

FEDERAL AVIATION ADMINISTRATION

A-748
Revision 2
(Culver) L-AR-90
Lark 95
November 1, 1978

AIRCRAFT SPECIFICATION NO. A-748

Type Certificate Holder M. H. Spinks, Sr., P.O. Box 11099
Fort Worth, Texas

I - Model L-AR-90 (Culver), (Army PQ-8), 1 PCLM, Approved September 11, 1941

Engine	Franklin 4AC-199-E4
Fuel	80 min. octane aviation gasoline
Engine limits	For all operations, 2500 rpm (90 hp)
Airspeed limits	Level flight or climb 145 mph (CAS) Glide or dive 175 mph (CAS)
C.G. range	(+14.56) to (+15.6)
Leveling means	Use plumb line from upper rear engine mount attaching bolt to reference mark on bottom longeron.
Maximum weight	1305 lbs.
No. seats	1 (+26)
Baggage	None
Fuel capacity	13.5 gals. (-3)
Oil capacity	5 qts. (-24)
Control surface movements	Not available
Serial Nos. eligible	L-102AR and up and all AAF Nos. eligible
Required equipment	1, 101, 201, and 202

II - Model Lark 95, 1 PCLM, Approved July 15, 1966

(Same as L-AR-90 except for engine, cowling, canopy, wing covering, and miscellaneous changes).

Engine	Continental C90-12F or C90-16F
Fuel	80/87 min. grade aviation gasoline
Engine limits	For all operations, 2475 rpm (90 hp)
Airspeed limits	Level flight or climb 145 mph (CAS) Glide or dive 175 mph (CAS)
C.G. range	(+14.56) to (+16.85) (See Note 1 for alternate range)

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Leveling means	Remove right wing-to-fuselage fairing. Place level in vertical position against wing spar.			
Maximum weight	1305 lbs. (See Note 1 for higher weight).			
No. seats	1 (+26) (See Note 1 for 2-seat aircraft).			
Baggage	None (See Note 1)			
Fuel capacity	20 gals. (-3)			
Oil capacity	4.8 qts. (-23)			
Control surface movements (degrees measured from neutral)	Elevator	Up	21	Down 30
	Elevator tab	Up	20	Down 30
	Aileron	Up	17	Down 15
	Rudder	Right	37	Left 34
	(measured from vert. stab. centerline)			
Serial Nos. eligible	9501 and up			
Required equipment	2, 204, 205, 206, 207, 303, 304, 305, 402, 403 and 404			

SPECIFICATIONS PERTINENT TO ALL MODELS

Certification basis	Civil Air Regulations 4A (CAR 04 dated May 31, 1938)
Production basis	None. Prior to original certification, each aircraft manufactured for civil use must satisfactorily pass: (a) An inspection for workmanship, materials, and conformity before covering, metal priming or final finish is applied. (b) A final inspection of the completed aircraft. (c) A check of the flight characteristics.

Weight and balance report including list of equipment included in certificated weight empty must be submitted for each aircraft with original inspector's report and each subsequent report covering changes in equipment.

Datum	Wing leading edge at fuselage (18 in. fwd. of wing attachment fitting centerline).
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Equipment

Propellers and Propeller Accessories

- Propeller (Model L-AR-90) 10 lbs. (-43)
Any fixed pitch wood which is eligible for the engine power and speed and which meets the following limits:
Static rpm at maximum permissible throttle setting:
Not over 2240, not under 2140.
No additional tolerance permitted.
Diameter: Not over 70 in., not under 68 in.
- Propeller (Model Lark 95) 21 lbs. (-42)
McCauley 1 B90-CM with the following limits:
Static rpm at maximum permissible throttle setting:
Not over 2350, not under 2250
No additional tolerance permitted.
Diameter: Not over 70 in., not under 69 1/2 in.
No additional cut-off for repairs permitted.

Engine and Engine Accessories

101.	Carburetor air heater (Model L-AR-90)	1 lb. (-28)
102.	Starter	
	(a) Auto Lite GFD 4801 (Model L-AR-90 only)	15 lbs. (-18)
	(b) Delco-Remy 1109656 (Model Lark 95 only)	15.5 lbs. (-16.75)
103.	Vacuum pump (Model L-AR-90 only).	4 lbs. (-19)
104.	Hydraulic pump (Model L-AR-90 only)	3 lbs. (-19)
105.	Oil radiator	
	(a) Harrison HE-212 (Model L-AR-90 only)	5 lbs. (-35)
	(b) Harrison HE-431-9 (Model L-AR-90 only)	5 lbs. (-35)
106.	Air Cleaner - Air Maze (Model L-AR-90 only)	2 lbs. (-35)
107.	Fuel pumps (Model Lark 95 only)	
	(a) Engine driven - AC Model 9867	1.9 lbs. (-35.5)
	(b) Emergency - Autopulse Model 500	1.9 lbs. (-15)

Landing Gear

201.	5.00-4 main wheels with E.T. Brakes (Hayes 451M) and 6-ply tires and tubes (L-AR-90 only)	23 lbs. (+28)
202.	5.00-4 nose wheel (Hayes 450M) with 6-ply tire and tube (L-AR-90 only)	10 lbs. (-26)
203.	Nose wheel fender (L-AR-90 only)	1 lb. (-27)
204.	5.00-4 main wheels Goodrich D3-142-2	6.6 lbs. ea. (+28.75)
205.	5.00-4 nose wheel Goodrich D3-163A	3.2 lbs. (-27.75)
206.	Brakes Goodrich D2-113	2.70 lbs. (+28.75)
207.	Tires (main & nose) 500-4 6 PR each	1.95 lbs.

Electrical Equipment

301.	Generators (2) (Auto-Lite ODY 4106) (L-AR-90 only)	24 lbs. (-17)
302.	Battery (Reading R-55) (L-AR-90)	51 lbs. (+42)
303.	Battery (Reading S-25) (Lark 95)	21.5 lbs. (+43)
304.	Generator (Delco-Remy 1101876 (Lark 95)	9.5 lbs. (-16.75)
305.	Voltage Regulator (Delco-Remy 1118383) (Lark 95)	1.08 lbs. (-6.0)

Instruments - Ref. Dwg. 9505810 Instrument Panel Model 95

402.	Airspeed Indicator (Eclipse-Pioneer 1426) (Lark 95)	.70 lbs. (+7.0)
403.	Altimeter (Kollsman 671CP) (Lark 95)	.90 lbs. (+7.0)
404.	Compass (Airpath C2000)	.56 lbs. (+7.0)

Miscellaneous (Not listed above)

601.	Door release (L-AR-90 only)	1 lb. (+15)
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NOTE 1:

Model Lark 95, S/N 9501 and up may be certificated as 2 place airplanes with a gross weight of 1475 lb. And 50 lb. baggage (+41.50) when modified per FAA approved drawings called out on the following sealed drawing list pages:

<u>Page No.</u>	<u>Date</u>	<u>Page No.</u>	<u>Date</u>	<u>Page No.</u>	<u>Date</u>
1.0	1-20-67	1.1	5-9-67	1.2	4-8-67
2.0	4-25-67	2.1	4-16-67	2.2	5-16-67
2.3	4-17-67	3.0	5-10-67	3.1	3-10-67
4.0	6-8-67	4.1	6-8-67	4.2	9-4-66
5.0	6-8-67	6.0	4-18-67	6.1	4-18-67
7.0	6-20-67	7.1	4-18-67		

C. G. Range (+14.56) to (+16.85) at 1305 lb. or less
(+16.5) to (+19.30) at 1475 lb.

NOTE 2:

The following placards must be installed in all airplane models in view for the pilot:

- a) "Intentional spins prohibited".
- b) "Max. allowable limit load factor at C.G. is 4.3". Placard b) in cockpit of 1475 lb. aircraft only.

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