SERIAL NO. PAGE

Mat. Div. A. C. 129-Wright Field 2-8-39-500

OFFICIAL SUMMARY OF CHARACTERISTICS

Date of Issue.....

AIRPLANE

Manufacturer BOEING Type BOMBARDMENT Model B-17B

Mfr. Model Spec. No. D-2140 Contract No. W-535-AC-10155 A. C. Type Spec. No. 98-201-B-1A

Crew 6 Wing Loading 26.8 lb./sq. ft. Power Loading 11.2 lb./bhp. Design Altitude 25000 ft.

Wing Area 1420 sq. ft. Span 103 ft. 9 in MAC 177.5 in. Aspect Ratio 7.58 Airfoil 0018-0010

Wing Type LOW MONOPLANE High Lift Devices SPLIT T.E. FLAPS Landing Gear Type CONVEN.-RETR.

ENGINES

Number 4 Mfr. WRIGHT Spec. No. 95-28059-B-3 Type RADIAL Model R-1820-51

No. Cyl. 9 Supercharger Blower Ratios 5.95:1 Turbo Type B-3

Prop. Gear Ratio 16:11 Compression Ratio 6.45:1 Cooling AIR

Carburetor Type NAFZE-3 Setting A.C. NO.50 Fuel 100 octane

Intake Type [illegible] Exhaust Type COLLECTOR RING

Rating:	Altitude ft.	Power b. hp.	Speed r. p. m.	Man. Pr. in. Hg	Time Limit minutes	Blower Ratio	Mixture F/A	
Take-off	S. L.	1000	2200	42	5	5.95:1	F.R.	
Normal	S. L.	850	2100	37	∞	5.95:1	.097	
Normal	25000	800	2100	37	∞	5.95:1	.097	
		"	"	"	"	"	"	
Military		max. allowable		operating instructions				
		flight test data	850					

PROPELLERS

Number 4 Mfr. HAMILTON-STANDARD Type CONST. SPEED FULL FEATHERING Rotation R.H.

Diameter 11 ft. 6 in. No. of Blades 3 Type Control HYDROMATIC Setting — to — at —

Blade Dwg. No. 6153, A-18 Hub Dwg. No. 23-E-50-85

Clearances: —ground 17" INB. 30" OUTB. —fuselage 9 3/8 —between disks 25 7/16 Weight each 429 lb.

WEIGHTS AND BALANCE

Design Useful load 10345 lb.
- Crew @ 200 lb. each 1200 lb.
- Fuel @ 6.0 lb./gal. 5100 lb.
- Oil @ 7.5 lb./gal. 570 lb.
- Armament & Bombs 3196 lb.
- Misc. Equipment 127 lb.
- NAVIGATING 14 lb.
- PYROTECHNICS 98

Weight Empty 27652 lb. Design Gross Weight 37997 lb.

Balance with Design Useful Load—c. g. 21.8 % MAC

Safe Limits of c. g. ..... % MAC to ..... % MAC

Normal Fuel 850 gal. Max. Fuel 2492 gal.

Normal Bombs 2577 lb. Max. Bombs 5024 lb.

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SERIAL NO. PAGE

Mat. Div. A. C. 129a-Wright Field 2-8-39-500

OFFICIAL PERFORMANCE SUMMARY

Model B-17B Date of issue

1. Level Flight Speeds at Design Altitude of 25000 ft. with Design Gross Weight of 37997 lb.

	Maximum Speed	291	m. p. h. at	2100	r. p. m. with	3400 b. hp. (106 % rated)
	High Speed	~~291~~ 285	m. p. h. at	2100	r. p. m. with	3400 b. hp. (110 % rated)
	Operating Speed	~~256~~ 250	m. p. h. at	1840	r. p. m. with	2460 b. hp. (75 % rated)
*	Cruising Speed	176	m. p. h. at	1600	r. p. m. with	1560 b. hp. (~~56~~ 49 % rated)

2. Optimum Range and Endurance with 1700 gal fuel and 2573 lb. bombs.

	At High Speed	1320 (1425)	miles at	9.4 (9.34)	mi./gal. or	422 (5.0)	hrs. at	340 gal./hr. (s. f. c. .635)
	At Operating Speed	2190	miles at	1.129	mi./gal. or	8.75	hrs. at	~~336~~ 194 gal./hr. (s. f. c. .485)
*	At Cruising Speed	2500	miles at	1.47	mi./gal. or	142	hrs. at	120 gal./hr. (s. f. c. .46)

3. Practical Range and Endurance with gal. fuel and lb. bombs.

	At Operating Speed	miles at	mi./gal. or	hrs. at	gal./hr. (s. f. c.)
	At Cruising Speed	miles at	mi./gal. or	hrs. at	gal./hr. (s. f. c.)

4. Climb Data with Gross Weight of 37997 lb.

1	Standard Altitude ft.	SL	5000	10000	15000	20000	25000	30000
	Climbing Speed m. p. h.	134	144.5	156	169	183.5	198	213
	Engine Speed r. p. m.	2100	2100	2100	2100	2100	2100	2100
	Total Power b. hp.	~~850~~ 3400	~~850~~ 3400	~~850~~ 3400	~~850~~ 3400	~~850~~ 3400	~~850~~ 3400	~~850~~ 3400
	Maximum Rate f. p. m.	1420	1410	1390	1350	1250	1115	880
2	Minimum Time. min.	0	3.5	7	10.7	14.6	18.8	23.7

** 5. Ceiling: Normal Engine Operation: Service Ceiling — ft. Absolute Ceiling — ft.

6. Take-off and Landing Distances—To Clear 50 ft. Obstacle at Sea Level (no wind).

Take-off 1250 ft. at — m. p. h. 15 deg. flap. Gr. Wt. 37997 lb. Ground run 1300 ft.

Land 2320 ft. at — m. p. h. ~~F0L6~~ deg. flap. Gr. Wt. ~~32974~~ lb. Ground run ~~1399~~ 1260 ft.

7. References and Remarks:

* These values quoted at 10,000 ft. altitude.

** Insufficient climb data above 30000 ft. to predict ceiling accurately.

Reference: E.T.M.P. A-19-986, dated Aug. 3, 1939; Climb data obtained directly from flying branch.

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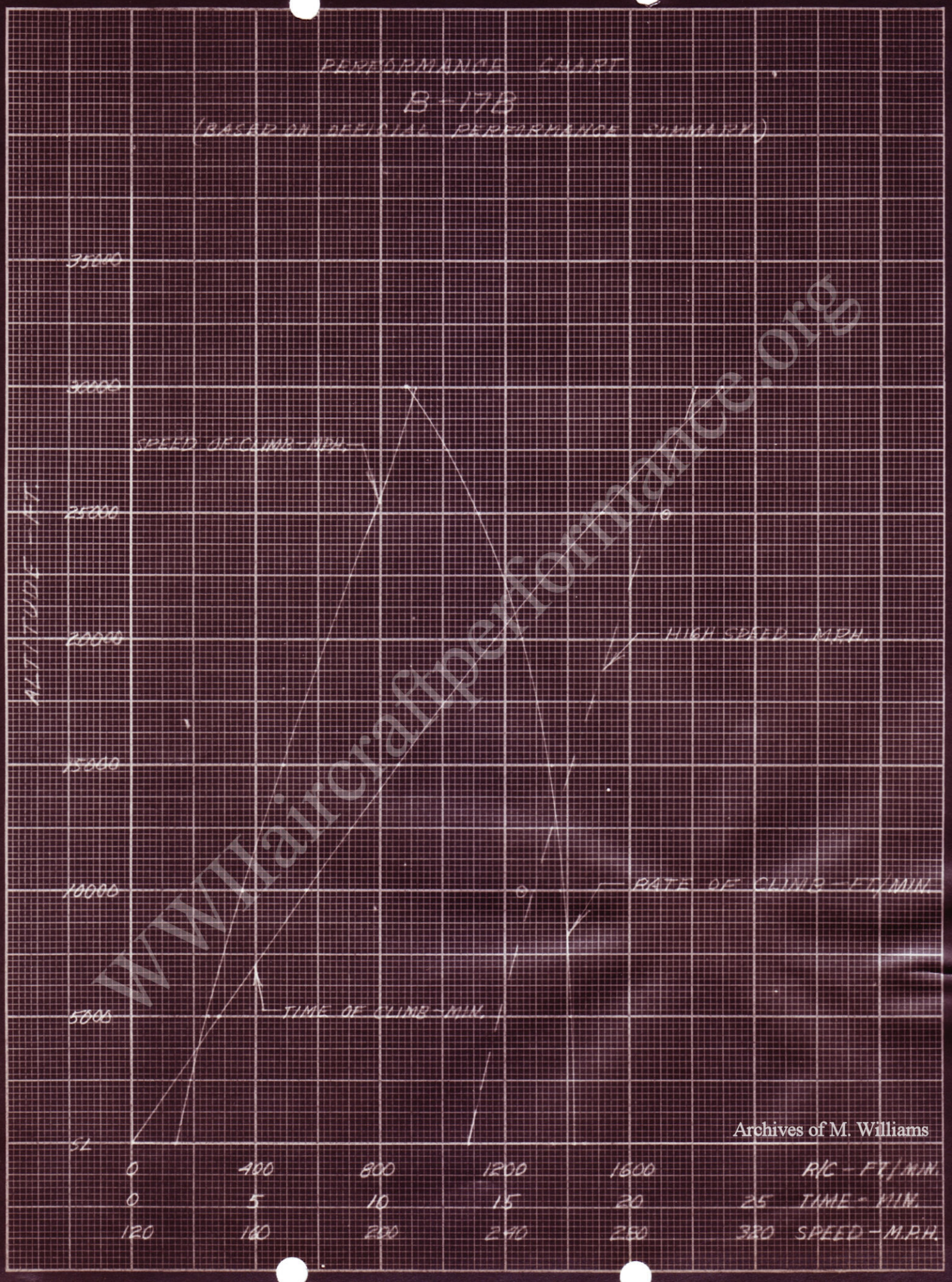
PERFORMANCE CHART

B-17B

(BASED ON OFFICIAL PERFORMANCE SUMMARY)



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