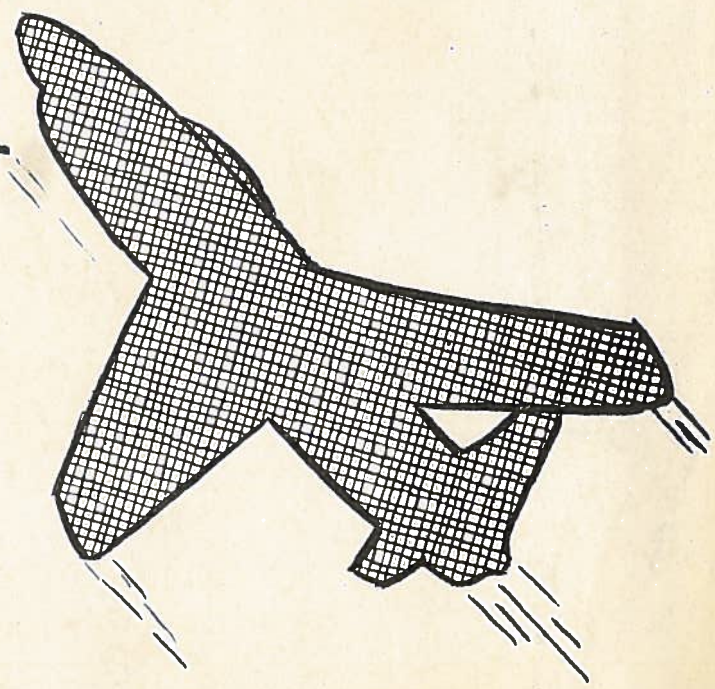
THE WORLD-WIDE USAF AIR-TO-AIR *Rocketry Competition*



YUMA
ARIZONA
Oct. 3 - 7
1955

Interceptor Phase, USAF Fighter-Gunnery & Weapons Meet

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General Background

YUMA, Ariz., October 3 - Planes that close on targets at 1,000 feet per second, firing rockets at 2,600 feet per second provide the backbone of the air defense of this country.

The ability to place destructive explosives in the vitals of enemy aircraft day or night, in all weather necessitated a combat procedure which is called "lead collision course firing", a right-angled approach on the target by the attacking plane.

In the trade, this is referred to as "thunderbolt geometry", a combination of lightning speeds and the old geometric theorem that "two straight lines can intersect at only one point".

On February 1, 1954, The Air Defense Command launched its pioneering air-to-air rocket firing program at Yuma Air Base, under direction of Colonel Robert F. Worley, of Chanute, Kansas, who is still in charge of this switch from conventional gunnery to faster moving and more devastating rockets.

In June, 1954, the first USAF-wide air-to-air rocketry competition was staged in Yuma, and was won by a team from Moody Air Force Base, Georgia, representing Hq Air Training Command.

Eight Teams Compete

The 1955 competition has drawn three teams from the Air Defense Command (one from the 26th Air Division, representing Eastern Air Defense Force; one from the 33rd Air Division, representing Central Air Defense Force; and one from the 28th Air Division, representing Western Air Defense Force), and one each from Hq Air Training Command, Hq Alaskan Air Command, Hq Northeast Air Command, Hq Far East Air Forces, and Hq United States Air Forces, Europe.

They are all the rocketry champions of their sponsoring headquarters having been assembled by elimination shoot-offs in order to be eligible to come to Yuma.

Several Aircraft Types

There are three competing types of aircraft.

The North American-built F-86D Sabrejet is a one-place plane, the pilot doing the flying as well as the radar observer chore, and without the use of auxilliary pods carries 24 2.75-inch rockets.

The F-94C Starfire, manufactured by Lockheed, is manned aloft by a pilot and radar observer, and has a rocket load of 48 projectiles.

Northrop's F-89D Scorpion, also with pilot and radar observer accommodations, has an arsenal capacity of 104 rockets.

Target Towships

There are two target towship units.

For the rocket-firing passes at 18,000-foot elevation, the B-29 squadron does the chore, dragging 5,000 feet in its rear a banner target which is 9 x 45 feet in dimension (the measurement of the Russian TU-4), to which two metallic spinners are attached for the radar directed fire control system to "lock on".

On those rocket firing runs at 30,000-foot elevation, the jet driven B-45s are used.

These units have the interesting motto:
"We drag 'em, you bag 'em"!

Four Basic Actions

The Air Defense system is built on four basic required actions in case of enemy air attack upon this country -- detection, identification, interception and destruction.

It is the last two of these which are key actions in the world wide air-to-air rocketry competition, and are dramatized out of context with the other two, which are equally important although they are similated in Yuma.

Among those attending to watch the competition are members of Aircraft Control & Warning Squadrons, the radar sites; and 37 honor post supervisors, members of the Ground Observer Corps, who taken altogether form our surveillance system in air defense and are deeply concerned with the first two basic actions, detection and identification.

The Reasons for Rocketry

The air power story as a combat element began in World War I when planes on routine courier and reconnaissance missions began to take pot-shots at each other.

This matured into the dog-fight procedure, in which planes doing a maximum of 100 miles an hour, jockeyed for dominant position in rear of the adversary trying to drill him or set him on fire with machinegun bullets.

During World War II and Korea, the "lead pursuit curve" was devised, which brought the attacker curling in from an angle at the rear of the target laying his bullets and cannon shots across the nose of the enemy.

Yuma's conversion from conventional gunnery to rocketry became necessary to cope with onrushing demands for an all-weather fighter-interceptor force, one which could fly and fight day or night no

matter how turbulent the elements. No longer can the USAF depend on "gun weather" and "visual sighting", but now has to be able to shoot quickly, decisively, accurately, and blind.

Rise of Electronics

The key to the precision firing of air-to-air rocketry is the Hughes fire control mechanism, which is mounted in all air defense aircraft.

Other than a blip on the radar scope, it is not necessary for any pilot or radar observer, or combination of them to actually see the target.

Action really starts on the apron, where ground crew specialists condition the aircraft.

The radar maintenance technician has to peak this delicate equipment in the plane. The armorer has to insure proper loading and arming of the rockets. And the tuning of the aircraft itself requires the best efforts of many highly trained specialists.

The ground, or interceptor radar controller is the one who must place the plane in the air in line with the target from 23 to 30 miles off as the actual firing pass is made. The pilot can only make the most minor of corrections after that, his rate of closure is so rapid.

When the trigger is pulled, the men in the plane sit back as "critics" rather than "actors" in the drama, while the electronics system actually decides the release time for the rockets.

Air Speed Progression

The climbing air speeds are now reaching staggering proportions.

From the 100 miles an hour of World War I, to the beginning of World War II, aircraft picked up 15 miles per hour per year.

From the start of World War II to 1947, the increase was 40 miles per hour per year.

Since 1947, it has gone up 140 miles per hour per year, and it is still going.

General Partridge says ..

General Earle E. Partridge, the Commander-in-Chief of the Continental Air Defense Command under whose direction the competition in Yuma has been developed, describes its importance this way:

"The best air-to-air rocketry teams in the world are here competing for the title of rocketry champions of the United States Air Force. These men fly and maintain aircraft which attack their targets at 1,000 feet per second, 200 feet per second faster than a pistol bullet. The rockets they fire travel 2,600 feet per second. This gives us all some idea of the kind of men, and the kind of precision which is required for the air defense of this country."

"Every man on these teams -- pilots, radar observers, and the specialists of the ground crews -- is of vital importance in putting these rockets on targets, and in protecting the lives and property of our people as well as the future national life of this country."

Eight teams representing six Air Force major air commands will attempt to wrest the title of world rocket champions from the Air Training Command, last year's victor, in the five-day rocketry meet.

The teams include the rocket champs from the Far East Air Forces, Alaskan Air Command, United States Air Forces Europe, Northeast Air Command, Air Training Command and the three defense forces of the Continental Air Defense Command.

Each team is composed of three major components: the ground radar controller, who locates the target on his radar scope and directs the fighter interceptor to the target area; the pilot or pilot and radar observer, who pilot the aircraft and then follow the directions given them by the controller and the aircraft's fire control system; and the ground maintenance-armament systems personnel, who keep the aircraft and the electronic fire control system of the plane in top operating condition.

The teams fly all-weather fighter interceptors armed with 2.75 lethal rockets each capable of downing the largest bomber known. All rocket firing missions during the meet will be fired under a hood to simulate all-weather conditions and the aircrews will not see the target at which they are firing.

The air-to-air rockets are fired at such speeds that the "lead collision course firing" method has been aptly referred to as "thunderbolt geometry". The attacker comes on the target at right angles, closing on it at 700 miles an hour, and his rockets are fired electronically.

General Earl E. Partridge, commander-in-chief of the Continental Air Defense Command, who has invited all the top hands in the USAF to attend the meet, recently stressed the tremendous speed and precision of these rocketry aircraft and teams.

OFFICE OF INFORMATION
462d Strategic Aerospace Wing (SAC)
Larson Air Force Base, Washington
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LAR 63-9-6

16 September 1963

"United States Air Force Celebrates 16th Birthday"

On Wednesday, Sept. 18, the Department of the Air Force will observe its 16th birthday with ceremonies throughout the nation to commemorate the event. It was on Sept. 18, 1947, that air activities were transferred from the Army to the new department of the Air Force. Thus the Air Force was raised to a coequal status with the Army and Navy.

The key observance will take place in Kansas City, Mo., where Air Force Secretary Eugene M. Zuckert will head a list of dignitaries at an anniversary luncheon and dinner. The luncheon will pay tribute to Missouri's Senator Stuart Symington for his historic role as first Secretary of the Air Force. Later in the day, military and civilian leaders will attend an anniversary dinner at which honors will be paid to former President Harry S. Truman, by whose signature the Air Force became a separate entity.

Larson Air Force Base and the surrounding communities of Moses Lake, Ephrata, and Soap Lake will also take part in the celebration. Plans call for a joint ceremony at the Moses Lake Chamber of Commerce dinner in honor of the 16th Air Force Birthday and the 25th anniversary of the founding of Moses Lake. At this dinner, to be held on the 17th, Col. David A. Tate, 462d Strategic Aerospace Wing commander, will address the gathering. Honored guests will also include Col. Clyde W. Owen, 462d Combat Support Group commander.

Mayors Harry Drittenbas of Ephrata and J. Edward Robinson of Soap Lake have proclaimed Wednesday as Air Force Day in their respective towns. In accordance with this, several civic and educational groups in Moses Lake, Ephrata, and Soap Lake have invited prominent Air Force personnel from Larson to address their organizations of Air Force growth in the past sixteen years.

As has been the case in the past several years, the slogan for the 16th anniversary of the Air Force will again be: "Aerospace Power for Peace."

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4624 Strategic Aerospace Wing (SAC)
Larson Air Force Base, Washington
Area Code 509 769-2325

LAB 63-9-7

16 September 1963

LARSON AIR FORCE BASE, Wash. -- The Property Disposal Officer announces that Retail Sales of Government Surplus Property at Larson AF Base will be temporarily suspended immediately. Sales are expected to resume shortly after 1 Jan 64. During this interim period the store will undergo a complete reorganization and will reopen in new quarters offering a much better selection of available property. The exact date of reopening and the location will be announced prior to resuming sales. Disposal personnel wish to thank the many friends and customers who have visited us in the past and to beg their indulgence during this necessary suspension of sales. They also hope to see all of their old friends and meet many new ones when the sales are reopened.

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USAF BIRTHDAY

SEPT 18 1947
to
SEPT 18 1963
the

16th ANNIVERSARY

Aerospace Power
for
Peace

UNITED STATES AIR FORCE
SIXTEENTH ANNIVERSARY---18 SEPTEMBER 1963
(A CHRONOLOGY OF AIR FORCE FACTS)

1903---Orville Wright made first successful powered and controlled airplane flight at Kill Devil Hill, North Carolina. Wright plane flew 120 feet and stayed aloft 12 seconds.

1907---Present-day United States Air Force began when Chief Signal Officer of the Army established an Aeronautical Division with one officer and two enlisted men.

1909---First military aircraft in world delivered to the Army Signal Corps by the Wrights meeting required specifications of flying at least 40 mph, staying aloft one hour, and carrying 2 passengers.
Lts. Humphreys and Lahm became first military pilots to solo---after only three hours of instruction.

1911---Lt. M. S. Crissy demonstrated dropping of live bombs from an aircraft.

1912---Capt. C. Chandler fired a machine gun from an aircraft.

1914---Congress established an Aviation Section within the Army Signal Corps.

1918---The Air Service showed no significant influence on the outcome of World War I but showed that air power was a distinct possibility. There was a 2-1 ratio of enemy aircraft downed by American aircraft.

1921---Air power showed potential by sinking two battleships in a test of strength.

1932---First blind flight of an aircraft relying entirely on instuments---birth of all weather Air Force.

1934---Air Corps undertook to fly the domestic air mail; experience gained in these operations saved thousands of lives in World War II.

1935---General Headquarters Air Force was organized representing the striking units of the Air Corps.

1942-45---During the early days of World War II the tradition was born that, under no circumstanes, does the United States Air Force quit.
It was the Air Force that slowed and finally stopped the Japanese tide.

1947---On 26 July 1947, The National Security Act separated the Air Force from the Army completely, and raised the Air Force to a coequal status with the Army and Navy.

1947---On 18 September, Stuart Symington, now Senator from Missouri was sworn in as the first Secretary of the Air Force. Thus, the birth of today's United States Air Force.

1948---Air Force carried out "Operation Vittles", the airlift of food and other supplies into beleaguered Berlin. In doing so, the Air Force demonstrated with utmost clarity the validity of its contention that "Air Power is Peace Power."

1949---A Boeing XB-47 Stratojet set an unofficial coast-to-coast speed record of 3 hours, 46 minutes, flying from Moses Lake, Washington, to Andrews Air Force Base, Maryland at an average speed of 607.2 mph.

1953---The Korean Conflict brought to a close because of the relentless hammering of the United States Air Force on the Communist enemy. Air Force had complete domination of the air.

1954---President Eisenhower's National Security Council adopted a global policy of security through nuclear air power which became known as the "New Look."
Bell X-1A flew to record altitude of 90,000 feet.

1955---As a result of a continued buildup of forces and aircraft like the huge, swift B-52 jet bombers the United States Air Force had a military power exceeding that of all the armed forces in history combined.

1956---Awesome new intercontinental missiles stood on the threshhold of operational status.
The X-2 streaked faster and higher than man had ever before flown, reportedly above 1900 miles per hour and to a height of 126,000 feet.
Air Force aircraft were nosing tentatively into the infinite reaches of outer space.
During November, the Secretary of Defense assigned operational control of all long range ballistic missiles to the Air Force, as distinguished from the U.S. Army. Thus the Air Force received even greater responsibilities in a world full of tensions.

1957---The Soviet government suddenly exposed the vast strides that had been made by Soviet science in the field of space vehicles. The Air Force assumed a heavy share of responsibility to meet this new challenge.

1958---Plain readiness of U.S. air power to strike aggressors caused a second thought in high Communist councils in relation to trouble spots such as Lebanon and the island of Quemoy.

1958---1 February, SAC converted to all-jet bomber force.
The F-104 flew at the sizzling speed of 1400 mph.
The USAF put an Atlas ICBM into orbit around the earth. The following day, a tape-recorded Christmas message from President Eisenhower was broadcast to the world from the new satellite.
The USAF fired the Pioneer rocket 71,300 miles into space but failed to put it into orbit around the moon.

1959---The U.S. and Britan established Thor ballistic missiles in England under joint U.S.-British control.

1960---The Air Force hurled missile after missile into test trajectories from Cape Canaveral and Vandenberg. One such flight carried over 10,000 miles to establish a new record.
Reconnaissance satellites were put into orbit around the earth.

1961---The X-15 continued to set new speed and height records by exceeding 4,000 mph and a height of 40 miles.
The Air Force was assigned the major role for military space development.
Of the continued successful firings of advanced models of the Atlas, Titan, and Discoverer missiles, one Atlas was fired successfully more than 9,000 miles.
The epoch-making space flights of Majors Gagarin and Titov of the Soviet Air Force and of Cdr. Alan Sheppard, USN and Capt. Virgil Grissom, USAF cast the U.S. and the Soviet Union deeper into the space race.

1962---Major Robert White, USAF joined the select company of astronauts when he pushed the X-15 to a height of 50 miles.
The first underground Titan ICBM base was opened at Lowry AFB.
Ranger IV hit the moon and the Air Force received responsibility for developing the advent military communications space satellite system.
The B-58 "Hustler" won for the Air Force permanent possession of the Aero Club of France's Bleriot Trophy by averaging 1,302 mph over a closed course of 669.4 miles.
A B-58 established a new trans-Atlantic record of 3 hours and 20 minutes, averaging 1,095 mph over Lindbergh's old route.

1963---Joseph A. Walker stretches X-15 to altitude record of 350,000 feet(66.3 miles).

PUBLIC INFORMATION OFFICE
APO 328, SAN FRANCISCO, CALIF

FOR IMMEDIATE RELEASE

HQ 6161ST AIR BASE WING, JAPAN - Staff Sergeant Carl R. Moss, the son of Mr. and Mrs. M. C. Moss of Route # 2, Wapato, Washington, recently transferred to his present station in Japan as a cook with [redacted] Food Service Squadron, a unit of the 6161st Air Base Wing.

A veteran of 10 years service, Sergeant Moss first entered the U.S. Navy in 1941 at Seattle, Washington. In 1947, he reenlisted in the Air Force at Spokane, Washington and remained on duty in the States until alerted for his present tour of duty. He is the holder of Purple Heart.

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FROM: Colonel Barney Oldfield
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YUMA AIR BASE, Yuma, Arizona, Oct. 2, 1955 -- (Advance for release Sunday, October 2.)

Super-sonic sharpshooters -- the best eight rocket-firing teams of the United States Air Force -- awaited the signal for early Monday morning takeoffs to decide who among them will wear the title of USAF "Rocket Champions of 1955" by the weekend.

The teams, containing 50 specialists each, have come from all over the globe, and have been winners of shootoff eliminations to decide their right to be in Yuma.

They will fly missions at controlled speeds of more than 400 miles an hour at 18,000 and 30,000 feet elevation against targets towed at right angles to their course in excess of 200 miles an hour.

"These men fly and maintain aircraft which have the capability of attacking their targets at 1,000 feet per second, 200 feet per second faster than a pistol bullet," said General Earle E. Partridge, commander in chief of the Continental Air Defense Command and director of the competition.

The rockets they fire, he pointed out, travel "at 2,600 feet per second."

"This gives us all some idea," he said, "of the kind of men and t kind of precision which is required for the air defense of this country.

(M O R E)

man in these teams -- pilots, radar observers, and the specialists in the ground crews -- is of vital importance in putting these rockets on targets, in protecting the lives and property of our people, and the future national life of this country."

The competing teams include three from General Partridge's own Air Defense Command resources. One is from the 26th Air Division, commanded by Colonel Milton Ashkins, of Wilmington, Delaware, representing Eastern Air Defense Force; one from 33rd Air Division, commanded by Colonel Richard Weltzin, of Fargo, North Dakota, representing the Central Air Defense Force; and the third is from the 28th Air Division, commanded by Colonel Wilton H. Earle, of Greenville, South Carolina, representing Western Air Defense Force.

From locations outside the air defense system, teams are present from five other commands.

The aggregation from Hq, Far East Air Forces is headed by Colonel George V. Williams of Chicago, Illinois.

From Hq, United States Air Forces Europe, the rocket unit is topped by Colonel William S. Harrell, of Montgomery, Alabama.

The boss of the Alaskan Air Command unit is Colonel Ronald D. Hubbard, of Warren, Ohio.

At the reins of the Hq, Northeast Air Command team is Colonel C. W. McColpin, of Buffalo, New York.

The winning command from the 1954 competition, Hq, Air Training, puts it chances of repeating in the hands of Colonel Thomas B. Whitehouse, of Rochester, New York.

Each competitor gets six rocket-firing runs, three at 18,000 feet and three at 30,000. A hit on the first pass gets him 1000 points, only 800 if he has to take a second, and 600 if it takes three times around.

(M O R E)

Last year, the finishers were in order, Air Training Command, Western Air Defense Force, and Eastern Air Defense Force. No overseas teams participated in 1954.

The winning team takes the coveted Major Richard I. Bong award, named for the Wisconsin World War II ace who shot down 40 Japanese planes, then lost his life after the war while flying as a test pilot.

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