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Weighing very nearly
30,000 lb in fighting trim,
the pro4trctTbn North
American F-100 A is a very
missive aircraft. The
single-slab tailplane we
estimate to have a maxi-
mum thickness of 3/n, and
it is seen at full negative
incidence. Above the tiny
rudder is a fairing for
lights and a downward-
facing pipe; other features
are the detachable rear-
uselage (for engine access)
and the open dorsal equip-
ment-bay door,which seems
to form a flush aerial.

SUPER-SABRE DETAILS

More thoughts on the North American F-IOOA
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N our issue of November 6th last we published an article entitled "Thought s on the F-100," which discussed the features of the North American Super Sabre. This fine aircraft has been further developed in the nine months since that date, and we now present a second selection of illustra-tions showing the production F-IOOA.
North American Aviation have always considered that the F-100 is a greater advance over the F-86 Sabre than was the latter over the piston-engined F^Sl Mustang. In fact, the company claim that the new fighter is "The greatest advance in aviation since the advent of jet power plants." These are bold words, but it is an indisputable fact that the F-100 is die first real supersonic aircraft, i.e., the first production machine designed to fly faster than sound as a matter of course, and for sustained periods.
One day we shall be able to relate all the problems faced by Ray Rice and his design team in developing such an aircraft. Suffice to say that literally millions of man-hours were expended on the single problem of stability and control, enlisting the aid

The Super Sabre speed brake is a single "barn-door" pushed down by
a pair of long-stroke hydraulic jacks acting in unison. Apparently no change of trim results at any speed.

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Aircraft of the U.S.A.F. are liberally stencilled with instructions: the original of the photograph above reveals the following:—
1, LIFT—vertical stabilizer only; 2, Drag chute release mech.; 3, Access to hydraulic rudder actuator; 4, Access to electrical disconnect—fuel-vent disconnect; 5, LIFT
— plugs to be flush to skin; 6, [applying to rear-fuselage coupling]—Ed. Torque ib-ft:
nut 640-650. stud 430-470; 7, Co-ax antenna disconnect, control disconnect; 8. Attach points . . .; 9, Compressor-bleed door BEWARE OF BLAST; 10, Access to fuel probe, hydraulic pressure transmitter flight-control system 2, hydraulic-pressure transmitter utility system; 11, Ground run support only. To support engine turn screw counter-clockwise until hole thru shank is outside mold line. To free engine for flight turn screw clockwise until the head has recessed below the mold line permitting the door to close. WARNING—SHIP MUST NO T FLY WIT H THIS SUPPORT ENGAGING ENGINE; 12,"Ground here [electrical earth— Ed.]; 13, Access to fit. control system 2 unloading relief valve, fit. control system 2 hyd-pressure switch; 14, Access to self-displacing accumulator fit. control system 2,
hyd. return filter fit. control system 2, fuel probe; 15 Fuel filler; 16, BEWARE
BLAST; 17, Fuel filler; 18, CAUTIO N disconnect electrical wiring before removing
rear section; 19, Rear section break-line; 20. Jack. Replace plugs flush to skin;
21, Fuel filler 221 U.S. gal. Service this aircraft with MIL-F-5624A grade JP-4 fuel;
22, Fuel cell access; 23, Fuel line support.

of numeruus tunnels, test rigs, and'Sabres fitted with "super-sonic" control systems and instrumentation. A control-system rig is illustrated. The control system consists of low-mounted single-slab horizontal tail surfaces, two-section inboard ailerons and a very small rudder (now smaller than that of the prototype). The surfaces are fully powered hydraulically, and they enable the production F-100 A to fight at any Mach number up to and beyond one. In practice, it seems that the difficulty of inter-

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