PART I

DESCRIPTIVE

NOTE.—The numbers quoted in brackets after items in the text refer to the illustrations in Part V.

INTRODUCTION

1. The Tempest II is a single-seat low-wing monoplane fighter and fighter-bomber, powered by a Centaurus V engine driving a Rotol four-blade 35° constant speed propeller. The engine is fitted with a Bendix-Stromberg injection carburettor and a two-speed supercharger. There are considerable differences between temperate and tropical versions. These notes cover the tropical version. The appendix on page 39 describes those features peculiar to the temperate version.

FUEL AND OIL SYSTEMS

2. Fuel system

(i) Fuel tanks.—Fuel is carried in four self-sealing tanks, one in the fuselage aft of the fireproof bulkhead and three in the wings. The fuel from the main tank is fed to the carburettor by an engine-driven pump. A float-valve in the main tank opens when the contents fall to 66 gallons, to allow the fuel from the wing tanks to be transferred to the main tank by air pressure from the exhaust side of the vacuum pump.

The capacities of the tanks are:

Main (fuselage) tank ... ... ... 76 gal.
2 Interspar (wing) tanks each 28 gal. ... 56 „
Nose (port wing) tank ... ... ... 28 „

Total ... ... ... 160 „

A drop tank of 45 or 90 gallons capacity may be carried under each wing, the fuel from these tanks being trans-

ferred to the main tank in the same way that the wing tank fuel is transferred. When necessary, these tanks can be jettisoned by means of the red lever (53) on the right-hand sloping panel above the K-40 priming pump.

NOTE.—The 90-gallon drop tanks are not yet cleared for service use.

(ii) Fuel cocks.—There is no provision for isolating separate tanks, the wing tanks, or alternatively the drop tanks, being used as a group. The transfer of fuel from the wing or drop tanks to the main tank is controlled by a single selector lever (54) mounted on the right-hand sloping panel.

When this lever is moved forward to ON, fuel is transferred from the drop tanks, and the wing tanks are turned off and vented to atmosphere. When it is pulled back to OFF, fuel is transferred from the wing tanks, and the drop tanks are turned off and vented to atmosphere. The main tank is not pressurised and the flow of fuel from it is controlled by an ON-OFF cock (55) mounted on the shelf on the right-hand side of the cockpit. An air pressure gauge (18) marked TANK AIR on the right-hand side of the instrument panel shows the pressure available for transferring fuel. The gauge should read between 3¾ and 5 lb./sq. in.

(iii) Fuel booster pump.—An electric fuel booster pump is fitted in the sump of the main tank. It is switched on and off by the main tank cock. Should it fail, fuel can still be fed to the carburettor by the engine-driven pump.

NOTE.—On no account must the fuel main cock be ON with the fuel cut-off control at NORMAL unless the engine is running (see para. 34 (vii)).

(iv) Fuel contents gauges.—Electrical fuel contents gauges (13) for all the permanent tanks are mounted together on the right-hand side of the instrument panel. They are switched on and off by the electrical master switch (39) which is interlinked with the ignition switches (40). There are no contents gauges for the drop tanks.