'Kelly' Johnson's Tour de Force

The Lockheed Mach 3.5 A-11 special-purpose aircraft created by "Kelly" Johnson and his gifted crew in the corporation's Burbank "Skonk Works" (see p. 16) is another fine example of how much the technical talent in the U.S. aerospace industry can accomplish when given a specific mission and a clear path unencumbered by bureaucratic red tape. Like its predecessor, the U-2, this Lockheed A-11 was designed to be optimized for a specific mission and was produced fast enough to stay a significant jump ahead of any counter-system that could be deployed against it.

This aircraft is a tremendously effective weapon in its particular specialized field for both cold and hot wars. In the cold war, this country's first line of military defense is reconnaissance, and technology has expanded capability in this field across a truly fantastic spectrum. Satellite reconnaissance has been doing a remarkable job for both the U.S. and USSR. But the reaction speed and operational flexibility of aircraft are required to supplement satellites. The A-11 was designed specifically as a highspeed, high-altitude, long-range reconnaissance aircraft that could penetrate the Iron Curtain at will and help protect this country from any unpleasant military surprises. The Soviets are also using a long-range twin-jet reconnaissance aircraft called Mandrake (AW June 3, p. 26) in Asia and Europe. Its performance is better than the U-2, but falls far short of the A-11.

Boost to U. S. Prestige

Because the A-11 design was optimized for its principal mission, it cannot be expected to function as a long-range interceptor, a low-level strike bomber or a supersonic transport prototype. In fact, its tremendous performance for its specific mission is a powerful argument for the development of the specialized aircraft, rather than chasing the eternal mirage of the "all-purpose" aircraft on the often illusory grounds of economy.

As the first operational Mach-3-plus aircraft in the world, the A-11 will reflect considerable prestige on U.S. aviation technology at a time when it needs this badly. It is an interesting footnote to the supersonic transport race that, while this country has been flying A-11 aircraft for long periods of sustained Mach 3 flight for several years and is pushing its X-15 research aircraft even further into the hypersonic regime, the British are close to abandoning their research aircraft program at Mach 2 (AW Mar. 2, p. 32). It is obvious that the combination of X-15 research and A-11 operational experience will produce considerable technical fall-out in materials, manufacturing, aerodynamics, subsystem development and operating techniques that will benefit all new U.S. supersonic aircraft programs. President Lyndon Johnson emphasized this in revealing the existence of the A-11, and particularly noted:

"One of the most important achievements in this project has been the mastery of the metallurgy and fabrication of titanium metal which is required for high temperatures experienced by aircraft traveling at more than three times the speed of sound.

"Arrangements are being made to make this and other important technical developments available under appropriate safeguards to those directly engaged in the supersonic transport program."

Technical Briefings

Competing airframe and engine manufacturers in the supersonic transport competition have already been apprised of these technical developments and U.S. airline technicians will shortly be briefed on this subject in Los Angeles (see p. 30).

Great technical success is always preceded by a solid foundation on which it can be built, and a host of unsung heroes who fashioned those foundations. Among those who come to mind in reflecting on the A-11 history is Vice Adm. John T. "Chick" Hayward, who, as chief of Navy research and development, fought a long and bitter battle to keep the Pratt & Whitney J58 turbojet program alive as a succession of airframe projects were canceled out from under it. Adm. Hayward's philosophy in protecting the J58 program against the onslaughts of Pentagon economizers was that by the time engines in this power class were fully developed, an urgent need for them would appear. And so it was with the A-11. When its power requirements suddenly arose, the J58 was ready.

We paid our original tribute to "Kelly" Johnson for the A-11 performance on Dec. 24, 1962, when we noted in our year-end "Laurels for 1962:"

"Clarence (Kelly) Johnson of Lockheed Aircraft for his continued ingenuity in the Skonk Works."

Until President Johnson's announcement on Feb. 29, 1964, this was all we chose to publish on this project.

—Robert Hotz