

(Above) Warwick installation of the Napier Sabre VI with annular radiator. (Right) Graph showing performance at altitude of the Sabre VII on 100 octane fuel. \*Allows for drop in power due to weak mixture.

internal increases of strength to withstand higher boost pressures and r.p.m., and the use of Vandervell strip-type thin-wall bearings, this being the first occasion on which such bearings have been used in an aircraft engine with such high r.p.m. and heavy loadings. Disposition of the sparking plugs was also altered and ignition harness was re-designed to obtain more advantage from the high-altitude ignition equipment now fitted.

**Supercharger Modifications**

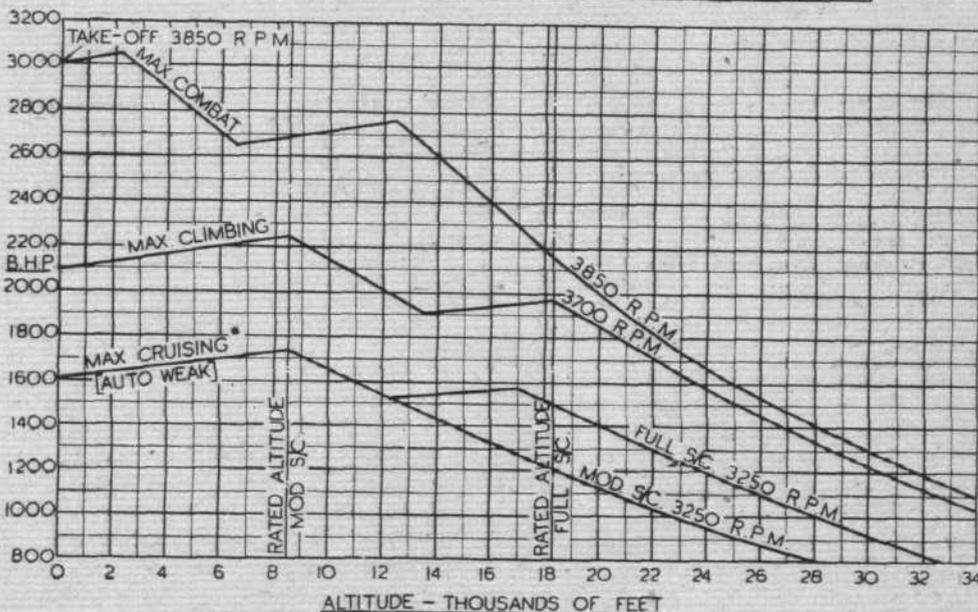
The double-entry supercharger impeller was replaced by a single-entry impeller of increased capacity, and the hydraulically operated two-speed clutch was re-designed to effect a saving of space and an increase in efficiency. Remodelling also included the addition of a boost pressure correction capsule to the boost-corrected ignition servo unit which, linked to the c.s.u. and thus responsive to engine speed, regulates the ignition timing for any engine operating condition. Perhaps the major modification of the VA over the previous marks was the replacement of the carburettor with Hobson-R.A.E. fuel injection and metering equipment, which embodies a fully automatic

duction and not to design. The practice of using the linings immediately after manufacture robbed them of an age-hardening process, but an artificial hardening was introduced which satisfactorily overcame the trouble.

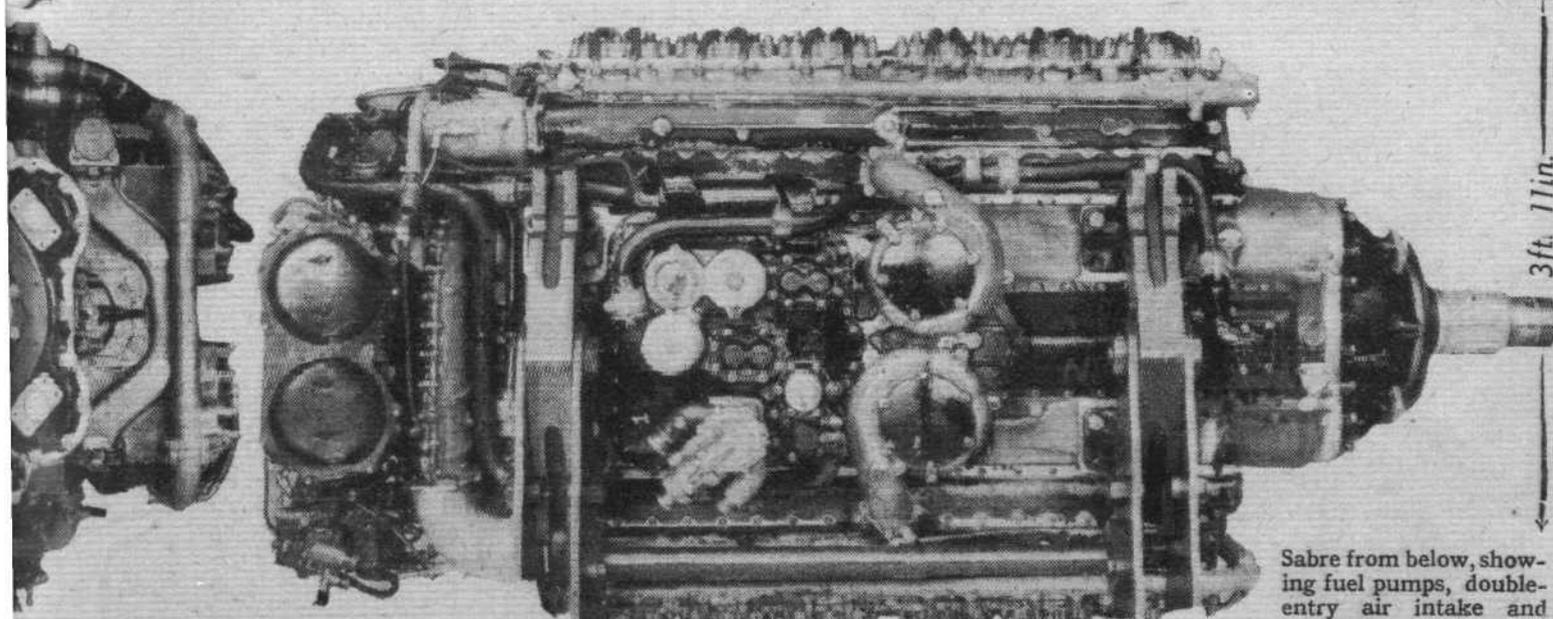
The Sabre IIb was installed in the Hawker Tempest V, and this engine was closely followed by a Mk. III which was specially developed for the Blackburn Firebrand; however, only 25 Mk. III units were installed, owing to the very high priority attached to the production of the Mk. V. A preliminary flight development engine for the Mk. V was known as the Sabre IV.

Numerous modifications were incorporated into the design of the Mk. V and VA, among which were

	MAX R.P.M.	MAX BOOST LB./SQ. IN.	MOD. SUPERCHARGER		FULL SUPERCHARGER	
			MAX. B.H.P.	ALTITUDE	MAX. B.H.P.	ALTITUDE
TAKE-OFF	3850	+17½	3000	S.L.	-	-
CLIMBING	3700	+10½	2235	8500	1960	18250
COMBAT	3850	+17½	3055	2250	2760	12450
MAX CRUISING	3250	+7	1730	8500	1570	17000



6ft. 11in.



Sabre from below, showing fuel pumps, double-entry air intake and coolant pumps.