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Cessna L-19/ O-1 Bird Dog

HISTORY

One of a long line of civilian light planes converted to military use (like the Taylor, Piper, and Stinson "Grasshoppers" of World War II fame), the Cessna L-19 "Bird Dog" observation and Forward Air Control aircraft traced its origins to the Cessna 170, a 4-place civilian light plane, with its military power upgraded from 145 to 213hp.

Winning a U.S. Army contract in 1950 with its Model 305A redesign of the Model 170, Cessna was awarded an initial contract for 418 of the aircraft, which were then designated L-19A, and named "Bird Dog." By the time the final craft was manufactured in 1962, over 3,400 Bird Dogs had been built.

Structurally, the military version differed significantly from its civilian progenitor, with the passenger capacity reduced by two, the aft superstructure radically revised to provide a clear view rearward, and transparent panel being inserted in the wing above the seats. The access door was made wider to accommodate a standard military stretcher, for which support brackets were installed. The L-19 was judged to be much better in terms of performance on takeoff and climb than its world War II predecessors, as well as more comfortable for the pilot and observer.

In 1953, an L-19A-IT version was developed to provide instrument training capability. Of the 2,486 L-19s delivered by 1954, 60 were reassigned to the U.S. Marine Corps where they were designated OE-1.

Although they were only used in small numbers during the Korean War, Bird Dogs were widely employed during the early days of the Vietnam war, when the U.S. Air Force acquired many to use in the Forward Air Control and observation roles, for which they were upgraded to carry wing stores, such as White Phosphorus ("Willie-Pete") target-marking rockets.

In 1956, constant-speed propellers were first installed in the TL-19D trainer version. The final production variant, the improved L-19E, had a higher gross weight.

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- Aircraft model identification coding was changed by the U.S. armed forces in 1962, with the result that US Army L-19A, TL-19D and L-19E aircraft became O-1A, TO-1D and O-1E respectively, while the US Marine OE-1 became O-1B. The Marine Corps also received 25 of the higher-powered O-1C. Standard production models of the U.S. Army trainers were re-designated TO-1A and TO-1E. Supplied to many nations, Bird Dogs were also built under license in Japan.

In the 1970s, a Texas company, Ector Aircraft, created "civilianized" conversions of the Bird Dog called the Mountaineer (213-hp) and Super Mountaineer (240-hp).

While long out of production, some Bird Dogs are still in active use around the world. In Canada, for instance, O-1s were deactivated in 1973 by the Canadian Army (with whom it first entered service in 1954), but 17 were subsequently reassigned to the Royal Canadian Air Cadets for glider towing and familiarization flying. On the civilian market, Bird Dogs have become popular as economical warbirds in the United States and Australia.

BASIC SPECIFICATIONS (O-1E)

Engine: One 213-hp Continental O-470-11 flat-six piston engine

Weight: Empty 1,614 lbs., Max Takeoff 2,400 lbs.

Wing Span: 36ft. 0in.

Length: 25ft. 9in.

Height: 7ft. 3.5in.

Performance:

Maximum Speed: 151 mph

Range: 530 miles

Armament: Four underwing pylons for mixed stores of smoke canisters and "Willie-Pete" white phosphorus marking rockets.

Number Built: 3,431

Number Still Airworthy: 120+



Photo: Unknown

Aeronca L-3/ O-58 "Grasshopper"

History:

This two-seat light observation airplane began as Aeronca's Model 65 TC "Defender" high wing monoplane. By 1940, The US Army Air Corps had begun to see the very real need for a light plane that could be used for rapid communications and in support of ground forces. After testing planes from Piper and Taylorcraft, the Aeronca was chosen. With a single 65-hp engine, the little plane had a top speed of 100 mph, a cruising speed of 70 mph and a range of 200 miles.

Aeronca Grasshoppers had a welded steel tube fuselage and tail unit with fabric covering, while the wings were spruce and light alloy all covered in fabric, making them easily repaired in the field. Visibility out of the large Plexiglas™ windows was excellent.

Initially designated O-58 (for "observation"), shortly after entering service it was renamed with an "L" for Liaison. Over 1,400 Aeronca Grasshoppers were built during the war years and served the Army in all theaters. Many ex-military L-3s are still flying today.

Nicknames: Grasshopper

Specifications:

Engine: One 65-hp Continental O-170-3 or Continental A-65-8 flat-four piston engine.

Weight: Empty 835 lbs., Max Takeoff 1,300 lbs.

Wing Span: 35ft. 0in.

Length: 21ft. 0in.

Height: 7ft. 8in.

Performance:

Maximum Speed: 100 mph

Ceiling: 12,500 ft.

Range: 200 miles

Armament: None

Number Built: Unknown

Number Still Airworthy: 30+

Average Price: \$25,000- \$35,000



Photo: Buck Wyndam

Aeronca L-16 "Grasshopper"

History:

Like its wartime Aeronca L-3 parent, the L-16 was a US civilian aircraft in military colors. During WWII, the Aeronca 65TC Defender had been pressed into service as the O-58, performing light observation, utility and liaison duties. It was later redesigned, designated the L-3, and served in many theaters and in many diverse roles.

After the war, when US civilian aircraft production resumed, Aeronca upgraded and redesigned its prewar designs into the 65-hp Model 7AC Champ. The Champ quickly became one of the the most popular training aircraft of the post-war pleasure-flying boom. The 7AC, in turn, was soon upgraded to the 7BC, with a larger engine, and was subsequently produced for the US Army under the designation L-16A (85-hp engine) and L-16B (90-hp engine). It served in the Army throughout the Korean War, where it performed many of the same roles it had in WWII: Target-spotting, observation, general utility, and even rescue.

In the late 1950s, quite a few L-16s returned to civilian life, where most of them shed their wartime paint and resumed life as 7BCM or 7CCM Champs, teaching primary students to fly all across the US. Still others went on to serve in the US Civil Air Patrol, a civilian search-and-rescue arm of the US Air Force. As the years have passed, a few have recently been restored to their L-16 livery in commemoration of their unique history. The lineage of these versatile and honest airplanes is such that they do not attract a great deal of attention at warbird gatherings, yet their place in military aviation is undeniable and appreciated by a growing number of enthusiasts and owners.

Specifications (L-16B):

Engine: One 90-hp Continental C-90-8F or Continental O-205-1 flat-four piston engine

Weight: Empty 870 lbs., Max Takeoff 1,300 lbs.

Wing Span: 35ft. 1.75in.

Length: 21ft. 5.75in.

Height: 7ft. 0in.

Performance:

Maximum Speed: 135 mph

Ceiling: 12,000 ft.

Range: 400 miles

Armament: None

Number Built: Unknown, probably 250+

Number Still Airworthy: Unknown

Average Price: \$30,000- \$40,000



Photo: Sam Taber

Stinson L-5 Sentinel

History:

By the latter half of the 19th century, armies in combat were beginning to adapt new technologies, like hot air balloons, to supplement cavalry reconnaissance units in trying to ferret out enemy movements and dispositions. The early days of World War I saw the airplane employed in similar capacity until someone hit upon the idea of arming those aircraft with guns and bombs, drastically changing their role to that of flying weapons platform, thereby altering the nature of warfare radically. By the time World War II broke out, liaison/observation aircraft had become a highly specialized group.

The Stinson L-5 Sentinel was one such aircraft, derived from the pre-war Stinson Model 105 Voyager. In 1941, the Army Air Corps purchased six Voyagers from Vultee Aircraft (which had acquired Stinson in 1940) for testing, these aircraft being designated as YO-54s. Meanwhile, a modified variant of the Voyager, called the Model 75B, had been demonstrated for the Army. The Model 75B incorporated some features and components of the earlier Voyager series, but was an entirely new design. The Army ordered this model in quantity, designating it first as the O-62 ("O" for Observation), and subsequently as the L-5 when the type designation was changed, in 1942, to indicate "Liaison" aircraft.

With short field takeoff and landing capabilities, and the ability to operate from unimproved forward airstrips, the two-crew L-5s were used during World War II for reconnaissance; delivering supplies to, and evacuating litter patients from, isolated units; rescuing Allied personnel from remote areas; laying of communications wire; transporting of personnel; and -- on occasion -- as a light bomber.

Nicknamed "the Flying Jeep," the L-5 demonstrated amazing versatility, even landing and taking off from tree-top platforms constructed above a thick Burmese jungle which could not be cleared for more conventional airstrips.

When the craft was produced specifically for the air ambulance role, its structure was enlarged and an additional door was added to accommodate stretchers (L-5B through L-5G). In British RAF service the L-5 and L-5B were known, respectively, as Sentinel Mk I and Sentinel Mk II.

Air Force Museum sources show that the US Army Air Corps procured 3,590 L-5s between 1942-45. 306 L-5s went to the Marines, where they received the U.S. Navy label OY-1 after Consolidated and Vultee had merged. In addition, eight Stinson 105s and 12 Model 10A Voyagers were "drafted" into Army Air Corps service under the designations AT-19A and AT-19B, respectively. Those designations were later changed to L-9A and L-9B, respectively. Another variant, the OY-2, was the Navy/Marine version of the L-5G, manufactured beginning in late 1945.

After WWII, the Sentinel served with distinction in the Korean War and continued in active service with the USAF until at least 1955, with some units still on the rolls until 1962 when the L-5G (the final variant) designation was changed to the Air Force's U-19B, while the Army's remaining L-5's were reclassified as U-19As. Their redefinition to utility, rather than liaison, is a stark reminder that technology is rarely static, as the passing of both the reconnaissance balloon and light liaison aircraft demonstrate.

Nicknames: "The Flying Jeep;" "Jungle Angel."

Specifications (L-5):

Engine: One 185-hp Lycoming O-435-1 flat-six piston engine

Weight: Empty 1,550 lbs., Max Takeoff 2,020 lbs.

Wing Span: 34ft. 0in.

Length: 24ft. 1in.

Height: 7ft. 11in.

Performance:

Maximum Speed: 130 mph

Ceiling: 15,800 ft.

Range: 360 miles

Armament: None

Number Built: 3,590

Number Still Airworthy: <200

Average Price: \$35,000- \$45,000



Photo: Courtesy Aircraft

Taylorcraft L-2/ O-57 Grasshopper"

History:

Following an aerial observation tradition more than 200 years old, the Taylorcraft Model D tandem trainer was "drafted" in 1941 for artillery spotting, light transport and courier service. After the U.S. Army successfully evaluated examples of the aircraft under the designation YO-57 for use in artillery spotting and liaison, 70 were ordered as the O-57 Grasshopper, powered by a 65hp Continental O-170-3 engine. That order was followed by a modification that added a radio and improved the all-around view with additional glazing to the cockpit area. 336 of that variant, designated O-57A, were ordered.

When American troops went into combat in WWII, the Army Air Force used the O-57/-57A for directing artillery fire on enemy troop and materiel concentrations, much as observation balloons had been used in W.W.I. The O-57, being far more mobile than earlier hot air and gas balloons, was also used for other types of liaison and transport duties, its ability to land and takeoff from small unprepared landing strips making it an ideal front-line vehicle.

140 of the O-57As were ordered in 1942, at which time the two variants were re-designated L-2 and L-2A, respectively.

Subsequent modifications yielded 490 L-2Bs aircraft produced especially for field artillery spotting and a variant with wing spoilers and a completely cowled engine, the L-2M, of which 900 were ordered. Various civilian models of Taylorcraft, in small quantities, were "drafted" into military service with designations from L-2C through L-2L.

253 engineless gliders based on the L-2 design were also manufactured by Taylorcraft for use as glider trainers. Designated ST-100, they were used primarily by the U. S. Army to train glider pilots for combat insertions, often behind enemy lines (as, for example, in the Normandy landings).

While some L-2s were furnished to foreign air forces, many were "mustered out," to rejoin their civilian counterparts on the U.S. civilian register after the war as comparatively cheap "warbirds." In the immediate postwar era, the commercial BC-12 D was manufactured for a time, and has become a popular example of late-1940's light aircraft.

While the observation tradition today is more likely to be carried on by pilotless aircraft, or the even more exotic "Micro Air Vehicles" being experimented with in numerous high-tech research facilities, the various species of "Grasshoppers" used by the United States in WWII will always occupy a special niche in the lore of aviation.

Nicknames: Grasshopper

Specifications:

Engine: One 65-hp Continental O-170-3 flat-four piston engine

Weight: Empty 875 lbs., Max Takeoff 1,300 lbs.

Wing Span: 35ft. 5in.

Length: 22ft. 9in.

Height: 8ft. 0in.

Performance:

Maximum Speed: 102 mph

Ceiling: 16,000 ft.

Range: 230 miles

Armament: None

Number Built: 1,726+

Number Still Airworthy: 150+

Average Price: \$30,000

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