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Little Jets

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COVER STORY

REDEFINING "AUSTERE"

*"**Austere** adj: having no comforts or luxuries, harsh or ascetic"*

By Art Nalls

The Smart -1 team and their micro-jets "at the ready" in Arizona. *(Courtesy Art Nalls)*

For years, Marines have practiced deploying and operating from austere environments. We had to take everything from beans to bullets, and be prepared to operate upon arrival. If you didn't bring it, you didn't have it. The SMART-1 team recently had to operate in a remote section of Arizona, which by every definition, as austere.

In early September 2019, the largest armada of SMART-1 micro-jets was quietly assembled to support airborne radar testing on behalf of a U.S. Government 'customer.' Aerial Productions International, Inc. (API) brought it's entire fleet, augmented by multiple air show BD-5J micro-jets, along with a host of pilots to fulfill this high-profile testing. As the total number of targets may be sensitive, let's just say we had a 'bunch' of them, with a spare. The total team was very near 20 personnel, and we were required to operate from a very small, remote civilian airfield.

The supporting airfield chosen by our government customer was Gila Bend, Arizona. There are actually two Gila Bend airfields. One is USG owned, but was officially "off limits" for this mission. It's an auxiliary airfield and emergency divert airfield for F-16, A-10 and F-35 using the Berry M. Goldwater range. Just getting on and off base would have been a chore for us. The second Gila Bend is the local municipal airfield, with 5,000 feet and a single runway. For those who've been there, you know it's an isolated civilian airfield, somewhere in the Arizona desert between Phoenix and Tucson. If you haven't been there, let me set the scene. It meets every definition of 'austere.'

It's a single runway, surrounded by desert inhabited mostly by the occasional coyote and multiple families of pigeons. The coyote and we often shared the run-

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way. Only a few transient aircraft per day stop by for some pattern training and perhaps, some fuel. There is apparently a training flight school somewhere in the area, and they use Gila Bend Muni as a training airfield due to low traffic. Most of the students we encountered were foreign and struggled not only with the flying but sometimes with English and a bunch of tiny jets sharing the pattern.

Pigeons greatly outnumbered the operating aircraft, and had taken control of the one, city-owned hangar that we were allowed to use during our stay. The single hangar door hadn't been opened in some time, so the first order of business was to attempt to get that door at least partially functional, with a generous amount of grease and some coaxing.

The second main task was to clean all the pigeon droppings. Our maintenance team spent the better part of a day, cleaning out the hangar. Armed with snow shovels and a pressure washer, there was a lot of pigeon droppings. Locating snow shovels in the Arizona desert was a challenge in itself. Pigeon droppings covered every square inch of the hangar space, the support beams, and anywhere a pigeon could land, including the only other occupant – a 1950's vintage fire truck with six flat tires. They stubbornly refused to give up their home.

Each night, around sunset, they were seen nearby, waiting for the right moment to sneak in and re-take possession. Just as soon as we could pack up, bed down the airplanes, and cover them with a tarp, they retook their roost. Each morning, we chased them out and cleaned up the mess – again. One morning, we had managed to cover every square inch of the SMART-1 jets, except for a small portion of a single wingtip. The next morning, there was a deposit, dead-center on that open space! It was a constant battle for possession of the only hangar available.

But fighting for hangar space wasn't our only issue. Gila Bend does not stock jet fuel, only AVGAS is available from a self-serve tank. We had to truck all our Jet-A in from Tucson. We couldn't find a single supplier willing to supply the relatively small amount we'd need for the exercise, so we had to do it ourselves. We leased a fuel truck and obtained the necessary hazardous waste training from Millionaire in Tucson. Even though the fuel truck was licensed for road use, our maintenance team was not certified for open road driving, so we had to load the truck on a flat bed and truck the entire rig to Gila Bend. Once off loaded, our team was qualified to drive on the air field and

A Smart-1 micro-jet in "austere" Arizona on government business.

(Courtesy Art Nalls)

dispense the fuel. At the completion of the mission, the fuel truck was again loaded on the flatbed and returned to Millionaire. Nothing was simple or easy about this operation!

Once set up, we planned a practice session, to simulate the join up, and positioning for the various target presentations. The SMART-1 micro-jets are so small, that normal formations are not practicable, and this was a 'bunch' of tiny jets. You simply cannot see the jet beyond about 2,000 feet of separation and our customer was calling for great erseparation distances than that in the multiple 'presentations' they wanted for testing. That would require we either had a separate GPS flight plan for each airplane, or very carefully planned sequences and timing.

The first practice was an absolute disaster! Although we were all very experienced pilots, most with tactical military jet experience, we couldn't get joined up on the radio, much less as a flight. So we made some 'adjustments' to our plans, including a lead change. After a few practice missions, we settled on the timing and altitude differences for safe separation and became comfortable operating as a team, beyond visual range, confident everyone was where they were supposed to be, when they needed to be there, all with minimal 'chatter' on the radios.

The terrain varied from very mountainous and rocky to extremely flat. There is nothing in the range, except for a single isolated Native American reservation and a few roads. Temperatures during the heat of the day hovered around 108 degrees F. Turbulence around the mountains was significant due to the extreme heat. That was some of the most violent turbulence I've personally ever experienced. I was reassured that the airplane could handle the gust loading, but not so sure I could. For most missions, the only time we saw each

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AOPA Pitches IPC Reforms

By Dan Namowitz, AOPA

The FAA should permit pilots who must take an instrument proficiency check before acting as pilot in command under instrument flight rules to use aviation training devices to meet their regulatory obligation, AOPA said in a filing proposing major reforms for the IPC.

AOPA also proposed eliminating the recordkeeping requirement for logging 30-day VOR checks for IFR navigation.

Bringing ATDs online for use in IPCs would require dropping the requirement to land from an instrument approach–a mandatory item on an instrument-rating practical test that is not required by regulation on an IPC. AOPA has pointed out that the relevant instrument flight skill to be reviewed on an IPC is not the landing, but "is the pilot's transition from flight solely by instruments to visual flight."

A related reform to make ATD use possible would be scrapping the circle-to-land procedure from IPCs, an improvement that would reduce training costs, add efficiency, and conform to the industry's goal of encouraging stabilized approaches as circling procedures are phased out of use.

AOPA first proposed ATD-related IPC reforms in 2018 and is again emphasizing their importance as a participant in the Airman Certification System Working Group, said Rune Duke, AOPA senior director of government affairs for air-

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other was on takeoff and occasionally returning in the landing pattern. It was takeoff on time, a brief join up to achieve the desired presentation, enter the range, and begin your run on time.

After we entered the target range and were in the target runs, we had to rely on each other to be at the right place, the right altitude, and at the right time, flying the right profile. We developed code words so that each member would know approximately where the other planes in the flight were and could keep safe by de-conflicting altitudes. We had to trust each other.

Add to this, the airshow airplanes that augmented our fleet have a smaller engine than the SMART-1's jets and carry less fuel. Our customer knew this in advance, and could accept this concession for some of the runs. So our first runs were usually a bit slower to compensate for those differences. After those airplanes returned to base, our SMART-1's could increase the speed and provide a few more target runs. We also managed to ad-lib a run or two on the return to base, as our customer could reposition much faster than we could, so that was actually value-added to them.

After three days of target testing, with flights twice per day, I'm proud to say the entire API team had 100 percent mission availability. We also made 100 percent of our time on and off the range – within a minute. This is a critical factor as this particular range is very heavily used by the USG and there is often someone waiting for the previous user to exit, before they can enter. Time is money so we can't afford to be late!

None of this would have been possible without the generous support of Gila Bend Municipal, and the town of Gila Bend. They generously loaned us the only available hangar and offered what they could to support us. Their support was critical for the API team to provide this service to the USG. Thank you, Gila Bend! We hope to be invited back in the future.

A Smart-1 micro-jet upon completing a government mission.

(Courtesy Art Nalls)

Congratulations the entire API Team for a completely successful, and safe target mission! Not only did we complete 100 percent of our tasks but we did it with virtually nothing, in the middle of nowhere, and in extreme heat. We re-defined the meaning of operating from an 'austere' environment, and demonstrated that we are the 'can-do' team.

Now, it's on to Alaska in the wintertime. Seriously – that's no joke. Yesterday's high was 18 below zero degrees F at the test location, but more on that later. We may re-define 'austere' yet again!