



RPV's Make the Difference

by

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What will the fighter pilot's chances be when that bird out there is the real thing, a MIG-21 . . . or a supersonic bomber making a run toward targets within the United States . . . or some other modern jet making an attack?

If he is a pilot of the Aerospace Defense Command, his chances will be good because he has experience resulting from weapons firing training and evaluation against remotely piloted vehicles (RPV) at the Air Defense Weapons Center.

RPV's have been around a long time, down along the northwest Florida Gulf Coast area at Tyndall Air Force Base. Here the Teledyne Ryan Firebee jet has been in operation as the prime target for pilots sharpening their air defense skills.

Because this remotely piloted vehicle is the nearest thing to a hostile aircraft, pilots who train against the Firebee will have a better chance against an actual attack. Not just a clay pigeon, this bird is a real jet aircraft. It flies like one. It maneuvers like one. Returning combat pilots confirm they must train against a maneuvering jet to be really prepared.

Those pilots who train at the Air Defense Weapons Center will know just what to expect when the chips are down. They'll know because they have flown against, fired against, and scored against an RPV that strongly simulated an aircraft being flown by an enemy pilot.

It was seventeen years ago when the Firebee entered the air defense picture at Tyndall Air Force Base, home of the Air Defense Weapons Center, and every pilot within the Aerospace Defense Command has at one time or another pitted his skill against the elusive high-speed and high-flying target. Today, ADC requires every pilot within the command to deploy to Tyndall at least once each year for the Weapons Center's weapons firing program. The drone target, operated by remote control, simulates an enemy invading American airspace.

ADC fighter pilots pit their skill and weapons against the Firebee in a test program conducted by the 4750th Test Squadron. The purpose of the program is to determine how well the weapons perform and to test any recent modifications. The Weapons Center hands down directives on which tactics the pilots will employ and what particular weapons will be fired. Fighter squadrons participate in the program as a unit.

Objectives are designed so as to determine overall ADC interceptor systems capabilities and

effectiveness. Each deploying unit at the Weapons Center is assigned different test conditions to satisfy the overall command objectives.

Although weapons testing involve the entire squadron, only a limited number of aircraft deploy to the Weapons Center at any one time. As each interceptor weapon system is qualified by successfully firing its armament load, the aircraft and freshly trained aircrew return to home base to resume air defense alert. The rotation continues until all aircrews in the squadron have fired and qualified their weapon systems. Air National Guard units also undergo the same rigid program at Tyndall.

This program prepares the pilot to operate his weapon system at maximum effectiveness in the tactical air defense role where the threat is a high-speed, highly maneuverable enemy aircraft. The tactical air defense role may be defined as the composite of flight tactics and weapons employment procedures for the purpose of protecting or attacking a tactical strike force in a radar-controller environment.

Although ADC pilots are in constant training and have the opportunity annually to fire live weapons against the Firebee, ADC's biannual Project William Tell held at the Weapons Center provides an even more realistic test for pilots, maintenance crews, weapons controllers, and munitions loading teams as they work under the closest possible simulation of combat conditions.

It is the proving ground for our aerospace defense network, Lieutenant General Thomas K. McGehee was quoted as saying following the 1972 William Tell.

Pilots firing against the Firebee in the competition voiced unanimous praise for the target systems.

It was there one minute and gone the next, said one pilot, recalling the evasive maneuvers executed by the Firebee under remote control.

Major Frank P. Walters and Captain David J. McCloud, members of the 2d Fighter Interceptor Squadron, were the first and last pilots to score kills against Firebee's in the 1972 William Tell competition. Les Allouettes missile hit came as a tie breaker.

My Firebee was as realistic as any enemy aircraft I hope to ever go up against, noted Walters, praise that was echoed by his teammate McCloud in debriefing sessions.

The first of the drones used at the Weapons Center was the Q2-A. Then came the more modern version of the Firebee, the Q2-C, or as it is known today, the BQM-34A. Now the newest of Teledyne Ryan's remote-controlled targets, the supersonic Firebee II, is being tested at Tyndall and will soon become operational for the first time in the U.S. Air Force.

The air defense mission of the Firebee started 1 July 1957, when the 4756th Drone Squadron

was activated at Tyndall. The squadron was established to organize, equip, administer, maintain, and train personnel to provide remote-controlled target aircraft for practice firing by ADC units deployed to the Weapons Center. The squadron would also support test projects and provide land and water recovery for target drones.

Shortages of trained personnel and various equipment caused delays, but one year later, on 3 July 1958, a B-26 aircraft soaring over the Gulf of Mexico firing range air-launched the first remote-controlled target from Tyndall.

Although this first target flew off into a thunderstorm and was never seen again, the launch marked the beginning of a new era in weapons firing training for pilots charged with the awesome responsibility of air defense. It was the start of a program that would give our pilots a mark of expertise.

The day of the towed sleeve target, a carry-over from World War II, was gone!

Favorable response and great enthusiasm were noticed from the very first by pilots flying against the Firebee. One pilot returning from a mission stated, streaking through the air at high subsonic speeds, the Firebee made a startling contrast to the towed banner targets previously used in the firing program at Tyndall.

Another pilot stated emphatically, The Firebee gives realism and the feeling that you are coming to grips with a foe, which is a much greater challenge to our skills and airplane.

It's so different from firing at a target being towed at only half the speed of which my aircraft is capable, still another said.

One month after losing their first target, the 4756th Drone Squadron successfully completed a launch and recovery sequence. About the same time the Air Force gave the green light for the World-Wide Weapons Meet and announced the Firebee would be used as targets for pilot competing in the first of several William Tell projects to be held at Tyndall.

The targets proved highly successful in the firing competition, and the Drone Squadron's skill increased in the target launches. In the summer of 1959 the squadron successfully launched its 200th target from a B-26 aircraft.

A first came in September of that year when the squadron launched dual targets in a test flight designed to give pilots in the 1959 Weapons Meet a more realistic battle condition. The first successful dual launch was from the B-26, and control was exercised by ground controllers at the Apalachicola, Florida control site. Both targets were successfully recovered after flying at altitudes of 25,000 and 30,000 feet respectively. Both were controlled for 42 minutes in the designated orbit prior to water recovery.

A record launching of 79 targets in the 10-day William Tell in October 1959 was another

remarkable feat, but records continued to be set by the Firebee as the Drone Squadron personnel's skill increased.

Early in February 1960 a new and advanced type of drone target was in the testing stage at Tyndall. The new target was the Ryan Q2-C, the improved version of the first Firebee. It had more powerful engines, could climb faster and higher.

But even as the testing program went on, the Q2-C was setting records, and by June 1960 the Drone Squadron marked its 500th launch. It was also in 1960 that the Lockheed C-130 went into use as the aerial launch vehicle necessary to carry the heavier target.

The year also marked the organization of the 4756th Field Maintenance Squadron to meet the requirements of ground-launching of targets, a new launch method that was being tested. In the meantime the 700th aerial launch was made, and another milestone was reached as more than 100,000 miles had been flown by targets in the air defense role at the Weapons Center. And finally it was time to retire the Q2-A and let the newer target assume the enemy role. It was 1 July 1961. The Drone Squadron launched number 739, and the Q2-A was phased out.

New Firebee records were constantly being set at the Weapons Center. On 13 December 1961 a flight record was set as a target was flown 97 minutes to break the old record of 87 minutes. The mission was a normal Weapons Center training flight and was at an altitude of 45,000 feet.

By 1962 it was deemed necessary to find other means of recovering the expensive targets, other than water recovery, as the salt water caused considerable contamination and corrosion, resulting in increased maintenance and turnaround time.

Pinpoint land recovery was the solution, and tests at the Weapons Center proved that drones retrieved in this manner suffered only minor damage and were returned to serviceable condition in less time. While open-sea parachute recovery is still procedural in some instances, Tyndall's Firebee operation normally includes recovery in an open land area on the base. An 85-foot recovery boat is maintained at Tyndall for Firebee retrieval as required.

The 1000th target was launched 8 May 1962!

It was in this time period that Air Force program managers developed electronic scoring systems that telemeter near-miss distances of weapons fired to a ground control station. Actual weapon kills against Firebee's were no longer necessary with this advance in the determination of weapon effectiveness.

The benefits resulting from the electronic scoring systems saved money for the Air Force, established accurate standards by which weapon effectiveness can be judged without the loss of Firebee's, and added to the sophistication of target operations at Tyndall.

While the 4756th Drone Squadron was establishing a Firebee legacy at Tyndall over the years of

its flight operations, Teledyne Ryan Company's Firebee field service teams were providing constant support.

In the William Tell Weapons Meets, special teams of Ryan technicians worked in close harmony with the Drone Squadron. It was in 1965 that Ryan sent a 47-man unit to Tyndall for the biggest, most challenging World-Wide Weapons Meet in history. Pilots competing in this event set all-time records in weapons effectiveness: Firebee missions zoomed to all-time highs; new target reliability marks went onto the boards; and the Meet established new standards for Firebee operations at Tyndall.

Brigadier General Thomas H. Beeson, commander of the 73d Air Division at Tyndall, described it as the most successful weapons meet conducted by the Air Force and said the Firebee's were the most effective targets flown in this event.

A new flight record in remote-controlled aerial targets was set at Tyndall in 1969 when three Firebee's soared into the air at one-hour intervals, each on its 38th flight. They broke the old record of 37 flights by a jet drone target held by the Navy's Pacific Missile Range at Point Mugu, California.

Since that historical 38th flight, one of the three targets launched that day has gone on to mark up an almost unsurpassable record of 87 flights.

The many repetitive missions flown by the Firebee's represent a big dollar savings for the U.S. Air Force.

Today, Teledyne Ryan, the Air Force Systems Command and the Weapons Center are working together on testing the new supersonic Firebee II that will provide a more realistic enemy by its speed. This bird was introduced to the Air Force and the Aerospace Defense Command at a rollout ceremony at Project William Tell 1972. Since that time several successful test flights have been conducted by the Air Defense Weapons Center. Additional tests are scheduled before it becomes an operational target for the ADC weapons firing program.

Matched against superior fighter aircraft of advanced design, Firebee II will fly dual missions. Carrying an external fuel cell, it will first present itself as a subsonic target. Upon completion of that mission the external cell is jettisoned, providing a supersonic configuration for its Mach 1.5 dash.

For 17 years the Firebee has been the practice enemy for pilots of the Aerospace Defense Command. But in playing the game for real, a potential enemy can be deterred from aggressive acts against the United States and its allies only if he is convinced that our military power and national resolve are such as to do him unacceptable damage if he starts an armed conflict. Aerospace defense with the capability to provide warning and active protection against attack is an essential ingredient for convincing any would-be aggressor that this country does possess such power and resolve.

The Aerospace Defense Command provides the deterrent to direct attack. The command tells any potential enemy he cannot count on surprising us and that an indeterminate portion of his attacking forces would never reach their targets in this country.

Where does today's aerospace defense team acquire the essential skills necessary to detect, intercept, identify, and destroy any hostile fighter or bomber aircraft and thus provide the vital deterrent? Charged with this awesome responsibility is the Air Defense Weapons Center at Tyndall AFB, Florida. This is where expertise in air defense is expected as part of everyday living.

The Weapons Center, under the command of Brigadier General Carl D. Peterson, is charged with responsibility for a variety of missions, all tied directly to combat readiness training for the Aerospace Defense Command. The Center provides a single area within the Department of Defense for the centralization of operational and technical expertise on air defense.

It is at Tyndall where ADC fighter interceptor pilots undergo an annual weapons firing program where pilots get advanced training in the supersonic F-106 jets where pilots learn the latest tactics where tests are conducted for Aerospace Defense Command to make sure that new equipment and tactics fit the defense mission. Weapons Center personnel also direct the Bomarc B and Mace target launch activity conducted by the 4751st Air Defense Missile Squadron at nearby Hurlburt Field, in support of weapon system development and evaluation.

It's a big job, this mission for air defense, and the remotely piloted Firebee has played a big and important role in giving this deterrent capability to the fighter pilots of the Aerospace Defense Command. It will make the difference when the chips are down!

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Contributor

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