

TACIT BLUE



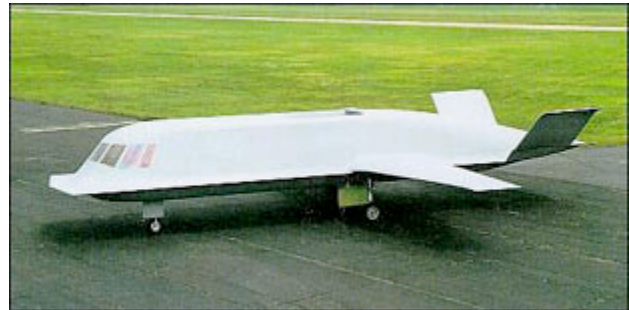
By Steve Douglass

The year is 1982. At the secret Groom Lake Flight Test Center (Dreamland) Lockheed Skunkworks engineers are busy working on the secret F-117A program. Although the Lockheed engineers have Top Secret security clearances they are asked by security to wait in a windowless building while another contractors secret aircraft prototype, is rolled out for its first flight. Both of the aviation contractors complain to the Air Force that the security restrictions of not being able to work in view of each other's aircraft are playing havoc with the flight test schedules. The Air Force agrees and soon the Lockheed team and the Northrop team work on their aircraft in full view of one another. The Lockheed team nicknames the Northrop aircraft "SHAMU" because its' sinister profile reminds them of a killer whale.

Years later, when the details of the F-117 program are declassified, Lockheed engineers let slip this intriguing anecdote. Aviation journalists, stealth watchers and air fans, are quick to take note and begin the search for clues into what exotic aircraft "SHAMU" could be. Is it the fabled "Aurora" (the Mach 5 replacement for the SR-71 Blackbird) or the sinister "TR-3A Black Manta", a manta-shaped tactical spy plane ?

The Secret Revealed

Eighteen years later we finally have our answer to what was SHAMU. On May 1st the USAF finally revealed the existence of TACIT BLUE one of the strangest looking aircraft you'll ever see. SHAMU may not have the grace of an F-23 or the sleek lines of the B-2 but without her they wouldn't exist for TACIT BLUE is the mother of all stealth bombers.



The aircraft, a product of the Northrop Corp., now Northrop Grumman Corp., was developed under a Advanced Research Projects Agency (ARPA) demonstration/evaluation program that began in 1978 and was cloaked under a tight wrap of secrecy that surpasses even the F-117 program.

"TACIT BLUE" was one of the most successful technology demonstrator programs in Air Force history, meeting all program objectives and most low-observable and sensor performance goals," said Assistant Secretary of the Air Force (Acquisition) Arthur Money.

"The once highly-classified program was unveiled because technologies and capabilities are currently in operational use and knowledge of the programs no longer needs protection.", Money announced in

a Pentagon press conference May 30.

According to the Air Force, TACIT BLUE was a leading edge program that took innovative stealth technologies out of laboratory and onto the flightline.



UGLY BUT SMART

TACIT BLUE is an odd-shaped aircraft looking like a cross between a city bus and a flying sausage, but don't let its ungainliness fool you. SHAMU was once the cutting edge in low observable (stealth) technology. Many of the engineering lessons learned from TACIT BLUE have been applied to current stealth aircraft such as the Northrop's B-2 ATB.

The aircraft's measurements aren't what one would call sleek. With a length of 55.8 feet, a wingspan 48.2 feet and a weight of 30,000 lbs., TACIT BLUE places SHAMU in the cargo aircraft class. Aptly nicknamed SHAMU looks like a flying whale with its stout tubular fuselage, stubby tapered wings and strange flat chines that run the length of the aircraft. Engine exhaust is released past two outward canted tail fins and over a broad flat plate that minimized the infrared signature of the aircraft and thus reducing the vulnerability to heat-seeking missiles.

A single flush engine inlet is shielded from probing enemy radars by placing it on the top of the fuselage. The aircraft is powered by two high-bypass Garret turbofan engines .

Flight control is supplied by a quadruply-redundant, digital fly-by-wire flight system that stabilizes the aircraft about the longitudinal and directional axes, much like the B-2s.

PROGENY

Astute aviation buffs were quick to notice that TACIT BLUE looks remarkably like General Atomics Predator UAV, an unmanned surveillance drone that is currently flying missions over Bosnia. Another UAV, the Teledyne Ryan Tier 2+, reconnaissance drone still under development can also claim TACIT BLUE as a direct ancestor.

TACIT BLUE features a straight, tapered wing with a broad "Vee" tail mounted on an oversized curved fuselage. It is the first aircraft to demonstrate the concept of achieving a low radar cross section using the curved surface concept technically known as dausian or curvilinear shaping. This is in direct contrast to the flat, angular, radar-scattering faceted "Hopeless Diamond" concept used on the F-117A.

Although the Air Force couldn't be pinned down on how small TACIT BLUE's radar signature is, an inside source at Northrop says that the TACIT BLUE radar signature is about the size of a bumble bee. That's at least equal, if not smaller than the F-117 Nighthawk. Such an aircraft loitering at high altitude could continuously monitor the ground situation behind the battlefield and provide targeting information in real-time to a ground command center, without detection.

TACIT BLUE owes some of its unique shape and size to the reconnaissance equipment it was designed to carry. A Hughes multi-mode-side-looking radar (SLAR) a predecessor to the ground surveillance radar used in Joint Stars, took up a large part of SHAMU's structure. The SLAR on TACIT BLUE was part of an effort to test if a LPI (low probability of intercept) radar flown on a stealth aircraft without compromising its presence.

ELINT (Electronic Intelligence) antennas for intercepting enemy communications were also part of TACIT BLUE's reconnaissance systems. Any intelligence gathered by TACIT BLUE, including battlefield movements and a complete tactical picture, could be relayed in real-time via flush mounted data-link antennas to a forward command center for analysis.

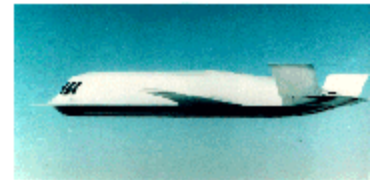
The reconnaissance technologies explored through TACIT BLUE, may have lead to the development of another still-secret tactical reconnaissance aircraft that aviation journalists and stealth chasers refer to as the "TR-3A Black Manta." According to aviation insiders and eyewitness accounts, the TR-3A is a span-loaded flying wing design , about half the size of the B-2. A triangular aircraft fitting this description has been sighted flying near Roswell, New Mexico and Anchorage, Alaska.

THE PROGRAM

TACIT BLUE initially was created to demonstrate that a low observable surveillance aircraft was capable of operating close to the forward line of battle undetectable and with a high degree of survivability.

The TACIT BLUE program cost the taxpayers approximately \$165 million which covered development, construction and flight testing. Northrop received a \$136 million contract to provide one complete technology demonstrator and a partially-developed back-up airframe.

Sources say that TACIT BLUE was developed and tested at several different locations, chief among them being Groom Lake and Edwards AFB, although the Air Force will not confirm this. According to the Air Force, TACIT BLUE was "flown and tested from a number of locations."



Never intended to be an operational aircraft, TACIT BLUE was flown only as a technology demonstrator and test bed for evaluating emerging stealth technologies.

Overseeing the project for the Air Force was Colonel Jack Twigg who was also tasked with managing the Have Blue program which led to the development of the F-117. At Northrop the primary geniuses in charge of the program were Steve Smith and Dr. John Cashen who went on to work on the B-2 project.

Webster's Dictionary defines Tacit as "unspoken, silent, not expressed openly" which certainly describes the TACIT BLUE program. Flown in total secrecy by both Air Force and contractor pilots, TACIT BLUE completed 135 flights, in broad daylight, over a three year period, with the maiden flight taking place on February, 1982. The aircraft logged three to four flights weekly and on several occasions flew more than one a day.

There were a total of five pilots who flew the aircraft. The first was Dick Thomas, a Northrop test pilot.

The air Force pilots were Lieutenant Colonel Ken Dyson (who was also a HAVE BLUE pilot) and Lieutenant Colonels, Wes Easter, Don Cornell and Major Dan Vanderhurst.

The TACIT BLUE, program was completed in 1985, with the aircraft being placed in flyable storage. This spring the aircraft was sent to Wright Patterson Air Force Base in Ohio, where it will go on permanent display at the Air Force Museum.

An Air Force Museum team prepared the aircraft for permanent display. Preparations included painting, de-arming the ejection seat and canopy, purging all fuels, oils and lubricants as well as well as draining the hydraulic systems. TACIT BLUE is scheduled to be unveiled at the United States Air Force Museum on May 22, 1996.

A GLIMPSE OF THINGS TO COME?

Although the aircraft may look like the latest example of advanced aviation technology, the Air Force's acknowledgment of the TACIT BLUE program makes it clear that the aircraft represents old technology.

Lessons learned from SHAMU have gone on to be incorporated into a plethora of stealth aircraft, some acknowledged some still secret.

At the news conference announcing the existence of TACIT BLUE, a reporter asked a probing question which yielded a tantalizing answer. "Should we expect other things like this from the Air Force? The Air Force spokesman replied " You know, we continue to explore new technologies all the time."

This author can't help but wonder if TACIT BLUE is considered obsolete, what exotic and still-secret aircraft are its progeny? What other stealthy wonders are winging their way through our night skies?

-Steve Douglass

We are still under construction.

Check back for updates!



Sightings 

