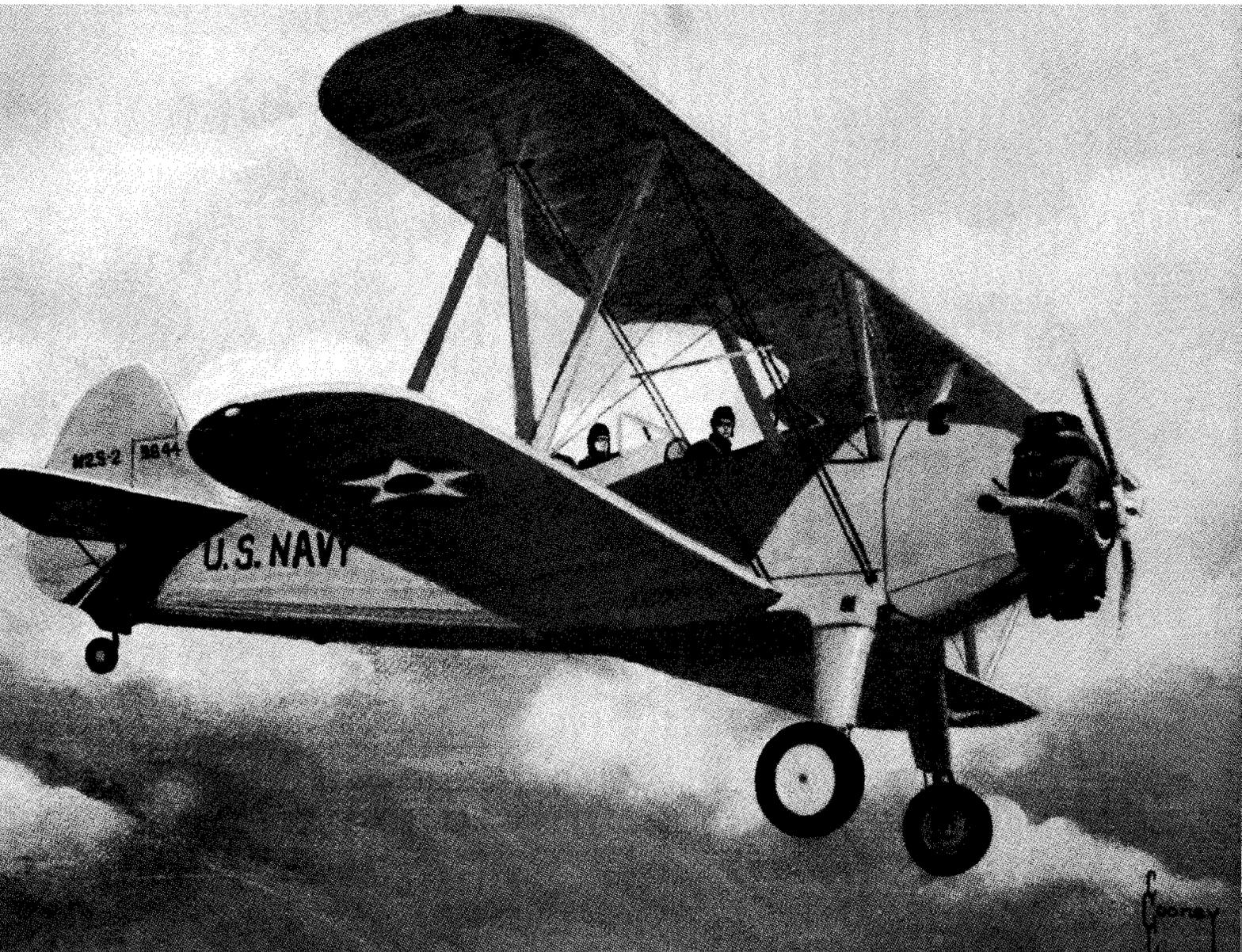
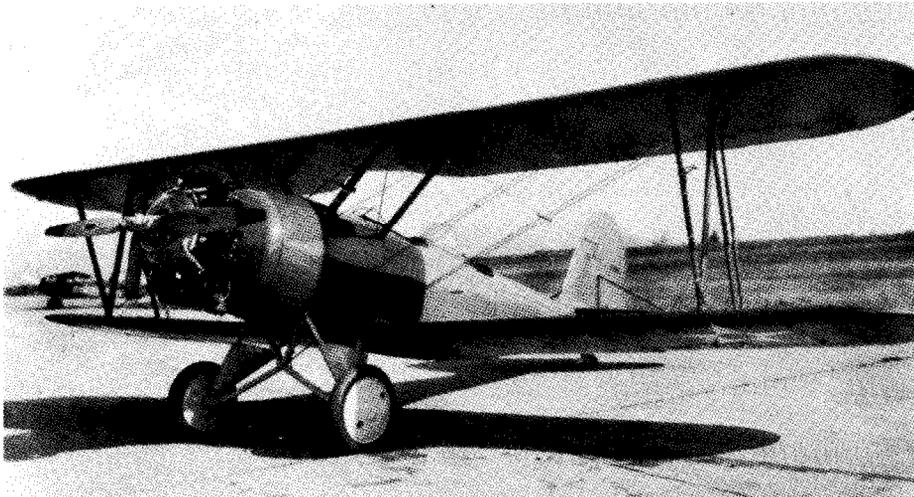


The SNV, a trainer used primarily during WW II.

A Charles C. Cooney painting depicting one of the Navy's famous training aircraft, the N2S Stearman.





The N3N, another of the Navy's well-known training aircraft, was used before and during WW II.

seaplane. The last production model N3N-1 was received on April 29, 1938.

It was followed by an improved version, the N3N-3. It consisted primarily of the original design features but incorporated new vertical tail surfaces, improved wheel landing gear and a different engine, the Wright Whirlwind R-780 with 235 hp. The N3N-3s were delivered to the Navy between April 1940 and January 1942, and immediately replaced the N3N-1s as the primary seaplane and landplane trainers. Many pre-WW II and WW II Naval Aviators received their primary training and won their Wings of Gold flying the N3N series. The N3N was later replaced by the more maneuverable Stearman N2S during WW II.

The majority of the N3Ns were declared surplus by the middle of 1945 and were sold to various civilian firms. They found favor as crop dusters and sprayers because they were able to take abuse and still fly. Roughly 100 N3N-3 seaplanes were maintained by the Navy for active service. They were used at Overhaul and Repair, Norfolk, and at the Naval Academy to provide aviation familiarization for midshipmen. They were the last open cockpit biplanes and seaplanes to be used by the Navy. The last N3N-3 was retired in 1961, ending the era of biplanes in the U.S. military services.

The NS or N2S, which replaced the N3N series, is another famous biplane and probably the best known Navy training aircraft. Deliveries to the Navy began in the mid-1930s and by the end of the 1940s the N2S series had left the Navy inventory.

The N2S carried a variety of designations during its service with the U.S. Navy, the U.S. Army Air Corps and various foreign countries. While it was given the name *Kaydet*, it is probably best known as the *Stearman Yellow Peril*.

The Navy ordered its first Stearman NS-1 on May 22, 1934. A standardized model, N2S-5, was developed in 1942 for the Navy and Army, which permitted interchangeability of aircraft parts between the two services. Over 3,300 Stearman *Kaydets* were ordered by the Navy. The only major change in all the models the Navy received, ranging from the NS-1, N2S-1 through N2S-5, was in the type of engine installed.

Pre-WW II and WW II training aircraft were painted a bright yellow and were known as *Yellow Perils*. However, the name is generally applied only to the N3N and Stearman *Kaydet* NS/N2S series aircraft. The name clung to these series, probably because of the large number used for training from 1936 through 1945. Since there was a massive increase during this period in the number of student Naval Aviators, many of these pilots remember the *Yellow Perils* as their primary trainer.

The *Yellow Peril* was a slow-moving biplane with only a few instruments in the cockpit to worry about, easy to handle and forgiving of student errors. Consequently, it was an excellent training plane for the propeller-driven era. With the advent of the jet age after WW II, these light biplanes presented too great a variation between the jump from basic flight training in the N2S to the heavier and faster aircraft needed for

advanced training. They gave way to the more advanced training aircraft and by 1948 only a few N2S-5s were in service with the Navy. However, this did not end their active career, as many of them saw service with foreign countries under the Mutual Assistance Pact. Other Stearmans passed into civilian hands and many are still flying today.

The Navy's first low-wing monoplane trainer, the NJ-1, was ordered on January 8, 1937, by the Army at the Navy's request. The planes were in use by the Army and those ordered for the Navy were procured as basic trainers under the Army's contract with North American. The NJ-1s remained in service for many years.

The initial contract was for 40 NJ-1s. They had fixed landing gear and were powered by a 500-hp Pratt & Whitney R-1340 Wasp engine. The NJ-1s were followed by the SNJ series, which was ordered as SNJ-1s in 1938. They had the same basic airframe as the NJ-1s but were modified to incorporate retractable landing gear and metal-covered rear fuselages. It was the beginning of a long, distinguished career for the SNJ *Texans* as training planes for the Navy. They were used in advanced training and more closely resembled the flight characteristics of aircraft in the fleet.

At the end of WW II, the SNJs were switched from advanced to basic training, replacing the slow N2S *Yellow Peril*. The faster SNJ met all the requirements of a basic trainer and facilitated the transition for the beginning pilot from basic training to flying the new jets. Its faster speed, retractable landing gear, complicated cockpit equipment, flight controls and heavier weight required the pilot to react and develop the reflexes necessary for emergencies similar to what might be experienced in flying jets. The SNJ thus served in the dual role of basic and advanced trainer.

SNJs also saw service as utility planes. They were occasionally assigned to carrier units and were equipped for arrested landings. Even though SNJs were flown by operational squadrons, they were used only on noncombat missions. On January 3, 1953, during initial test operations aboard the Navy's first angled-deck carrier USS *Antietam*, an SNJ was one of six aircraft models used to evaluate the new angled deck, making touch-and-go landings and takeoffs in winds of varying force and direction.

The last training flight of SNJs took place at NAAS Corry Field, Pensacola, on May 21, 1958, their final salute as training aircraft before they were ferried to storage. The last SNJ left Navy service in February 1960.

During WW II, another significant trainer in the Navy's inventory was the JRB *Expediter/SNB Kansan*. The JRB/SNBs were twin-engine planes powered by two 450-hp Pratt & Whitney engines. They were assigned a variety of roles and duties during their service with the Navy.

The first five JRBs were contracted for on June 6, 1940, through the Army. This aircraft had been produced as a commercial design by Beech Aircraft Company but was modified to meet the needs of the Army and Navy. JRB-1 BuNo 2543 was accepted by the Navy on October 27, 1940, the first in a long line of 1,423 JRB/SNB aircraft delivered to the Navy and Marine Corps. The JRB *Expediter* series (known originally as *Voyagers*) were used as drone control aircraft and transports, and for photography.

The first mention of the SNB *Kansan* series appeared in the April 1942 Model Designation Bulletins. The SNB-1s were first procured for advanced scout training of pilots for multiengine patrol aircraft duty. They were equipped with turret gunnery and bombardier training capabilities. The SNB-2s were ordered in 1942 and were known as *Navigators*. Other modifications to the SNB series led to their use as photoreconnaissance trainers.

While the SNB during WW II was the primary twin-engine trainer, other twin-engine aircraft used in training included the PBM-3 *Mariner*, R4D-5S/T *Skytrain*, JRF-6B *Goose*, PV-1 *Ventura* and PV-2 *Harpoon*.

The post-WW II period found the Navy with a large inventory of SNB *Kansan/Navigator* aircraft which continued to be used as trainers and transports well beyond the end of the war, and which were also adapted as trainers in electronic countermeasures.

With the advent of the unified designation system, the SNBs still remaining in service were redesignated TC-45Js and RC-45Js. The TC-45Js

were eventually given a utility transport mission with the designation UC-45Js. The last SNB series (UC-45J) ended active service with the Naval Air Reserve Training Unit at NAF Detroit, Mich., between March and June 1972. The last training versions (RC-45Js) ceased operations in the Naval Air Technical Training Unit in Pensacola about the same time. For a period of 30 years, the Navy had employed the SNB series in some form of training.

Besides the more significant training aircraft of WW II, the Navy also used 2,000 SNV *Valiants* built by Vultee. They were an all-metal, low-wing monoplane with fixed landing gear. The SNV was used between the N2S and the SNJ as an interim trainer to facilitate the transition from the slow and easy N2S biplane/primary trainer to the advanced SNJ which was heavier and faster. The SNV-1 and SNV-2 were equivalent to the Army Air Corps BT-13A and BT-13D versions, and were produced with interchangeable parts. They were also used as instrument trainers. Two other instrument trainers were the Howard NH-1 and the Fairchild GK-1, both of which were high-wing monoplanes.

Other primary trainers in the Navy's inventory during WW II included the Ryan NR-1 *Recruit*, the Timm N2T *Tutor* and the Piper NE-1 *Grasshopper*. All three were monoplanes and the NR-1 and NE-1 had been adapted from

commercial designs. The NR-1 and N2T were low-wing while the NE-1 was a high-wing design. During the war when metal was in great demand, the N2T *Tutor* fuselage was specially designed and constructed of a plastic-bonded plywood. The NE-1 *Grasshopper* served as the introduction trainer and proved to be an efficient means of weeding out personnel not qualified to continue pilot training. It also served as a specialized training aircraft for glider pilots.

A number of aircraft were ordered from Curtiss as combat trainers before the war began, which were adapted from a Curtiss design and given the Navy designation SNC. They were low-wing monoplanes with retractable gear and helped to supplement the SNJs in the training role.

With the conclusion of WW II, a new era began to unfold in Naval Aviation — the jet age — creating new requirements for training aircraft. Navy policy had been to utilize obsolete fleet aircraft in the advanced training stage but, with the development of jet fighters, there were no old or obsolete jet fighters available for training. This led the Navy to acquire three P-80A *Shooting Stars* from the Air Force to evaluate the suitability of jet aircraft for operations aboard carriers and for training.

Testing began with the delivery of a P-80A to NAS Patuxent River on June 29, 1945. On November 11, 1946, a P-80A



**The SNB was used for multiengine training, gunnery and bombardier training and was later adapted for electronic countermeasure training.**



The NPT-T Tutor was an experimental training aircraft constructed of plastic-bonded plywood and used during WW II.

was used for catapult launches, free takeoffs and arrested landings aboard USS *Franklin D. Roosevelt*. However, this was not the first shipboard testing of a jet. On July 21, 1946, an FD-1 (FH-1) *Phantom* had operated aboard *Roosevelt*.

By 1946, the FJ-1 *Fury* and FH-1 *Phantom* were in the fleet and the need for a jet training aircraft was evident. To fill this gap, the Navy procured 50 Lockheed P-80s from the Air Force to use as interim familiarization trainers for fighter pilots until enough Navy jets became available. The P-80 *Shooting Stars* were designated TO-1s and were not equipped with arresting hooks or catapult fittings. They were assigned to VF-6A and VMF-311.

They acted as the training squadrons for pilots and maintenance personnel, providing basic operations and tactics in jet aircraft. On May 5, 1948, VF-17A, flying the FH-1 *Phantom*, became the first Navy jet squadron to become carrier qualified.

The TO-1 *Shooting Stars* arrived at Whiting Field, Fla., in 1949 to transition pilots from the SNJ to the new F9Fs. Pilots selected for training in the TO-1 had already completed advanced training in fighter-type aircraft at Corpus Christi, Texas, and had carrier qualified aboard *Roosevelt* at Pensacola.

The Navy continued to use the *Shooting Star* as a training plane and ordered the two-seater training version which had been produced for the Air Force. With the designation TO-2, the aircraft were not only assigned to Navy and Marine Corps training squadrons, units and groups, but one or two also went to various carrier air groups (wings) in 1951, for crew training. The TO-1 and TO-2 designations were later

changed to TV-1 and TV-2.

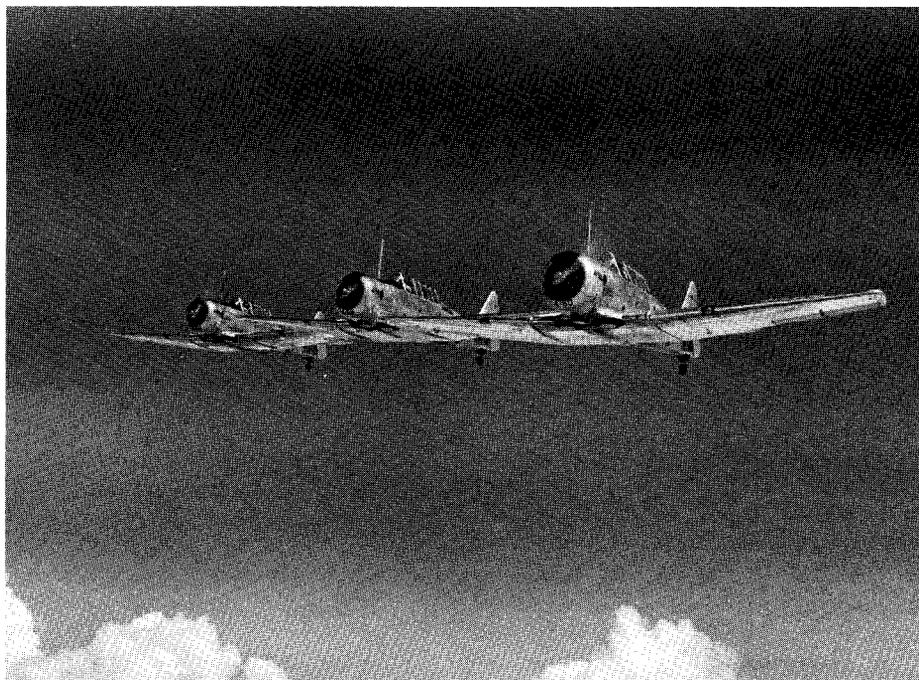
The TV-2s were adequate for familiarization training in jets but were not suitable for operational training aboard carriers. Lockheed, builder of the TV-1 and TV-2, developed a new jet trainer along the lines of the TV-2, which was capable of carrier operations. The new aircraft was first flown on December 15, 1953, and the Navy immediately placed an order. It was designated T2V-1 and named the *Seastar*, the Navy's first jet aircraft designed as a trainer for carrier operations. The *Seastar* was delivered on May 27, 1957, to the Naval Air Advanced Training Command at Corpus Christi. On May 4, 1958, the T2V-1 moved from advanced training to the all-jet basic training program at

Pensacola. It continued to serve as a trainer until it was phased out in favor of the T2J-1 for basic flight training.

Even though jet aircraft were operating in the Navy by the late 1940s, propeller-driven trainers continued to play an important role in Naval Aviation. The updated and modernized SNJ *Texans* were unable to keep pace with training requirements, and the search for new primary and advanced trainers in the late 1940s and early 1950s produced several new aircraft.

North American Aviation, Inc., developed a modified version of the U.S. Air Force T-28A training aircraft which had been in service since 1950. The T-28B provided the Navy with a more powerful engine and a three-bladed propeller. It retained its basic configuration as a tandem-seat trainer and was flown for the first time in April 1953. The Navy ordered the T-28B and named it the *Trojan*. Mission requirements called for advanced flight training following primary and basic training. This was the Navy's first plane to be assigned an operational training role with a design that incorporated the use of a tricycle undercarriage. The first T-28Bs were accepted by the Navy in October 1953, with deliveries going first to the advanced training units and the Naval Air Advanced Technical Training Command.

The T-28B was an adequate trainer but it did not meet one of the Navy's



The SNJ Texan had a long and varied career as a training aircraft.