

MISSILES AND PROJECTILES . . .

A salvo of electronically aimed, automatically triggered, Mighty Mouse R.P.s leaves the wing-tip launchers of a Northrop F-89D.



employed by any Commonwealth air force except the R.C.A.F. The Mighty Mouse attains a velocity of over 2,900ft/sec and its warhead is said to rival, in destructive effect, a 75 mm shell. Illustrative of its potency is the bringing down of a Boeing DB-17, with its crew, by a single accidental hit from an F-86D which had mistaken the DB-17 for the radio-controlled target which that aircraft was controlling.

In Switzerland, the Oerlikon organization has developed various forms of air-to-air/air-to-ground rocket. The first to become operational is an 8 cm (3.15in) weapon, about 2ft long, weighing 22 lb, of which 2.2 lb is explosive. There are three versions: an H.E. pattern with contact nose-fuse; an armour-piercing version, having a percussion fuse in the base of the hollow explosive charge; and a practice rocket with dummy warhead. Projectiles of this type, to a total of 24, are carried by Swiss Air Force Vampires on staggered tandem racks. "All-burnt" velocity is 2,750-3,100ft/sec.

A retractable launching device for a Mighty Mouse battery is a key feature of the North American F-86D Sabre single-seat all-weather fighter. Twenty-four projectiles are carried in a tube-filled ventral discharger, which, at the appropriate range, is hydraulically extended from the fuselage by a circuit in the Hughes fire-control system. The R.P.s are then "rippled" electrically in a predetermined sequence. The discharger can be lowered, a salvo of twelve rounds fired, and the discharger retracted again in the space of one second. As the tails of the projectiles leave the launcher their velocity relative to the aircraft is about 100 m.p.h., or about 500 m.p.h. when passing the nose. It is necessary that the "Mice" should follow a path governed solely by the direction in which the aircraft is pointing at the moment of release, and not by the relative wind. For this reason their fins remain locked until clear of the aircraft, so that "weather-cocking" in the initial stages is reduced almost to zero. Little of the propulsive gas from the rockets is swallowed by the engine air intake, although, being of the "beard" type, this is closely situated to the line of fire.

Two under-wing "packs," of approximately aerofoil section, and each containing 45 Mighty Mouse rockets, are a possible load for the North American F-100 Super Sabre.

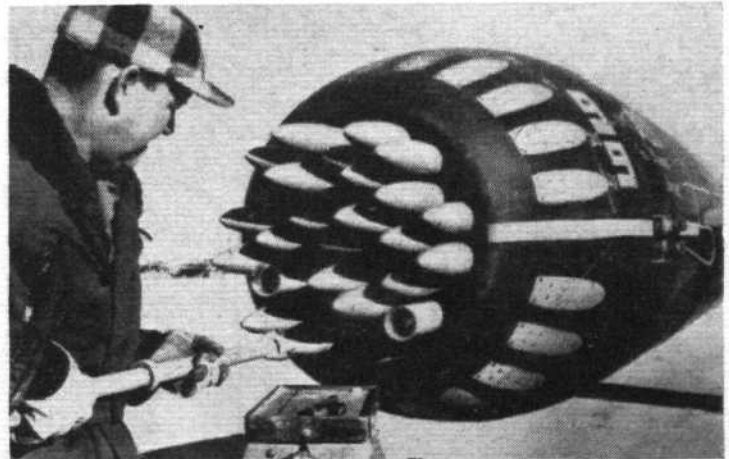
Like the F-86D, the Chance Vought F7U-3 Cutlass has a ventral Mighty Mouse launcher, though this differs in design. The complete assembly (see photograph) can be reloaded repeatedly after expending its missiles, or can be detached in a few minutes. The muzzle door retracts before the rockets are fired, and the missiles are triggered off by the door itself when this is fully retracted. Capacity is believed to be 32 rockets, loaded in pairs in 16 tubes. When firing has ceased the door is closed automatically. For strike operations additional Mighty Mouse packs can be carried under the wings.

The most powerfully armed fighter in operational service is the Northrop F-89D Scorpion, which carries 104 Mighty Mice in massive wing-tip pods. These, the makers claim, confer improved dispersion, since two sources of fire power are used instead of a single concentration, as on the F-86D; moreover, the firing of the rockets does not interfere with the vision of the crew

at the critical moment of interception, and engine-air intakes are not exposed to smoke and debris from the rockets. The projectiles can be fired in a single salvo or in groups, enabling the Scorpion to make as many as three passes at a single target or to attack three separate aircraft. As on other American rocket-armed fighters, electronic aiming and triggering equipment is standard. The makers have said that the rockets "fan out in overlapping patterns like huge shotgun blasts to blanket an area of sky as large as a football field."

The F-94C version of the Lockheed Starfire two-seat all-weather fighter is another U.S.A.F. fighter with all-rocket armament. In the nose, around the radar, is a ring of 24 Mighty Mouse or Aeromite firing tubes, and projecting about 6ft from the wing leading edges are two pods each containing 12 more projectiles of the same type. Thus, 48 rounds are carried in all. The firing ports in the fuselage nose are normally covered by retractable panels which, immediately before firing takes place, recess into the fuselage. The 12 podded rockets can be fired in less than a quarter of a second, and their housings have frangible Fiberglas nose covers, which disintegrate outwards under gas pressure an instant before the rockets leave. Maximum speed is lowered by only 4-8 knots by the removal of the covers. Machine-gun batteries can be mounted as alternatives to the pods.

Collision-course tactics are regularly employed by the F-86D and F-94C: that is, they approach a bomber from abeam instead of by the traditional stern-chase method, which would bring them within the accurate field of fire of the bomber's defensive armament. The technique is as follows: First the fighter is positioned by normal G.C.I. control and is manoeuvred relative to the bomber to a point where its A.I. radar registers contact; this occurs at a range of about 25 miles. Thereafter the interception is controlled by the crew—in the case of the F-86D, by the pilot alone. He closes in towards the target until, by one means or another, he can identify it, and then locks his fire-con-



(Above) An armorer, using a special tool, in process of loading 52 Mighty Mice into one of the Scorpion's wing-tip pods. Below is a remarkable panoramic view illustrative of the Scorpion's tremendous fire power. To secure it three tail-mounted cameras were triggered simultaneously.

