DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

1A7 Revision No. 10 MARTIN 404

June 1, 1978

AIRCRAFT SPECIFICATION NO. 1A7

Type Certificate Holder

Martin-Marietta Corporation Baltimore, Maryland 21220

I - Model 404, Approved October 5, 1951

Engines 2 P&W Double Wasp CB3 or CB16 (Item 101(a) or (b))
Fuel Aviation gasoline: Minimum grade 100/130 for all engines
Engine limits P&W Double Wasp CB3 (Low Blower only) and CB16:

variation with altitudes shown.)

•				m.p.
	Alt.	<u>h.p.</u>	<u>r.p.m.</u>	inhg.
Low impeller gear ratio 7.29:1				
(CB3 and CB16)				
Takeoff (dry) (2 minutes)	S.L.	2050	2700*	55.0
Critical altitude	6900	2050	2700*	53.0
*(See NOTE 3 for propeller governor				
re-setting prior to "dry" takeoff.)				
Takeoff (antidetonant	S.L	2400	2800	59.5
injection) (2 minutes)				
Critical altitude	5000	2400	2800	59.0
Maximum continuous	S.L.	1800	2600	48.5
Maximum continuous	9200	1800	2600	46.5
High impeller gear ratio 8.58:1				
(CB16 only)				
Maximum continuous	10000	1700	2600	48.5
Maximum continuous	16800	1700	2600	47.5
(Straight line manifold pressure				

Airspeed limits (CAS)

Variable, see table below Vno (Normal Operation) Vne (Never exceed) Variable, see table below Vp (Maneuvering) 180 m.p.h. (150 knots) Vf (Flaps down 0° to $12 \frac{1}{2^{\circ}}$) 190 m.p.h. (165 knots) Vf (Flaps down 12 1/2° to 45°) 150 m.p.h. (130 knots) Vle (Landing Gear Extended) 190 m.p.h. (165 knots) Vlo (Landing Gear Operation) 190 m.p.h. (165 knots) (Ext.) (Ret.) 180 m.p.h. (156 knots)

Max. Wt. (Zero fuel), lb.	41,000	42,500
Vne (Never exceed) m.p.h.	301*	285
Knots	261*	247
Vno (Normal Operating) m.p.h.	265*	247
Knots	230*	214

*Above 20,000 ft. reduce maximum values of Vne and Vno 6 m.p.h. (5.22 knots) per 1000 ft.

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C.G. range	Condition Max. Weigh Takeoff 44,900 Takeoff & 43,000 43,000 & 43	Down 44 Down 43 less Down 43	G. Range 0.2 - 461.4 9.2 - 461.4 6.8 - 461.4 2.6 - 461.4	
	(Straight line C.G. variation wi Effect of retracting landing gea			
Datum	87 inches forward nose of fuse	age		
Leveling means	Longitudinal: Left side, fuselage stations 389.5 and 411 at water level 19.75 (Battery hatch area)			
	Lateral: Fuselage station 389.5	at water level 4.76 (Battery ha	tch area)	
Maximum weights	Takeoff (Antidetonant Power) Takeoff (Dry Power) Landing (Antidetonant Power) Landing (Dry Power) Zero-Fuel	44,900 lb. 41,500 lb. 43,000 lb. 40,200 lb. Variable between 41,000 at 42,500 lb. See "Airspeed Limits" for zero fuel weight and corresponding Vne and	ts	
Minimum crew	2 - Pilot and Co-pilot (190)			
Maximum passengers	50 (CAR 4b.43)			
Maximum baggage	Fwd. Cabin-R.H. 212 Fwd. Cabin-L.H. 255 Fwd. Cabin-L.H. 255 Aft cabin 730	ion Max. Capacity (Lb.) 900 -330 1700 -290 800 -330 2000 -799 600 -723 1600	Arm 228 273 273 293 766 643	
Fuel capacity	1370 gal. (458) (685 gal. in 6 in NOTE 1(c) for "System Fuel."	nterconnected wing fuel cells in	each wing) See	
Oil capacity	54 gal. (408) (One 27 gal. tank See NOTE 1(c) for "System Oi			
Control surface movements		30° Up 18° 12° Up 12° 30° Up 15° 25° Left 25° /2° Left 17 1/2°	Down Down Down Down Right Right Down	
Serial Nos. eligible	14101 and up, except U.S. Coa (Refer to pertinent ACA Forms Aircraft.)			
Required equipment	In addition to the pertinent requitems of equipment must be instrems 1, 2, 101(a) or (b), 102(a (b), 205(a), 206(a), 301, 302, 3	talled: o or (b), 103, 104, 105, 106, 10	7, 201(a), 202(a), 203(a) or	

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SPECIFICATIONS PERTINENT TO ALL MODELS

Certification basis Type Certificate No. 1A7 (CAR 4b, as amended to October 1, 1949 and Amendment

4b-6 effective March 5, 1952, Paragraph 4b.120 only)

Production Certificate No. 106 Production basis

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

is installed.

Propellers and Propeller Accessories (except Deicing Equipment)

1.	2 Propellers.	controllable - Hamilton	Standard hubs 43E60 with 3 blades:	

(a) 6895A-12 1205 lb. (302)

Diameter: Max. 13'1-5/16", min. allowable for repairs 12'9-5/8".

Pitch settings at 42 in. Sta.: Low +30 1/2, feathered +95°, reverse -11°.

The maximum time to automatically feather an engine from take-off r.p.m. at V2 speed is 10 seconds.

2. 2 Propeller governors (Hamilton Standard 5U18)

26 lb. (317)

۷.	2 Fropener governors (Hamilton Standard 5018)	2010. (317)
Engin	es and Engine Accessories - Fuel and Oil Systems	
101.	(a) 2 P&W Double Wasps CB3 (Airplane Flight Manual)	4687 lb. (340)
	Item 401(a) only is applicable) (b) 2 P&W Double Wasps CB16 (Airplane Flight Manual Item 401(b) only is applicable)	4751 lb. (340)
102.	(a) 2 Starters (Jack & Heintz JH6ER-12)(b) 2 Starters (Eclipse-Pioneer 36E00-4)	55 lb. (385) 55 lb. (385)
103.	2 Feathering pumps (Ham. Std. 66166)	29 lb. (395)
104.	2 Oil coolers (Airesearch 19519 or 86687, 16" dia.)	63 lb. (379)
105.	2 Fuel pumps, engine-driven (Thompson TF2100 or TFD2100	8 lb. (381)
106.	2 Fuel submerged fuel pumps, electrically driven (Thompson TFD-27900-10 or -15, Type B5C)	14 lb. (470)
107.	System fuel and oil (See NOTE 1(c) for definition) (a) System fuel (b) System oil	37 lb. (463) 196 lb. (409)
108.	Antidetonant system installation (including 16 gal. of fluid at 8 lb. per gallon)	250 lb. (417)
Landi	ng Gear	
201.	4 Main wheel-brake assemblies, 12.50-16, Type III,	
231.	(a) Goodyear Model L12.50-16 HBM, Wheel Assembly No. 9540512, Brake Assembly No. 9540494	389 lbs. (473)
202	(a) 4 Main wheel tires 12 50-16. Type III 10-ply rating with regular tubes	312 lb (473)

201.		Goodyear Model L12.50-16 HBM, Wheel Assembly No. 9540512, Brake Assembly No. 9540494	389 lbs. (473)
202.	(a)	4 Main wheel tires, 12.50-16, Type III, 10-ply rating, with regular tubes	312 lb. (473)

203. 2 Main gear shock strut assemblies

(a)	Menasco 527000 (Martin Dwg. No. E-100007)	570 lb. (481)
(b)	Menasco 511001 (Martin Dwg. No. 404-4900135)	518 lb. (481)

205. (a) 1 nose wheel, 9.50-16, Type III, Goodyear Wheel Assembly No. 9530759 31 lb. (205)

206. (a) 1 nose wheel tire, 9.50-16, Type III, 10-ply rating, with regular tube 53 lb. (205) *1A7* 4

Electr	ical Equipment	
	2 Generators (Eclipse-Pioneer 30E02-11B or -11C)	130 lb. (387)
302.	Battery (Exide 12T-AS11)	83 lb. (400)
303.	2 Landing Lights (Grimes G-3800A-6)	12 lb. (445)
304.	2 Inverters (Eclipse-Pioneer 1518-1-F)	73 lb. (375)
Interio	or Equipment	
	One of the following FAA Approved Airplane Flight Manuals. (The Manual may be carried as part of, or bound with, the operator's "Approved Operator's Manual", but <u>must</u> remain in the airplane and <u>must</u> retain its identity as an individual manual.) (a) EAL Model 404, Revision 4 dated 9/4/62	
	(b) TWA Model 404, Revision 5 dated 10/15/52	7 lb. (167)
402.	Windshield wiper installation (Marquette Motor D1600-1 with Marquette 16-2E6-1/64 Rev. C valve or Alco Motor XW2068-5 or XW2069-2 with valve XW2331-2)	
403.	2 cabin combustion heaters (Surface Combustion 77A63)	55 lb. (358)
404.	Oxygen system (Includes both protective and supplemental) (a) EAL Maint. Manual (Vol. V) Series 20-2 Page 1. (b) TWA Maint. Manual Series 20-2 Page 1. 	53 lb. (332) 100 lb. (302)
Anti-i	cing and Deicing Equipment	
501.		158 lb. (467)
502.	Carburetor heat anti-icing system26 lb. (358) (GLM Dwg. No. 404-5051100 or 404-5051200)	
503.	Alcohol deicing system (including 16 gal. at 7 lb. per gallon) (EAL Maintenance Manual Vol. V Series 18-2 pages 11 and 13; TWA Maintenance Manual Series 18-2 pages 11 and 13). (a) Propeller deicing equipment Hamilton Standard Boots Model 74467, length 52 inches. (b) Carburetor.	212 lb. (521)

- NOTE 1. (a) Current weight and balance report including list of equipment included in certificated weight empty, and loading instructions when necessary, 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).
 - (b) Refer to Martin Engineering Reports "Actual Weight and Balance Model 404 (Airline)" and "Weight and Balance Loading Schedule Model 404 (Airline)" for interior arrangement, equipment list, weight and balance and loading schedule for any particular airplane.
 - (c) "System Fuel and Oil" is that amount required to fill both the systems and the tanks up to the tank outlets to the engines, when the airplane is in the level attitude. "System Fuel and Oil" and all hydraulic fluid must be included in the certificated weight empty. (See Item 107 for fuel and oil quantities).
 - (d) Fuel and Oil capacities listed do not include any "System Fuel and Oil". Oil tank does include propeller feathering oil (2 gal.).
- NOTE 2. The following placards must be displayed on the instrument panel in full view of the pilot (except as noted in (c), (e) and (f) below):
 - (a) "This airplane must be operated in compliance with operating limitations specified in F.A.A. approved airplane operating manual."

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- (b) Automatic Propeller Feathering: "Lights ON for all take-off operations".
- (c) "Emergency gear extension Do not lower above 130 m.p.h.".(Located inside emergency gear control access door.)
- (d) Landing gear control handle:

"Caution: Lever must return to neutral after each operation".

(e) Forward Cabin Door:

"This door to be open during all take-offs and landings". (Located on forward side of cabin inner door at Sta. 330.)

(f) Forward entrance door restraining bar (EAL only): "Warning - Bar must not be across doorway during take-off and landing". (Installed on restraining bar).

NOTE 3. When antidetonant injection is not used for takeoff, the propeller governors must be reset prior to takeoff in order to limit the dry takeoff engine r.p.m. to 2700.

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