FLIGHT LINES

In Memoriam

Jack Martin, Jr. 1935–2019
Norman E. Ponder, Jr. 1922–2019
THE GNOME TYPE N ROTARY ENGINE

The Gnome rotary is essentially a standard Otto engine (a stationary single-cylinder internal combustion four-stroke engine designed by Nikolaus Otto), with cylinders arranged radially around a central crankshaft just like a conventional radial engine, but instead of having a fixed cylinder block with rotating crankshaft, the crankshaft is stationary and the entire cylinder block rotates around it. This created a very powerful engine with some nasty tendencies.

The spinning cylinders helped keep the engine cool but the weight acted like a gyroscope. Pulling the “stick” back would make the plane pitch up and gyroscope effect would pull the nose to the right. This effect could tear the engine off the plane during violent maneuvers.

The Gnome Monosoupape 9 Type-N (1917) burned a mixture of fuel and castor oil to lubricate the cylinders. This mixture sprayed in the pilot’s face and caused constant sickness. Comparing the Gnome to the Curtiss OX-5 of the same period, it produced 3-times the power and weighed 100 lbs less. The power-to-weight ratio is comparable to modern engines.

THE FAILED VENTRAL TURRET

Visitors to the museum will have the opportunity to observe a rare defensive weapon that was in use for a short time during WWII. The production B-25B, B-25C, B-25D, and some B-25G models had a retractable remote control belly turret, called a ventral turret. These turrets were often removed in the field because they were ineffective and disliked by the crews. The lower turret was officially deleted in the middle of the B-25G production run.

The ventral turret was operated through a periscope that caused such intense vertigo and nausea in its’ user that it was rarely used. In the Pacific, the turrets were removed because monsoon rains turned airfields into mud which covered the gunsight on takeoff rendering the turret useless.

Harold Maul, a B-25 crewman, described the ball turret in Eric Bergerud's book, Fire in the Sky: The Air War in the South Pacific: "The worst thing ever designed was the bottom turret of the B-25. It was the stupidest bit of equipment. My God, the operator is sitting in one place getting a reverse image through a mirror. He couldn't hit a thing. It slowed the damn plane down, and we weren't getting belly attacks anyway. What they really needed was a tail gun, which they eventually installed." The retractable ventral turret (which had generally been dead weight anyway) was finally eliminated on the remaining B-25 production run.

The infamous Doolittle Raid on Tokyo in 1942 was conducted using B-25B’s produced with ventral turrets. However, the 16 bombers were modified, being loaded with 1141 gallons of gasoline, with the ventral turrets removed. Doolittle agreed to replace the turret with a 60-gallon gas tank that could be gradually refilled by a crewman from ten five-gallon cans stored in the rear compartment, and black-painted broomsticks on the tail as dummy guns.

The ventral turret on display at the Southern Museum of Flight was installed in the “Lake Murray” B-25 and may be the only ventral turret existing today. As useless as it was, it now represents a valuable and rare historical artifact.
A “C-47” GLIDER?

While the C-47 carved out a reputation of service during World War II as a powered transport and glider tug, it is unique in becoming the glider as well as the tug in a 1944 U.S. Army Air Forces (AAF) experiment.

A single C-47 had both its engines removed, with bluntly rounded and ballasted caps affording some measure of streamlining to its engineless nacelles. The AAF envisioned towing engineless C-47s as CG-17 gliders behind larger four-engine Douglas C-54s. This would capitalize on the power and capability of the C-54 to tow gliders larger and heavier than the typical tugs then in service. With a wing spanning more than 95 feet, the Gooney Bird Glider had a flat glide angle.

The test specification required the ability to revert CG-17s back to powered configuration, so the large nacelles with blunt caps were a necessity that no doubt diminished performance.

Tests included tows behind a C-47, and behind a pair of C-47s, and with a four-engine B-24 Liberator bomber acting as tug. The flight tests were conducted by the Air Technical Service Command of Wright Field based at Dayton, Ohio, and took place at the Clinton County airfield at Wilmington, Ohio, about 35 miles distant. During the war, a number of satellite airfields ringing the Dayton area hosted flight test projects like this one.

Though the XCG-17 did not make it to production, it did serve to further validate the remarkable versatility of the Douglas DC-3 design.
**IN MEMORIAM**

Longtime SMF volunteer, Norman Ponder, a true representative of the thousands of WWII veterans of the Greatest Generation, was born in 1922 and grew up in the Woodlawn, Roebuck and Bush Hill neighborhoods. He graduated from Woodlawn High School in 1940 and joined the Army Air Corps. He became an Aviation Cadet at Maxwell Field and went on to serve as a test pilot at Tinker Field (Oklahoma), Kelly Field (Texas), and Stinson Field (Texas).

He joined the 27th Air Depot at Post Moresby, New Guinea in December 1943, and began flying C-47s loaded with supplies to combat units. He was credited with 4 combat missions and 16 combat hours. For his overall 1943 to 1945 service in the Pacific, he received the American Campaign Medal, Asiatic-Pacific Campaign Medal (*with 4 Battle stars*), WW II Victory Medal, and the Philippine Liberation Ribbon.

In 1945, Norm returned to the University of Alabama on the GI Bill and remained with the Air Force Reserves until retiring as a Lt. Col. In 1982, Norm taught school in Alexander City, worked as a salesman for a decade, then concluded a career in the Land Department of Alabama Power Co. from 1964 to 1987.

His passion for aviation led him to volunteer with the museum where he was a member of the Board and worked tirelessly helping to restore aircraft and support the mission of the Museum, earning him the Glenn Messer Trophy. He was an active member of the Birmingham Aero Club and the Experimental Aircraft Assn., building his own Pazmany PL-4A experimental airplane, which he flew for many years. It is now on display at the museum. He was also an ardent ship model builder. His scale model of the USS Alabama is displayed aboard the battleship in Mobile, AL, earning him special recognition from the USS Alabama Battleship Commission. Many other models, including the USS Birmingham and the USS Enterprise, are on display at the SMF.

Jack Martin, Jr., Colonel, US Army (Ret), was born in 1935. Jack attended the Tarrant High School system and graduated from Tarrant High School in 1954. He earned his BS degree and graduated in the first graduating class of Samford University in 1966.

He served on active duty with the 101st Airborne Division, 5th Infantry Division and 9th Infantry Division. His US Army Reserve assignments were with the 87th Maneuver Area Command where he served as Flight Detachment Commander, Aviation Officer, Chief of Combat Exercise Division 2 and Inspector General.

Jack retired as Commander of the 33rd Aviation Group (Combat), Ft. Rucker, AL where he commanded US Army Reserve aviation units located in five Southeastern States.

He was a graduate of the Command and General Staff College. His awards and decorations include: the Master Army Aviator Badge, Legion of Merit, Meritorious Service Medal w/ 3 Oak Leaf Clusters, Army Commendation Medal w/ 2 Oak Leaf Clusters and other awards. Jack's civilian employment included Hayes International Corporation where he was a Program Manager and Senior Technical Writer; and Schrader Bellows, a division of Parker Hannifin Corporation, where he was a District Sales Manager in design, engineering and sales of hydraulic and pneumatic automation equipment.

Jack served on the Board of the Southern Museum of Flight and contributed to the museum’s goals as a volunteer. He was a member of the Birmingham Hangar of Quiet Birdmen. He worked with the Boy Scouts of America at putting on car shows.

Jack Martin enjoyed antique automobiles, flying and the outdoor sports of hunting and fishing. His involvement and energy will be greatly missed as the museum enters a new phase of its mission.