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HEADQUARTERS
EUROPEAN THEATER OF OPERATIONS
UNITED STATES ARMY

TECHNICAL REPORT

AIR TECHNICAL SECTION

SUBJECT PERFORMANCE OF Fw 190 FIGHTER

SOURCE: Air Ministry A.I.2(g). Report No. 2092.

I. GENERAL

1. The Fw 190 single seat fighter, which landed at Pembrey, was despatched to R.A.E., where a number of performance tests were carried out, the total flying time being 9 hours. The figures given in the present report summarize the information supplied by R.A.E. but a detailed analysis of these figures cannot be attempted until the engine (BMW 801D) has been run on the test bed.

II. RESULTS OF PERFORMANCE TRIALS

1. The Fw 190 test-flown at R.A.E. is equipped with a BMW 801D engine, which, as shown in the engine data card found in the cockpit of the aircraft, is de-rated. The speeds and climbs obtained during these trials, therefore, mainly apply to the Fw 190 equipped with a de-rated engine. Calculations have, however, been made assessing the maximum speed, climb and ceiling operating at the full engine rating.

2. The results given below are sub-divided into two sections, as follows:

- a. Performance with de-rated engine, and
- b. Performance with fully rated engine.

III. PERFORMANCE WITH DE-RATED ENGINE

1. The engine ratings were assumed to be as follows:

Maximum emergency: 2,450 r.p.m. and 1.35 ata (+4.5 lb/sq" boost).
 Climb and 30-minute: 2,350 r.p.m. and 1.23 ata (+3.5 lb/sq" boost).

The speeds and climbs obtained under these conditions are given in Tables 1 and 2.

TABLE 1
MAX. SPEED AT MAX. EMERGENCY ENGINE OUTPUT
(DE-RATED)

SUPERCHARGER GEAR	MAXIMUM SPEED		SERVICE CEILING Ft.
	m.p.h.	alt., ft.	
Low	326	4,500	-
	305	S.L.	
High	375	18,000	35,000
	350	25,000	

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Classification Canceled
 By: Dir., AMC
 Date: APR 27 1944
 REPORT NO.

DATE 11th August, 1942

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TABLE 2
MAXIMUM RATE OF CLIMB
DE-RATED

<u>SUPERCHARGER GEAR</u>	<u>RATING</u>	<u>MAXIMUM RATE OF CLIMB</u>	
		<u>ft./min.</u>	<u>alt., ft</u>
Low	Emergency	3,050	Up to 4,000
	Climb and 30 min.	2,750	Up to 4,000
High	Emergency	3,280	from 10,000 to 17,500
	Climb and 30 min.	2,750	from 10,000 to 17,500

IV. PERFORMANCE WITH FULLY RATED ENGINE

1. The figures given under this heading were estimated from results obtained at full throttle at sea level.

2. The engine ratings were assumed to be as follows:

Maximum emergency: 2,700 r.p.m. and 1.5 ata (+6.6 lb/sq") boost
Climb and 30 minute: 2,450 r.p.m. and 1.35 ata (4.5 lb/sq") boost.

The figures in Tables 3 and 4 give the estimated performance of the Fw 190 with a fully rated engine.

TABLE 3
MAX. SPEED AT MAX. EMERGENCY ENGINE OUTPUT
(FULLY RATED)

<u>SUPERCHARGER GEAR</u>	<u>MAXIMUM SPEED,</u>		<u>SERVICE CEILING.</u>
	<u>m. p. h.</u>	<u>alt., ft.</u>	<u>ft.</u>
Low	345	3,750	-
	329	S.L.	
High	392	17,250	36,500
	358	25,000	

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SUBJECT Performance of Fw 190 Fighter (Cont'd)

TABLE 4

MAXIMUM RATE OF CLIMB
(FULLY RATED)

<u>SUPERCHARGER GEAR</u>	<u>RATING</u>	<u>MAXIMUM RATE OF CLIMB ft/min.</u>	<u>OF CLIMB alt., ft</u>
Low	Emergency	3,750	Up to 3,250
	Climb and 30 min.	3,050	Up to 4,000
High	Emergency	3,750	from 10,000 to 16,750
	Climb and 30 min.	3,280	from 10,000 to 17,500

V. GENERAL PERFORMANCE

1. It is known that the gasoline normally used has an octane number of about 96 and a specific gravity of 0.78. Standard British suel was used during tests at R.A.E. but in order to compensate for the different density the mixture strength had to be readjusted. One flight was made, however, with a fuel approximating closely to that normally used, and there was not any noticeable difference in the performance.

2. It is important to note that the airframe had been camouflaged at R.A.E. and therefore the actual performance of the Fw 190 with German external finish, may be slightly above the figures obtained at Farnborough. It is assumed that the change of mixture setting did not affect the power output of the engine.

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