wing, control surfaces, fuselage, and powerplant conform to technical data defining Model S-1A-85F on approved drawing list.

Required equipment	In addition to the pertinent basic required equipment as prescribed in the applicable airworthiness regulations (see Certification basis), the following items of equipment must be installed in the aircraft for certification: Items 1(d), 201, 202, and 601.

IV - Model S-1A-90F, 2 PCLM (Normal Category), Approved January 5, 1942
(Same as Model S-1A-85F except for powerplant and fuel grade.)

Engine	Franklin 4AC-199-E2, Engine Type Certificate No. 226
Fuel	80 min. octane aviation gasoline
Engine limits	For all operations, 2500 rpm (90 hp)
Airspeed limits	Level flight or climb 117 mph (102 knots) TIAS Glide or dive 158 mph (137 knots) TIAS
Propeller limits	Static rpm at maximum permissible throttle setting: Not over 2275, not under 2175. No additional tolerance permitted. Diameter: Not over 72 in., not under 70 in. No further reduction permitted.
C.G. range	(+9.9) to (+20.3)
Empty weight C.G. range	(+14.2) to (+17.1). When empty weight C.G. falls within this range, computation of critical fore and aft C.G. positions is unnecessary. Range is not valid for non-standard arrangements.
Maximum weight	1300 lb.
No. of seats	2 (one at +7 and one at +37)
Maximum baggage	40 lb. (+70)
Fuel capacity	15 gal. (-18)
Oil capacity	5 qt. (-43.5)
Control surface movements	Elevator 30° Up 29° Down Elevator tab 21.5° Up 29° Down Ailerons 19.5° Up 20.5° Down Rudder 30° right and left from centerline
Serial Nos. (S/N) eligible	180 and up provided ailerons are balanced and wing, control surfaces, fuselage, and powerplant conform to technical data defining Model S-1A-90F on approved drawing list.
Required equipment	In addition to the pertinent basic required equipment as prescribed in the applicable airworthiness regulations (see Certification basis), the following items of equipment must be installed in the aircraft for certification: Items 1(d), 201, 202, and 601.

Specifications Pertinent to All Models

Datum	Wing leading edge
Leveling means	Fuselage tube at door sill
Certification basis	Aircraft Type Certificate No. 737 Model S-1A: Part 04 of the Civil Air Regulations effective November 1, 1937, and amendments in effect on March 20, 1940. Date of Application for Type Certificate March 20, 1940.

Model S-1A-65F: Part 04 of the Civil Air Regulations effective November 1, 1937, and amendments in effect on October 15, 1940. Date of Application for Type Certificate October 15, 1940.

Models S-1A-85F and S-1A-90F: Part 04 of the Civil Air Regulations as amended to April 1, 1941, and additional amendments in effect on October 23, 1941. Date of Applications for Type Certificate October 23, 1941.

Production basis: None. Prior to original certification of each aircraft manufactured subsequent to April 2, 1943, a CAA or FAA representative must perform a detailed inspection for workmanship, materials, and conformity with the approved technical data, and a check of the flight characteristics.

Equipment: A plus (+) or minus (-) sign preceding the weight of an optional item indicates the net weight change when that item is installed.

Approval for the installation of all items of equipment listed herein has been obtained by the aircraft manufacturer except those items preceded by an asterisk (*). This symbol denotes that approval has been obtained by someone other than the aircraft manufacturer. An item so marked may not have been manufactured under a CAA or FAA monitored or approved quality control system and, therefore, its conformity with CAA or FAA approved technical data must be determined if the item is not identified by a CAA Form ACA-186, FAA Form 186, FAA Form 8130-3, FAA PMA, or other evidence of CAA or FAA conformity inspection or production approval.

Propellers and Propeller Accessories

1.	Propeller	
	(a) Wood (fixed or adjustable pitch) and Continental A3746 hub assembly (Model S-1A only)	15.4 lb. (-56.5)
	(b) Wood (fixed or adjustable pitch) (Model S-1A with Item 101(a) engine only)	11 lb. (-56.5)
	(c) Wood (fixed or adjustable pitch) (Model S-1A-65F only)	11 lb. (-57.5)
	(d) Wood (fixed or adjustable pitch) (Models S-1A-85F & S-1A-90F)	13 lb. (-58)
2.	Propeller	
	(a) McCauley 1A90/CH or 1A90/CF fixed pitch metal, Propeller Type Certificate No. 842, and Continental A3746 hub assembly (Model S-1A only) with the following limits: Static rpm at maximum permissible throttle setting: Not over 2200, not under 1900. No additional tolerance permitted. Diameter: not over 76 in., not under 72 in. No further reduction permitted.	25.4 lb. (-56.5)
	(b) McCauley 1A90/CF fixed pitch metal, Propeller Type Certificate No. 842 (Model S-1A with Item 101(a) or Item 101(d) engine only) with the following limits: When installed on Item 101(a) engine: Static rpm at maximum permissible throttle setting: Not over 2200, not under 1900. No additional tolerance permitted. Diameter: not over 76 in., not under 72 in. No further reduction permitted. When installed on Item 101(d) engine: Static rpm at maximum permissible throttle setting: Not over 2375, not under 2275. No additional tolerance permitted. Diameter: not over 73 in., not under 71.5 in. No further reduction permitted.	21 lb. (-56.5)
*3.	Propeller - Sensenich M74CK fixed pitch metal, Propeller Type Certificate No. 1P2 (Model S-1A with Item 101(a) engine only) with the following limits: Static rpm at maximum permissible throttle setting: Not over 2200, not under 1900. No additional tolerance permitted. Diameter: Not over 74 in., not under 72.5 in. No further reduction permitted.	21 lb. (-56.5)

*4.	Propeller - fixed pitch wood and Continental A3746 hub assembly (Model S-1A with Item 101*(c) engine only) with the following limits: Static rpm at maximum permissible throttle setting: Not over 2200, not under 2000. No additional tolerance permitted. Diameter: Not over 74 in., not under 72 in. No further reduction permitted.	15.4 lb. (-56.5)
5.	Propeller spinner installation	
	(a) Spinner installation in accordance with Interstate Aircraft and Engineering Corporation Drawing No. B-6259 (Model S-1A with Item 1(a), Item 2(a), or Item *4 propeller only)	0.3 lb. (-59.9)
	(b) Spinner installation in accordance with Interstate Aircraft and Engineering Corporation Drawing No. B-6256 (Model S-1A-65F only)	0.3 lb. (-60.9)
	(c) Spinner installation in accordance with Interstate Aircraft and Engineering Corporation Drawing No. B-6256 (Models S-1A-85F and S-1A-90F)	0.3 lb. (-61.4)

Engines and Engine Accessories - Fuel and Oil System

101.	Engine	
	(a) Continental A-65-8F, Engine Type Certificate No. 205 (Model S-1A only) with limits unchanged from Continental A-65-8 engine as installed on Model S-1A (Item 1(b), Item 2(b), or Item *3 propeller required)	+1 lb. (-55)
	(b) Franklin 4AC-199-E3, Engine Type Certificate No. 226 (Model S-1A-90F only) with limits unchanged from Franklin 4AC-199-E2 engine as installed on Model S-1A-90F	+7 lb. (-36.1)
	*(c) Continental C75-8, Engine Type Certificate No. 233 (Model S-1A only) with the following limits: For all operations, 2275 rpm (75 hp) Fuel: 73 min. octane aviation gasoline (Item *4 propeller required)	+7 lb. (-44.25)
	(d) Continental C90-8F, Engine Type Certificate No. 252 (Model S-1A only) with the following limits: For all operations, 2475 rpm (90 hp) Fuel: 80 min. octane aviation gasoline (Item 2(b) propeller required) Installation of this engine requires fuel system revisions and engine cowl modifications as outlined in approved Call Aircraft Company technical data.	Use actual weight change
102.	Starter - 6 volt or 12 volt, Auto-Lite MBG or MZ (Model S-1A-90F with Item 101(b) engine only) (Item 301(a) 6 volt battery or Item 301(b) 12 volt battery and Item 305(a) 6 volt wind-driven generator, Item 305(b) 12 volt wind-driven generator, or Item 308 6 volt or 12 volt engine-driven generator to match voltage rating of starter required)	16 lb. (-33)
103.	Carburetor air filter in accordance with Interstate Aircraft and Engineering Corporation Drawing No. D-6221 (Models S-1A-65F, S-1A-85F, and S-1A-90F)	Neglect weight change
104.	Cabin heater in accordance with Interstate Aircraft and Engineering Corporation Drawing No. K-6041 (Model S-1A only) or in accordance with Interstate Aircraft and Engineering Corporation Drawing No. K-6087 (Models S-1A-65F, S-1A-85F, and S-1A-90F)	1 lb. (-39)

Landing Gear and Floats

201.	Two main wheel/brake assemblies and tires - Firestone (Shinn) 6C5WB or 6C5WFB 6.00 - 6 wheels with brakes and Firestone 6.00 - 6, 2-ply tires	29 lb. (-1.6)
202.	Steerable tail wheel and tire - Firestone 6 x 2.00 solid tail wheel/tire assembly in accordance with Interstate Aircraft and Engineering Corporation Drawing No. D-5099	3 lb. (+174.4)
203.	Wheel fairings in accordance with Interstate Aircraft and Engineering Corporation Drawing No. D-5112 and inner cutout cover plates in accordance with Interstate Aircraft and Engineering Corporation Drawing No. A-5090	5 lb. (-1.6)
204.	Two main wheel replacement skis - Federal SC-2 (Eligible provided the propeller installation meets the minimum 9-in. ground clearance requirement specified by § 04.611 of CAR Part 04 as amended to April 1, 1941)	Use actual weight change

Electrical and Radio Equipment

301.	Battery installation	
	(a) Battery - 6 volt, Willard Type SYR-7-3 (Pacific Airmotive No. 4209), and box in accordance with Interstate Aircraft and Engineering Corporation Drawings No. D-8036 and No. A-8037	10 lb. (-23)
	(b) Battery - 12 volt, Reading Model R24L, and box in accordance with Interstate Aircraft and Engineering Corporation Drawing No. D-8102	28 lb. (+13)
302.	Position light installation	
	(a) Position lights - Grimes Model B tail and wing lights, and wiring, in accordance with Interstate Aircraft and Engineering Corporation Drawings No. R-0006, No. D-3087, and No. A-8037 (Models S-1A and S-1A-65F with original vertical tail surfaces) (Item 301(a) 6 volt battery or Item 301(b) 12 volt battery to match voltage rating of installed bulbs required)	2.7 lb. (+58.2)
	(b) Position lights - Grimes Model A tail light and Grimes Model B wing lights, and wiring, in accordance with Interstate Aircraft and Engineering Corporation Drawings No. R-0014, No. D-3-3002, No. A-8037, No. B-8038, and No. B-8041 (Models S-1A and S-1A-65F with larger vertical tail surfaces, and Models S-1A-85F and S-1A-90F) (Item 301(a) 6 volt battery or Item 301(b) 12 volt battery to match voltage rating of installed bulbs required)	2.7 lb. (+58.6)
303.	Antenna installation	
	(a) Trailing - reel, in accordance with Interstate Aircraft and Engineering Corporation Drawing No. B-8041	4 lb. (+37)
	(b) Overhead - fixed, in accordance with Interstate Aircraft and Engineering Corporation Drawing No. B-8043	Neglect weight change
	(c) Overhead - fixed, with Air Associates AR-6 loading coil, in accordance with Interstate Aircraft and Engineering Corporation Drawing No. D-8069	Neglect weight change
	(d) Belly - fixed, in accordance with Interstate Aircraft and Engineering Corporation Drawing No. D-8064	1 lb. (+49)
	(e) Whip - Air Associates Model AR-7, in accordance with Interstate Aircraft and Engineering Corporation Drawing No. B-8049	2 lb. (+47)
304.	Radio installation	
	(a) Receiver - Air Associates Model BR-3, in accordance with Interstate Aircraft and Engineering Corporation Drawing No. B-8048	7 lb. (+11)
	(b) Receiver-Transmitter - American Aircraft Model AAR-7 receiver and Model AAT-5 transmitter, in accordance with Interstate Aircraft and Engineering Corporation Drawing No. D-8051	16 lb. (+15.9)

	(c) Receiver-Transmitter - Air Associates Model BR-3T, in accordance with Interstate Aircraft and Engineering Corporation Drawing No. R-8070	12 lb. (-10.6)
	(d) Receiver-Transmitter - Air Associates Model BR-3T, in accordance with Interstate Aircraft and Engineering Corporation Drawing No. R-8100	12 lb. (+9.4)
305.	Wind-driven generator installation in accordance with Interstate Aircraft and Engineering Corporation Drawing No. D-8072	
	(a) Wind-driven generator - 6 volt, Champion Model W612 (Item 301(a) 6 volt battery required)	12 lb. (-25)
	(b) Wind-driven generator - 12 volt, Champion Model W128 (Item 301(b) 12 volt battery required)	12 lb. (-25)
306.	Instrument panel light installation - 6 volt or 12 volt, 2 Western Auto #E6317 dash lights and 1 Pacific Airmotive Grif-Ho instrument light, in accordance with Interstate Aircraft and Engineering Corporation Drawings No. A-8037 and No. D-8073 (Item 301(a) 6 volt battery and Item 305(a) 6 volt wind-driven generator, or Item 301(b) 12 volt battery and either Item 305(b) 12 volt wind-driven generator or Item 308 12 volt engine-driven generator to match voltage rating of installed bulbs required)	0.5 lb. (-8)
307.	Landing light installation - 12 volt, U.S. Army Air Corps Type A6A with Type A19 12 volt, 240 watt bulb in accordance with Interstate Aircraft and Engineering Corporation Drawing No. D-8074 (Item 301(b) 12 volt battery and either Item 305(b) 12 volt wind-driven generator or Item 308 12 volt engine-driven generator required)	4.5 lb. (+8)
308.	Engine-driven generator - 6 volt or 12 volt, Auto-Lite Model GDY or GAS (Model S-1A-90F with Item 101(b) engine only) (Item 301(a) 6 volt battery or Item 301(b) 12 volt battery to match voltage rating of generator required)	12 lb. (-32.5)

Miscellaneous (not listed above)

601.	Lead ballast in accordance with Interstate Aircraft and Engineering Corporation Drawing No. D-1262 (Models S-1A-85F and S-1A-90F)	Weight as required (+190)

NOTE 1. A current weight and balance report including a list of the equipment included in the certificated empty weight, and loading instructions when necessary must be provided for each aircraft at the time of original certification.

NOTE 2. The following placards must be displayed in plain view and installed in the appropriate locations. If the aircraft is approved for night flight, the interior placards must be suitably lighted during night operations.

(a) On the instrument panel of each aircraft approved for night flight:
"SOLO NIGHT FLYING FROM FRONT SEAT ONLY"

(b) On the front of the baggage compartment:
"BAGGAGE COMPARTMENT
MAXIMUM CAPACITY 40 LB."

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