Stinson predecessors to the L-5

Stinson's first entry into the liaison field was the purpose designed model 74. First designated by the USAAF as the O-49, it later became the L-1, 324 of which were eventually built. While the L-1 had excellent short field performance, it was expensive to operate, consumed too many man-hours to construct to be produced quickly enough and in the quantity eventually required. It also proved impractical for operational reasons as an artillery spotter in terms of size, weight, operating cost, maintenance needs and pilot training requirements.

The Stinson YO-54

Jim Gray, Sentinel Owners & Pilots Association, sent me this in depth email on December 10, 2021 which provides extensive details about the Stinson YO-54 a predecessor to the Stinson L-5.

From Jim Gray - "I'm still working on my L-5 book after all these years and it has taken semi-retirement for the project to start heading toward a conclusion. Awhile back, I hired some college students at Washington University to go digging in the extensive 'Sarah Clark Collection' of Wright Field papers located at the National Archives. Among many treasures I've received is a file with over a hundred pages of scanned documentation on the YO-54, so I thought I'd pass along a few details from the chapter I'm writing about the YO-54. The documents in hand are memoranda, reports and correspondence generated by Wright Field, Stinson, and various branches of the military. It is dry, but fascinating reading.

"There were 6 airplanes delivered with the following serial numbers, as listed on a document with a Stinson Aircraft Division, Nashville Tennessee letterhead dated August 20, 1940:

Stinson #	Air Corps #
7640	41-143
7645	41-144
7649	41-145
7650	41-146
7651	41-147
7653	41-148

"They are listed as Stinson 105's on this document, but on August 22, 1940 an Affidavit of Conformity from Robert R. Osborn, Stinson Chief Engineer, was sent to Wright Field stating that "Manufacturer's Serial No. 7640 has been manufactured in accordance with

the latest technical data submitted to and approved by the Civil Aeronautics Authority pertaining to our Model 10 (105).

"'On August 27th, Franklin Carroll, Chief of the Experimental Engineering Section sent a Memorandum Report to the Chief of the Material Division in Washington. Subject: Purchase of Stinson 105 Airplanes, A.C. Model YO-54. Purpose: To set forth the action taken in the procurement of six (6) Stinson 105 Airplanes for service tests with mechanized units....' And thus began the confusion about the Model 105 vs Model 10 regarding the YO-54's true identity.

"On September 4, Wright Field notified the Commanding Officer, Flight 'B,' 16th Observation Squadron that three YO-54's were being assigned to his station for evaluation as an observation aircraft for mechanized forces. The letter stated that 'The YO-54 Airplane ... is manufactured in accordance with Civil Aeronautics Approved Type Certificate 709...'

"As we know, TC #709 was issued on May 20, 1939 for the HW-75, aka Model 105; and on April 22, 1940 the Model 10 was added. The TCDS parenthetically states: (Model 10 is same as HW-75 except for wider cabin and minor structural changes). Under the sub-heading 'Serial Nos. eligible,' it says 10: 7501 and up manufactured prior to Feb. 28, 1941. Approval expired as of that date. Since our YO-54's all have 76xx serial numbers, this nails it down and they are indeed Model 10's.

"On September 10, 1940 a 'Model or Type Designation' sheet was prepared at Wright Field giving specs on the six 80 hp Continental A-80-9 (Air Corps Model O-170-1) engines that had been installed...in the Model 10 Stinson Airplanes (Air Corps Model YO-54) procured on Purchase Order 41-1071.' The same day, an inter-office memo sent to the Post Finance Officer at Wright Field requested that payment be made for... 'six (6) Airplanes, Model 10 (Air Corps Model YO-54).'

"However, muddying the waters, on September 14, 1940 another Air Corps Material Division memorandum was prepared for the Chief of the Division. Subject: Stinson YO-54 Airplanes. Purpose: To summarize final action taken by the Material Division in connection with procurement of six (6) Stinson 105 Airplanes, Air Corps Model YO-54. It briefly discusses radio installation and functional tests. Three planes were then sent to Fort Benning and three to Fort Knox for the service tests. All were equipped with steerable tail wheels, Lear Radios and wind generators to power those radios. (Incidentally, the Ryan YO-51 Dragonfly was also evaluated by those squadrons at the same time.)

"Clearly, various departments within the Air Corps were confused. After the tests were concluded, the Commanding Officer of the 12th Observation Squadron at Fort Knox sent Wright Field a report dated March 12, 1941 that was titled 'Service Tests of Stinson Model 105 Airplane, Air Corps Model YO-54.' A later addendum to that report was titled the likewise. Anyway, he did not recommend procurement of the type in

quantity, but this shows that there was no clear understanding of exactly what the YO-54 was. In any event, the planes were deemed unsuitable and were recommended for redistribution to other services such as the Civil Air Patrol.
“On May 14, 1941 an Air Corps Captain at the California Institute of Technology, who had apparently learned of this availability, requested data from Wright Field on ‘the Stinson 105.’ In contrast to the memo sent to the Material Division chief in Washington ten months earlier, the Chief of Experimental Engineering, Franklin Carroll, replied with this...

"There are no data available to the Material Division on the Stinson 105 Airplane. There are inclosed Engineering Report No.1116 ‘Type Specification - Model 10 - Army Procurement’ and drawing 10-00000 ‘General Airplane Assembly - Three View - Model 10' which cover the Air Corps Model YO-54 Airplane (commonly called the Stinson 105).’ At least Carroll was finally aware of what the YO-54 truly was.

“In the final analysis, we probably ought to lay some of the blame on the Stinson sales department. The HW-75 was marketed in 1939 as the ‘105' and was built at the Wayne factory. In January 1940, after minor changes, the Stinson marketing wizards confusingly advertised the plane as the ‘New 105 for 1940,’ for which the A-80 was now an option, as was a steerable tail wheel, radio, lights and other features.

“Obviously influenced by the Detroit automotive industry's proclivity for introducing new ‘model years’ later in the spring, the ‘New 105' suddenly became the Model 10 in April 1940, right at the time the Air Corps began casting about for a cheap and readily available alternative to the very expensive O-49. Even Stinson made the mistake of referring to the six YO-54's as Model 105's, so it is no wonder that through the decades magazines and books have also published conflicting information. At least you managed to get it right.

“Now, there is one detail you've gotten wrong. Your website says ‘Stinson chief engineer A. P. Fontaine learned from the YO-54's, and from them he next designed the Stinson L-5 Sentinel.’

“This is not exactly correct. Fontaine and Co. began working on the tandem seat ‘Model 75B’ several months before the YO-54 service test got underway. Because of a ‘light plane contest’ held at Wright Field in March 1940, they already knew the objections the infantry had to the side-by-side configuration and that the two Stinson 105's provided (one Lycoming 75hp geared, the other Continental 80hp) were both under-powered for the soft, rutted, muddy field where the light plane ‘contest’ was held. Nonetheless, both 105's clearly outperformed the other aircraft evaluated which led directly to the order for the six YO-54's. It also happened that the 105 was 'Hap' Arnold's preferred choice among the available ‘off-the-shelf’ civilian types.

“The prototype Model 75B, built at Nashville, was indeed a Model 10 with a reconfigured fuselage. It morphed into the Model 75C when the more powerful 125 hp

Lycoming O-233 (not a Franklin, as quoted by Aerofiles) was installed. Never heard of the Lyc O-233 engine? Few people have. It's what grew up to be the O-235 four years later. Anyway, the Model 75C - now called the V-75C because Stinson had just been merged into Vultee - was also evaluated at nearby Fort Knox, albeit unofficially. It was turned down for further consideration and Stinson was advised that if they wanted to sell a replacement for the O-49, it had better conform to Army-Navy engineering handbook standards, not the lighter-duty CAA standards.

“That is when A.P. Fontaine went back to the drawing board and designed the Model 76, aka the L-5. It was a completely new design that had nothing in common with the Stinson 105 / 10 / YO-54 except for the airfoil, wing slots and a similar type of cantilevered main landing gear.

“I've been on a crusade for the past 20 years trying to correct the proliferation of misinformation about this on the internet, but with little success. The vast majority of websites still parrot the deplorable Air Force Museum website entry: ‘The L-5 was the military version of the commercial Stinson 105 Voyager. The U.S. Army Air Forces purchased six Voyagers in 1941 as YO-54s for testing, and quantity orders for Sentinels began in 1942.’ Absolute rubbish! Nobody at the Air Force Museum has ever looked into it. Nor at the Smithsonian or any other vaunted institution.

“Because thousands of people visit your website annually, I hope you will copy this in full to your website. Perhaps as a linked separate page in the YO-54 section that you will undoubtedly now update. One other detail - the YO-54's did not have Plexiglas panels in the roof as sometimes speculated by others. One other little morsel - the prototype Stinson 125 Voyager (aka Model 108) was test flown on this date in 1944.”

Thank you Jim Gray for your in depth explanation about the Stinson YO-54 predecessor to the Stinson L-5.

Emerge the Stinson L-5 Sentinel

Short comings of the YO-54 (Model 10) and the V-75B / V-75C (tandem seat Model 10) to meet military requirements (who wanted tandem seating and more power) led Stinson to create the essentially clean-sheet V-76 as a replacement for their Model 74 (O-49) that had been adopted for military short-range observation, liaison and artillery work. A. P. Fontaine further engineered the model 75B into the Stinson model 76. First flight, Al Schramm test pilot, was on June 28, 1941. The aircraft was registered NX27772, and carried serial number 9001 (Earlier versions incorrectly said s/n 76-1). First testing saw the model 76 equipped with a Lycoming 175 HP engine and full span leading edge slots. During testing it was learned that the full span leading edge slots caused asymmetric lift and could lead to an uncontrollable flat spin. Changes were made to limit the slots to half span and larger tail surfaces to NX27772. The result was an excellent flying aircraft.

Initially identified as by the USAAF as the O-62. I believe that no aircraft were actually delivered to the USAAF with the O-62 designation, but rather the USAAF renamed the Stinson model 76 as the L-5 before any were delivered.

During World War II most USAAF aircraft were assigned "popular" names. The reason for popular names was to identify aircraft by name rather than specific model. The public might be told of "Flying Fortresses" going to some war theater for example, rather than "B-17G's" going to that specific location. This allowed the public to be given information without giving the enemy specific model information about the aircraft being deployed. The official USAAF popular name for the Stinson L-5 is the "Sentinel." Unofficially it is often called the "Flying Jeep."

Stinson continued as a division of Vultee through 1942. A new company, Consolidated Vultee, resulted from the merger of Consolidated and Vultee in 1943. Stinson remained in Wayne, Michigan as the Stinson Division of Consolidated Vultee. Because of the parent company name, you may find the L-5 referred to as a Vultee product rather than a Stinson product.

The first USAAF order to Stinson was for 275 aircraft, originally identified as the O-62. Before the first delivery to the USAAF the designation was changed to L-5. Voyager 10 features were a major influence on the design, but the L-5 was optimized as a two place liaison and observation aircraft.

About 3,691 Sentinels were built during WWII for the US Army Air Force and the Royal Air Force. US Marines received 306 Sentinels, all originally built under USAAF contract, and the US Navy also received some Sentinels with Bureau Aer numbers assigned to the Marines. Marine procurement did not begin until 1943 when Consolidated and Vultee had merged, with Marine aircraft designated, following Navy lines, as the OY-1.

The models of the Stinson L-5 Sentinel

O-62 First production airplane, 275 airplanes, deliveries through mid 1942. Gross weight 2050 pounds. Airplanes equipped with an RCA AVT-15 or AVT-112 radio transmitter, and an AVR-20A radio receiver. Many publications indicate that these airplanes carried the O-62 designation, but most likely all were delivered as L-5.

Updated information on the O-62 designation. Homepage visitor Ron Hefner, e-mail <BH60241@navix.net>, wrote to tell me he owns Stinson serial number 1003, Army Air Force serial number 42-14800. The data plate on his airplane shows it to be a L-5. Two areas of interest here, this is probably the oldest L-5 in existence, and it also shows that while many publications show serial numbers for the O-62, they were almost certainly renamed to the L-5 **BEFORE** delivery to the USAAF. Referencing the official flight manual would tend to support this assumption since the model O-62 is not listed at all.

L-5 O-62 designation changed in 1942 before delivery of the first L-5 airplane. Aircraft equipped with the Lycoming O-435-1 185 HP engine. Electrical switches relocated after the first 275 aircraft.

L-5A Commercial publications say the L-5A "was a modified L-5 with a 24 volt electrical system (previous airplanes were 12 volt) and that for ease of maintenance saw the deletion of the landing gear fairings as used on the L-5. These were originally built as L-5 airplanes and converted to L-5A." These publications list 688 airplanes as modified.

I've been unable to locate any serial numbers for a L-5A model, my original official flight manual does not list it, and Jim Gray's original maintenance and parts manuals do not list a L-5A model. John Baker's World Stinson Database, data of which comes from FAA sources and other sources, does not show any L-5A models. For the above reasons I'm going to say the L-5A never existed, at least officially. See the Myths section below.

L-5B Same as L-5 with addition of an upward hinged hatch added to provide access for a stretcher. Provisions made for float installation. Additional AN/ARR-13 radio receiver added. Gross weight increase to 2100 pounds.

Some publications say the L-5B was the first version to use a 24 volt electrical system. I believe this is in error. My information indicates all L-5's used 12 volts until the L-5G model. See myths section below.

L-5C Same as L-5B with addition of brackets to carry a K-20 aerial camera.

L-5D Designation allocated but not used.

L-5E Same as the L-5C with addition of dropping ailerons to improve short field performance. Drooping the ailerons is accomplished by turning a handle at the center top of forward carry through, at the top of the windscreen.

XL-5F One L-5B (serial number 44-17103) modified to use the Lycoming GO-435-2 185 HP geared engine. Later converted back to a L-5B.

L-5G Final variant, same as L-5E with an engine change to the Lycoming O-435-11 190 HP engine. Radio equipment changed to a full SCR-274N command set. Gross weight increase to 2200 pounds.

Stinson L-5 Production Serial Numbers

Model	Quantity	USAAF Serial Numbers and notes
USAAF/Army/USAF use of the Stinson L-5 Sentinel		
L-5 originally identified as O-62	275	42-14798 to 42-15072 - NOTE some publications say these were originally O-62's. Information from Homepage viewer Ron Hefner indicates they were actually delivered to the USAAF by Stinson as L-5.
L-5	1,538	42-98036 to 42-99573
L-5A	(688)	Many publications say these were modified from L-5 aircraft with 24 volt electrical. I've not been able to find any serial numbers for a L-5A, flight and maintenance manuals don't show there was an "A" model.
L-5B	711	42-99574 to 42-99735, 44-16703 to 44-17102, 44-17104 to 44-17252 (44-17103 is XL-5F Below)
L-5C	200	44-17253 to 44-17452
L-5D	0	Reserved designation not used
L-5E	500	44-17453 to 44-17952
L-5E-1	250	44-17953 to 44-18202
XL-5F	1	44-17103 (Built during L-5B production, during 1948 converted to the quiet airplane with GO-435)
L-5G	115	45-34911 to 45-35025, 57-6278
L-5H	1	One prototype built and it was a hybrid between the L-5G ambulance and the original L-5 observer model.

Royal Air Force use of the Stinson L-5 Sentinel		
Model	Quantity	RAF Serial Numbers
Sentinel I	40	KJ368 to KJ407 Equivalent to L-5
Sentinel II	60	KJ408 to KJ467 Equivalent to L-5B, NOTE - Most RAF Sentinels were used in Burma
Totals	**3,440**	Total MILITARY (USAAF + RAF) L-5 count by serial number

The number of aircraft built is calculated by the assigned serial numbers. Reviewing several publications reveals slightly different production numbers.

See **Myth Number One** on page 13 for an explanation of the actual quantity of L-5's manufactured versus what some other publications indicate.

USAF Modification Program

Homepage visitor Abram Karl <gilmo709@bellsouth.net> is currently restoring Stinson L-5E, USAAF Sn: 44-17812, and Navy BuNo: 03956. Karl provides the following information about a USAF modification program to bring early model L-5 aircraft up to L-5G standard, including a change from 12 to 24 volt electrical systems.

“Some of the L-5B were converted to 24 Volt airplanes. But, they were also converted to L-5G standards although they retained their L-5B serial numbers and designations. This was a fleet wide campaign in order to standardize the remaining fleet of aircraft to an all 24 Volt fleet. This was also done just prior to the airplanes (primarily the L-5) release to the Reserve units, Civil Air Patrol, Coast Guard, and finally the release for sale to other countries. The modification done to these L-5B's was not done to all aircraft just aircraft that had what were considered to a "considerable" service life remaining.”

The End of United States Military Service for the L-5

This information corrected by an email from Jim Gray <akdhc2pilot@yahoo.com> on 10/26/2022. On my 01/01/2022 L-5 article I said “With one exception USAF use of the L-5 ended in 1953. L-5G aircraft 57-6278 was repurchased in 1957 by the USAF for use by the Air Force Academy as a glider tug.”

Corrected information from Jim Gray “There are several that went beyond 1953, and so far I've counted 13 active duty L-5s that were not in the CAP.

“The two longest-serving I know of are 42-14984 and 42-98734. They were still with USAF units up to March 1961, when they were transferred to a school in Japan. One was with the USAF 6100th Air Base Wing at Tachikawa, and the other was with the 6102d Air Base Wing at Yakota. Neither had served with the Civil Air Patrol previously. Another long-server was L-5E-1 44-17984 which was with an Air Rescue Squadron at Elmendorf until Feb. 1959. That corresponds with Alaska statehood, by the way.

“Also, as of October 31, 1956, the Marines still had 14 OY-2s in the Atlantic Fleet's ‘operating inventory.’” All but one were seconded in November. By December 1956 the Navy had a single OY-2 in inventory, and in March 1957 it was finally retired. (source: OPNAV 03110, ALLOWANCES & LOCATION OF NAVY AIRCRAFT)

“By the way, the CAP was still an auxiliary branch of the Air Force through the end of 1956 and their aircraft were still maintained by the Air Force and considered part of their active-duty inventory (in Alaska it was until 1959). As such, they could have been brought back into a regular AF unit as had happened with dozens of CAP L-5s during the Korean War. In December 1956, a few dozen were donated to the CAP and put

under their civilian corporate ownership, and given N-numbers. 'Donated' is exactly how it appears on the record cards. I don't have a final count yet, but I have already identified 41 that were technically 'active duty' USAF aircraft without civil registrations until 1957, albeit flown by civilian pilots.

"As far as I've been able to determine, the USAF Academy glider tug was the only one in service when it was designated a U-19B in 1962. Outside of CAP aircraft, I do not find any to which U-19A would have applied, even though it was an official designation. The last CAP L-5s remained in service until the early 70's (I own one of them which was CAP until 1973)."

Department of Defense 1962 Aircraft Designation Change

The USAF Academy L-5 was still in use in 1962 when military aircraft designations were standardized between the services. The single USAF L-5G in use was re-designated U-19B. Five Army L-5 Sentinels still in use were re-designated as U-19A in 1962.

Marine Corps and Navy Sentinels

U.S. Marine Corps Sentinels, designated OY-1, were transferred from the USAAF. They have the following USAAF serial numbers and U.S. Navy bureau numbers. Since these aircraft were built on USAAF contracts, they are included above in the total aircraft USAAF count of L-5's.

Navy Model	Quantity	Bu Aer SN	Built as USAAF SN	Army Model
OY-1	10	2747 to 2756	42-99512 to 42-99521	L-5
OY-1	10	2757 to 2766	42-99690 to 42-99699	L-5B
OY-1	10	2767 to 2776	44-16857 to 44-16866	L-5B
OY-1	12	2777 to 2788	44-16957 to 44-16968	L-5B
OY-1		2789 to 2790	Assigned, canceled	
OY-1	147	3862 to 4008	44-?????? NOTE - Navy BuNo: 03956 is USAAF 44-17812	
OY-1*	1	4009	44-18137	L-5E
OY-1	16	4010 to 4025	44-?????	
OY-1	16	60460 to 60475	42-98448 to 42-98463	L-5
OY-1	16	60476 to 60491	42-98528 to 42-98543	L-5
OY-1	16	60492 to 60507	42-98737 to 42-98752	L-5

Navy Model	Quantity	Bu Aer SN	Built as USAAF SN	Army Model
OY-1	12	75159 to 75170	42-98948 to 42-98959	L-5
OY-1	12	75171 to 75182	42-99040 to 42-99051	L-5
OY-1	5	120442 to 120446	44-????? (formerly 04021/04025)	
OY-1	28	120447 to 120474	4?-????? (120454 was USAAF 44-18182, 120469 was USAAF 45-35012)	
Total	**311**	Total Marine Corp L-5 count by serial number		

***** - Bureau of Aeronuatics SN 4009 went to the Navy. At least 29 others were modified to become OY-2 airplanes.

U.S. Military production of the L-5 series airplanes ended November 1945.

Equipped with a 185 h.p. Lycoming engine, the L-5 gross weight is 2050 pounds (rising in later models to 2200 pounds). L-5's saw service in all theaters during WWII, but are probably best remembered for their work in the Pacific and Asia. Only the Piper L-4 was produced in greater numbers than the Stinson L-5 Sentinel.

United States Coast Guard Sentinels

Mike O'Rourke <wmor@ix.netcom.com> wrote to give me information about U.S. Coast Guard use of the Stinson L-5 Sentinel. The United States Coast Guard used 6 Stinson L-5's between 1948 and 1958. None of these aircraft were new build, rather the USCG obtained them from either the Navy or USAF. Much of their use was to locate illegal "moonshiners" in the Southeast part of the United States. All of the machines were "based" at CGAS Elizabeth City (ECG) but operated out of various airports in the S.E. US looking for moonshiners. Oh yes, don't fret about the letter "G" appendage to the aircraft type. The USCG added a "G" at the end of everything they flew (PBM-5G, PB-1G, PBY-5AG, PB4Y-2G, etc).

Update 10/19/03 - Homepage visitor Jos Heman provided the following additional information about L-5 aircraft used by the U.S.C.G. “In there Mike O'Rourke gave information on Sentinels used by the USCG and suggested that some of these were designated as OY-1G and OY-2G. The former included the aircraft serialized 42-98168. However, Arthur Pearcy’s book ‘United States Coast Guard Aircraft’ shows, on page 318, a photo of this particular aircraft with the distinct designation OY-1 painted on the tail. So, it is likely that the OY-1G and OY-2G designations were never assigned. I have attached a scan of the photo concerned.”

My Thanks to Jos Heyman <josheyman@hotmail.com>, 92 Modillion Ave, Riverton WA 6148, Australia for the information above.

Mike O'Rourke's information continued:

Regarding the below;
RSS = Retired-Sold as Surplus,
DBR = Damaged Beyond Repair,
AFSP = Acquired For Spare Parts source,
SSP = Scrapped for Spare Parts.

AIRCRAFT TYPE/SERIES: Stinson OY-1/2 Sentinel - Model 76

USCG No.	Date Comm	Rec'd From	Date Decomm	Other Nos./Service/Remarks C/N
3937	05/16/52	USN	02/06/58	OY-2G, USN, OY-2, Buera Number 03937, USAF, L-5E-VW, 44-?????, Crash, DBR
4870	09/18/48	USAF	11/15/51	OY-1G, USAF, L-5-VW, 42-14870, Crash, DBR
4970	09/18/48	USAF	03/28/52	OY-1G, USAF, L-5-VW, 42-14970, RSS
5025	09/16/48	USAF	05/09/49	OY-1, USAF, L-5-VW, 42-15025, RSS
5060	09/09/48	USAF	05/09/49	OY-1, USAF, L-5-VW, 42-15060, RSS
8186	09/20/48	USAF	06/04/58	OY-1G, USAF, L-5-VW, 42-98168, RSS (see above about the "G" designation)
8293	09/20/48	USAF	10/14/48	AFSP, USAF, L-5-VW, 42-98293, SSP
8665	09/20/48	USAF	10/14/48	AFSP, USAF, L-5-VW, 42-98665, SSP
8768	09/17/48	USAF	10/14/48	AFSP, USAF, L-5-VW, 42-98768, SSP

USCG L-5 Use Summary

Total USCG L-5's Aircraft:	6 Operationally + 3 Acquired For Spare Parts = 9 total L-5 Aircraft
1st USCG L-5 Aircraft acquired:	09/16/48
Last USCG L-5 Aircraft:	06/04/58
Total time USCG used L-5:	117 months
Actual units:	6 - rest used for type support

Other Military Users of the L-5

Apparently many surplus L-5 Sentinels were delivered to other countries. The following countries are shown as flying the L-5: Ethiopia, Greece, Indonesia, Italy, Japan, Republic of Korea, Mexico, the Philippines, and Thailand. I don't have quantities to any of these countries.

Approved Type Certificate

Since most military aircraft are not produced to civilian airworthiness standards, Stinson did not seek an ATC for the L-5. The first L-5, model 76, was registered NX27772, for flight testing. But an approved type certificate was not issued by the CAA (Civil Aeronautics Administration) at that time.

After WWII, when appropriately modified, the L-5 is eligible for a standard Approved Type airworthiness certificate under ATC #764. Near the end of WWII with production coming to an end, the remaining inventory of L-5 parts was purchased by Sentinel Aircraft, Inc. of Dexter, Michigan.

Apparently the newly formed "Sentinel Aircraft Company" continued to assemble L-5's, most likely from spare parts. That must have seemed like good business sense - to use up all the surplus components - until the airplane market crashed in '49. Later a company in Phoenix actually held the rights of manufacture in the 50's, and that may have been the source of the odd-ball 1957 'new build' Air Force academy L-5.

Jim Gray suggests as many as 900 L-5G's were built, only the first 115 were built for the military. Checking John Baker's World Stinson Database reveals that FAA records show a real variety of serial numbers for the L-5 models.

Basic L-5 Specifications

SPECIFICATIONS	PERFORMANCE
Span: 34 ft. 0 in.	Maximum speed: 130 mph
Length: 24 ft. 1 in.	Cruising speed: 115 mph
Height: 7 ft. 11 1/2 in.	Stalling speed: 43 mph
Empty Weight: 1,550 pounds	Range: 420 miles
Maximum Weight: 2,050 pounds	Service Ceiling: 15,800 ft.
Crew: One minimum, two maximum	Rate of Climb: 875 FPM
Armament: None	
Engine: Lycoming O-435-1 of 185 hp.	
Cost: $10,000	

L-5 Sentinel Myths

Myth Number One - Reading different commercial publications provide differing descriptions of the models. First major difference is in the number of L-5 airplanes built. Many publications (most publications actually) indicate 1,731 L-5's were built, while the serial numbers I have show 1,813 L-5's were built.

Jim Gray, e-mail <Akdhc2pilot@aol.com> of Juneau, Alaska, sent me the following e-mail which MAY explain how the 1,731 number is arrived at:

The L-5 serial numbers are as follows:

42-14798 thru 42-15072	=	275 (O-62)
42-98036 thru 42-99573	=	1,538 (L-5)

From the second batch of 1,538 L-5 serial numbers, the Navy accepted the following airplanes for the Marines:

42-99512 thru 42-99521	=	10 (OY-1)
42-98448 thru 42-98463	=	16 (OY-1)
42-98528 thru 42-98543	=	16 (OY-1)
42-98737 thru 42-98752	=	16 (OY-1)
42-98948 thru 42-98959	=	12 (OY-1)
42-99040 thru 42-99051	=	12 (OY-1)
		82 Total OY-1 from L-5 production

1,538 + 275 = 1,813 - 82 (OY-1) = **1,731** which is the quantity of L-5's most often quoted in other publications.

Apparently the OY-1's aren't considered L-5's by whoever made this computation to show 1,731 L-5's manufactured. They shouldn't be subtracted because they are right out of the L-5 serial numbers, built on USAAF contracts. These were aircraft built for the USAAF as L-5's and diverted to the Marines.

Based on the serial numbers, and Jim Gray's theory, I believe the actual number of L-5's built is 1,813 and the number includes the 82 L-5/OY-1 for the Marines.

Myth Number Two - was there an L-5A airplane? One commercial publication indicates the L-5A was a new build airplane and the L-5B a modification. Three other commercial publications indicate the L-5A is the modified airplane and the L-5B is the new build. Since serial numbers are assigned to L-5B's and not L-5A's, I believe the L-5A is the modified airplane, **IF** there ever was an official L-5A.

Taking that one step further, it may be there never was an "A" model. Again Jim Gray emailed me to provide additional information. Gray's source is original maintenance and parts manuals for the L-5.

“In the 1947, 1950, and 1953 USAF L-5 parts catalogs (unlike the earlier ones), there is an extra column in the right margin of each page used to show which model(s) each part is used on. A note at the front of the manual states that for this system they will use an 'A' to designate L-5's, a 'B' to denote L-5B's, a 'C' to denote L-C's, and so on... This is probably another source of the L-5A confusion. They are NOT saying these are L-5A's, just using the lettering system to make referencing parts simpler. For example, it is easier to list the usage for a part as: A-G, or A-B, rather than write it as _-G, or _-B.”

From the information he has, Gray believes there never was a L-5A model. He says there seems to be an assumption that if there was a “B” model there must have been an “A” model before it.

My original copy of the official “Pilot’s Flight Operating Instructions for Airplanes L-5, L-5B, L-5C, L-5E and L-5G, plus Navy model OY-1," identified as AN 01-50DB-1, is dated 10 August 1945. Note this flight manual lists the L-5, L-5B, L-5C, L-5E, L-5G and OY-1. There is no mention of an L-5A model. I’ve searched but so far have found no source to indicate what serial numbers were ever assigned to a L-5A model. In my opinion if there was an official model L-5A, the USAAF would have included it with the designations the flight, maintenance and parts manuals covered.

From the information I have, and Jim Gray’s maintenance and part manual information, I now believe there never was an L-5A model, at least officially.

Myth Number Three - which are the 24 volt airplanes? Most commercial publications indicate the L-5B was the first to use a 24 volt electrical system. Contrary to the commercial publications, the official USAAF Pilot’s Flight Operating Instructions for Airplanes L-5, L-5B, L-5C, L-5E and L-5G, plus Navy model OY-1," indicates the L-5G was the first airplane to have a 24 volt electrical system.

Jim Gray provided additional information he obtained from the original maintenance and parts manuals for the L-5. These manuals show that only the L-5G has a 24 volt electrical system. Gray’s conclusions from his original maintenance and parts manuals confirms the information I have from my original flight manual. Assuming my original flight manual, and Gray’s original maintenance and parts manual are both correct, that indicates that the commercial publications are in error when they say L-5B’s and later have 24 volt electrical systems. Official publications indicate only the L-5G is a 24 volt airplane.

The Final Stinson Production Airplane - the model 108

The next, and final light aircraft designed and built by the Stinson Division of Consolidated Vultee was the model 108 Voyager, descried separately.

Stinson model 76 L-5 Sentinel Bibliography
Commercial Publications

Bowers, Peter M., and Swanborough, Gordon. "United States Military Aircraft Since 1909. My copy is the 1989 edition by the Smithsonian Institution Press. Pages 572 & 573 cover the Stinson L-1, pages 574 & 575 cover the Stinson model 76 L-5 Sentinel. Brief mention is made of the YO-54 on page 574.

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Love, Terry M., "The L-Birds American Combat Liaison Aircraft of World War II," 2001. Chapter Six, pages 35 to 44 covers the Stinson L-5 Sentinel, book also has other illustrations of the L-5, some color. Published by Flying Books International, New Brighton, MN. Information on the Stinson O-49/L-1 Vigilant in chapter Two. A recommended book about Liaison aircraft in the World War II period.

Underwood, John, "The Stinsons a Pictorial History," 1982 is the third printing. Chapter X, "Flying Jeeps for Uncle Sam," pages 65 to 71 covers the Stinson L-5 and other Stinson liaison aircraft. Published by Heritage Press, Glendale, California. Book originally copyrighted in 1976. Sometimes available on the used book market.

Wegg, John, "General Dynamics Aircraft and their Predecessors," 1990. Pages 137 to 144 cover the YO-54, L-1 and L-5. This is an excellent reference for all Stinson aircraft including the model 108. Published in the United States by the Naval Institute Press, also in England by Putnam. One of the Putnam series newer, larger style format. ISBN 0-87021-233-8, Library of Congress 89-60237. This is my favorite book on the Stinson light aircraft.

Stinson model 76 L-5 Sentinel Bibliography
Military Publications

Department of Defense (previously the War Department) - the following manuals are printed by the government for Stinson's used by the U.S.A.A.F and U.S.A.F.

AN 01-50DB-1 Pilot's Flight Operating Instructions for Airplanes, Army Models L-5, L-5B, L-5C, L-5E, L-5G, Navy Model OY-1, 10 August 1945. "This publication replaces AN-01-50DB-1 dated 20 March 1945. Commanding Officers will be responsible for bringing this Technical Order to the attention of all pilots cleared for operation of the subject aircraft as well as those undergoing Transition Flying Training as contemplated in AAF Regulation 50-16. This publication shall not be carried in aircraft on combat missions or when there is a reasonable chance of its falling into the hands of the enemy. Published under joint authority of the Commanding General, Army Air Forces, and the Chief of the Bureau of Aeronautics. Notice: This document contains information effecting the national defense of the United States within the meaning of the Espionage

Act, 50 U.S.C.,31 and 32 as amended. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law." Added 04/05/99.

AN 01-50DB-4 Parts Catalog for Airplanes, Army Models L-5, L-5B, L-5C, L-5E, L-5G, Navy Model OY-1, 25 January 1946. Restricted. Title page includes the following notes: "This publication replaces AN-01-50DB-4 dated 25 March 1945. Published under joint authority of the Commanding General, Army Air Forces, and the Chief of the Bureau of Aeronautics. Notice: This document contains information effecting the national defense of the United States within the meaning of the Espionage Act, 50 U.S.C.,31 and 32 as amended. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law. Courier-Journal Job Ptg. Co., Louisville, KY. February 1946 - 5,100." Thanks to John T. Baker at <John@hangar9aeroworks.com>, 04/05/99, for this entry.

AN 01-50DB-4, Airplane Parts Catalog for Army Models L-5 and L-5B, Navy Model OY-1, British Model Sentinel 1 & II, 15 September 1944. It contains a similar security warning. Printed by Copifyer Lithograph Corp, Cleveland, Ohio, September 1944, 12,400 printings. Thanks to John T. Baker at <John@hangar9aeroworks.com>, 04/05/99, for this entry.

AN 01-50DB-2. Revised 1 November 1954. It is a service manual for the L-5, but the cover and title page is missing. Thanks to John T. Baker at <John@hangar9aeroworks.com>, 04/05/99, for this entry.

Contact data to provide corrections or add my omissions to this article

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