DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

A-763
Revision 18
LOCKHEED
49-46
149-46
649-79
649A-79
749-79 (C-121A, VC-121B)
749A-79

September 21, 1955

AIRCRAFT SPECIFICATION NO. A-763

Manufacturer — Lockheed Aircraft Corporation
Burbank, California

I - Model 49-46, Approved October 14, 1946 (See NOTE 14 for interrelationship of models)

Engines — 4 Wright Cyclones 745C18BA-3 with 16:7 reduction gear ratio.

Fuel — AN grade 100/130.

Engine limits — Low impeller ratio 6.46:1

Maximum continuous:
(Sea level) 43.5 in.hg., 2400 rpm (2000 hp)
(Straight line manifold pressure variation with altitude to 4800 ft.)
41.5 in. hg., 2400 rpm (2000 hp)

Take-off (two minutes):
(Sea level) 46.0 in.hg., 2800 rpm (2200 hp)
(Straight line manifold pressure variation with altitude to 6300 ft.)
44.0 in.hg., 2800 rpm (2200 hp).

High impeller ratio 8.67:1

Maximum continuous:
(8000 ft.) 43.0 in.hg., 2400 rpm (1800 hp)
(Straight line manifold pressure variation with altitude to 15000 ft.) 40.0 in.hg., 2400 rpm (1800 hp).

Take-off (two minutes):
(10,600 ft.) 44.0 in.hg., 2600 rpm (1900 hp)
(Straight line manifold pressure variation with altitude to 16200 ft.)
42.0 in.hg., 2600 rpm (1900 hp).

Airspeed limits — Level flight or climb - 271 mph (236 knots) for sea level to 16000 ft.
Above 16000 ft. reduce speed 5 mph (4 knots) for each additional 1000 ft. of altitude.
Flaps extended (Landing position) 146 mph (127 knots)
(Approach position) 146 mph (127 knots)
(Take-off position) 200 mph (174 knots)
Landing gear extended or during gear operation - 175 mph (152 knots)
Glide or dive
Without Speedpak and/or deicer boots installed - 324 mph* (282 knots) for sea level to 13000 ft. Above 13000 ft. reduce speed 6 mph (5 knots) for each additional 1000 ft. of altitude. (*Note: When airspeed instrument (0-305 mph) is installed, the above-noted glide or dive speed should read 305 mph instead of 324 mph and the corresponding altitude should read 16000 ft. instead of 13000 ft.)
With Speedpak and/or deicer boots installed - 300 mph (261 knots) for sea level to 17000 ft. Above 17000 ft. reduce speed 6 mph (5 knots) for each additional 1000 ft. of altitude.

Usable ceilings — See Approved Operating Manual (enroute climb curve).

Page No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Rev. No.	18	18	18	18	14	16	18	18	18	18	14	18	18	14	18	18	10	10	16	18

C.G. range — See NOTE 1(b) for required loading and gear retraction moment.

Condition	Weight lbs.	Landing gear	Fwd. sta.	Limit %MAC	Aft. sta.	Limit %Mac
Take-off	90,000	Down	535.7	20.3	556.4	32.0
	77,800 or less	Down	531.7	18.0	556.4	32.0
Landing	77,800 or less	Down	531.7	18.0	556.4	32.0
Cruising	90,000	Up	531.1	17.7	556.4	32.0
Flight	77,800 or less	Up	526.4	15.0	556.4	32.0

Weight limits — Landing: 75,000 lbs.
Take-off: 86,250 lbs. (Dump valves are required)
3-engine ferrying: 80,000 lbs. See NOTE 11 for other conditions applicable.
See NOTE 7 regarding eligibility for higher weights.

Minimum crew — 3, Pilot and Copilot at +190 and Flight engineer at +226.

Passengers — Maximum 60 (CAR 4b.3812). See Approved Weight and Balance Report for actual number and location.

Baggage — See NOTE 4.

Fuel capacity — 2 inboard tanks (790 gal. ea.) 9,480 lbs. (+563).
2 inboard tanks (1,555 gal. ea.) 18,660 lbs. (+558).
See NOTE 5 regarding "System Fuel and Oil".

Oil capacity — 2 inboard tanks (45 gal. ea.) 675 lbs. (+495)
2 outboard tanks (45 gal. ea.) 675 lbs. (+520).

Control surface movements

Main surfaces (booster pressure on) -	Elevator	40° up	20° down
	Aileron	25° up	9° down
	Rudder	30° right	30° left
Tabs (main surfaces in neutral)	Elevator	22° up	22° down
	Aileron	12° up	12° down
	Rudder	25° right	25° left

Flaps - 41° total angular travel.

Serial Nos. eligible — 1963 to 1965 inclusive, 1967 to 1971 inclusive, 1974 to 1980 inclusive, and 2021 to 2088 inclusive.

Required equipment — Items 1a or e; 101(a); 200(a), (b) or (c); 201(a), (b), (c), (d), (e), (f) or (g); 202(a), (b), (c) or (d); 203(b) or (e); 205(a), (b), (c) or (d); 206(c) or (d); 508; 600; 601.

II - Model 649-79, Approved March 14, 1947 (See NOTE 14 for interrelationship of models)

Engines — 4 Wright Cyclones 749 C18BD-1 with 16:7 reduction gear ratio.

Fuel — AN grade 100/130.

Engine limits — Low impeller ratio 6.46:1
Maximum continuous:
(Sea level) 44.0 in.hg., 2400 rpm (2100 hp)
(Straight line manifold pressure variation with altitude to 4400 ft.)
42.5 in. hg., 2400 rpm (2100 hp)
Take-off (two minutes):
(Sea level) 51.5 in.hg., 2800 rpm (2500 hp)
(Straight line manifold pressure variation with altitude to 3100 ft.)
51.0 in.hg., 2800 rpm (2500 hp).
High impeller ratio 8.67:1
Maximum continuous:
(9000 ft.) 42.5 in.hg., 2400 rpm (1800 hp)
(Straight line manifold pressure variation with altitude to 16000 ft.)
41.0 in.hg., 2400 rpm (1800 hp).

Take-off (two minutes):
(10800 ft.) 44.0 in.hg., 2600 rpm (1900 hp)
(Straight line manifold pressure variation with altitude to 15700 ft.)
43.5 in.hg., 2600 rpm (1900 hp).

Airspeed limits

Level flight or climb - 271 mph (236 knots) for sea level to 16000 ft.
Above 16000 ft. reduce speed 5 mph (4 knots) for each additional 1000 ft. of altitude.
Flaps extended (Landing position) 146 mph (127 knots)
(Approach position) 146 mph (127 knots)
(Take-off position) 200 mph (174 knots)
Landing gear extended or during gear operation - 175 mph (152 knots)
Glide or dive
Without Speedpak and/or deicer boots installed - 324 mph* (282 knots) for sea level to 13000 ft. Above 13000 ft. reduce speed 6 mph (5 knots) for each additional 1000 ft. of altitude.
(*Note: When airspeed instrument (0-305 mph) is installed, the above-noted glide or dive speed should read 305 mph instead of 324 mph and the corresponding altitude should read 16000 ft. instead of 13000 ft.)
With Speedpak and/or deicer boots installed - 300 mph (261 knots) for sea level to 17000 ft. Above 17000 ft. reduce speed 6 mph (5 knots) for each additional 1000 ft. of altitude.

Usable ceilings

See Approved Operating Manual (enroute climb curve).

C.G. range

See NOTE 1(b) for required loading and gear retraction moment.

Condition	Weight lbs.	Flap Position	Landing gear	Fwd. sta.	Limit %MAC	Aft. sta.	Limit %Mac
Take-off	94,000	Takeoff	Down	535.2	20.0	556.4	32.0
Climb or cruise	84,500 or less	Takeoff	Down	531.7	18.0	556.4	32.0
Straight line variation between above listed values.							
Climb or cruise	94,000	Up	Up	529.9	17.0	559.9	34.0
	84,500 or less	Up	Up	526.4	15.0	559.9	34.0
Straight line variation between above listed values.							
Landing	84,500 or less	Down	Down	531.7	18.0	556.4	32.0

Weight limits

Landing: 84,500 lbs.
Take-off: 94,000 lbs. (Dump valves are required)
3-engine ferrying: 80,000 lbs. See NOTE 11 for other conditions applicable.

Minimum crew

3, Pilot and Copilot at +190 and Flight engineer at +226.

Passengers

Maximum 60 (CAR 4b.3812). See Approved Weight and Balance Report for actual number and location.

Baggage

See NOTE 4.

Fuel capacity

Tanks 2 and 3 (inboard) (790 gal. ea.) 9,480 lbs. (+563).
Tanks 1 and 4 (outboard) (1,555 gal. ea.) 18,660 lbs. (+558).
See NOTE 5 regarding "System Fuel and Oil".

Oil capacity

With Item 1(b) or (f) propeller -
2 inboard tanks (56 gal. ea.) 840 lbs. (+455)
2 outboard tanks (56 gal. ea.) 840 lbs. (+474).
With Item 1(d), (e) or (g) propeller -
2 inboard tanks (54 gal. ea.) 810 lbs. (+455).
2 outboard tanks (54 gal. ea.) 810 lbs. (+474).

Control surface movements	Main surfaces (booster pressure on) -	Elevator	40° up	20° down
		Aileron	25° up	9° down
		Rudder	30° right	30° left
	Tabs (main surfaces in neutral)	Elevator	22° up	22° down
		Aileron	12° up	12° down
		Rudder	25° right	25° left

Flaps - 41° total angular travel. With Model 49 flaps installed in accordance with LAC Dwings 251010, 251011 and 273326, flap movement is reduced to 41°.

Serial Nos. eligible: 2501 and up

Required equipment: 1b, d, e, f or g; 101(b) or (c); 108(b); 200(b); 201(f) or (g); 202(a), (b), (c) or (d); 203(b) or (e); 205(b), (c) or (d); 206(c) or (d); 508; 600; 601.

III - Model 749-79 (Army C-121A, VC-121B - See NOTE 16), Approved March 14, 1947
(See NOTE 14 for interrelationship of models)

Engines: 4 Wright Cyclones 749C18BD-1 with 16:7 reduction gear ratio.

Fuel: AN grade 100/130.

Engine limits:

Low impeller ratio 6.46:1
- Maximum continuous:
  - (Sea level) 44.0 in.hg., 2400 rpm (2100 hp)
  - (Straight line manifold pressure variation with altitude to 4400 ft.) 42.5 in. hg., 2400 rpm (2100 hp)
- Take-off (two minutes):
  - (Sea level) 51.5 in.hg., 2800 rpm (2500 hp)
  - (Straight line manifold pressure variation with altitude to 3100 ft.) 51.0 in.hg., 2800 rpm (2500 hp).

High impeller ratio 8.67:1
- Maximum continuous:
  - (9000 ft.) 42.5 in.hg., 2400 rpm (1800 hp)
  - (Straight line manifold pressure variation with altitude to 16000 ft.) 41.0 in.hg., 2400 rpm (1800 hp).
- Take-off (two minutes):
  - (10800 ft.) 44.0 in.hg., 2600 rpm (1900 hp)
  - (Straight line manifold pressure variation with altitude to 15700 ft.) 43.5 in.hg., 2600 rpm (1900 hp).

Airspeed limits:

Level flight or climb - 271 mph (236 knots) for sea level to 16000 ft.
Above 16000 ft. reduce speed 5 mph (4 knots) for each additional 1000 ft. of altitude.

Flaps extended	(Landing position)	146 mph (127 knots)
	(Approach position)	146 mph (127 knots)
	(Take-off position)	200 mph (174 knots)

Landing gear extended or during gear operation - 175 mph (152 knots)
Glide or dive
- Without Speedpak and/or deicer boots installed - 324 mph* (282 knots) for sea level to 13000 ft. Above 13000 ft. reduce speed 6 mph (5 knots) for each additional 1000 ft. of altitude.
  (*Note: When airspeed instrument (0-305 mph) is installed, the above-noted glide or dive speed should read 305 mph instead of 324 mph and the corresponding altitude should read 16000 ft. instead of 13000 ft.)
- With Speedpak and/or deicer boots installed - 300 mph (261 knots) for sea level to 17000 ft. Above 17000 ft. reduce speed 6 mph (5 knots) for each additional 1000 ft. of altitude.

Usable ceilings: See Approved Operating Manual (enroute climb curve).

C.G. range — See NOTE 1(b) for required loading and gear retraction moment.

Condition	Weight lbs.	Flap Position	Landing gear	Fwd. sta.	Limit %MAC	Aft. sta.	Limit %Mac
Take-off	102,000	Takeoff	Down	537.0	21.0	556.4	32.0
Climb or cruise	94,000	Takeoff	Down	535.2	20.0	556.4	32.0
	84,500 or less	Takeoff	Down	531.7	18.0	556.4	32.0
Straight line variation between above listed values.							
Climb or cruise	102,000	Up	Up	532.6	18.5	559.9	34.0
	94,000	Up	Up	529.9	17.0	559.9	34.0
	84,500 or less	Up	Up	526.4	15.0	559.9	34.0
Straight line variation between above listed values.							
Landing	84,500 or less	Down	Down	531.7	18.0	556.4	32.0

Weight limits — Landing: 84,500 lbs. (See NOTE 17)
Take-off: 102,000 lbs. (Dump valves are required)
3-engine ferrying: 80,000 lbs. See NOTE 11 for other conditions applicable.

Minimum crew — 3, Pilot and Copilot at +190 and Flight engineer at +226.

Passengers — Maximum 60 (CAR 4b.3812). See Approved Weight and Balance Report for actual number and location.

Baggage — See NOTE 4.

Fuel capacity — Tanks 2 and 3 (inboard) (790 gal. ea.) 9,480 lbs. (+563).
Tanks 1 and 4 (middle) (1,555 gal. ea.) 18,660 lbs. (+558).
Tanks 2a and 3a (outboard) (565 gal. ea.) 6,780 lbs. (+560).
See NOTE 5 regarding "System Fuel and Oil".

Oil capacity — With Item 1(b) or (f) propeller -
2 inboard tanks (56 gal. ea.) 840 lbs. (+455)
2 outboard tanks (56 gal. ea.) 840 lbs. (+474).
With Item 1(d), (e) or (g) propeller -
2 inboard tanks (54 gal. ea.) 810 lbs. (+455).
2 outboard tanks (54 gal. ea.) 810 lbs. (+474).

Control surface movements

Main surfaces (booster pressure on) -	Elevator	40° up	20° down
	Aileron	25° up	9° down
	Rudder	30° right	30° left
Tabs (main surfaces in neutral)	Elevator	22° up	22° down
	Aileron	12° up	12° down
	Rudder	25° right	25° left

Flaps - 45° total angular travel. With Model 49 flaps installed in accordance with LAC Drawings 251010, 251011 and 273326, flap movement is reduced to 41°.

Serial Nos. eligible — 2501 and up

Required equipment — Items 1b, d, e, f or g; 101(d) or (e); 108(b); 200(b); 201(f) or (g); 202(a), (b), (c) or (d); 203(b) or (e); 205(b), (c) or (d); 206(c) or (d); 508; 600; 601.

IV - Model 149-46, Approved March 18, 1948 (See NOTE 14 for interrelationship of models)

Engines — 4 Wright Cyclones 745C18BA-3 with 16:7 reduction gear ratio.

Fuel — AN grade 100/130.

Engine limits

Low impeller ratio 6.46:1
Maximum continuous:
(Sea level) 43.5 in.hg., 2400 rpm (2000 hp)
(Straight line manifold pressure variation with altitude to 4800 ft.)
41.5 in. hg., 2400 rpm (2000 hp)
Take-off (two minutes):
(Sea level) 46.0 in.hg., 2800 rpm (2200 hp)
(Straight line manifold pressure variation with altitude to 6300 ft.) 44.0 in.hg., 2800 rpm (2200 hp).
High impeller ratio 8.67:1
Maximum continuous:
(8000 ft.) 43.0 in.hg., 2400 rpm (1800 hp)
(Straight line manifold pressure variation with altitude to 15000 ft.) 40.0 in.hg., 2400 rpm (1800 hp).
Take-off (two minutes):
(10,600 ft.) 44.0 in.hg., 2600 rpm (1900 hp)
(Straight line manifold pressure variation with altitude to 16200 ft.) 42.0 in.hg., 2600 rpm (1900 hp).

Airspeed limits

Level flight or climb - 271 mph (236 knots) for sea level to 16000 ft.
Above 16000 ft. reduce speed 5 mph (4 knots) for each additional 1000 ft. of altitude.
Flaps extended (Landing position) 146 mph (127 knots)
(Approach position) 146 mph (127 knots)
(Take-off position) 200 mph (174 knots)
Landing gear extended or during gear operation - 175 mph (152 knots)
Glide or dive
Without Speedpak and/or deicer boots installed - 324 mph* (282 knots) for sea level to 13000 ft. Above 13000 ft. reduce speed 6 mph (5 knots) for each additional 1000 ft. of altitude.
(*Note: When airspeed instrument (0-305 mph) is installed, the above-noted glide or dive speed should read 305 mph instead of 324 mph and the corresponding altitude should read 16000 ft. instead of 13000 ft.)
With Speedpak and/or deicer boots installed - 300 mph (261 knots) for sea level to 17000 ft. Above 17000 ft. reduce speed 6 mph (5 knots) for each additional 1000 ft. of altitude.

Usable ceilings

See Approved Operating Manual (enroute climb curve).

C.G. Range

See Note 1(b) for required loading and gear retraction moment.

Condition	Weight lbs.	Flap Position	Landing gear	Fwd. sta.	Limit %MAC	Aft. sta.	Limit %Mac
Take-off	100,000	Takeoff	Down	537.0	21.0	556.4	32.0
Climb or cruise	93,000	Takeoff	Down	535.2	20.0	556.4	32.0
	83,000 or less	Takeoff	Down	531.7	18.0	556.4	32.0
Straight line variation between above listed values.							
Climb or cruise	100,000	Up	Up	532.6	18.5	559.9	34.0
	93,000	Up	Up	529.9	17.0	559.9	34.0
	83,000 or less	Up	Up	526.4	15.0	559.9	34.0
Straight line variation between above listed values.							
Landing	83,000 or less	Down	Down	531.7	18.0	556.4	32.0

Weight limits

Landing: 83,000 lbs.
Takeoff: 100,000 lbs. (Dump valves are required)
3-engine ferrying: 80,000 lbs. See NOTE 11 for other conditions applicable.
See NOTE 7 regarding eligibility for above weights.

Minimum crew

3, Pilot and Copilot at +190 and Flight engineer at +226.

Passengers	Maximum 60 (CAR 4b.3812). See Approved Weight and Balance Report for actual number and locations.			
Baggage	See NOTE 4.			
Fuel capacity	Tanks 2 and 3 (inboard) (790 gal. ea.) 9,480 lbs. (+563). Tanks 1 and 4 (middle) (1,555 gal. ea.) 18,660 lbs. (+558). Tanks 2a and 3a (outboard) (565 gal.ea.) 6,780 lbs. (+560). See NOTE 5 regarding "System Fuel and Oil".			
Oil capacity	2 inboard tanks (45 gal. ea.) 675 lbs. (+495) 2 outboard tanks (45 gal. ea.) 675 lbs. (+520).			
Control surface movements	Main surfaces (booster pressure on) -	Elevator	40° up	20° down
		Aileron	25° up	9° down
		Rudder	30° right	30° left
	Tabs (main surfaces in neutral)	Elevator	22° up	22° down
		Aileron	12° up	12° down
		Rudder	25° right	25° left
	Flaps - 41° total angular travel.			
Serial Nos. eligible	1963 to 1965 inclusive, 1967 to 1971 inclusive, 1974 to 1980 inclusive, and 2021 to 2088 inclusive.			
Required equipment	Items 1a or e; 101(f); 200(b); 201(f) or (g) (See NOTE 15); 202(a), (b), (c) or (d); 203(b) or (e); 205(b), (c) or (d); 206(c) or (d); 508; 600; 601.			

V - Model 749A-79, Approved February 15, 1949 (See NOTE 14 for interrelationship of models)

Engines: 4 Wright Cyclones 749 C18BD-1 with 16:7 reduction gear ratio.

Fuel: AN grade 100/130.

Engine limits:

Low impeller ratio 6.46:1

Maximum continuous:

(Sea level) 44.0 in.hg., 2400 rpm (2100 hp)

(Straight line manifold pressure variation with altitude to 4400 ft.) 42.5 in. hg., 2400 rpm (2100 hp)

Take-off (two minutes):

(Sea level) 51.5 in.hg., 2800 rpm (2500 hp)

(Straight line manifold pressure variation with altitude to 3100 ft.) 51.0 in.hg., 2800 rpm (2500 hp).

High impeller ratio 8.67:1

Maximum continuous:

(9000 ft.) 42.5 in.hg., 2400 rpm (1800 hp)

(Straight line manifold pressure variation with altitude to 16000 ft.) 41.0 in.hg., 2400 rpm (1800 hp).

Take-off (two minutes):

(10800 ft.) 44.0 in.hg., 2600 rpm (1900 hp)

(Straight line manifold pressure variation with altitude to 15700 ft.) 43.5 in.hg., 2600 rpm (1900 hp).

Airspeed limits:

Level flight or climb - 271 mph (236 knots) for sea level to 16000 ft.

Above 16000 ft. reduce speed 5 mph (4 knots) for each additional 1000 ft. of altitude.

Flaps extended	(Landing position)	146 mph (127 knots)
	(Approach position)	146 mph (127 knots)
	(Take-off position)	200 mph (174 knots)

Landing gear extended or during gear operation - 175 mph (152 knots)

Glide or dive

Without Speedpak and/or deicer boots installed - 324 mph* (282 knots) for sea level to 13000 ft. Above 13000 ft. reduce speed 6 mph (5 knots) for each additional 1000 ft. of altitude.

(*Note: When airspeed instrument (0-305 mph) is installed, the above-noted glide or dive speed should read 305 mph instead of 324 mph and the corresponding altitude should read 16000 ft. instead of 13000 ft.)
With Speedpak and/or deicer boots installed - 300 mph (261 knots) for sea level to 17000 ft. Above 17000 ft. reduce speed 6 mph (5 knots) for each additional 1000 ft. of altitude.

Usable ceilings — See Approved Operating Manual (enroute climb curve).

C.G. range — See NOTE 1(b) for required loading and gear retraction moment.

Condition	Weight lbs.	Flap Position	Landing gear	Fwd. sta.	Limit %MAC	Aft. sta.	Limit %Mac
Take-off	107,000	Takeoff	Down	537.0	21.3	556.4	32.0
Climb or cruise	89,500 or less	Takeoff	Down	531.7	18.0	556.4	32.0
Straight line variation between above listed values.							
Climb or cruise	107,000	Up	Up	533.5	19.0	559.9	34.0
	89,500 or less	Up	Up	526.4	15.0	559.9	34.0
Straight line variation between above listed values.							
Landing	89,500 or less	Down	Down	531.7	18.0	556.4	32.0

Weight limits — Landing: 89,500 lbs.
Take-off: 107,000 lbs. (Dump valves are required)
3-engine ferrying: 80,000 lbs. See NOTE 11 for other conditions applicable.

Minimum crew — 3, Pilot and Copilot at +190 and Flight engineer at +226.

Passengers — Maximum 60 (CAR 4b.3812). See Approved Weight and Balance Report for actual number and location.

Baggage — See NOTE 4.

Fuel capacity — Tanks 2 and 3 (inboard) (790 gal. ea.) 9,480 lbs. (+563).
Tanks 1 and 4 (middle) (1,555 gal. ea.) 18,660 lbs. (+558).
Tanks 2a and 3a (outboard) (565 gal. ea.) 6,780 lb. (+560).
See NOTE 5 regarding "System Fuel and Oil".

Oil capacity — With Item 1(b) or (f) propeller -
2 inboard tanks (56 gal. ea.) 840 lbs. (+455)
2 outboard tanks (56 gal. ea.) 840 lbs. (+474).
With Item 1(d), (e) or (g) propeller -
2 inboard tanks (54 gal. ea.) 810 lbs. (+455).
2 outboard tanks (54 gal. ea.) 810 lbs. (+474).

Control surface movements

Main surfaces (booster pressure on) -	Elevator	40° up	20° down
	Aileron	25° up	9° down
	Rudder	30° right	30° left
Tabs (main surfaces in neutral)	Elevator	22° up	12° down
	Aileron	12° up	12° down
	Rudder	25° right	25° left

Flaps - 45° total angular travel. With Model 49 flaps installed in accordance with LAC Dwgs. 251010, 251011 and 273326, the flap movement is reduced to 41°.

Serial Nos. eligible — 2501 and up converted in accordance with Lockheed Service Bulletins 49/SB-500, -500A and -545. Modifications covered by LAC 49/SB-500 were incorporated in serial Nos. 2589, 2590, 2601 and up, prior to delivery.

Required equipment — 1b, d, e (with 6801A-0 blades), f or g; 101(d); 108(b); 200(d) or (e); 201(f) or (g); 202(a), (b), (c) or (d); 203(e); 205(b), (c) or (d); 206(c) or (d); 209; 508; 600; 601.

VI - Model 649A-79, Approved December 20, 1949 (See NOTE 14 for interrelationship of models)

Engines: 4 Wright Cyclones 749 C18BD-1 with 16:7 reduction gear ratio.

Fuel: AN grade 100/130.

Engine limits: Low impeller ratio 6.46:1

Maximum continuous:

(Sea level) 44.0 in.hg., 2400 rpm (2100 hp)

(Straight line manifold pressure variation with altitude to 4400 ft.) 42.5 in. hg., 2400 rpm (2100 hp)

Take-off (two minutes):

(Sea level) 51.5 in.hg., 2800 rpm (2500 hp)

(Straight line manifold pressure variation with altitude to 3100 ft.) 51.0 in.hg., 2800 rpm (2500 hp).

High impeller ratio 8.67:1

Maximum continuous:

(9000 ft.) 42.5 in.hg., 2400 rpm (1800 hp)

(Straight line manifold pressure variation with altitude to 16000 ft.) 41.0 in.hg., 2400 rpm (1800 hp).

Take-off (two minutes):

(10800 ft.) 44.0 in.hg., 2600 rpm (1900 hp)

(Straight line manifold pressure variation with altitude to 15700 ft.) 43.5 in.hg., 2600 rpm (1900 hp).

Airspeed limits: Level flight or climb - 271 mph (236 knots) for sea level to 16000 ft.

Above 16000 ft. reduce speed 5 mph (4 knots) for each additional 1000 ft. of altitude.

Flaps extended (Landing position) 146 mph (127 knots)

(Approach position) 146 mph (127 knots)

(Take-off position) 200 mph (174 knots)

Landing gear extended or during gear operation - 175 mph (152 knots)

Glide or dive

Without Speedpak and/or deicer boots installed - 324 mph* (282 knots) for sea level to 13000 ft. Above 13000 ft. reduce speed 6 mph (5 knots) for each additional 1000 ft. of altitude.

(*Note: When airspeed instrument (0-305 mph) is installed, the above-noted glide or dive speed should read 305 mph instead of 324 mph and the corresponding altitude should read 16000 ft. instead of 13000 ft.)

With Speedpak and/or deicer boots installed - 300 mph (261 knots) for sea level to 17000 ft. Above 17000 ft. reduce speed 6 mph (5 knots) for each additional 1000 ft. of altitude.

Usable ceilings: See Approved Operating Manual (enroute climb curve).

C.G. range: See NOTE 1(b) for required loading and gear retraction moment.

Condition	Weight lbs.	Flap Position	Landing gear	Fwd. sta.	Limit %MAC	Aft. sta.	Limit %Mac
Take-off	98,000	Takeoff	Down	535.6	20.3	556.4	32.0
Climb or cruise	86,500 or less	Takeoff	Down	531.7	18.0	556.4	32.0
Straight line variation between above listed values.							
Climb or cruise	98,000	Up	Up	530.6	17.4	559.9	34.0
	86,500 or less	Up	Up	526.4	15.0	559.9	34.0
Straight line variation between above listed values.							
Landing	89,500 or less	Down	Down	531.7	18.0	556.4	32.0

Weight limits: Landing: 86,500 lbs. (See NOTE 19 for 89,500 lbs.)

Take-off: 98,000 lbs. (Dump valves are required)

3-engine ferrying: 80,000 lbs. See NOTE 11 for other conditions applicable.

Minimum crew: 3, Pilot and Copilot at +190 and Flight engineer at +226.

Passengers	Maximum 60 (CAR 4b.3812). See Approved Weight and Balance Report for actual number and location.
Baggage	See NOTE 4.
Fuel capacity	Tanks 2 and 3 (inboard) (790 gal. ea.) 9,480 lbs. (+563). Tanks 1 and 4 (outboard) (1,555 gal. ea.) 18,660 lbs. (+558). See NOTE 5 regarding "System Fuel and Oil".
Oil capacity	With Item 1(b) propeller - 2 inboard tanks (56 gal. ea.) 840 lbs. (+455) 2 outboard tanks (56 gal. ea.) 840 lbs. (+474). With Item 1(d), propeller - 2 inboard tanks (54 gal. ea.) 810 lbs. (+455). 2 outboard tanks (54 gal. ea.) 810 lbs. (+474).

Control surface movements				
Main surfaces (booster pressure on) -	Elevator	40° up	20° down
	Aileron	25° up	9° down
	Rudder	30° right	30° left
Tabs (main surfaces in neutral)	Elevator	22° up	22° down
	Aileron	12° up	12° down
	Rudder	25° right	25° left

Flaps - 41° total angular travel. With Model 49 flaps installed in accordance with LAC Dwgs. 251010, 251011 and 273326, flap movement is reduced to 41°.

Serial Nos. eligible	2501 and up
Required equipment	1b, d, e, f or g; 101(b) or (c); 108(b); 200(b); 201(f) or (g); 202(a), (b), (c) or (d); 203(b) or (e); 205(b), (c) or (d); 206(c) or (d); 209; 508; 600; 601.

Specifications Pertinent to All Models

Datum	601.5 inches forward of stub wing jack points.
MAC	176 inches. Leading edge of MAC - station 500.
Leveling means	Leveling points on left side of fuselage at stations 230 and 747.
Certification basis	Type Certificate No. 763. See NOTE 14 regarding applicable regulations. Compliance with the ditching provisions of CAR 4b.292(4b.261) has been shown.
Production basis	Production Certificate No. 600.
Export eligibility	Eligible for export to all countries, subject to the provisions of ASR 312 (MOP 2-4 contains the same information) except as follows: Canada: Landplane -eligible Skiplane - not eligible

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 (*). The asterisk denotes that approval has been obtained by someone other than the aircraft manufacturer. An item marked with an asterisk may not have been manufactured under a CAA monitored or approved quality control system, and therefore attention should be paid to workmanship and conformity with pertinent data called for in this specification.

Propellers and Propeller Accessories (Except De-icing Equipment)

1a. (1) 4 Propellers - Ham. Std. hubs 33E60, blades 6801-0 2,044 lb. (+396)
Diameter: Max. 15' 1-1/8", min. allowable for repairs 14' 9-1/4".
No further reduction permitted.
Low pitch setting 15° (17° optional) at 72 in. sta., propeller feathering pitch setting must prevent engine windmilling (approx. 82°)
(Eligible with 745C18BA-3 engines).

	(2)	(a) 4 Feathering Pumps Ham. Std. 59664-11 or	44 lb. (+464)
		(b) 4 Feathering Pumps Pesco 1E521DC or 1E521-JC or	44 lb. (+464)
		(c) 4 Feathering Pumps Pesco 1E-777-BAC-1	44 lb. (+464)
	(3)	(a) 4 Governors Ham. Std. 3G8A33G1 or	44 lb. (+415)
		(b) 4 Governors Ham. Std. 3G8B33G1 or	44 lb. (+415)
		(c) 4 Governors Ham. Std. 3G8C36M or	44 lb. (+415)
		(d) 4 Governors Ham. Std. 5G8A36M	36 lb. (+415)
b.	(1)	4 Propellers - Curtiss Wright hubs C632S-A or C632S-B, blades 850-4C2-0 Diameter 15'1". Pitch settings at 54 in. sta.: low forward +22°, low reverse - 21°, propeller feathering pitch setting must prevent engine windmilling (approximately 89°). (Eligible only with 749C18BD-1 engines and at 102,000 pounds maximum gross weight). When this propeller is installed the following placard shall be placed at two locations: (1) in full view of both pilots and (2) in full view of the flight engineer: "In flight avoid continuous operation below 1625 rpm and between 1725 to 1850 rpm, 1900 to 2000 rpm and 2050 to 2375 rpm. On ground avoid continuous operation between 1200 to 1500 rpm." In addition to the above placard the tachometers shall be marked as follows: Red band 1200 to 1625 rpm. Green band 1625 to 1725 with green radial line at 1675 rpm. Red band 1725 to 1850 rpm with green radial line at 1875 rpm. Red band 1900 to 2000 rpm. Green band 2000 to 2050 rpm with green radial line at 2025 rpm. Red band 2050 to 2375 rpm with green radial line at 2400 rpm. Yellow band 2400 to 2800 rpm at red radial line at 2800 rpm.	1,668 lb. (+380)
	(2)	1 Synchronizer Master Unit - Curtiss 119778-20	39 lb. (+195)
	(3)	4 Alternators - Curtiss 102750-2	15 lb. (+390)
	(4)	2 voltage Boosters-Bendix 1544 Model 2 Curtiss 116285-231	40 lb. (+253)
	(5)	1 Master Unit Filter - Curtiss 112148-9	6 lb. (+171)
	(6)	4 Nacelle Filters - Curtiss 111872	10 lb. (+461)
c.		Deleted (March 30, 1948).	
d.	(1)	4 Propellers - Ham. Std. hubs 23260, blades 2F17K3-24R or 2F17E3-24R Diameter 15'1". Pitch settings at 72 in. sta.: low forward +14°, low reverse -17°, propeller feathering setting must prevent engine windmilling (approximately 84°). Avoid continuous operation below 1400 engine rpm in flight. (For use with 749C18BD-1 engines only.)	1,758 lb. (+381)
	(2)	4 Synchronizing Governors Ham. Std. 5U-18-E30AG	54 lb. (+400)
	(3)	(a) 4 Master Synchronizer Generators Kollsman 1135GF, 1020304, or	16 lb. (+446)
		(b) 4 Master Synchronizer Generator Kollsman 1135GF, 1040304	16 lb. (+446)
	(4)	1 Propeller Synchronizing Control Box Ham. Std. Dwg. 320300	40 lb. (+190)
	(5)	4 Feathering Pumps - Pesco 1E-777-EL-1	54 lb. (+470)
e.	(1)	4 Propellers - Ham. Std. hubs 33E60, blades 6801-0 or 6853-0 Diameter: Max. 15' 1-1/8", min. allowable for repairs 14' 9-1/4". No further reduction permitted. Low pitch settings 15° (17° optional at 72 in. station, propeller feathering pitch setting must prevent engine windmilling (approximately 82°). (Airplanes equipped with 749C18BD-1 engines eligible for 102,000 pounds maximum gross weight with 6853A-0 blades and 107,000 pounds maximum gross weight when 6801A-0 blades are installed.)	2,044 lb. (+381)
	(2)	4 Synchronizing Governors Ham. Std. 5U-18-E30AG	54 lb. (+400)
	(3)	(a) 4 Master Synchronizer Generators Kollsman 1135GF, 1020304, or	16 lb. (+446)
		(b) 4 Master Synchronizer Generators Kollsman 1135GF, 1040304	16 lb. (+446)
	(4)	1 Propeller Synchronizing Control Box Ham. Std. Dwg. 320300	40 lb. (+190)
	(5)	4 Feathering Pumps Pesco 1E-777-EL-1	54 lb. (+470)

f.	(1)	4 Propellers-Curtiss Wright hubs C634S-C306 or C634S-C308, blades 830-21C4-0. Diameter 15'0". Pitch settings at 54 in. sta.: low forward 20.3°, low reverse -14.3°, propeller feathering pitch setting must prevent engine windmilling (approximately 89.7° with C634S-C306 hub and 90.5° with C634S-C308 hub). (Eligible with 749C18BD-1 engines only)	2,661 lb. (+380)
	(2)	1 Synchronizer Master Unit-Curtiss 119778-20	39 lb. (+195)
	(3)	4 Alternators - Curtiss 102750-2	15 lb. (+390)
	(4)	2 Voltage Boosters - Bendix 1544 Model 2 Curtiss 116285-231	40 lb. (+253)
	(5)	1 Master Unit Filter - Curtiss 112148-9	6 lb. (+171)
	(6)	4 Nacelle Filters - Curtiss 111872	10 lb. (+461)
g.	(1)	4 Propellers - Ham. Std. hubs 43E60, blades 6869-0 or 6901-0 Diameter: Max. 15' 1-5/16", min. allowable for repairs 14' 9-3/16". No further reduction permitted. Pitch settings at 72 in. sta.: low forward 13°, low reverse -20.5°, propeller feathering setting must prevent engine windmilling (Approximately 81.5°). (Eligible with 749C18BD-1 engines only)	2,284 lb. (+381)
	(2)	4 Synchronizing Governors - Ham. Std. 5U-18-E34AS or 5U-18-2	52 lb. (+400)
	(3)	4 Feathering Pumps - Pesco 1E-777-ML-1	58 lb. (+472)
	(4)	4 Master Synchronizer Generators Kollsman 1135 GH0120304	16 lb. (+446)
	(5)	1 Propeller Synchronizing Control Box Ham. Std. Dwg. 320300	40 lb. (+190)

Engines and Engine Accessories - Fuel and Oil System

100.		Fuel dump valve installation per following Lockheed Drawings: Model 48-46 - Drawings 254009 or LAC Service Bulletins 49/SB-158; Model 649-79 - Drawings 254009, 294076 or 297581; Models 749-79 and 749A-79 - Drawings 292594, 293781 and either 254009 or 294076 or 297581; Model 149-46 - Drawings 292594, 293781 and either LAC Service Bulletin 49/SB-158 or Drawing 254009. See NOTE 3 regarding use of dump valves.	
101.		System fuel and oil (See NOTE 5 for definition).	
	(a)	Model 49-46	685 lb. (+480)
	(b)	Model 649-79 and 649A-79 (with propeller Item 1(b) or (f) installed)	663 lb. (+481)
	(c)	Model 649-79 and 649A-79 (with propeller Item 1(d), (e) or (g) installed)	818 lb. (+470)
	(d)	Models 749-79 and 749A-79 (with propeller Item 1(b) or (f) installed)	718 lb. (+489)
	(e)	Model 749-79 (with propeller Item 1(d), (e) or (g) installed)	873 lb. (+477)
	(f)	Model 149-46	740 lb. (+487)
108.		Fuel dump standpipes (See NOTE 9 regarding quantities of undumpable fuel).	
	(a)	Model 49-46	
	(b)	Models 649-79, 749-79 and 749A-79	
	(c)	Model 149-46	
109.		Exhaust System	
	(a)	4 Collectors Solar A169000000 Inconel, or	324 lb. (+434)
	(b)	4 Collectors Solar 3299 Stainless Steel, or	266 lb. (+434)
	(c)	4 Sets jet exhaust stacks Rohr P/N 55-5200-1000 Installed in accordance with Lockheed Service Bulletins 49/SB-600 or 49/SB-600A (Models 649/749 Series)	380 lb. (+433)

Landing Gear

200.		2 main gear shock struts	
	(a)	Cleveland 8298B	948 lbs. (+586)
	(b)	Cleveland 8298C	975 lbs. (+586)
	(c)	Cleveland 8298D	951 lbs. (+586)
	(d)	Cleveland 8298F with either -85 or -85A axle	989 lbs. (+586)
	(e)	Cleveland 8298G	1000 lbs. (+586)
	(f)	Cleveland 8298BA	948 lbs. (+586)
	(g)	Cleveland 8298DA	951 lbs. (+586)
	(h)	Cleveland 8298GA	1000 lbs. (+586)

201.	Nose gear shock strut	
	See NOTE 15 regarding struts eligible on Model 149	
	(a) Cleveland 8297B	463 lbs. (+195)
	(b) Cleveland 8297C	463 lbs. (+195)
	(c) Cleveland 8297D	463 lbs. (+195)
	(d) Cleveland 8297E	463 lbs. (+195)
	(e) Cleveland 8297F	463 lbs. (+195)
	(f) Cleveland 8297G	463 lbs. (+195)
	(g) Cleveland 8297H	463 lbs. (+195)
202.	4 main wheel-brake assemblies, 17.00-20, Type III	
	(a) Goodyear Model 20DHBM	887 lbs. (+579)
	Wheel Assembly No. 530402-M (See AD note 48-1-1)	
	Brake Assembly No. 511031-M	
	(b) Bendix Type B	732 lbs. (+579)
	Wheel Assembly No. 145340M	
	Brake Assembly No. 145570, 145570M-C or 145570M-CR	
	Use of only Bendix 145340 M/M-1 wheels stamped "MSL 25000, 26000 or 26750" is approved. These wheels are serial 6A1426 and up.	
	(c) Bendix Type B	766 lbs. (+579)
	Wheel Assembly No. 145340M	
	Brake Assembly No. 145570M-CR2 or 146892M-ST	
	Use of only Bendix 145340 M/M-1 wheels stamped "MSL 25000, 26000 or 26750" is approved. These wheels are serial 6A1426 and up.	
	Bendix Brake Assemblies 145570M-C and 145570M-CR may be reworked as described in Lockheed Service Bulletin 49/SB-545 and reidentified as Bendix Brake Assembly No. 145570M-CR2 (Identical to 146892M-ST). (See NOTE 14).	
	(d) Bendix Type B-3	804 lbs. (+579)
	Wheel Serial 19A3497 and up	836 lbs. (+579)
	Wheel Assembly No. 146884M-1	
	Brake Assembly No. 146892M-ST or 145570M-CR2	
	(e) Goodrich Model 1752M (This installation requires replacement of the two Bendix 7 1/2" accumulators with two Vickers 10" accumulators P/N AA-14009B)	820 lbs. (+582)
	*(f) Goodrich Model 1754M	
	Wheel Assembly No. H-3-735	772 lbs. (+579)
	Brake Assembly No. G-2-597	248 lbs. (+579)
	(Per TWA Engineering Order 5144A & Capial EP 24)	
	*(g) Bendix Type B-4	
	Wheel Assembly No. 146884A-1	572 lbs. (+579)
	Brake Assembly No. 147772A-STR	446 lbs. (+579)
	or Brake Assembly No. 147772M-STR	424 lbs. (+579)
	*(h) Goodyear Model L20HBA or LF20HBM	
	Wheel Assembly No. 9540433	492 lbs. (+579)
	or Wheel Assembly No. 9540552	512 lbs. (+579)
	or Wheel Assembly No. 9540753	542 lbs. (+579)
	or Wheel Assembly No. 9540832	546 lbs. (+579)
	or Wheel Assembly No. 9540891	526 lbs. (+579)
	Brake Assembly No. 9540534	428 lbs. (+579)
	(Per TWA Engineering Order 5090B)	
203.	4 main wheel tires, 17.00-20, Type III, with tubes: Total permissible wt.	860 lbs. (+582)
	(b) 16-ply rating	
	(e) 20-ply rating	
205.	2 Nose wheel assemblies	
	(1) 33 in., Type I	
	(a) Bendix Type B-3, Assembly No. 57608PA	64 lbs. (+184)
	(b) Bendix Type B-5, Assembly No. 57608M	54 lbs. (+184)
	(2) 34x9.9, Type VII B	
	(c) Bendix Type B-1, Assembly No. 146066M	69 lbs. (+184)
	(d) Goodrich Model 6250M, Assembly No. H-3-592-M	67 lbs. (+184)

206.	2 nose wheel tires with tubes; Total permissible wt.	124 lbs. (+184)
	(c) 10-ply rating, 34x9.9, Type VII B, Plain or Goodrich Rotovane	
	(d) 10-ply rating, 33 in., Type I	
209.	2 main gear drag strut dampers, LAC Dwg. 299282	246 lbs. (+572)

Electrical Equipment

(See Approved Weight and Balance Report for each aircraft.)

Interior Equipment

400.	Surface Control Equipment	
	a. Automatic pilot	
	(1) Sperry A-3 (3 servos C6-S1-C) (LAC Models 49 & 149 only)	93 lbs. (+160)
	(2) Pioneer PB-10 (3 servos 15601-1A, 1 servo 15620-2A)	233 lbs. (+624)
	Servo stall forces measured at pilot's controls:	
	Elevator 25 lbs. ± 5	
	Aileron 25 lbs. ± 6	
	Rudder 90 lbs. ± 30	
	(These forces have not been demonstrated for Flight Path Control)	
	Terrain clearance minimum is 500 feet in cruise configurations, and is 200 feet in approach with pilot's seat belt fastened and hand on control wheel.	
420.	2 cabin superchargers	
	(a) LAC part No. 644155, B change (Models 49-46 and 149-46)	115 lbs. (+511)
	(b) Airesearch Type 52077-50 (Models 649-79, 649A-79, 749-79 and 749A-79), Dry	302 lbs. (+513)
	(c) Stratos Type S60-1 (Models 649, 749 and 749A) installed in accordance with Stratos Corporation Dwgs. Nos. 14675B and 14676B	262 lbs. (+509)
	(d) Airesearch Type 52077-70, Dry	302 lbs. (+513)
	(e) Airesearch Type 52077-80, Dry	322 lbs. (+513)
	(f) Stratos Type S60-5 (Model 49-46 and 149-46 only) when installed in accordance with Pan American World Airways data, Miami, Fla.	262 lbs. (+509)
421.	2 cabin supercharger driveshafts	
	(a) LAC part No. 644280, B change, with guards (Models 49-46 and 149-46)	64 lbs. (+481)
	(c) LAC part No. 644280-500 including guards and Stratos 15,000 disconnect installation (Models 49-46 and 149-46)	70 lbs. (+481)
	(d) Airesearch Type 55040-50, with guards (Models 649-79, 749-79 and 749A-79)	105 lbs. (+478)
	(e) Airesearch Type 56240 shaft with LAC 305199 Disconnect	107 lbs. (+478)
424.	Cabin refrigerating unit installation	
	(a) Refrigerating unit	
	(1) Airesearch Type 52068 (Serial 7-600 and up)	155 lbs. (+613)
	(2) Airesearch Type 52068-60, -70	146 lbs. (+613)
	(b) One temperature control installation Dwg. No. 299305 (Not required with 52068-70 or subsequent refrigerating unit)	8 lbs. (+590)
	(c) Two supercharger relief valves Dwg. No. 299257	4 lbs. (+615)
	(d) One water separator, Airesearch Type 1967SG	22 lbs. (+675)

Deicing Equipment

500.	Wing deicer boots and attachments - Goodrich Model 310 (Use of deicer boots between fuselage and inboard nacelle is optional).	157 lbs. (+516)
501.	Stabilizer deicer boots and attachments - Goodrich Model 310	55 lbs. (+1119)
502.	Fin deicer boots and attachments - Goodrich Model 310	28 lbs. (+1152)
508.	Windshield wipers: either	
	(a) One dual Marquette Type 22V5E (Electric) or	12 lbs. (+189)
	(b) One dual Marquette Type 22V24E (Electric) or	12 lbs. (+189)
	(c) Two Marquette Type 50V51 (Hydraulic)	7 lbs. (+173)

Miscellaneous (not listed above)

600. CAA Approved Operating Manual (Airplane Flight Manual) including Section IV, ICAO Requirements, for Models 749 and 749A. (A manual containing information required for the Airplane Flight Manual may be carried in lieu thereof in aircraft operated under the provisions of Parts 40, 41 and 42 of the Civil Air Regulations.)

601. Emergency ladder

607. Speedpak external cargo carrier. (Airplane must be operated in accordance with Appendix I to the CAA Approved Operating Manual.) See NOTE 8 for loading and capacities of Speedpak.

NOTE 1. (a) Current weight and balance report including list of equipment included in certificated weight empty, and loading instructions, must be in each aircraft at the time of original certification and at all times thereafter (except in the case of air carrier operators having an approved weight control system). See approved Master Equipment List (LAC Report 6056) for list of approved items of equipment in addition to those items listed in this specification.

(b) The airplane must be loaded so that the C.G. is within the specified limits at all times, with the effects of fuel use, gear retraction, and movement of crew and passengers from their assigned positions being considered (retraction of the main and nose gears causes the C.G. to move forward, the change in moment due to this retraction being 139,000 in. lb. for landing gears with wheel Item 202(a), 124,000 in.lb. for wheel Item 202(b), and 128,000 in.lb. for wheels Item 202(d) and tires Item 203(e). Add 3,000 in.lb. to each of the above moments when drag strut dampers are installed.) At take-off, the airplane shall be loaded so that, due to fuel use, the C.G. cannot move forward of 18% MAC unless it can be shown that the C.G. can be easily and rapidly shifted in flight (see CAR 4.70) to meet the 18% forward landing limit. The load manifest form shall indicate the exact load shifting necessary during flight. A 34% aft C.G. limit (gear retracted) for cruising flight may be used when the effect of passenger and crew movements from their assigned positions has been taken into account. For Model 49-46 only, see Notes in Approved Operating Manual concerning trim speeds necessary to permit use of 34% aft C.G. limit and concerning operations with take-off C.G. aft of 29% MAC.

NOTE 2. The following placards shall be installed so as to be in full view of the pilots or flight engineer:

(a) The following airplane placards for fuel distribution shall be installed:
"This airplane must be fueled and the fuel used in accordance with the chart contained in the Approved Operating Manual."
"At all times fuel in tanks 2 and 3 must not exceed fuel in tanks 1 and 4, respectively."
"Fuel transfer from one tank to another is not permitted. When operating the fuel system on crossfeed, the tank not being used must be turned off."

(b) "This airplane shall be operated in accordance with Part I (Operating Limitations) of the CAA Approved Operating Manual" (all models).

(c) "Above 16,000 ft. altitude, the maximum level flight or climb speed shall be reduced 5 mph for each additional 1,000 ft. of altitude. Above 13,000 ft. altitude, the maximum glide or dive speed shall be reduced 6 mph for each additional 1,000 ft. of altitude," or equivalent.

(d) "With de-icer boots installed, the maximum glide or dive speed is 300 mph between sea level and 17,000 ft. altitude. Above 17,000 ft., reduce this maximum speed by 6 mph for each additional 1,000 ft. of altitude," or equivalent.

(e) "Do not dump fuel with gear or flaps down or above 218 mph. After dumping fuel, move lever to the red line first, then back to intermediate position for 15-30 seconds before closing." (To be placed adjacent to dumping controls for fuel tanks Nos. 1, 2, 3, and 4.)

(f) Unless "Fasten Seat Belt" and "No Smoking" signs are installed in the forward passenger compartment, one or more crew members shall be instructed to advise the passengers in this compartment when smoking is not permitted or seat belts must be fastened.

The following placards shall be installed in the cabin:

(g) Placards restricting use during take-off and landing (except by seats equipped with approved safety belt installations for use of cabin attendants only) and limiting the number of occupants at any time, as follows:

Models 49 and 149 men's lounge	3 persons
Models 49 and 149 ladies' lounge	3 persons
NOTE: No placard required in the -59 interior mens' and ladies' lounges.	
Models 649, 649A, 749 and 749A men's lounge:	
-12, -31, -34, -51, -52 interiors	3 persons
-21, -22, -32, -33, -35, -44, -46, -50 interiors	4 persons

Models 649, 649A, 749 and 749A ladies' lounge:

-12 interior	2 persons
-21, -22, -32, -35 interior	6 persons
-31, -34, -51, -52 interiors	3 persons
-33, -44, -46, -50 interiors	4 persons

Models 649, 649A, 749 and 749A Fwd. urinal:

-31 and -34 interiors	1 person

(h) A placard to indicate the maximum capacity of the replacement seat (for Models 49- 46 and 149-46) at cabin attendants' position, if seat other than described by Lockheed Drawing 290262 is installed.

(i) At stewardess' seat location adjacent to main cabin door of Models 649, 649A, 749 and 749A: "Not to be occupied during take-off and landing."

(j) "Navigator's stool not to be occupied during take-off and landing unless equipped with an approved safety belt installation."

NOTE 3. A. Item 100 must be installed for operation of the airplane at weights in excess of maximum landing weight. If provisions other than Item 100 are made for dumping fuel, these fuel dump valves shall be made positively inoperative.

B. If Item 10C is installed, the aircraft operation record shall include one of the following statements:

(1) Non-Air Carrier: "Fuel shall not be dumped with flaps extended."

(2) Air Carrier:

(a) With authorized weight in excess of maximum landing weight - "Landing shall not be made at a weight in excess of maximum landing weight except in accordance with CAR 61.7811. Fuel shall not be dumped except in accordance with CAR 61.7811 and with flaps retracted, and then only if the pilot deems it safer than landing at a weight in excess of maximum landing weight."

(b) With authorized weight not in excess of maximum landing weight - "Fuel shall not be dumped except in accordance with CAR 61.7811 and with flaps retracted."

NOTE 4. Maximum capacity of internal baggage and storage compartments (see NOTE 8 for Speedpak data):

	Vol. (cu. ft.)	Max. Floor Loading psf	Cap. (lbs.)	Compt. C.G.
Models 49-46 and 149-46:				
Fwd. cargo compt., fwd. portion (a)	85	30 or 70	1,100 or 2,500	(+395)
Fwd. cargo compt., aft portion (a)	95	30 or 70	1,220 or 2,800	(+475)
Aft cargo compt., fwd. portion (a)	143	30 or 70	1,900 or 4,350	(+685)
Aft cargo compt., aft portion (a)	122	30 or 70	1,630 or 3,750	(+820)
AOA cabin compt., "A" (per LAC/dwg. 291835)		45(b)	1,550	(+385)
AOA cabin compt., "B" (per LAC/dwg. 291835)		45(b)	2,200	(+436)
Coats and luggage			400	(+895)
Wash water			350	(+377)
Galley installation and supplies (all interiors)		45(b)		
Models 649-79, 649A-79, 749-79 and 749A-79:				
Fwd. cargo compt.	154	70	4,900	(+434)
Aft cargo compt., fwd. portion	165	70	4,300	(+679)
Aft cargo compt., aft portion	115	70	4,300	(+830)
Coats and luggage:				
-21, -22, -32, -35 interiors			500	(+940)
-12 interior				
Left hand fwd.			400	(+273)
Right hand fwd.			825	(+376)
Left hand aft			150	(+944)
-33, -46, -50 interiors			465	(+900)
-31, -34 interior			550	(+900)
-44 interior				
Left hand			150	(+900)
Right hand			700	(+873)
Wash water, -21, -22, -32, -35 interiors			267	(+412)
Wash water, -12, -31, -33, -34, -44, -46, -50, -51, -52			350	(+769)
Galley water, -21, -22, -32, -35 interiors			142	(+380)
Galley installation and supplies (all interiors)		45(b)		

(a) For Models 49-46 and 149-46, cargo compartments are satisfactory for heavier loading, as indicated, when flooring is modified in accordance with Lockheed drawing 293877. This modification was accomplished at the factory on airplane serials 2051 and up.
(b) Galley areas between Stations 260 and 451 are structurally satisfactory for a uniformly distributed load over the entire area of 45 PSF or a uniformly distributed load of 55 PSF on each side of the 20" aisle or a uniformly distributed load of 420# per linear foot. Galley installations and their contents shall not exceed these loadings. Fixed equipments such as galleys shall be listed on the Approved Equipment List together with pertinent weights and arms.

NOTE 5. (a) "System Fuel and Oil" is that amount required to fill both systems and the tanks up to the tank outlets to the engines, when the airplane is in the level attitude. For these models, the only "unusable" fuel is "System fuel." (Ref. CAR 4b.112 and 4b.6104.) "System Fuel and Oil" and all hydraulic fluid must be included in the certificated weight empty.
(b) Fuel and oil tank capacities do not include any "System Fuel and Oil."

NOTE 6. On Models 49-46 and 149-46, the carburetor filtered air controls must be rendered inoperative, both at the flight engineer's station and in the nacelles. The four filters must be retained, however, unless the firewall openings are covered with adequate stainless steel plates.

NOTE 7. (a) In order that airplane serials prior to 2045 may be eligible for certification at landing weights over 75,000 lbs., and take-off weights above 86,250 lbs., the main landing gear side struts must be replaced and the wing front spars reinforced in accordance with Lockheed Service Instructions Nos. 049/SI-14 and 049/SI-14A. These changes were accomplished by the manufacturer on airplane serials 2045 and up.
(b) Model 49-46 is eligible for certification at 93,000 lb. take-off weight when modified in accordance with Lockheed Service Bulletin No. 49/SB-282. This modification includes the addition of external rails to the upper forward portion of the fuselage, modification and reidentification of nose and main landing gear struts and the replacement of nose landing gear wheels and tires. This model is also eligible for certification at 83,000 lbs. landing weight when modified in accordance with Lockheed Service Bulletin 49/SB-425. Prior to certification, the pertinent sections of the Operating Manual should be replaced to correspond to the increased take-off and landing weights.
(c) Model 49-46 is eligible for certification at 96,000 lbs. take-off weight and 83,000 lbs. landing weight when modified to incorporate reinforcements of the wing and landing gear structures in accordance with LAC Service Bulletin 49/SB-548.
(d) Model 49-46, Serial Nos. 1970, 1971, 1974 through 1980 and 2021 through 2088, eligible for certification at 98,000 lbs. take-off weight and 84,500 lbs. landing weight when modified to incorporate reinforcements of the wing and fuselage structure in accordance with LAC Service Bulletin No. 49/SB-759.

NOTE 8. (a) Maximum gross weight of Speedpak and contents - 10,000 lbs. Use actual gross weight and C.G. for weight and balance calculations.
(b) The airplane fuel tank venting and dumping systems must be revised in accordance with Lockheed Service Bulletin 049/5B-201 prior to operation of the airplane with Speedpak installed.
(c) Maximum capacity of Speedpak compartments:

COMPARTMENT	Volume (Cu.Ft.)	Maximum floor loading, psf	per running ft. - lb.	Capacity (Pounds)	Comp. C. G.
A	72	100	290	1440	404
B	40	100	360	790	459
C	46	100	360	930	459
D	50	100	360	1000	525
E	58	100	360	1160	525
F	69	100	260	1380	613
G	75	100	260	1500	613

(d) When Speedpak is installed, the speed limit placards on the pilot's and copilot's instrument panels shall be replaced with new placards listing the speed restrictions pertinent to use of Speedpak (LAC part No. 296921 or equivalent).
(e) Airplane serials up to and including 2084 must be modified to incorporate a guard over the Speedpak fire extinguisher, heater and smoke detector switches prior to use of Speedpak (LAC Service Bulletin 49/SB-234 describes this modification).

(f) Airplane serials up to and including 2081 must be modified to relocate the CO_2 discharge indicator prior to initial installation of Speedpak (LAC Service Bulletin 49/SB-235 describes this modification).

(g) Airplane serials up to and including 2075 must be modified in accordance with Lockheed Service Instruction 49/SI-8 to permit installation of Speedpak.

NOTE 9. Undumpable fuel, as listed below, must be included in landing weight. (Values listed are usable fuel and do not include any system fuel covered by Item 101):

Model	Condition	Gallons remaining in tanks		
		2 and 3	1 and 4	2a and 3a*
49	(No standpipes)	20 ea.	65 ea.	
49, 149	(With standpipes, per LAC Service Instr. 49/SI-12)**	182 ea.	225 ea.	1 ea.
49, 149	(With standpipes, per LAC Service Bull. 49/SB-403)**	116 ea.	136 ea.	1 ea.
649, 649A**		116 ea.	136 ea.	
749, 749A**		116 ea.	136 ea.	1 ea.

*Tanks 2a and 3a are installed in Models 149, 749 and 749A only.

**On all models equipped with standpipes, either the ram pressure type fuel tank vents or the suction cut-off type vents may be used on tanks 1, 2, 3 and 4. Ram vents must be retained on tanks 2a and 3a of Models 149, 749 and 749A airplanes.

NOTE 10. (a) The approved Operating Manual must cover at least the following valves:

Model	Condition	Gallons in tanks		
		2 and 3	1 and 4	2a and 3a*
49	Max. fuel at land. wt. (90,000 lb. rake-off wt.)	790 ea.	900 ea.	
49	Max. fuel at land wt. (93,000 lb. and 96,000 lb. take-off wt.)	790 ea.	1,555 ea..	
149, 749 and 749A	Max fuel at land. - either	790 ea.	1,200 ea.	100 ea.
	or	790 ea.	1,200 ea.	0
649, 649A	Max. fuel at land.	790 ea..	1,555 ea.	

*Tanks 2a and 3a in Models 149, 749 and 749A only.

(b) For minimum fuel at any take-off weight, refer to fuel loading and usage chart in the pertinent Approved Operating Manual.

NOTE 11. Ferry permits may be issued to Model 49 Series aircraft on which one engine is inoperative with its propeller removed or feathered under the following conditions:

(a) Operation of aircraft shall be in accordance with pertinent limitations contained in the applicable portion of the CAA Approved Operating Manual, pertinent appendicies and existing instructions.

(b) (1) Maximum take-off weight 80,000 lbs.
(2) Maximum landing weight (Model 49-46) 77,800 lbs.

(c) C.G. range: See applicable portion of specification above.

NOTE 12. Tail bumper installation may be removed in accordance with LAC Service Bulletin No. 49/SB-346.

NOTE 13. Aircraft in their original configuration have the following elevator boost ratios:
Models 49-46: 9:1
Model 149-46, 649-79, 749-79 and 749A-79: 15:1
The boost ratio for Models 49-46 may be increased to 15:1 in accordance with LAC Service Bulletin 49/SB-355.

NOTE 14. Interrelationship of various models.

Model[1] design.	Weight in pounds Take-off	Landing	Certification basis	Remarks
49[3]	86,250	75,000	CAR 4a (Transport Category	Basic model-conversion of AAF model C-69.
49[2,3] (49A)	90,000	77,800	↓ ↓ ↓	See NOTE 7(a) for required modifications for these weights.
49[2,3] (49B)	93,000	77,800	↓ ↓ ↓ ↓	See NOTE 7(b) Basic model modified to incorporate forward fuselage reinforcements, different shock strut metering pins and different nose gear wheels and tires. (Refer LAC 49/SB-282)
49[2] (49C)	93,000	83,000	Combination CAR 4b & CAR 4a (Transport Category)	See NOTE 7(b). Same as preceding, except higher landing weight substantiated in accordance with CAR 4b performance requirements. (Refer LAC 49/SB-425)
49[2] (49D)	96,000	83,000	↓ ↓ ↓	See NOTE 7(c). Same as preceding except for higher take-off weight, wing and landing gear reinforcements per LAC Service Bulletin 49/SB-548.
49[2] (49E)	98,000	84,500		See NOTE 7(d). Same as preceding except for higher take-off and landing weights; wing and fuselage reinforcement per LAC Service Bulletin 49/SB-759.
149[2]	100,000	83,000	↓ ↓ ↓ ↓ ↓ ↓	Same as preceding, but with Model 749 outer wing panels. Different basic fuel distribution required. Model 149 identical or equivalent structurally to Model 749 except for inner wing panels. Modifications described in LAC Service Bulletin 49/SB-66.
649[2]	94,000	84,500	↓ ↓ ↓ ↓ ↓	Basic production model. Differs from Model 49 in following major respects: Engines, propellers, cabin superchargers and driveshafts, oil tanks, shock strut metering pins, fuselage and inner wing reinforcements, and flap deflection.
649A[2]	98,000	86,500 (See NOTE 19)	↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	Same as preceding except for higher take-off and landing and landing weights of 98,000 lbs. and 86,500 lb., respectively. Incorporates inner wing reinforcements, new L.G. struts (8298F). These modifications are covered in LAC SB 49/SB-503 Change A. These airplanes also eligible for certification as Model 749A when provisions of LAC Service Bulletin 49/SB-614 are accomplished.
749[2]	102,000	84,500 (See NOTE 17)	Combination CAR 4b & CAR 4a (Transport Category). ICAO DOC Annex 8 (See NOTE 18)	Model 649 with integral fuel tanks in outer wing panels.
749A[2]	107,000	89,500	↓ ↓ ↓ ↓ ↓ ↓	Model 749 modified to incorporate reinforcements of wing center section, inner wing, and fuselage structure between stas. 527.6 and 603.2; new main L. G. struts (8298F); 20-ply rating main tires; new or revised brakes. These modifications are covered by LAC S.B. 49/SB-500; -500A and -545.

[1]Dash numbers indicate engine installation: -46: Wright 745C18BA-3
-79: Wright 749C18BD-1

[2]Complies with CAR 4b ground loads requirements.

[3]Structural zero fuel for the Model 49 at 90,000/93,000 lb. take-off and 77,800 lb. landing weights is 75,960 lbs. For all other models, structural adequacy has been shown when the undumpable fuel specified in NOTE 9 is included in the landing weight.

(Models shown in parenthesis( ) are the LAC designations for the specified weight category).

NOTE 15. (a) Model 49 main gear shock struts listed as Equipment Items 200(a) or (c), if modified in accordance with LAC Service Bulletin 49/SB-66, are also eligible for use on model 149 aircraft. These modified struts are identified as Cleveland Types 8298BA.

(b) Model 49 nose gear shock struts, listed as Equipment Items 201(a), (b), (c), (d), or (e), if modified in accordance with LAC Service Bulletin 49/SB-66, are also eligible for use on model 149 aircraft. These modified struts are identified as Cleveland types 8297BA, 8297BC, 8297CA, 8297DA or 8297FA.

NOTE 16. (a) Model 749 aircraft are also eligible for certification with installation of large cargo door described by LAC Drawing No. 299984.

(b) Military Models VC121-B and C-121A are essentially identical to model 749 aircraft modified in accordance with (a) above and are eligible for civil certification with the following stipulations:

(1) The manufacturer's nameplate on the airplane should be altered to show the date of conversion and the designation "Model 749-79."

(2) Life rafts installed in the vicinity of the navigator's station must be removed or relocated to eliminate the interference with the emergency exit in that vicinity.

(3) Each airplane should be inspected for possible hidden damage, satisfactory workmanship and materials utilized in making repairs and/or alterations, compliance with applicable Airworthiness Directive Notes, installation of approved equipment (see NOTE 1), and for additions or changes accomplished subsequent to delivery which may adversely affect the operation as a civil aircraft.

NOTE 17. The conversion of Model 749 aircraft to Model 749A is covered by LAC Service Bulletins 49/SB-500, -500A and -545. Since production changes similar to the modifications described in Bulletin 49/SB-500 were incorporated in serial Nos. 2589, 2590, 2601 and subsequent prior to their delivery from the factory these aircraft are eligible for certification and Model 749 at maximum landing and take-off weights of 86,500 lbs. and 102,000 lbs., respectively. The landing weight may be increased to 89,500 lbs. when provisions of Service Bulletin 49/SB-545 are incorporated.

NOTE 18. All Models 749-79 and 749A-79 aircraft are eligible for certification at maximum takeoff weights of 102,000 lbs. and 107,000 lbs. respectively, in accordance with the ICAO Category "A: Standards set forth in Document Annex 8 dated April, 1949. The Flight Manuals for all aircraft so certificated must be amended to include Section IV, ICAO Requirements.

NOTE 19. Model 649A aircraft are eligible for certification at landing weight of 89,500 lbs. when new wheels and brakes are installed in accordance with LAC Service Bulletin 49/SB- 545. When the above change is made the forward C.G. position for the 98,000 lb. maximum take-off weight is revised as follows:

Take-off condition	Sta. 534.4 (19.5%)
Climb or cruise	Sta. 529.2 (16.6%)

No correction of C.G. position is required for the increased landing weight of 89,500 lbs.

NOTE 20. The electric drive on the elevator trim tab mechanism on the control pedestal, formerly considered as an integral part of the airplane, may be retained or removed at the option of the operator.

NOTE 21. In accordance with the agreement between the Department of Defense and the Civil Aeronautics Board, all air carrier operators utilizing aircraft which have been modified under the Civil Reserve Air Fleet Program, Part I, Phase II, may deduct the added weight of military modification up to a maximum of 50 lbs. for each aircraft so modified.

.....END.....