GE F4H Install

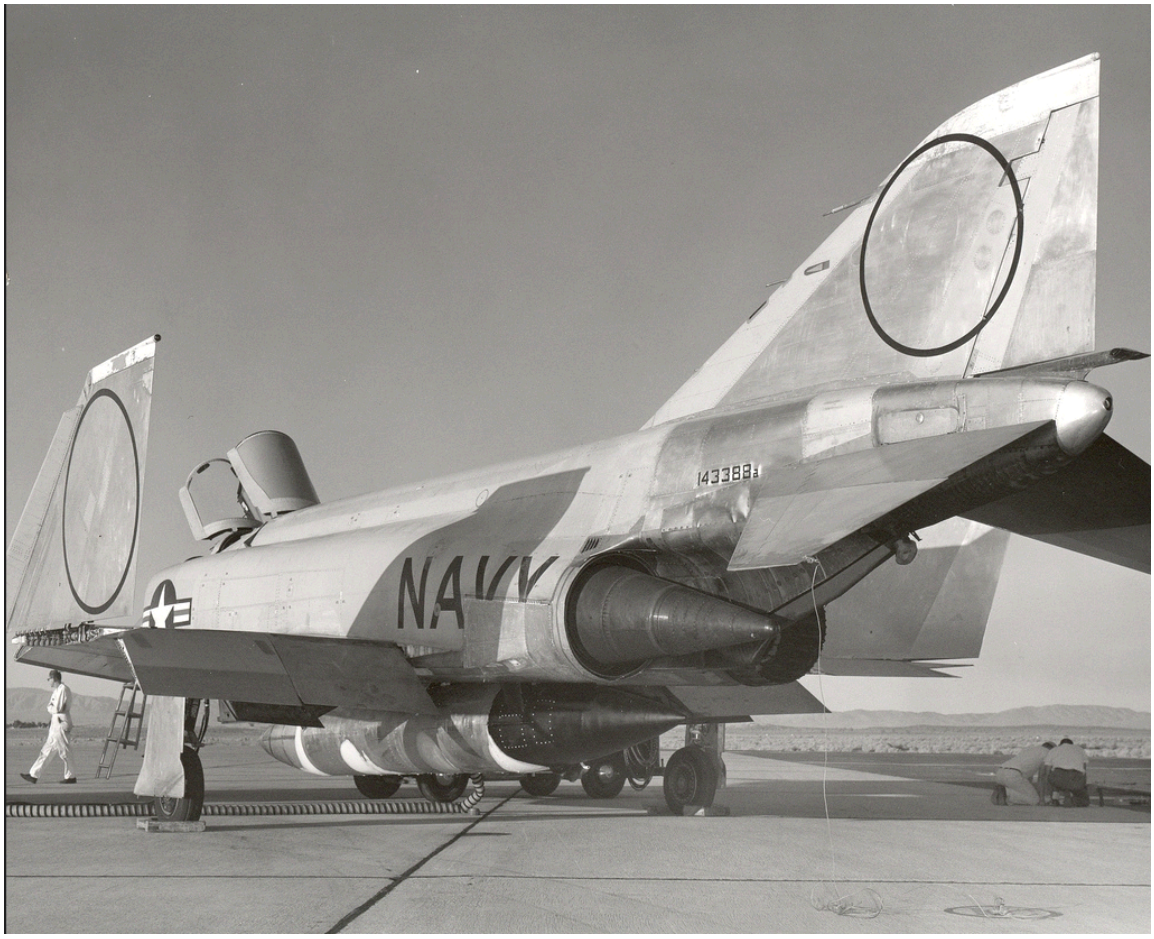
GE's F4H-1F Testbed. I do not know the signifigance of the various circles painted on the airplane--I've always assumed they were put there by the Navy before 388 came to GE. I also do not know why there is a strange exhaust nozzle on the J79 being installed--have not been able to ask any of the retirees yet.

This is a "plug nozzle", an alternative to the convergent-divergent nozzle used on the basic J79 to yield supersonic exhaust flow needed to get out to Mach 2-plus. I have run across this in some NACA reports from the mid-late 1950s but this is the first time I have seen it installed in an aircraft. P&W did use it in a non-afterburning application for the NAA Hound Dog missile in the J52-P-3 engine. It gave supersonic speed with excellent range figures. Great find!



Installation of J79 with liquid nitrogen-cooled conic nozzle

From a GE research paper: "A special test program was conducted on the F-4A to evaluate the IR suppression characteristics on a cooled plug nozzle. The exit lip of the aircraft engine bay was modified and a test engine with a plug nozzle was installed. An LN2 tank was designed to hang from centerline stores position. An LN2 system was installed in the aircraft to allow the LN2 to cool the plug."



F4H Engine Run

This view is of the F4H-1F testbed on the engine run-up ramp to the east of the GE hangar.

From Jason Chapman's Photostream