

# Requiem For The Human Flight Navigator

Submitted by Fred Gardner. Some portions of this dissertation were excerpted from "By Dead Reckoning" by Ralph Lewis.

There was a time during the history of flight when navigation was performed by humans, not black navigator boxes with knobs. Flesh and blood Navigators did not have the vast array of electronic nav-aids available today. In those days, electronic navigations aids capable of fixing an aircraft's position over land consisted mainly of low frequency radio ranges and homing beacons. When flying long distances over water, however, such aids were quite useless.

The human flight Navigator, having ventured beyond land's end, had to rely on his skills with the one instrument that he knew could positively fix his position...his sextant. With his training and experience he could instantly identify 35 or 40 first magnitude stars in both the Northern and Southern Hemispheres. Early versions of aircraft sextants were primitive at best. And voluminous star tables requiring a knowledge of advanced mathematics were difficult, time consuming, and cumbersome to use. For lack of satellite surveillance, meteorological forecasts were not always accurate either, and at times, not available at all. Most military aircraft of the period operated at only about 18,000 feet due to pressurization limitations. In some latitudes, well developed cumulus and cumulo-nimbus cloud formations often rose to heights in excess of 40,000 feet. Unable to top towering build-ups, and avoid severe turbulence encountered in line squalls, there was no alternative but to tackle them head on.

The human Navigator's work table held a chart, a wind-up hack watch, a plotter, a Dalton computer, an almanac, several HO 249 star table computation books, the sextant, a couple of pairs of dividers, and a variety of pencils, none of which were fastened down. During an unexpected encounter with turbulence, they invariably ended up somewhere on the floor. The work space was confining, ranging from the cramped B-25, to the complexity of the

## TAC Tanker Apparel and a Little Experience I Had

*In a quest for collecting TAC Tanker hats, patches, decals, bumper stickers, pins, etc., Dave Taylor wrote to Nate Hill of the following experience*

After many years of searching I finally located and acquired two mint 353rd TAC Fighter Squadron patches. Got them from an F-15 Strike Eagle pilot at Seymour-Johnson AFB. He runs a little patch trade/sale business on the side. I found him on a web search. I wanted them because I was fortunate enough to get to see a KB-50 air refueling mission from the other end.

The 427th CO at the time was a gung-ho guy and set up an exchange program for some of the Myrtle Beach AFB F-100 pilots to fly a refueling mission with us, and some of us to fly with them. I was the first volunteer to reach our CO's office after the briefing announcement, and was the first to go. I was TDY to the 353rd TAC Fighter Squadron at Myrtle Beach and stayed with them for about three days. The Wing Commander was Col.

drift meter placement on the C-124, the strange trapeze station of the C-123, the KB-29 with the hang-up sextant and its pencil markings and astro dome and the KB-50 with the periscopic sextant.

At night, if there was no cloud cover and minimal turbulence, celestial worked very well, but during daylight flights, it was another matter entirely. Only the sun, and sometimes the moon and Venus, were visible enough to provide lines of position during the daytime. The latter two were often too close to the sun to obtain good cuts, and Venus, were it to be seen at all in broad daylight, needed to be pre computed by the human Navigator to locate it in the eyepiece of his sextant. It was during those times, the human Navigator felt as one with God's universe.

In today's world, the sudden unmistakable rumble of jet engines somewhere high overhead commands one's attention. As the sound intensifies, we know that unless the jet's vapor trail is visible, we will never see the tiny speck that generates the distant roar. Thirty five thousand feet up, at the edge of the troposphere, that almost invisible object streaking through the sky is a modern jet. We stand watching the minuscule point of light and its streaming ribbon of silver until it finally disappears from view.

Invariably when this scenario plays itself out above the aging human Navigator, he pauses in reflection at the spectacle, wondering what it would be like to be back up there with the flight crew, but alas...the days of the aerial Navigator are no more. Today's aviators, of course, still experience the exuberance of flight, but for the human Navigator there is solace in knowing that those who flew and navigated in his day had something else...adventure, excitement, the lure of the unknown, the endeavor in a science and skill which was demanding as well as rewarding, the knowledge of self accomplishment, and the pure enjoyment of using God given personal skills in concert with God's universe. I wonder if the universe misses this human Navigator as much as he misses it?

Francis Gabreski (I am sure you know about him; WWII leading European ace and also an ace in Korea).

Our refueling mission was on 23 May 1960 in the old Arctic Bear refueling area, and the four ship formation was lead by Col Gabreski. I flew back seat in an F-100F model and we were Col. Gabreski's wingman. The tanker we hit was from the 427th and the A/C, Capt. Strange, was taking his standboard ride that day. Our refueling operator was A/IC Eldon Knight.

That was an experience I'll never forget.

I was also very impressed after the mission when we parked on the ramp and as soon as the canopy was opened, the crew chief pitched us a couple of cold beers into the cockpit before we even got unbuckled! (Those fighter jocks seemed to do things a little differently than we did).

I had a great time and caught a hop back to Langley the next day on a C-123 that was carrying a single large nuke as cargo. Thus the long story about why I wanted the patches.

Dave Taylor