EAA Chapter 81 Meeting Minutes
January 16, 2021

Meeting was called to order by President Erik Fjerstad at 1001 at the Ryan Field meeting room. Each attendee had his temperature checked at the gate, wore a mask, and chairs were 6 feet apart.

Secretary's report: Quashed before it began. Again.

Treasurer's Report: Kevin Byers had to attend the simultaneous Corsair Condos owners' meeting, but left a report with Erik; it was summarized and can be found on our website: eaa81.org.

Visitors: Tim Fisher from Modesto has a Long-EZ. Roberto Guerrero is an instructor operating out of Nogales International Airport. He earned his ticket at Flabob, the home of EAA Chapter 1! Austin Lambert is working on a glider license. Jim Day of Limon, Colorado is interested in flying.

Old Business: None

New Business: Larry Wilson, who has recently finished Phase I testing of his Zenith CH-701 has decided to sell it and perhaps replace it with an airplane somewhat larger and easier to get into. He has over $50K invested in the Zenith and will sell it for $40K. Another prime example of how to make a small fortune in aviation: start with a large fortune.

And now, what we've all been waiting for: Former Chapter 81 President Tito Sanchez's presentation on his experience flying the mighty F-104, which current President Erik Fjerstad informs us is actually faster than the F-16. Secretary Bob Miller misheard Erik (imagine that, a pilot with a hearing problem!) and thought that Tito had flown the F-4 instead. Erik caught this error and corrected the Minutes of the December meeting before anyone could become aware of Bob's humongous mistake. Until now. Thanks, Erik.

Tito started out as a child, and by the time he was 16 he was sneaking flying lessons without Mom's permission; Grandpa was the culprit! At age 22, Tito entered Air Force pilot training. Skip ahead a few years, and he retired from being a Delta Airlines captain at age 61.

Puerto Rico had the F-104 for 16 years and never lost a pilot (but did lose three aircraft). The Lockheed F-104 Starfighter was a Kelly Johnson design, as were the U-2 and SR-71 Blackbird, and he even was on the teams that developed the P-38 Lightning and the P-80 Shooting Star, the first U.S. operational jet fighter. Designed as an interceptor and a fighter-bomber, the F-104

came about after Johnson interviewed Korean War pilots, asking what they wanted in a fighter. The answer was: speed, altitude, and maneuverability. Well, they got the first two, anyway. The F-104 achieved many firsts: the first production aircraft to achieve Mach 2, first to reach 100,000 ft. after taking off under its own power, first to be equipped with the M61 Vulcan auto cannon (6-barrel 20 mm Gatling gun) and (2) M-9 Sidewinder missiles, and first (in 1958) to hold the records for airspeed, altitude, and time-to-climb simultaneously. Tito says that it is so easy to "bust" Mach 1 (no afterburner is required), that the Group Commander frequently would ask pilots why there was a sonic boom. Although it was a fast interceptor, it lacked endurance and payload and the Air Force got rid of it after only 11 years. Puerto Rico's F-104s came from Viet Nam and they kept them until 1975, when they were replaced by the subsonic Ling-Temco-Vought A-7 Corsair II. While still flying the F-104, Tito had his Mach 2 certificate signed by no other than Tony LeVier, Lockheed engineering test pilot who was instrumental in proving the P-38 Lightning design. In Puerto Rico, Mach 2.1 at 33,000 ft. was done only in training, as it "burned too much gas".

Tito began flying the F-104 at age 24 and found it to be not much different from the Northrop T-38 Talon in which he had trained, with similar handling and panel. The T-38 was the first supersonic jet trainer, the most-produced, and is still in service in many countries. With all the wisdom of a 24-year old, Tito said of the F-104 that "any idiot could fly it". Early F-104s were underpowered with their Wright J65 engine, but the later F-104A Tito flew was equipped with the J79-GE-19 with 11,900 pounds of dry thrust (17,900 with afterburner). The later model also had the Lockheed C-2 upward-ejecting seat (minimum ejection speed of 90 knots), a huge improvement over the early Stanley C-1 downward ejecting seat, named by the Germans "erdnagel", which translates "ground spike". In fact, the German public called the F-104 the Widowmaker, having lost 116 pilots and 292 of their 916 F-104s.

Navigation was by TACAN (Tactical Air Navigation system), a more accurate version of VOR/DME. and there was even an ADF! Air Defense Radar was, per Tito, "a piece of junk; eyeballs were the only thing that found the target". Air-to-ground operations were compromised by the "home-made" bomb sight.

So, what's it like to fly the F-104? The wings are very thin; many airmen suffered head wounds from bashing on the sharp edges; in fact, a metal cover was made to soften the edge while on the ground. Tito says that his RV-12 has more wing! A GPU (Ground Power Unit) provided compressed air for the pneumatic start. There is a 4-stage afterburner; during a formation takeoff, the lead pilot had to throttle back so that the wing men could keep up. During a night formation takeoff, the afterburner display is "a good shot of testosterone", says Tito. Takeoff is done with half-flaps until reaching 350 knots. The F-104 could carry two 500 pound bombs, but for bombing practice, it was instead equipped with four 50 pound bombs. Experience (and some great mentors) taught Tito that, to hit the ground target, you had to fly over it, never mind what the sighting instruments told you. There was a no-cross line, which meant that you could not fly too close to the target or your score would be reduced by the range officer. Acoustic sensors "heard" the bullets on strafing runs. Refueling in the air was easy with the fueling probe in plain sight, unlike that of the F-101, which had the fueling probe so far back that it could not be seen by the pilot. Refueling was important, because the F-104 has an endurance of only 1/2 hour ((2,200 pounds of fuel with tip tanks). The A-7 has more range. All F-104 strafing and bombing runs are done at 400 knots. Slow to 200 knots to be able to put down full flaps and the landing gear. Low-speed flight is aided by the BLCS (Boundary Layer Control System), which blows bleed air over the extended flaps to keep the boundary layer attached. The problem was,

the BLC air flow changed with engine power changes! The stick shaker pushes the stick forward, important, as the stall is vicious. Landing speed is 170 knots plus 5 knots for every 1000# extra, which Tito says never happened. If you lose the engine on approach, you leave the airplane, because it is not recoverable. Tito says that the F-104 slowed down rapidly when the throttle was chopped and the drag chute was not needed. The F-100 and the A-7 were another story.

Other tidbits: Tito says that Puerto Rico is 35 miles North-to-South and 100 miles East-to-West; "We're all related!" This applied even more to the Air National Guard, which Tito called "a family affair". Officers, cleaning guys, administrators, all were invited to social events.

The first Air Force plane in Puerto Rico (1947) was a Republic P-47 Thunderbolt.

Tito belongs to Mach Deuce, the Royal Order of Starfighters.

Tito also had the rare privilege to be the personal pilot of the Adjutant General of Puerto Rico for a year, flying the C-131, which is the military version of the Convair CV-440. "It was a lot of fun." It had no weather radar, so night-flying was avoided. The flight engineers were all chefs so the food was great. Time from San Juan to Miami was 5 1/2 hours, to Andrews, 10 hours. The AG held Tito in such esteem that he asked his opinion about what Puerto Rico's next fighter aircraft should be. Tito, having done a lot of over-water flying, liked the idea of two engines and recommended the F-15, but the AG instead chose the more-sophisticated (but single-engine) F-16.

After this amazing presentation, random items were discussed in our usual disorderly fashion.

There was a lot of interest and discussion about getting vaccinated for COVID-19

President Fjerstad asked for suggestions for upcoming meetings. February is already booked with Steve Hulland's presentation about the CAP (Civil Air Patrol) Search and Rescue operation here in Tucson. Bob Miller finally got his hangar at Ryan Field and is offering to host a Project Meeting in March.

Glen Allison's Sonex has been out of service but is flying again, and he has finished flying the first of 15 hours of dual training.

The decision on the chapter's Cessna 140 was to reassemble it and get it into a ferry-able condition, figure out its worth, and sell it.

John Phillips wants to repair his RV-3 (built by Tony Bingelis) after a landing incident.

Meeting was adjourned at 1120. The next meeting will be at the Ryan Field Meeting Room on Saturday, February 20 at 1000.

Respectfully Submitted by
Secretary Bob Miller