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Aero/863/3R/RAM/155.

21st December, 1943.
despd 24.12.43

The Secretary,
Ministry of Aircraft Production,
Millbank,
LONDON, S.W.1.

For the attention of AD/RDT1.

F.W.190. A-3 (BMW.801D) Performance Tests.

The performance tests on this aeroplane have now been completed. The attached tables and curves give the results. The points given in the tables are actual measurements corrected to standard conditions by the method given in Report No.A.&A.E.E./Res./170, and are not taken from faired curves. Photographs of the aeroplane with the bomb and tanks on are attached.

The aeroplane was fitted with the fully rated engine for which the "combat" or 30 minute rating is 2400 r.p.m. and 1.32 a.t.a. boost. All the tests have been done at this rating under automatic boost control. Due to the main engine control unit being slightly out of adjustment the boost pressure obtained was 1.34 ata.

It had been our intention to do a few level speed measurements at the 3 minute rating of 2700 r.p.m. and 1.42 ata boost. This had to be abandoned due to the bad condition of the engine. It is estimated that at this rating the level speed would be 396 m.p.h. T.A.S. at 17,500 ft. with the supercharger in S-gear.

This aeroplane differed from the previous model tested in that it was fitted with controlable cooling gills. These were kept closed throughout the tests.

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Only one set of partial climbs were done in M gear at 5,000 ft. the results obtained agreed well with our previous results (after allo for the difference in power).

Two sets of partial climbs were done at 16,000 ft. The agreement between the two sets is good. The climbs were done through 2,000 ft. and, in order to allow for wind gradient, were done in opposite directions alternately.

As the aeroplane had to be landed with the bomb on, the weight in this condition was kept to a minimum and does not, of course, represent the weight when operating as a fighter-bomber.

(Sgd) George P. Douglas

For Director,
Royal Aircraft Establishment.

F.W.190. A-3 (RAE.801 D)

Level Speeds (Gills closed).

Condition of Aeroplane and Date of Test.	All up Weight Lb.	Supercharger gear ratio	Propeller pitch setting	True Air Speed		Boost		
				Corrected Height Ft.	True Air Speed M.P.H.	Corrected Height Ft.	Manifold Pressure A.T.A.	Engine r.p.m.
Standard 29-7-43	8580	M	10.46	5,100	329	4,770	1.295	2,400
	"	"	10.45	8,100	333	7,500	1.19	"
Standard 9-8-43	8580	S	10.40	16,000	369	16,000	1.35	2,400
	"	"	10.32	11,050	346	11,050	1.35	"
Standard 19-8-43	8580	S	11.35	15,000	369	15,000	1.34	2,400
	"	M	10.45	3,000	335	3,000	1.34	"
Standard 24-8-43	8580	M	10.03	4,000	332	4,000	1.34	2,400
	"	M	10.08	7,080	338	7,320	1.18	"
	"	S	10.22	24,750	364	24,950	0.93	"
	"	"	10.28	20,030	385	20,070	1.24	"
	"	"	10.32	18,030	382	18,070	1.33	"
	"	"	10.36	15,000	367	15,000	1.34	"
Standard 27-8-43	8580	S	-	17,000	372	17,000	1.34	2,400
Standard 9-9-43	8580	S	10.31	21,180	385	20,450	1.20	2,400
500 Kg. bomb fitted 22-9-43	8710	M	11.00	3,000	313	3,000	1.34	2,400
	"	"	10.50	4,400	318	4,750	1.28	"
	"	S	10.40	15,000	336	15,000	1.34	"
	"	"	10.36	19,200	347.5	18,520	1.29	"
	"	"	10.36	21,050	350	20,460	1.20	"

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F.W.190. A-3 (BMW.801 D) (contd.)

Level Speeds (Gills closed).

Condition of Aeroplane and Date of Test.	All up Weight Lb.	Super-charger gear ratio	Propeller pitch setting	True Air Speed		Boost		
				Corrected Height Ft.	True Air Speed M.P.H.	Corrected Height Ft.	Manifold pressure A.T.A.	Engine r.p.m.
500 Kg. bomb and two jettison fuel tanks fitted 2-10-43	8,710	M	11.57	3,000	294	3,000	1.34	2,400
	"	"	11.56	4,920	295	4,960	1.25	"
	"	S	10.43	15,000	313	14,600	1.35	"
	"	"	10.41	17,140	318	17,640	1.29	"
	"	"	10.41	19,140	315	19,640	1.20	"
500 Kg. bomb and two tank fairings only fitted 7-10-43	8,710	M	10.56	3,000	299	3,000	1.34	2,400
	"	"	10.54	4,430	305	4,760	1.27	"
	"	S	10.42	15,000	332	15,000	1.35	"
	"	"	10.38	18,720	338	18,300	1.30	"
	"	"	10.38	20,580	342	20,240	1.21	"
500 Kg. bomb and two tank fairings only fitted 27-10-43	8.710	M	10.55	3,000	302	3,000	1.34	2,400
	"	"	11.00	5,270	305	5,100	1.26	"
	"	S	10.43	15,000	322	15,000	1.34	"
	"	"	10.43	18,850	333	18,360	1.30	"
	"	"	10.38	20,710	335	20,300	1.20	"

F.W.190. A-3 (BMW.801D)

Partial and ceiling climbs.

Condition of Aeroplane and date of test	All up Weight Lb.	Super charger gear ratio	Propeller pitch setting	I.A.S. M.P.H.	T.A.S. M.P.H.	Rate of climb: Corrected height Ft.	Rate of climb: Rate of climb Ft./min.	Boost pressures: Corrected height Ft.	Boost pressures: Manifold pressure A.T.A.	Boost pressures: Engine r.p.m.
Standard 29-7-43 Partial climbs 2,000 to 4,000 ft.	8580	M	11.30 11.27 11.17 11.14 11.07	166 175 186 207 226	175 184 196 218 238	3250	2810 2590 2590 2160 2050	3250	1.34	2400
Standard 30-7-43	8580	M " " M S " "		175				2,000 3,000 6,530 9,580 12,000 15,000 18,730	1.34 1.34 1.18 1.06 1.34 1.34 1.24	2,400
Standard 30-7-43 Partial climbs 15,000 ft. to 17,000 ft.	8580	S	11.05 11.00 10.55 10.50 10.45	162 173 184 205 226	208 222 236 263 290	16,000	2495 2330 2335 2060 1720	15,000 / 17,600	1.34/ 1.28 1.34/1.28 1.34/1.29 1.34/1.30 1.34/1.30	2,400
Standard 9-8-43	8580	M " " S " "		184				2,000 4,370 7,580 10,700 12,000 16,800 19,850	1.34 1.28 1.04 1.34 1.34 1.32 1.22	2,400

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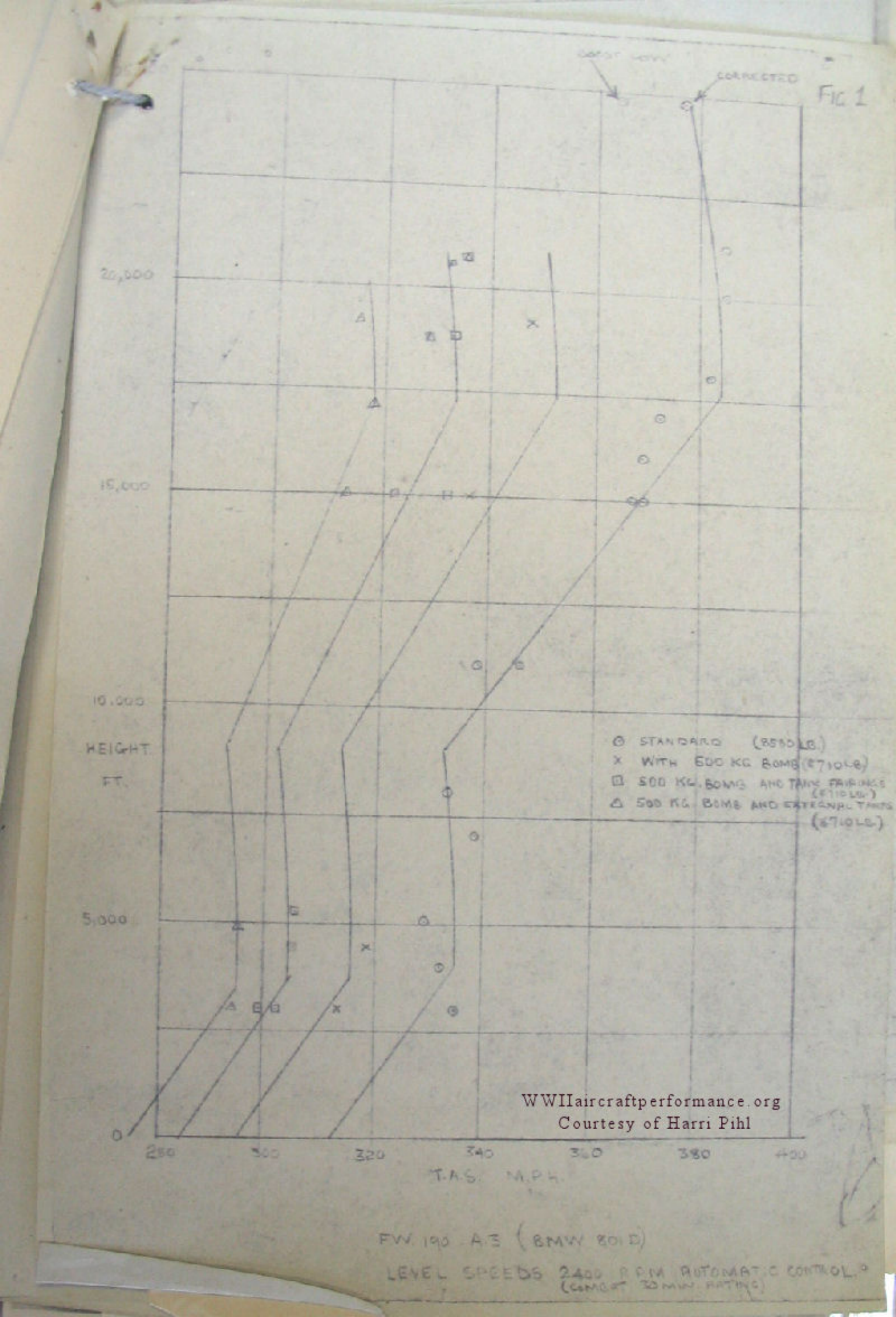
F.W.190. A-3 (BMW.801D)

Partial and ceiling climbs.

Condition of Aeroplane and date of test	All up Weight Lb.	Super charger gear ratio	Propeller pitch setting	E.A.S. M.P.H.	T.A.S. M.P.H.	Rate of climb		Boost pressure		
						Corrected height Ft.	Rate of climb Ft./min.	Corrected height Ft.	Manifold pressure A.T.A.	Engine r.p.m.
Standard 9-8-43 Partial climbs 14,000 ft. to 16,000 ft.	8580	S	11.03 11.00 - 10.55 10.47	156 167 178 195 216	197 211 225 246 273	15,000	2500 2530 2325 2130 1680	15,000	1.34	2,400
Standard 19-8-43 Partial climbs 2,000 ft. to 4,000 ft. and 14,000 ft. to 16,000 ft.	8580	M " S "	10.28 10.50 11.07 11.03	143 156 141 156	152 163 178 197	3,000 3,000 15,000 15,000	2700 2460 2040 2235	3,000 16,000	1.34 1.34	2,400
Standard 9-9-43 Ceiling climb	8580	S		178 178 178 173 168 163 158 153 148 142		13,000 15,000 18,500 20,300 22,300 24,200 26,300 28,200 31,800	2340 2410 2320 2020 1690 1690 1340 1130 800	13,000 15,000 18,550 20,550 22,700 24,550 26,650 28,500 30,500 32,300	1.34 1.34 1.25 1.18 1.08 1.00 0.91 0.85 0.78 0.72	2,400



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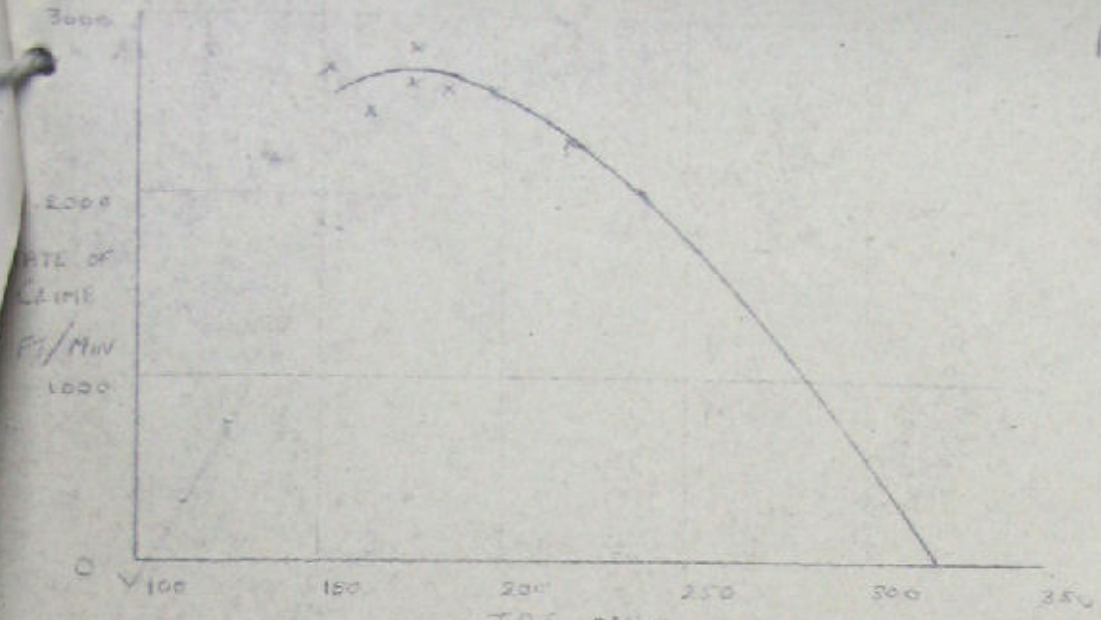
Courtesy of Harri Pihl

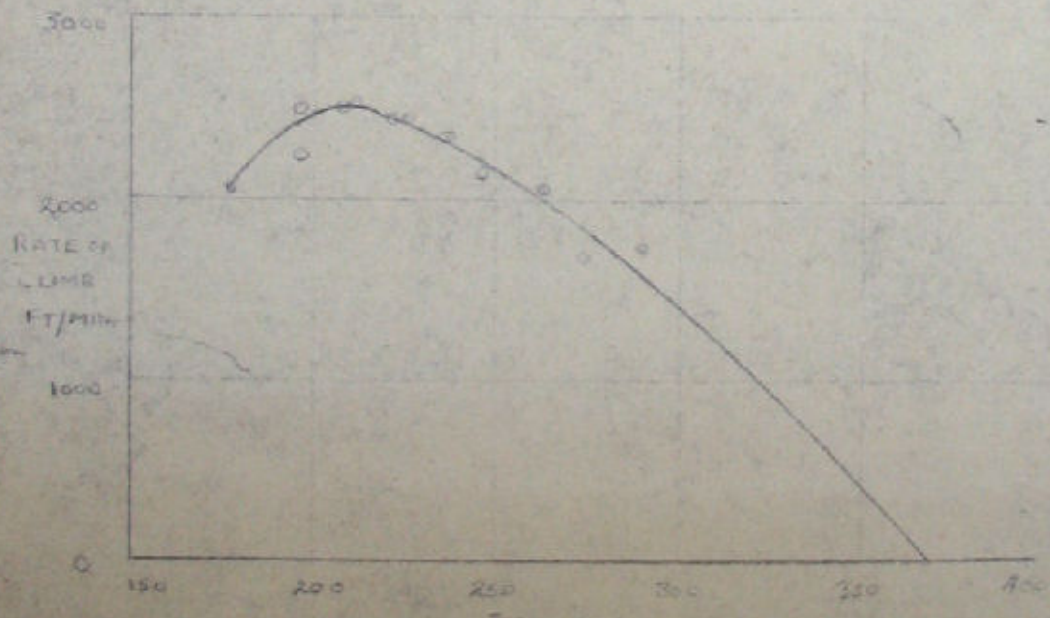
FW. 190 A.3 (BMW 801 D)

LEVEL SPEEDS 2400 R.P.M. AUTOMATIC CONTROL.
(CLIMB AT 30 MIN. RATING)

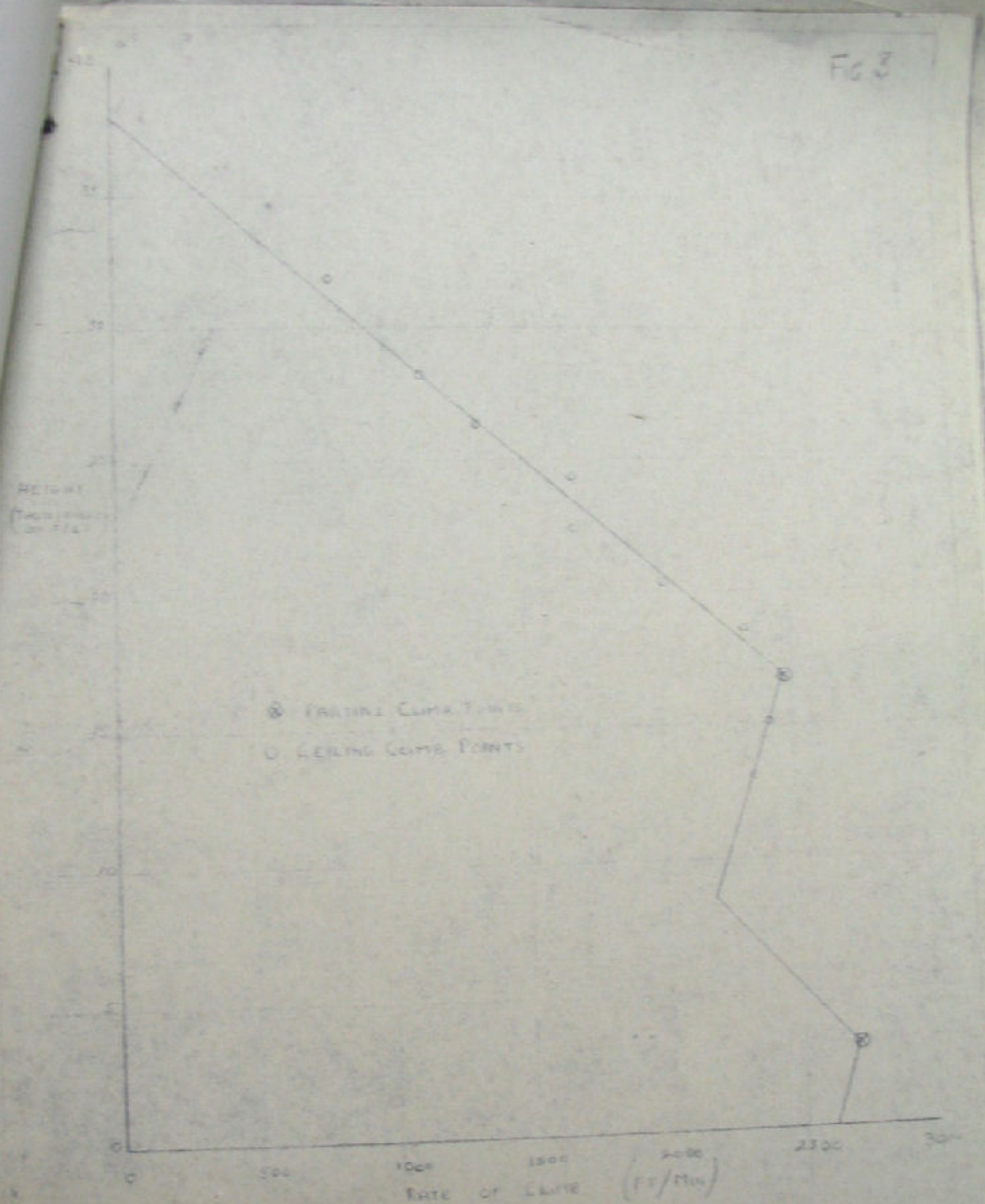
FIG 2



F.W 190 A-3 (B.M.W. 801 D)
PARTIAL CLIMBS AT 3,000 FT. SUPERCHARGER IN M-GEAR
WEIGHT 8530 LB. BOOST PRESSURE 1.34 ATA 2400 R.P.M.



F.W 190 A-3 (B.M.W. 801 D)
PARTIAL CLIMBS AT 16,000 FT. SUPERCHARGER IN S GEAR.
WEIGHT 8,800 LB. BOOST PRESSURE 1.34 ATA 2400 R.P.M.



FW.190 A-3/B.M.W. 801D

Rate of Climb Weight Empty

Engine at 2600 R.P.M. Automatic Control

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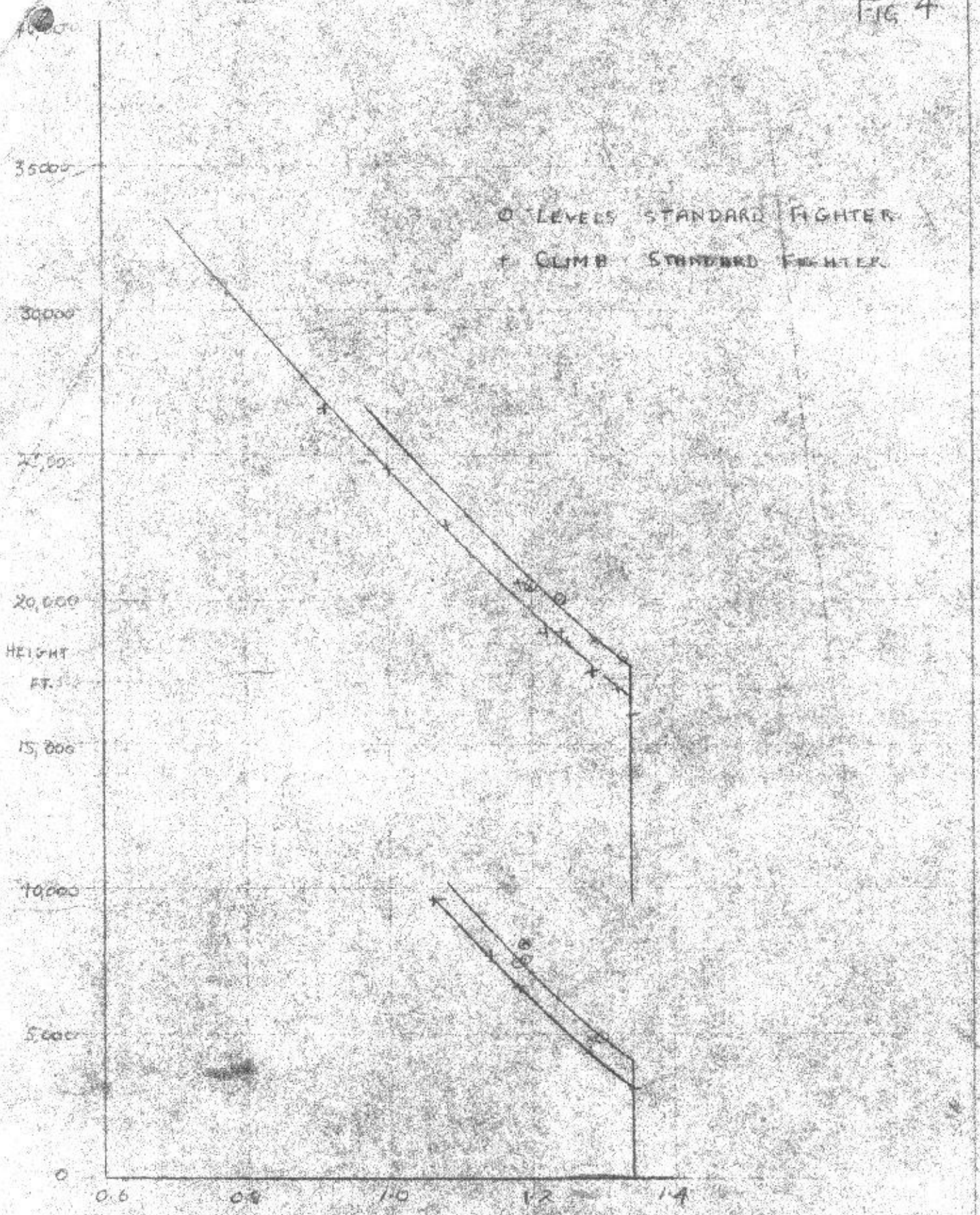
FIG 4



F.W. 190 A-3 (B.M.W. 801D)

BOOST PRESSURES - (ENGINE R.P.M. 2400 AUTOMATIC CONTROL)

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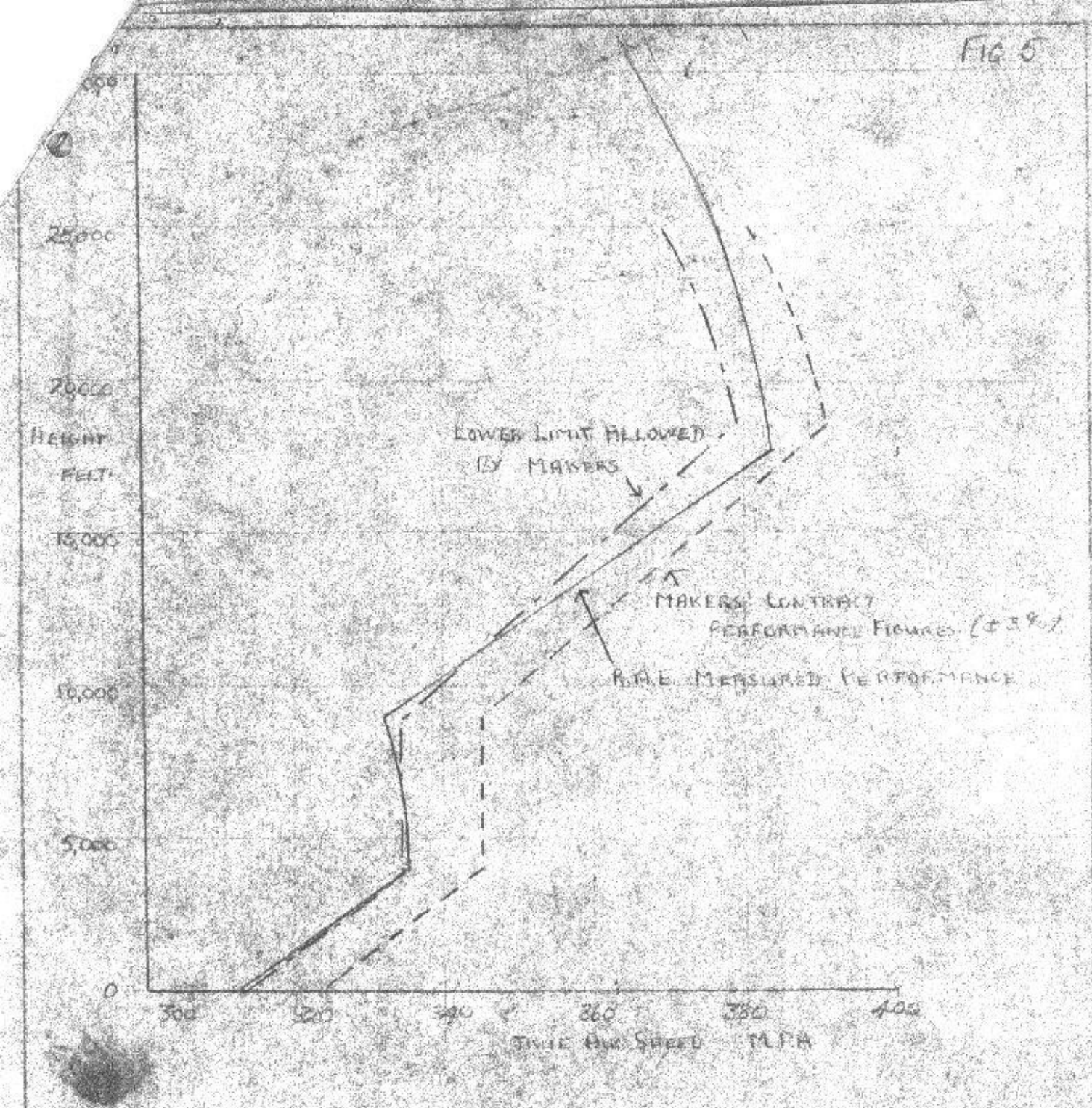
FIG 5



FW 190 A-3 (C.M.W. 2018)

LEVEL SPEEDS

ENGINE AT 2400 R.P.M. AUTOMATIC CONTROL

(COMBAT 30 MIN. RATING)

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FIG 6

SPITFIRE A-3 (4 FLYSPOTS)

RATE OF CLIMB AT 2400 R.P.M. (INTERMEDIATE) CONTROL
(COMBAT 30 MIN RATING)

WEIGHT 6450 LB

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