

F E B R U A R Y

UNCLASSIFIED

1 9 6 0

FLYING SAFETY

U N I T E D S T A T E S A I R F O R C E

IRIS 920456

26 OCT 1989



UNCLASSIFIED BY AUM

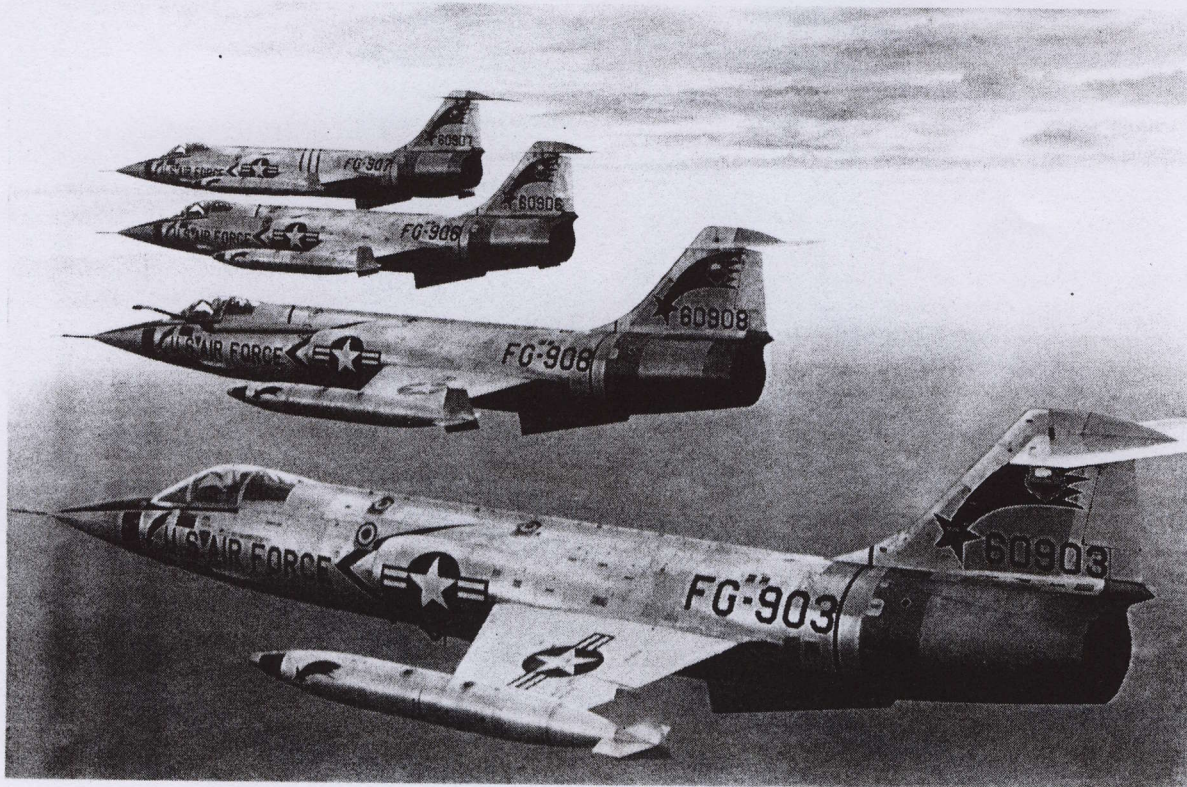
UNCLASSIFIED

SAC'S TOP TEAM

(AIRCREW PROFESSIONALISM)

5-8908-28
009205-46

★ OPERATION STAR BLAZER ★



Brig. Gen. Avelin P. Tacon, Jr., Commander 831st Air Div. (TAC) George Air Force Base, Calif.

Operation Star Blazer was conceived, planned and executed with only one goal in mind: to prove the capability of the F-104C to deploy nonstop to overseas areas. Not until this capability had been demonstrated successfully could the Star Fighter be considered a full-fledged member of the Tactical Air Command weapon system.

The actual deployment flight was an anticlimax because, as in any successful operation, most of the hard work had been accomplished before the first aircraft was airborne on the deployment. Our preparations for the Star Blazer flight were broken down into a series of these logical steps:

- Plan the profiles and decide upon the best one.
- Correlate the cruise control figures in the Dash One to formation flights.
- Decide upon a configuration for the flight.
- Flight test the entire profile and configuration in the same size formation that we would use on the trip.
- Pick the pilots and give them whatever extra training might be considered necessary for the flight.
- Prepare the aircraft.

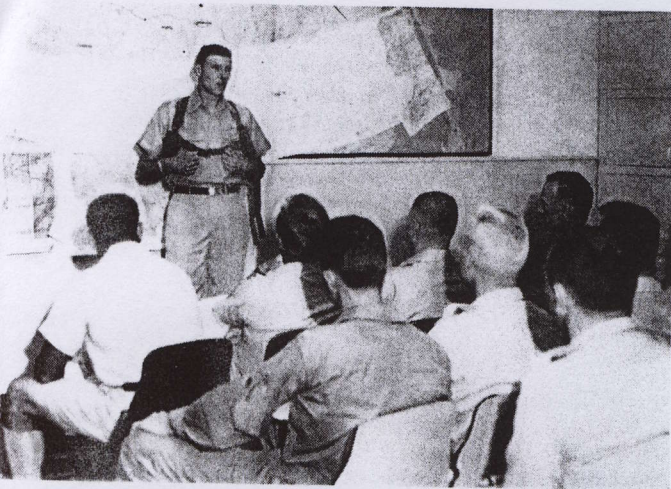
Deciding upon the profiles was a time consuming job.

The route to be flown was the standard Tactical Air Command deployment route through the central Atlantic from Myrtle Beach AFB, South Carolina, to Moron, Spain. Various combinations of refueling areas and recovery bases were discussed. The recovery bases along this route are rather limited so the discussions were more concerned with the minimum fuel requirements that we should establish for aborting aircraft. We did not want to use the minimums established for our other fighters because our F-104/J-79 combination has better fuel consumption at light weights—when you're sweating out those last few pounds—than other fighters seem to have. Less fuel is required for the instrument letdown and GCA pattern so we felt that we could safely establish lower fuel minimums, thus increasing the probability of getting all the aircraft over without compromising safety in any way. In profile planning for a deployment such as this, the recovery fuel minimums are the baseline from which we work to plot our refueling areas.

Our concept of peacetime deployments does not include air refueling beyond the point of no return. After trying several combinations, we finally decided upon a profile which met the essential conditions of safe fuel minimums over recovery bases and destination, including weather



Above, General Weyland accepts the first F-104C from Lockheed Vice President Burt C. Monesmith. Below, 1st Lt. David L. Perry, George AFB, briefs crewmembers on use of personal equipment.



Above, one of the three refuelings that enabled General Tacon's flight to fly nonstop to Spain. Below, to the victor go the spoils. General Tacon is blinded by the beauty of two welcoming Senioritas.



alternates, and the minimum number of refuelings compatible with this so that we would not waste tanker sorties. The mission profile and the exact location of refueling areas is classified information, but in general terms, the refuelings were in the Bermuda and Azores areas.

While performing the profile planning, we were verifying the Dash One cruise control figures. Every fighter pilot knows that the difference between fuel consumption for the leader and for Tail End Charlie can vary from quite a bit to ridiculous. What we needed were averages for the formation, as well as techniques that would reduce to a minimum fuel variances between the different formation members. As our plan called for deploying in a six ship section, this was the size formation we were interested in.

After many trial flights in two ship elements, we finally came up with what we considered the optimum configuration and profile. The next step was to test this on a simulated deployment flight to Moron, Spain. The total distance over the planned route from Myrtle Beach to Moron is 3672 nautical miles.

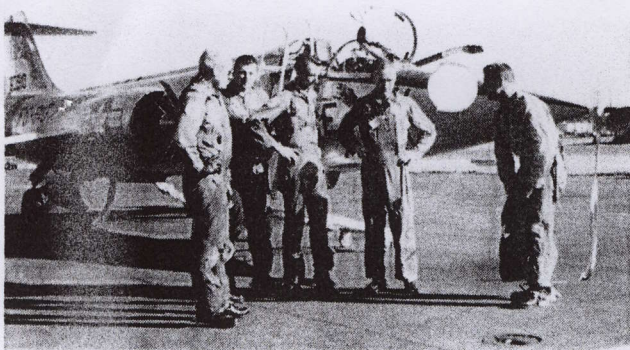
The next step was to get out the map of the Western United States and figure a simulated deployment route that would give us the exact total distance and properly timed refueling intervals. As we had only one refueling area that could be used for this operation, all the flight lines had to converge periodically on this one area.

Anyone who doesn't believe it is a problem should try laying out a flight route under these conditions, especially when the entire route must be kept in the general West Coast area so that in the event aircraft do abort they are not strung out all over the country. After all of the lines were drawn on the map, picking another name for the exercise could have been a cinch—Operation Spiderweb!

Finally we were ready, and a practice mission was laid on. Tanker sorties were allocated, ATC clearances obtained, and data cards given to each pilot to record the cruise control information we needed. The flight was to be made with six primary aircraft, with two spares going to the first refueling area northwest of Las Vegas. We planned on having two aircraft abort to Nellis AFB to test our planning figures for aborting aircraft.

It would be nice if we could say that the practice mission went well and according to plan. It didn't, not by any stretch of the imagination, which is probably why we have practice missions. We were plagued with aborts, both receiver and tanker, so we plotted quite a bit more data on aborting aircraft than we either planned or wanted. We did get four F-104Cs around the entire circuit, however, and obtained the formation cruise control data we needed. With our planning figures confirmed, we knew the flight was feasible. Only one other factor had to be considered before we requested authority for the flight: aircraft and engine reliability.

The first F-104C arrived at George Air Force Base, California, in October, 1958. As is usual in a new weapon system, we had aircraft and engine problems. Before launching on a transatlantic flight we wanted to be sure that the aircraft and engine were ready, that we were not rushing things. Nothing can set a program back faster than dumping an aircraft in the Atlantic somewhere off the Azores on its maiden deployment flight. This line of reasoning was not entirely objective, either: there were eight pilots who took a rather subjective viewpoint of this aspect of the exercise!



Five of the six pilots making the trip are shown. l to r: Capt. John S. Burklund, Capt. David G. Harston, 1st Lt. Robert Cordle, Maj. Robert O. Shimp, Gen. Tacon. Missing is Capt. David B. Clardy.

Our greatest problem with the aircraft had been afterburner nozzle failures while in flight. A fix had been made which an accelerated flight program on selected aircraft had verified. We were convinced that neither the aircraft nor engine would let us down, so authorization for the flight was requested. We received approval and 25 August 1959 was the date set for departure.

On 23 August 1959, we left George AFB for Myrtle Beach with 10 F-104Cs. The plan—to fly nonstop with one air-to-air refueling near Wichita Falls, Texas—went according to calculations, except for one aircraft which exceeded fuel minimums for hookup and had to abort into Tinker AFB, Oklahoma. This aircraft rejoined us at Myrtle Beach the next day. The flight from the air-refueling area to Myrtle Beach was uneventful. Our en route maintenance team arrived at Myrtle Beach shortly after we did and the aircraft were turned over to them for final preparation for the flight.

Launch hour was set for 1000 Zulu time, 0500 local. This meant a predawn takeoff and join-up. In anticipation of this we had given every pilot a recent afterdark takeoff. Although our weather in the desert is almost always clear, the nights are pretty black, so we had been able to get some black-night, no-horizon takeoffs. Training like this is mandatory for predawn takeoffs in a coastal area such as Myrtle Beach. As it turned out, we didn't need the extra training because the weather for our predawn takeoff was clear with a final quarter moon shining. But we were prepared for the worst.

On the afternoon of 24 August we held a general briefing to go over the mission once more and to re-emphasize the air rescue portion of the flight. Although we had covered these things at previous briefings at George AFB, we again went over the en route air rescue facilities and communications, and the proper techniques for overwater bailout so that the maximum chance of pickup would be assured. Since this briefing was given by local air rescue people, we were certain the information was accurate and up to date.

At the termination of the general briefing we went into crew conditioning. Myrtle Beach has the best crew-conditioning facilities I have ever seen; the base is to be complimented. The facilities are in a permanent building near the hospital, completely air conditioned and completely blacked out. The convenience and comfort this affords can be appreciated only by those who have tried to sleep in the middle of a hot, bright summer afternoon, before an important mission!

Briefing was set up for 0200 local time following flight planning at 0100. Actual flight planning for all flights was performed by the mission leader and mission opera-

tions officer. I am a firm believer in having the mission leader do the final planning and take care of making out the flight plan and log. This is the only way he can get a feel for the mission. There is nothing worse, in my opinion, than just handing a mission leader a flight log, strapping him in an airplane, and giving him the go signal.

The final briefing was not too long. It covered only last minute details on direction of takeoff, form-up, and times and fuel consumption figures for flight logs. We allow plenty of time between briefing and start-engines so that the pilots are not rushed during their preflight walk-around inspections of their aircraft. We believe that on missions such as this the pilots should be fastened in the cockpit and have completed his final cockpit check at least five minutes before start engines. This gives him time to settle down and get all squared away for the mission; it is not the time or place for hurrying!

Takeoff, by individual aircraft, was on time. As previously mentioned, the weather was clear with a last-quarter moon. The F-104 accelerates rapidly on takeoff and is extremely hard to spot in the dark; this makes night join-ups difficult. Our join-up was spotty, with one or two elements together and some separated. Since we had anticipated this, we'd arranged for the nearby radar stations to vector us together for join-up. The GCI station did an excellent job and in about 10 minutes we were in formation—six primary and two airborne spares—and on our way.

About 20 minutes prior to our first refueling, we established radio and radar contact with our tankers for vectors and ranges to the rendezvous. We made visual contact and hooked up without incident. Drop-off was effected at the predetermined coordinates and the six primaries continued on to the next refueling. Two somewhat disappointed airborne spares turned around and headed back to Myrtle Beach.

The other two refuelings were exact replicas of the first. Radio and radar contact with our tankers was excellent; we were vectored to the rendezvous points without any problems whatever. Our experience had been that air-to-air refueling hookups in the F-104 were comparatively easy. It was certainly verified on this flight.

The weather was clear throughout the flight, with the exception of about 15 minutes of instruments in some high cirrus. Landfall off the southwest tip of Portugal was made on time; 7 hours and 22 minutes after takeoff we were over the high cone at Moron Air Force Base. After a formation fly-by, we landed a little tired but very well pleased with the entire operation.

The return flight was as uneventful as the flight over. We did experience one day's delay because of weather at an alternate air base in the Azores, and then several days' delay due to higher priority missions going through and using our tankers. On 2 September, at 1000 Zulu time, we launched for Myrtle Beach. Just 5 hours and 30 minutes after takeoff, we were over the high cone at Myrtle Beach.

After a rapid turnaround, we departed for Tinker AFB as the next stop on the way home. At Tinker, we all seemed to run out of steam simultaneously, so rather than risk a tired-pilot type accident, we decided to fold up for the night. The next day we had to wait out a typical Oklahoma thunderstorm before we could get off. It was here that our first aircraft went out of commission. We had gone all the way to Spain and back to Oklahoma without

an abort or any trouble. Perhaps because of the soaking from the hard rain, when we started engines one of the aircraft had so many warning lights flashing in the cockpit that it looked like a pinball machine! Leaving the broken bird at Tinker, the five remaining aircraft proceeded to George AFB without further incident.

The ease with which the deployment was accomplished certainly belied the hard work that many people put into the preparation. Maintenance personnel spent long hours both in support of the preparatory training missions and in readying the aircraft for the actual flight. The pilots, too, expended many hours both in training flights and in ground training. We tried not to overlook any possibility that might contribute to the successful execution of the mission. For example, we had the pilots perform in the instrument trainers all of the published instrument let-

downs along the route and at the terminals so that they would be familiar with them in case of recovery in weather. We practiced wet dinghy drill to polish up our techniques in releasing the parachute canopy disconnect and in getting into the dinghy. This drill also served to test our anti-exposure suits for leaks. Although predicted water temperatures indicated no requirement for the suits, again we wanted to be prepared. It was fortunate that we tested the suits because most of them leaked.

The myriad of little details such as these can mean the difference between success and failure. Once the mission is launched, you are entirely dependent upon the effort you have expended in preparation. You just can't beat the timeworn concept that having well-trained pilots flying properly maintained aircraft on well-planned missions will inevitably result in successful operations. ▲