

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

A-767  
Revision 27  
UNIVAIR  
(STINSON)  
108  
108-1  
108-2  
108-3  
108-5  
July 14, 2005

AIRCRAFT SPECIFICATION NO. A-767

Type Certificate Holder                      Univair Aircraft Corporation  
2500 Himalaya Road  
Aurora, Colorado 80011

I - Models 108 and 108-1, 4 PCL-SM (Normal Category, 2 PCLM (Utility Category); Model 108 (Landplane)  
Approved July 19, 1946; Model 108 (Seaplane) and Model 108-1 (Landplane and Seaplane) Approved June 4, 1947

Engine	Franklin 6A4-150-B31, -B3, or -B4 (See Item 111 for optional engine)		
Fuel	80/87 minimum grade aviation gasoline		
Engine limits	For all operations, 2600 rpm (150 hp)		
Airspeed limits	Landplane:		
	Maximum structural cruising	117 m.p.h. (102 knots)	True Ind.
	Never exceed (Normal Category)	148 m.p.h. (129 knots)	True Ind.
	Never exceed (Utility Category)	158 m.p.h. (137 knots)	True Ind.
	Flaps extended	88 m.p.h. (77 knots)	True Ind.
	Seaplane:		
	Maximum structural cruising	102 m.p.h. (89 knots)	True Ind.
	Never exceed (Normal Category)	128 m.p.h. (111 knots)	True Ind.
	Flaps extended	88 m.p.h. (77 knots)	True Ind.
Propeller limits (With Item 1)	Static r.p.m. at maximum permissible throttle setting: Not over 2350, not under 2100. No additional tolerance permitted. Diameter: Not over 76 in., not under 74 in.		
C.G. range	108 Landplane: (Normal and Utility)	(+10.6) to (+20.0)	
	108-1 Landplane: (Normal)	(+10.6) to (+21.3)	
	(Utility)	(+10.6) to (+16.8)	
	108 and 108-1 Seaplane: (Normal Only)	(+11.1) to (+19.8)	
Empty weight C.G. range	108 Landplane: (Either Category)	(+9.9) to (+13.0)	
	108-1 Landplane: (Either Category)		
	With standard baggage compt.	(+9.9) to (+14.4)	
	When Item 402 is installed	(+9.9) to (+12.0)	
	108 Seaplane:	(+10.3) to (+13.0)	
	108-1 Seaplane:		
	With standard baggage compt. at (+42)	(+10.5) to (+12.0)	
	When Item 402 is installed	None	
	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	108 Landplane:	(Normal)	2150 lb.
		(Utility)	1900 lb.
	108-1 Landplane:	(Normal)	2230 lb.
		(Utility)	1925 lb.
	108 and 108-1 Seaplane:	(Normal Only)	2235 lb.
No. seats	4 (2 at +16 and 2 at +48)		
Maximum baggage	108:	50 lb.	(+42) under rear seat
	108-1:	100 lb.	(+42) or
		100 lb.	(+75.5) when Item 402 is installed.
	Both Models: Baggage may be increased to 350 lb. with rear seats removed.		
Fuel capacity	40 gal. (Two 20 gal. tanks at +22) See NOTE 1 regarding unusable fuel.		
Oil capacity	2 gal. (-49)		
Control surface movements	Elevator	17° up (flaps up)	20° down
		25.5° up (flaps down)	
	Elevator tab	14° up	14° down
	Rudder	19° left	19° right
	Aileron	24° up	12° down
	Flaps		33° down
	Stabilizer	Fixed	
Serial Nos. eligible	Model 108:	108-1 through 108-742 (except 108-11).	
	Model 108-1:	108-11 and 108-743 through 108-2249 (except 108-1474) and 108-3100.	
Required equipment	In addition to the pertinent required basic equipment specified in CAR 3, the following items of equipment must be installed:		
	Landplane:	1, 102, 112, 201, 202, 401(a) or (b)	
	Seaplane:	1, 102, 112, 206, 207, 401(c).	
	Skiplane:	1, 102, 112, and 401(a) with 401(f) or 401(b) with 401(g).	

II - Model 108-2, 4 PCL-SM (Normal Category), 2 PCLM (Utility Category), Landplane Approved May 18, 1948, Seaplane Approved January 4, 1949

(Same as Model 108-1 except for engine installation and rudder bungee)

Engine	Franklin 6A4-165-B3 or 6A4-165-B4		
Fuel	80/87 minimum grade aviation gasoline		
Engine limits	For all operations, 2800 rpm (165 hp.)		
Airspeed limits	Landplane:		
	Maximum structural cruising	121 m.p.h. (105 knots)	True Ind.
	Never exceed (Normal Category)	153 m.p.h. (133 knots)	True Ind.
	Never exceed (Utility Category)	164 m.p.h. (143 knots)	True Ind.
	Flaps extended	88 m.p.h. (77 knots)	True Ind.
	Seaplane:		
	Maximum structural cruising	102 m.p.h. (89 knots)	True Ind.
	Never exceed (Normal Category)	128 m.p.h. (111 knots)	True Ind.
	Flaps extended	88 m.p.h. (77 knots)	True Ind.
Propeller limits (With Item 1)	Static r.p.m. at maximum permissible throttle setting: Not over 2320, not under 2100. No additional tolerance permitted. Diameter: Not over 76 in., not under 74 in.		

C.G. range	Landplane: (Normal)	(+10.6) to (+21.3)
	(Utility)	(+10.6) to (+16.8)
	Seaplane: (Normal Only)	(+11.1) to (+19.8)
Empty weight C.G. range	Landplane: (Both categories)	
	With standard baggage compt. at (+42)	(+ 9.9) to (+14.4)
	When Item 402 is installed	(+ 9.9) to (+12.0)
	Seaplane: (Normal Only)	
	With standard baggage compt. at (+42)	(+10.5) to (+12.0)
	When Item 402 is installed	None
	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	Landplane: (Normal)	2230 lb.
	(Utility)	1925 lb.
	Seaplane: (Normal Only)	2235 lb.
No. seats	4 (2 at +16 and 2 at +48)	
Maximum baggage	100 lb. (+42) under rear seat, or 100 lb. (+75.5) when Item 402 is installed. Baggage may be increased to 350 lb. with rear seats removed. For station wagon model, see NOTE 3(f).	
Fuel capacity	40 gal. (Two 20 gal. tanks at +22) See NOTE 1 regarding unusable fuel.	
Oil capacity	9 qts. (-49)	
Control surface movements	Elevator	17° up (flaps up) 20° down
		25.5° up (flaps down)
	Elevator tab	14° up 14° down
	Rudder	19° left 19° right
	Aileron	24° up 12° down
	Flaps	33° down
Stabilizer	Fixed	
Serial Nos. eligible	108-1474 and 108-2250 through 108-3500 (except 108-3100).	
Required equipment	In addition to the pertinent required basic equipment specified in CAR 3, the following items of equipment must be installed:	
	Landplane:	1, 102, 112, 201, 202, 401(d).
	Seaplane:	1, 102, 112, 206, 207, 401(e).
	Skiplane:	1, 102, 112, 205 and 401(d).

III - Model 108-3, 4 PCL-SM (Normal Category); 2 PCLM (Utility Category), Landplane Approved September 17, 1948, Seaplane Approved September 20, 1498

(Same as Model 108-2 except for larger fuel tanks, structural changes for increased gross weight, revised vertical tail surfaces and controllable rudder trim tab replaces rudder bungee.)

Engine	Franklin 6A4-165-B3, or 6A4-165-B4 (See Item 114 for optional engine)
Fuel	80/87 minimum grade aviation gasoline
Engine limits	For all operations, 2800 rpm (165 hp)

Airspeed limits	Landplane:		
	Maximum structural cruising	126 m.p.h.	(110 knots) True Ind.
	Never exceed (Normal Category)	158 m.p.h.	(137 knots) True Ind.
	Never exceed (Utility Category)	170 m.p.h.	(148 knots) True Ind.
	Flaps extended	88 m.p.h.	( 77 knots) True Ind.
	Seaplane:		
	Maximum structural cruising	112 m.p.h.	( 97 knots) True Ind.
	Never exceed (Normal Category)	140 m.p.h.	(122 knots) True Ind.
	Flaps extended	88 m.p.h.	( 77 knots) True Ind.
Propeller limits	Static r.p.m. at maximum permissible throttle setting:		
	Landplane (with Item 1): Not over 2315, not under 2215.		
	Seaplane (with Item 5c): Not over 2500, not under 2400.		
	No additional tolerance permitted.		
	Diameter (Landplane and Seaplane): Not over 76 in., not under 74 in.		
C.G. range	Landplane:	(Normal)	(+16.5) to (+21.9) at 2400 lb. (+10.6) to (+21.9) at 1750 lb. or less
		(Utility)	(+12.9) to (+17.2) at 2000 lb. (+10.6) to (+17.2) at 1750 lb. or less
	Seaplane:	(Normal Only)	(+16.5) to (+21.9) at 2500 lb. (+11.0) to (+21.9) at 2000 lb. or less
	Empty weight C.G. range	Landplane:	
With standard baggage compt. at (+42)		(+10.0) to (+16.0)	
When Item 402 is installed		(+10.0) to (+13.7)	
As station wagon (2 PCLM), when Item 402 is <u>not</u> installed		(+10.0) to (+14.4)	
Above hold good regardless of category.			
Seaplane:			
With standard baggage compt. at (+42)		(+10.5) to (+16.4)	
When Item 402 is installed		(+10.5) to (+14.2)	
As station wagon (2 PCSM), when Item 402 is <u>not</u> installed		(+10.5) to (+14.9)	
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	Landplane:	(Normal)	2400 lb.
		(Utility)	2000 lb.
	Seaplane:	(Normal Only)	2500 lb.
No. seats	4 (2 at +16 and 2 at +48)		
Maximum baggage	100 lb. (+42) under rear seat, or 100 lb. (+75.5) when Item 402 is installed. Baggage may be increased to 350 lb. with rear seats removed. For station wagon model, see NOTE 3(f).		
Fuel capacity	50 gal. (Two 25 gal. tanks at +22) See NOTE 1 regarding unusable fuel.		
Oil capacity	9 qts. (-49)		

Control surface movements	Elevator	17° up (flaps up)	20° down
		25.5° up (flaps down)	
	Elevator tab	22° up	14° down
	Rudder	19° left	19° right
	Rudder tab	18° left	18° right (Landplane)
		22° left	14° right (Seaplane)
	Aileron	24° up	12° down
Flaps		1st position	27° down
		2nd position	33° down
Stabilizer	Fixed		

Serial Nos. eligible 108-3501 and up.

Required equipment In addition to the pertinent required basic equipment specified in CAR 3, the following Items of equipment must be installed:  
 Landplane: 1, 102, 112, 201(a), 202(a), 401(h).  
 Seaplane: 5(c), 102, 112, 206, 401(k).  
 Skiplane: 1, 102, 112, 205(a), 401(h).

IV - Model 108-5, 4 PCLM (Normal Category); 2 PCLM (Utility Category). Landplane Approved March 16, 1964  
 (Same as Model 108-3 except for engine installation and battery location).

Engine Franklin 6A-335-B1

Fuel 80/87 minimum grade aviation gasoline

Engine limits For all operations, 2800 rpm (180 hp)

Airspeed limits	Landplane:			
	Maximum structural cruising	126 m.p.h.	(110 knots)	True Ind.
	Never exceed (Normal Category)	158 m.p.h.	(137 knots)	True Ind.
	Never exceed (Utility Category)	170 m.p.h.	(148 knots)	True Ind.
	Flaps extended	88 m.p.h.	( 77 knots)	True Ind.

C.G. range	Landplane: (Normal)	(+16.5) to (+21.9) at 2400 lb.
		(+10.6) to (+21.9) at 1750 lb. or less
	(Utility)	(+12.9) to (+17.2) at 2000 lb.
		(+10.6) to (+17.2) at 1750 lb. or less

Empty weight C.G. range	Landplane:	
	With standard baggage at (+42)	(+10.0) to (+16.0)
	When Item 402 is installed	(+10.0) to (+13.7)
	As station wagon (2 PCLM), when Item 402 is <u>not</u> installed	(+10.0) to (+14.4)
	Above hold good regardless of category.	

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	Landplane: (Normal)	2400 lb.
	(Utility)	2000 lb.

No. seats 4 (2 at +16 and 2 at +48)

Maximum baggage	100 lb. (+42) under rear seat, or 100 lb. (+75.5) when Item 402 is installed. Baggage may be increased to 350 lb. with rear seats removed. For station wagon model, see NOTE 3(f).			
Fuel capacity	50 gal. (Two 25 gal. tanks at +22) See NOTE 1 regarding unusable fuel.			
Oil capacity	9 qt. (-49)			
Control surface movements	Elevator	17° up (flaps up) 25.5° up (flaps down)	20° down	
	Elevator tab	22° up	14° down	
	Rudder	19° left	19° right	
	Rudder tab	18° left	18° right	
	Aileron	24° up	12° down	
	Flaps		1st position	27° down
			2nd position	33° down
Stabilizer	Fixed			
Serial Nos. Eligible	108-3501 and up.			
Required equipment	In addition to the pertinent required basic equipment specified in CAR 3, the following Items of equipment must be installed Landplane: 8, 102, 112, 201(a), 202(a), 401(h) and 401(p) Skiplane: 8, 102, 112, 205(a), 401(h) and 401(p)			

Specifications Pertinent to All Models

Datum	Leading edge of wing
Leveling means	Inside door frame at top
Certification basis	Type Certificate No. 767 (CAR 3)
Production basis	None. Prior to original certification of each aircraft manufactured subsequent to February 16, 1949, an 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 item of equipment indicates 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 an FAA monitored or approved quality control system, and therefore conformity must be determined if the item is not identified by a Form FAA-186 or 8130-3 Airworthiness Approval Tag, TSO, PMA or other evidence of FAA production approval.

Propellers and Propeller Accessories

1. Propeller - Sensenich 76JA-53, 76JR-53 or any other fixed pitch wood propeller which is eligible for the engine power and speed and which meets the diameter and static r.p.m. limits given under "Propeller limits". (For 6A4-150-B3, -B31, or 6A4-165-B3 only) 14 lb. (-65.5)
2. Propeller spinner (108-6921000) (for fixed pitch propellers) 2 lb. (-66.5)

Propellers and Propeller Accessories (Cont.)

3. Propeller - Koppers Aeromatic F200/00-76B 32 lb. (-65.5)

- (a) Models 108 and 108-1 with Franklin 6A4-150-B3 or -B31 engines.  
(Landplane and Seaplane), Parts List Assembly No. 4243.

Low pitch setting: 14° at 24 in. station

Static r.p.m. at maximum permissible throttle setting: Not over 2600, not under 2500.  
No additional tolerance permitted.

Diameter: Not over 76 in., not under 74 in.

The following must be inserted in designated sections of Airplane Flight Manual:

Limitations - "Aeromatic Propeller Model F200/0076B, Parts List Assembly No. 4243, installation and operation must be accomplished in accordance with Koppers' Installation Procedure and Operating Limitations No. 10C."

Performance Information - "With Koppers' Aeromatic Propeller Model F200/0076B installed the airplane performance has been demonstrated to equal or exceed that presented herein over altitude and temperature range shown."

- (b) Models 108, 108-1, 108-2 and 108-3 with Franklin 6A4-165-B3 engines, (Landplane and Seaplane)

- (1) F200/0076B, Parts List Assembly No. 4320 or 4320-1 dated October 5, 1948, and Installation Procedure and Operating Limitations No. 11C. 32 lb. (-65.5)

- (2) F200H/0076B, Parts List Assembly No. 4320H-1 dated May 17, 1950, and Adjustment Instructions and Operating Limitations No. 59. 32 lb. (-65.5)

Propeller Control Assembly No. 4393 (Installed in accordance with Koppers Co. Dwg. No. 4320H-1). 6 lb. (-45)

Static r.p.m. at maximum permissible throttle setting:  
Not over 2600, not under 2550. No additional tolerance permitted.

Low pitch setting: 14.3° measured at 24 in. sta.

Diameter: Not over 76 in., not under 74 in.

Item 105 engine baffle required when this propeller installed on 108, 108-1, 108-2 and 108-3 (Landplane and Seaplane).

The following placards are required:

1. "Never exceed 2650 r.p.m."
2. Red line on tachometer at 2650 r.p.m.

Following must be inserted in designated sections of Airplane Flight Manual as applicable:

Limitations - "Aeromatic Propeller Model \_\_\_\_\_, Parts List Assembly No. \_\_\_\_\_, installation and operation must be accomplished in accordance with Koppers' Installation Procedure and Operating Limitations No. \_\_\_\_\_ (or Adjustment Instructions and Operating Limitations No. 59)."

Performance Information - "With Koppers' Aeromatic Propeller Model \_\_\_\_\_, the airplane performance has been demonstrated to equal or exceed that presented herein over altitude and temperature range shown."

Propellers and Propeller Accessories (Cont.)

4. Propeller - Sensenich 2-position controllable model C-3FR4/PC-376B3 36 lb. (-66)

(a) Models 108, 108-1 and 108-2 with Franklin 6A4-165-B3 engine (Landplane and Seaplane)

Diameter: Not more than 76 in., not less than 74 in.

Pitch at 28.5 in. sta.

Landplane: Low 13.2°, high 18.3°

Seaplane: Low 11.5°, high 17.0°

Item 105 must be installed when this propeller is used.

(b) Model 108-3 (Landplane and Seaplane) Diameter: Not more than 76 in., not less than 74 in.

Pitch settings measured at 28.5 in. station:

Landplane: Low 13°, high 17.5°

Seaplane: Low 11.5°, high 17°

5. Propeller - McCauley Model 1A170-DM or 1A170-SFC as designated 33 lb. (-65.5)  
below or any other Model 1A170 propeller which meets the following limits:

(a) Models 108 and 108-1 with Franklin 6A4-150 series engine, (Landplane and Seaplane)

Static r.p.m. at maximum permissible throttle setting: Not over 2450 (1A170-xx7649),  
not under 2200 (1A170-xx7654). No additional tolerance permitted.

Diameter: Not over 76 in., not under 74 in.

Placard: "Avoid continuous engine operation between 2100 and 2300 r.p.m."

(b) Models 108, 108-1 and 108-2 with Franklin 6A4-165-B3 engine,  
(Landplane and Seaplane) and 108-3 (Landplane only).

Static r.p.m. at maximum permissible throttle setting: Not over 2500 (1A170-xx7649),  
not under 2250 (1A170-xx7654). No additional tolerance permitted.

Diameter: Not over 76 in., not under 74 in.

Tachometer should be marked with a yellow arc between 2150 and 2250 r.p.m.

(c) Model 108-3 (Seaplane only) 1A170-xx7649.

Static r.p.m. at maximum permissible throttle setting: Not over 2500, not under 2400.  
No additional tolerance permitted.

Diameter: Not over 76 in., not under 74 in.

Tachometer should be marked with a yellow arc between 2150 and 2250 r.p.m.

1A170-DM propellers are applicable to 6A4-150-B3, -B31 and 6A4-165-B3 engines  
and 1A170-SFC propellers are applicable to 6A4-150-B4 and 6A4-165-B4 engines.

Propellers and Propeller Accessories (Cont.)

- \*6. Propeller - Sensenich M74DR, fixed pitch metal 30 lb. (-65.5)
- (a) Models 108, 108-1 and 108-2 with Franklin 6A4-165-B3 engine.  
(Landplane and Seaplane), 108-3 (Landplane)
- Static r.p.m. at maximum permissible throttle setting: Not over 2500, not under 2300.  
No additional tolerance permitted.
- Diameter: Not over 74 in., not under 72.5 in.
- Placard: "Avoid continuous operation between 2150 and 2250 r.p.m. on ground and in flight." Item 401(m) required.
- (b) Model 108-3 (Seaplane only)
- Static r.p.m. at maximum permissible throttle setting: Not over 2500, not under 2400.  
No additional tolerance permitted.
- Diameter: Not over 74 in., not under 72.5 in.  
Placard: "Avoid continuous engine operation between 2150 and 2250 r.p.m. on ground and in flight"
- Item 401(m) required.
- \*7. Propeller - Hartzell HC12X20-8C/8428-6 or 8433-6  
Models 108, 108-1, 108-2 and 108-3 with Lycoming O-435 Series engine only (Item \*110)
- Diameter: Not over 78 in., not under 76.5 in.
- Pitch setting measured at 30 in. station: Low 11.5°, high 22.5°
- Static rpm at maximum permissible throttle setting: Not over 2425, not under 2325
- No additional tolerance permitted.
8. Propeller - McCauley 2A31C21/84S  
Models 108-3 and 108-5 with Franklin 6A-335-B1 engine
- Diameter: Not over 76 in., not under 74 in.
- Pitch setting measured at 30 in. station: Low 10.7°, high 21.5°
- Woodward governor, P/N 210453, and Cessna spinner, P/N 0552016 or P/N 0752004, are required with this propeller.

Engines and Engine Accessories - Fuel and Oil Systems

101. Starter (Delco Remy 1109651) 16 lb. (-32)
102. Carburetor air heater 5 lb. (-41)
103. Carburetor air filter (108-6221805) 1 lb. (-40)
104. Cabin heater and control (108-6221209) (Model 108) 1 lb. (-37)  
Cabin heater and control (108-3092120) (Model 108-1, -2, -3) 6 lb. (-15)
105. Under cylinder engine baffles (108-6922010 and 108-622219A)  
Required with Item 3(b) propellers on 108 series (Landplane and Seaplane)  
with Franklin 6A4-165-B3 engine installed.

Engines and Engine Accessories - Fuel and Oil Systems (Cont.)

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|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 106.   | Oil filter - Fram PB-5 (Stinson Dwg. 108-692200 or Fram Kit No. 501, Dwg. 61532) weight includes one quart of oil.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4 lb. (-25)       |
| * 107. | Oil cooler shutter installation by Baker-Eberle Aviation Corp. Detroit City Airport, Detroit, Michigan, Dwgs. 1 thru 10 dated October 24, 1947.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2 lb. (-50)       |
| 108.   | Filtered carburetor hot air induction system (Stinson Dwg. 108-6922011B) (108 series aircraft with Franklin 6A4-165-B3 engine only)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | No weight change  |
| * 109. | Engine fire extinguisher system (Van's Air Service Dwg. 7 1/4 - 1, dated July 15, 1949; with operation instructions 7 1/4 - 1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 25 lb. (-41)      |
| * 110. | P. E. Page Aircraft, Lycoming Stinson Conversion Kit for Lycoming O-435-A or -C engine installation in Models 108-1, -2, -3, installed in accordance with instructions issued by P. E. Page Aircraft, 107 Cheesman, P. O. Box 450, Erie, Colorado 80516 (Landplane only)<br>Engine - Lycoming O-435-A or -C<br>Limits: For all operations, 2550 r.p.m. (190 hp.)<br>Fuel: 80 min. octane - O-435-A 73 min. octane - O-435-C                                                                                                                                                                                                        | Use actual weight |
|        | Propeller Item 7 is required with this installation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |
| 111.   | Franklin 6A4-165-B3 or 6A4-165-B4 engine<br>Eligible in Models 108 and 108-1 (Landplane, Seaplane or Skiplane) when installed in accordance with Univair Aircraft Corporation (Universal Aircraft Industries) Stinson Service Information Letter No. 74A.<br>Engine limits, fuel and propeller limits are the same as shown in Section II for this engine when installed in the Model 108-2. In addition to the required basic 108 or 108-1 CAA Approved Airplane Flight Manual (or Approved Operating Limitations), the FAA Approved Appendix A (Item 401 (n)) is required with this engine installed.                            | Use actual weight |
| 112.   | Oil cooler -<br>(a) Heat Exchangers, Inc. Model 102-C (Franklin P/N 18554)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 8.3 lb. (-50.0)   |
|        | or (b) Heat Exchangers, Inc. Model 1100 installed per Univair Aircraft Corporation (Universal Aircraft Industries) Drawing No. U-108-6222804                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Use actual weight |
| 113.   | Vacuum pump - Aero A-513 DA (108-3 or 108-5 with Franklin 6A-335-B1 engine.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4.0 lb. (-63.0)   |
| 114.   | Franklin 6A-335-B1 engine.<br>Eligible in Model 108-3 (landplane or skiplane only) when installed in accordance with Univair Aircraft Corporation (Universal Aircraft Industries) Stinson Service Bulletin No. 269 date June 11, 1964. Engine limits, fuel and propeller limits are the same as shown in Section IV for this engine when installed in the Model 108-5. In addition to the required basic 108-3 CAA Approved Airplane Flight Manual (or Approved Operating Limitations), the FAA Approved Appendix B (Item 401 (p)) is required with this engine installed.<br>Propeller Item 8 is required with this installation. |                   |

Landing Gear and Floats

201. Two main wheel-brake assemblies, 6.00-6, Type III, and 7.00-6 4-ply rating tires with tubes (-1)
- (a) (1) Goodyear Model LF6HBD 33 lb.  
Wheel Assembly No. 511960-M  
Brake Assembly No. 9520093 (all Models)  
Brake Assembly No. 952139 (108-3 only)
  - (2) Goodyear Model L68HBD 34 lb.  
Wheel Assembly No. 511413-M  
Brake Assembly No. 9520292 (108 only)
  - (b) Firestone Model DFA180-1 31 lb.  
Wheel Assembly No. DFA180-1  
Brake Assembly No. \_\_\_\_\_
  - (c) Cleveland Aircraft Products 33 lb.  
Model 6.00DHB-3  
Wheel Assembly No. C-38500H  
Brake Assembly No. C-2000H
  - (d) Goodyear Model CL6HBM (cross-wind wheels) 45 lb.  
Wheel-Brake Assembly No. 266AX36  
Wheel-Installation Dwg. No. 280AX4  
(NOTE: Weight change of axles negligible)
  - (e) Goodyear Model CL6HBM (cross-wind wheels) 45 lb.  
Wheel Assembly No. 9530381-82  
Brake Assembly No. 9530368-69  
(Same as Item 201(d), except kingpin angle has been increased).
  - (f) U. S. Rubber Model D-1021-A 34 lb.  
Wheel Assembly No. C-1021-B  
Brake Assembly No. C-1022-C
  - (g) Cleveland Aircraft Products, Wheel Assy. No. 40-28, Use actual weight  
Brake Assy No. 30-18
  - (h) Parker-Hannifin Conversion kit No. 199-08700 installed Use actual weight  
per Stinson Dwg. No. 108-5101000 and Parker-Hannifin Dwg. No. 50-58
202. Tail wheel and tire-steerable:
- (a) Scott 3-24 BS 6 lb. (+218)
  - (b) Maule SFS-34, SFS-3-4-P8 6 lb. (+218)
  - (c) Scott Model 3200 8 lb. (+219)
203. Parking brake Neglect weight
204. Wheel pants 6 lb. (-1)
205. Skis (Axle per Stinson Dwg. 108-5G11001 required for (a) and (b)):
- (a) Federal A2500, A2500A, A3500, or A3500A Use actual weight  
Federal Installation Dwg. S1A-2500
  - (b) Call S-5 (Call Dwg. 251 and 255A) 71 lb. (-4.5)

Landing Gear and Floats (Cont.)

* (c)	Federal Model AWA-2500 Federal Installation Dwg. 11R418 Ski position indicator ES-B-143, or equivalent, required. (See also Item 401(l) for required Airplane Flight Manual Supplement).	Use actual weight
* (d)	Federal Model AWB-2500 Federal Installation Dwg. 11F556 Ski position indicator required as in (c)	Use actual weight
* (e)	Wesco A-25, AS-2A or AS-2B per Western Aircraft Equipment Company Dwg. Nos. 114 and 148	
206.	Floats (Edo Model 44-2425)	303 lb. (+21)
207.	Auxiliary fin (No. 108-3901002)	4 lb. (+218)
*208.	Consolidair Inc., wheel fenders	
	(a) Model 16, Dwg. 0027	9 lb. (-1)
	(b) Model 18, Dwg. 0044 (for use with, but not limited to Items 201(d) or (e)).	

Electrical Equipment

301.	Generator (Delco Remy No. 1101877)	12 lb. (-31.5)
302.	Battery, 12-volt: Batteries approved for use on 108, 108-1, 108-2, and 108-3 aircraft are listed in Univair/Stinson Service Letter No. 81. (a) deleted (b) deleted (c) deleted (d) Bowers B-27 (108-5 only)	See Svc. Ltr No. 81    23.5 (+120)
303.	Landing light (G.E. 4509)	1 lb. (+4)

Interior Equipment

401.	CAA Approved Airplane Flight Manual (Approved Operating Limitations) (See NOTE 2 (a)).	
	(a) Model 108-Landplane, Manual dated June 4, 1947	
	(b) Model 108-1 Landplane, Manual dated June 4, 1947	
	(c) Model 108 & 108-1 Seaplane, Manual dated June 4, 1947	
	(d) Model 108-2 Landplane (Skiplane), Manual dated January 4, 1949	
	(e) Model 108-2 Seaplane, Manual dated January 4, 1949	
	(f) Model 108 Skiplane, Supplement dated August 2, 1948	
	(g) Model 108-1 Skiplane, Supplement dated August 2, 1948	
	(h) Model 108-3 Landplane (Skiplane), Manual dated December 29, 1948	
	(i) Omitted	
	(j) Deleted February 1, 1949	
	(k) Model 108-3 Seaplane, Manual dated December 28, 1948	

- (l) When Federal AWA-2500 or AWB-2500 wheel skis are installed, the following supplemental information shall be appended to the Airplane Flight Manual:

Performance Information with Federal AWA-2500 Wheel Ski Installation Climb:

“Skiplane climb performance is approximately 50 feet per minute less than the Landplane.”

Take-Off and Landing:

“Under the most favorable conditions of smooth packed snow at temperatures approximately 30°F, Skiplane takeoff distance is approximately 10% greater than the distance shown for the Landplane. Skiplane landing distance is approximately 20% greater than that shown for the Landplane. In applying the performance data, caution should be exercised in that lower temperatures or other snow conditions will increase the ski friction and hence increase the takeoff run and either increase or decrease the landing run.”

- (m) Model 108-2 and 108-3, Landplane (Skiplane) and Seaplane, Supplement dated July 11, 1957.
- (n) Appendix A dated November 15, 1963 for 108 and 108-1 Landplane, Seaplane or Skiplane with Franklin 6A4-165-B3 or -B4 engine installed. (Revision dated July 15, 1968 required for 6A4-165-B4 engine.)
- (p) Appendix B revised July 14, 1964 for 108-3 (with Item 114 installed) and 108-5 Landplane or Skiplane. This Appendix must be used in conjunction with the basic CAA Approved Airplane Flight Manual for the 108-3 Landplane (Item 401(h)).
- (q) Appendix C dated July 15, 1968 for Franklin 6A4-150-B4 engine used in lieu of 6A4-150-B3 in Models 108 and 108-1, landplane, seaplane or skiplane.
- (r) Appendix D dated July 15, 1968 for Franklin 6A4-165-B4 engine used in lieu of 6A4-165-B3 in Models 108-2 and 108-3, landplane, seaplane or skiplane.

402.	Baggage compartment installed per Stinson Dwg. 108-3002260	15 lb. (+75.5)
* 403.	Ambulance litter installation, installed per installation instructions for Mountain States Aviation, Inc., Denver, Colo. Placard required: "No smoking when stretcher is installed".	25 lb. (+30)

Miscellaneous Equipment, Not Listed Above

* 601.	Metal skin fuselage, installed in accordance with Met-CO-Aire Company, Fullerton, California, drawings as follows: Dwgs. Nos. 1108 and 2108 for Models 108, 108-1 and 108-2 Dwg. No. 2108A for Model 108-3	Use actual wt. change
* 602.	Metal wing skin installed in accordance with Birtcraft Engineering Co., 11836 Cherry Ave., Inglewood, California Technical Instruction Report No. 102550.	Use actual wt. change
* 603.	Metal skin fuselage, installed per Ruleto Industries, Inc., 4823 Rosecrans Ave., Hawthorne, California, Dwgs. R-1001, R-1002 and R-1003 and installation instructions SFK-1.	Use actual wt. change
* 604.	Glass fiber reinforced plastic nose cowls installed per Ruleto Industries, Inc., 4823 Rosecrans Ave., Hawthorne, California Dwg. R-1000 and installation instructions SNC-1.	Use actual wt. change
* 605.	Metal wing skin installed per Ruleto Industries, Inc., 4823 Rosecrans Ave., Hawthorne, California, Dwg. R-1007, R-1008, R-1009 and installation instructions SWK-1.	Use actual wt. change
* 606.	Metal wing skin installed per Met-Co-Aire, Fullerton, Calif., Dwg. 3108.	Use actual wt. change

- \* 607. Fuselage auxiliary fuel tank installed per Met-Co-Aire, Fullerton, California Dwgs. 4108 and 5108. Use actual wt. change

NOTES

NOTE 1. Current weight and balance report including list of equipment included in certificated empty weight, and loading instructions when necessary, must be in each aircraft at the time of original certification and at all times thereafter. The certificated empty weight must include the unusable fuel supply and undrainable oil as follows: 24 lb. (+22)

NOTE 2. The following placards must be displayed:

- (a) In front and in clear view of the pilot:  
"This airplane must be operated in compliance with the Approved Operating Limitations (CAA Approved Airplane Flight Manual)."
- (b) In front and in clear view of the pilot:

Model 108 (Landplane)

"Normal Category (GW-2150 lb.). No acrobatic maneuvers including spins approved."

"Utility Category (GW-1900 lb.). No acrobatic maneuvers approved except those listed below:

<u>Maneuver</u>	<u>Entry Speed</u>
-----------------	--------------------

Chandelle	120 m.p.h.
-----------	------------

Lazy-Eights	115 m.p.h.
-------------	------------

Stalls (except whip stalls)

Spins (intentional spins prohibited with flaps down) No inverted or snap maneuvers approved."

Model 108-1 and Model 108-2 (Landplane)

"Normal Category (GW-2230 lb.). No acrobatic maneuvers including spins approved."

"Utility Category (GW-1925 lb.). No acrobatic maneuvers approved except those listed below:

<u>Maneuver</u>	<u>Entry Speed</u>
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Chandelle	120 m.p.h.
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Lazy-Eights	115 m.p.h.
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Stalls (except whip stalls)

Spins (intentional spins prohibited with flaps down) No inverted or snap maneuvers approved."

Models 108-3 and 108-5 (Landplane)

"Normal Category (GW-2400 lb.). No acrobatic maneuvers including spins approved."

"Utility Category (GW-2000 lb.). No acrobatic maneuvers approved except those listed below:

<u>Maneuver</u>	<u>Entry Speed</u>
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Chandelle	120 m.p.h.
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Lazy-Eights	115 m.p.h.
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Stalls (except whip stalls)

Spins (intentional spins prohibited with flaps down) No inverted or snap maneuvers approved."

Models 108, 108-1 and 108-2 (Seaplane)

"Normal Category (GW-2235 lb.). No acrobatic maneuvers including spins approved."

On flap handle—"take-off-1st notch"

Model 108-3 (Seaplane)

"Normal Category (GW-2500 lb.). No acrobatic maneuvers including spins approved."

- (c) On rear seats: "Not to be occupied when airplane is operated as utility category."

NOTE 3. Baggage arrangements are as follows:

- (a) Baggage allowance may be increased to 350 lb., with rear seats removed for all models.
- (b) Standard Model (108). Do not exceed 50 lb. on cabin floor under rear seat.
- (c) Standard Model (108-1). Do not exceed 100 lb. on cabin floor under rear seat.  
(See Airplane Flight Manual for detail loading instructions.)
- (d) Rear Baggage Compartment Model (108-1, 108-2, 108-3 and 108-5).  
Do not exceed 100 lb. Do not place baggage under rear seat.  
(See Airplane Flight Manual for detail loading instructions.)

Placards must be used to indicate maximum baggage allowance for under rear seat and rear baggage compartment.

- (f) Station Wagon Model (108-2, 108-3 and 108-5).

Do not place baggage under rear seat.

Do not exceed 90 lb. per square foot or a total of 600 lb. on cabin floor.  
(See Airplane Flight Manual for detail loading instructions).

...END...