INTRODUCTION

These prototype and early pre-production Lightning aircraft are single-seat, supersonic performance aircraft powered by two Avon Mk.210 turbo-jet engines, each producing 11,450 lb *(nominal)* static thrust at sea level *(14,450 with maximum reheat)*. The engines are mounted in the fuselage, one to the rear of and above the other. The reheat pipes terminate in variable-area propelling nozzles which give two opening positions in cold running and three in reheat.

All internal fuel is carried in the wings but additional fuel can be carried in a jettisonable ventral tank; this tank is pressurized to effect transfer into the main tank system, where electrically-driven low-pressure pumps transfer fuel within the wing tank system and supply the engine high pressure pumps and the reheat pumps.

The primary flying controls *(ailerons, rudder, and tail plane)* are fully power-operated, *i.e.*, irreversible. Artificial feel is provided on the pilot's controls. Two-position flaps, hinged to the wing rear spars, and variable-position air brakes, flanking the fuselage at the leading-edge of the fin, are electrically controlled and hydraulically operated. A brake parachute is housed in a compartment below the lower reheat pipe; flush-fitting doors covering the compartment are opened hydraulically to allow the parachute to be streamed.

The pressurized cockpit is covered by a clam-shell type canopy, and contains an ejection seat fitted with parachute, dinghy, leg-restraining gear and emergency oxygen.