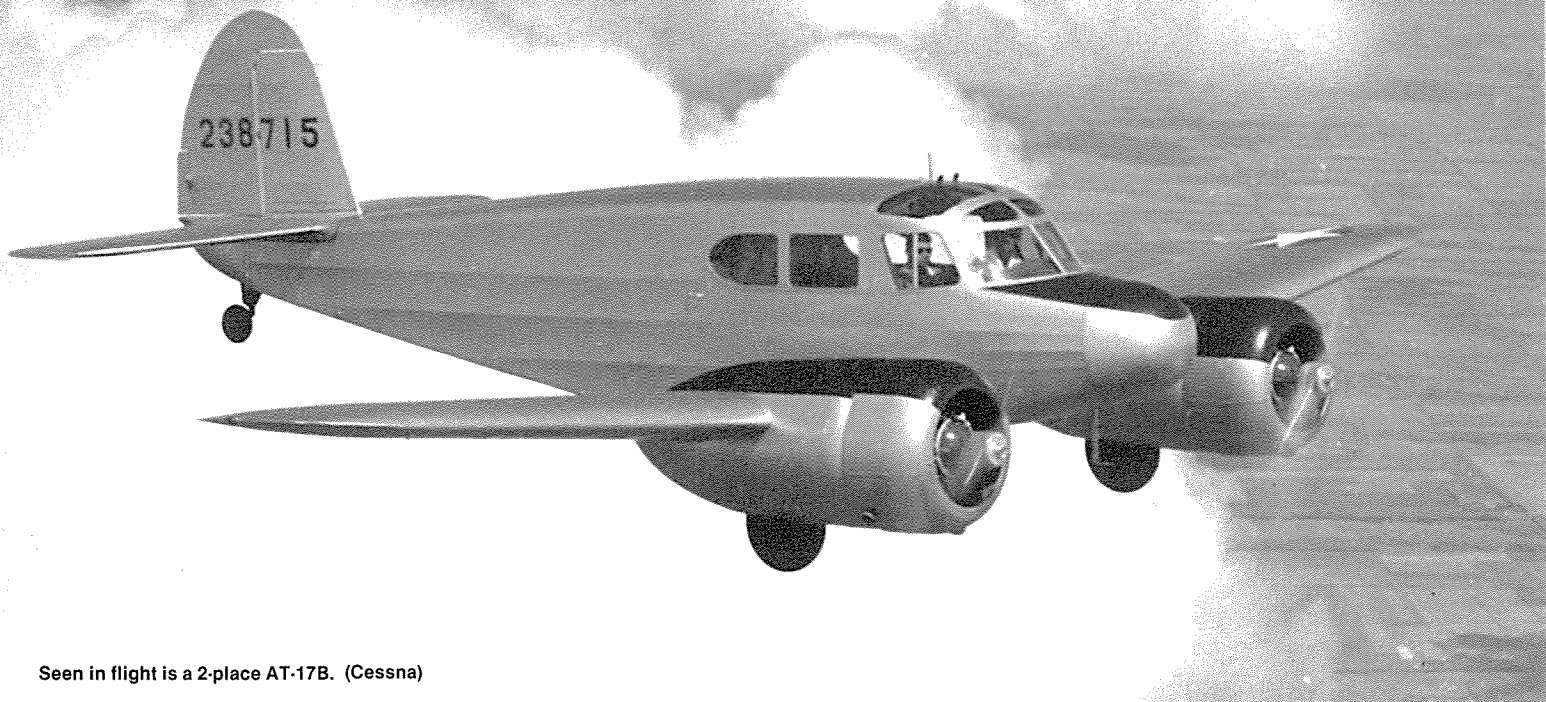




Seen in flight is a 2-place AT-17B. (Cessna)

CESSNA AT-17/UC-78 BOBCAT SERIAL NUMBERS

by Kent A. Mitchell

THE CESSNA AIRCRAFT COMPANY of Wichita, Kansas, during the late 1930s was still suffering the effects of the Great Depression and was about ready to go out of business. Only sales of a few of the company's *Airmaster* models kept them from going bankrupt. Then, company president Dwane L. Wallace decided the market was ready for a small twin-engine airplane—one that was lighter and more affordable than the twins then available from Beechcraft or Lockheed.

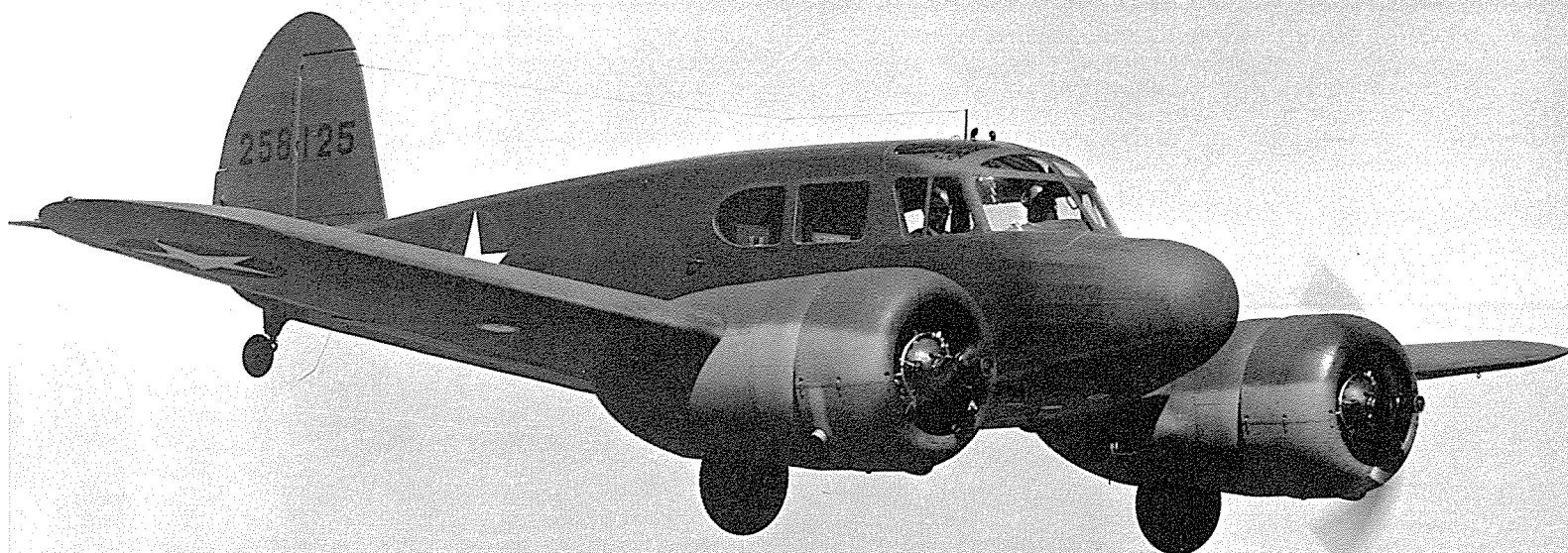
Developed over a three-year period, the prototype of the company's first twin flew on March 26, 1939, with Mr. Wallace himself at the controls. Designated as the Model T-50, the airplane was constructed (as were all previous Cessnas) with a fabric-covered, welded steel-tube fuselage and fabric-covered, all-wood wings, horizontal stabilizer

and vertical fin. The ailerons and flaps were fabricated of steel tubing while the rudder and elevator were a combination of wood and tubing—all being fabric-covered. The engine nacelles were welded steel tubing box structures with aluminum cowling and also housed Cessna's first retractable landing gear. Powerplants were the then-new Jacobs L-4MB seven-cylinder, air-cooled radial providing 225 horsepower (245 horsepower for takeoff) and Hamilton Standard constant-speed, two-blade propellers. Certified at a gross weight of 5,000 pounds, the five-place twin was placed into production and was offered to the general aviation market in 1940.

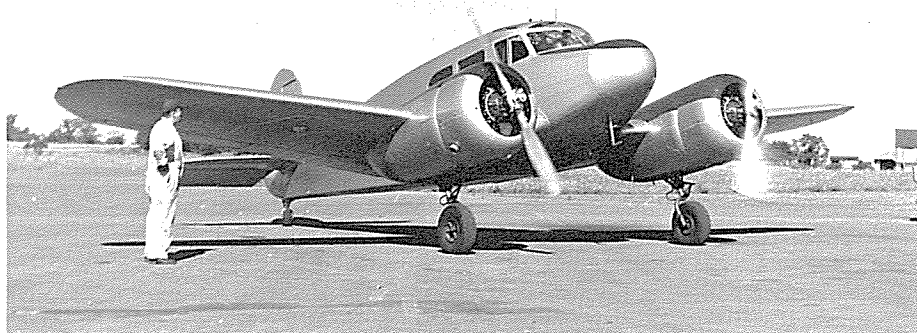
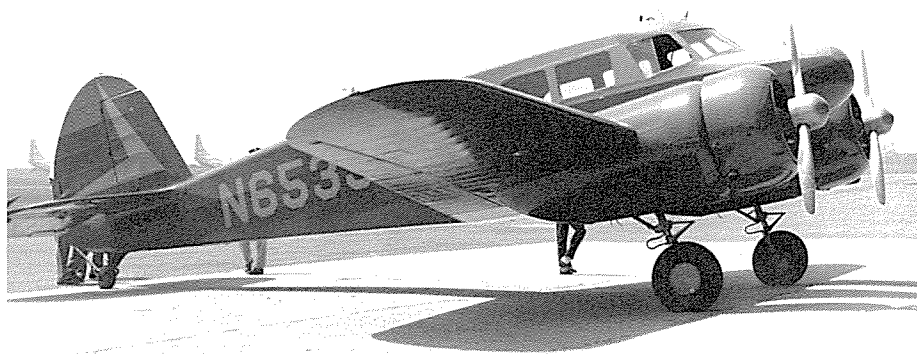
Combined sales of the new T-50 and the older *Airmaster* kept the company from going under. Still, the company had only \$5.03 in their bank account when Dwane Wallace convinced the

Royal Canadian Air Force that they needed the T-50 as a two-place trainer for bomber pilots. Armed with an order for planes, Cessna persuaded local Wichita bankers to finance construction of new factory facilities and the purchase of materials to enable the company to begin a production run of 640 airplanes for delivery to the RCAF.¹

Although painted chrome yellow and named the *Crane*, the only difference between the RCAF military plane and the 42 U.S. civilian T-50s already sold was the addition of engine oil radiators for Canadian cold weather operation. (Cessna explained that "... their use was for warming the oil only and were not required as an oil cooler ..." [?] and recommended their removal for weight-saving purposes in other climates per Cessna Service Bulletin No. 49.)



This 5-place UC-78 (S/N 258125) in olive drab was the 16th of a batch of 431 UC-78s produced between July 1942 and April 1943. (Cessna)



In mid-1940 the U.S. Army Air Corps ordered 33 of the T-50s—but with 295 horsepower Lycoming R-680-9 radial engines (which were already in the military inventory) and an increase in gross weight to 5,100 pounds. To be used as Advanced Trainers for multi-engine pilots, the airplane was designated as the AT-8.

With war clouds looming in 1941, the increased demand for pilots was such that the U.S. military undertook a massive pilot training program and ordered many trainers from many aircraft manufacturers. Among those aircraft ordered were 450 of the twin-engine Cessnas. By then, the Jacobs L-4MB engine had been added to the military inventory as the R-755-9. Procured with this engine installation, the plane became the Army AT-17 and was officially named the *Bobcat*.

Follow-on orders for Models A through C of the AT-17 totaled 1,199 until the Army decided it had enough

This late 1950s-vintage photo shows a *Bobcat* with domed spinners covering its Hamilton Standard propeller pitch control mechanisms. (Photo by Lyle S. Mitchell)

Most AT-17s and UC-78s left the factory painted silver overall, as seen in this 1943 photo taken at the Hagerstown, Maryland airport. (Photo by Lyle S. Mitchell)

trainers and redesignated further production models as UC-78 Utility Cargo transports. Another 3,479 *Bobcats* were built with that nomenclature until military production ceased in March of 1944. Included in these numbers are 190 AT-17A models which were delivered to Canada under a Lend-Lease program and became known as the *Crane* 1A (and later as the *Crane* II). The original T-50 *Cranes* purchased by the RCAF were renamed *Crane* I. Also, the U.S. Navy acquired 67 UC-78s from the Army and operated them as JRC-1 utility transports.

By Cessna's own accounting, a total of 5,402 civilian and military models of their first light-twin was built. Over the years, various publications have re-

sorted to a lot of arithmetic manipulations to arrive at this total by adding up the various numbers of each model reported to have been built. Complicating this process was Cessna's method of assigning serial numbers to production aircraft and the Army's confusing habit of changing the model letter of aircraft *after* their production.

Usually, blocks of manufacturers' serial numbers (MSNs) were assigned by the factory so that the *first* airplane built of that model always had a serial number with the last digit being 1. That is, the first airplane could have an MSN of 1, or 101, or 501, or 10,001—whatever series of numbers the factory assigned as a block. In other words, the *first* airplane could *never* be serial number 0. However, the tenth airplane could then be 10, or 110, or 510, or 10,010, and so forth. For example, the production run of the Cessna AT-17

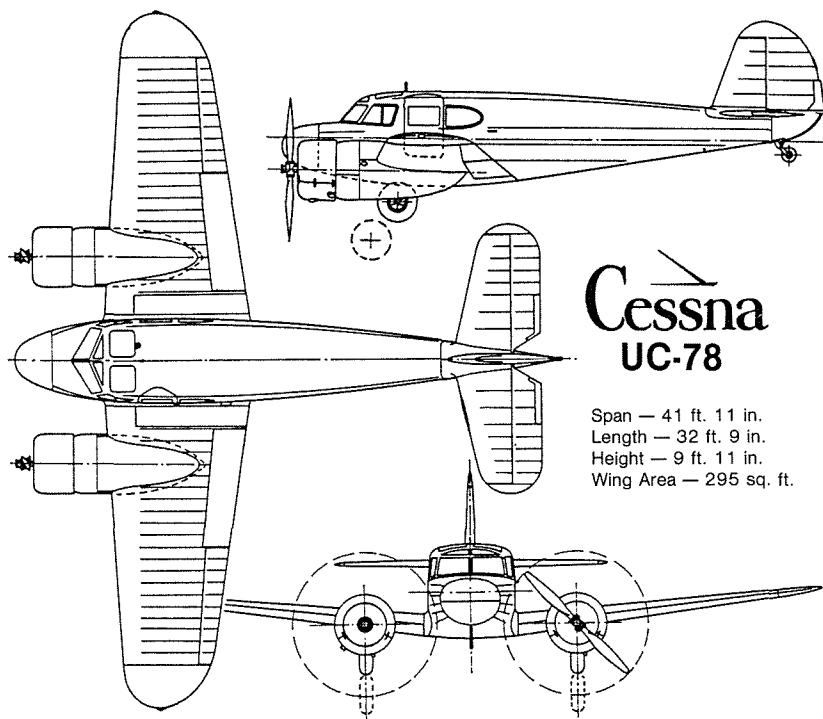
began with the first airplane being MSN 1701 and the last of that model being MSN 2150—a total of 450 airplanes. However, exceptions to the Cessna *Bobcat* serial numbering system began to appear almost immediately.

The first AT-17A model was Cessna serial number 2301—but after 190 were built, the next 60 airplanes were redesignated AT-17C (MSN 2491 through 2550). Then another 33 AT-17As were built—the last serial number of the series being 2583.

The first AT-17B was MSN 2901, but after 466 of those were built, the Army decided it had enough “advanced trainers” and the airplanes would be produced as UC-78B “utility cargo” transports. Hence the first UC-78B had a serial number of 3367. Meanwhile, five-place transports were already being built as the UC-78 beginning with serial number 3601. There were no *Bobcats*

Bobcat NC 41823 shows its 1940s civilian paint scheme in the skies over Maryland.
(Fairchild Aircraft Photo)





built as UC-78As—that model designation being assigned to those civilian T-50s bought back from their owners by the Army after the start of WWII. The first 266 UC-78Cs picked up the serial numbers where the AT-17As left off, beginning with 2584. The last of 60 UC-78Cs began with MSN 4101 and ended with 4160—whereupon more UC-78Bs were built with serial numbers 4161 through 4800. More Bs were built with serial numbers 5374 through 5700 left over from a UC-78 block of numbers. The last of the B models were serial numbers 6051 through 6700—which was the highest serial number *Bobcat* built (January 15, 1944)—but not the last! That was UC-78 MSN 6050, finished on March 17, 1944.

Further confusion arose when the Army changed model letters of certain aircraft after operating gross weight limitations were imposed.

The original civilian T-50 (hence *Crane I* and UC-78A) aircraft were certified by the U.S. Government's Civil Aeronautics Administration (CAA) to operate at a maximum gross weight of 5,000 pounds, based on the design of the wing structure. The military AT-8 and AT-17 were produced with a wing designed to CAA safety factors to carry a gross load of 5,100 pounds. However,

the Army operated the aircraft at 5,200 pounds for some months and then raised the allowable military gross weight to 5,300 pounds.

Then a problem was discovered with the wing spars on the military *Bobcats*. By necessity, most of the thousands of Army trainers were parked outside which exposed them to the weather. Then, too, when not being rained upon, the "military climate" meant that the aircraft were washed quite often. Water that leaked into the wing collected at the lowest spot—which happened to also be where the spars were located at the wing root. With the possibility of wood rot developing at this location, and at the same time still seeking yet higher maximum gross weights, the Army requested Cessna to provide a beefed-up wing structure. To accomplish this, Cessna engineers added mahogany plywood doublers to the face of the existing spruce spars. With this design, the Army allowed the aircraft to operate at a maximum gross weight of 5,700 pounds. All AT-17 and UC-78 series *Bobcats* built from December 19, 1942, forward had the strengthened wing design.

Spar problems continued, however. Consequently, those aircraft upon inspection that were identified as having a

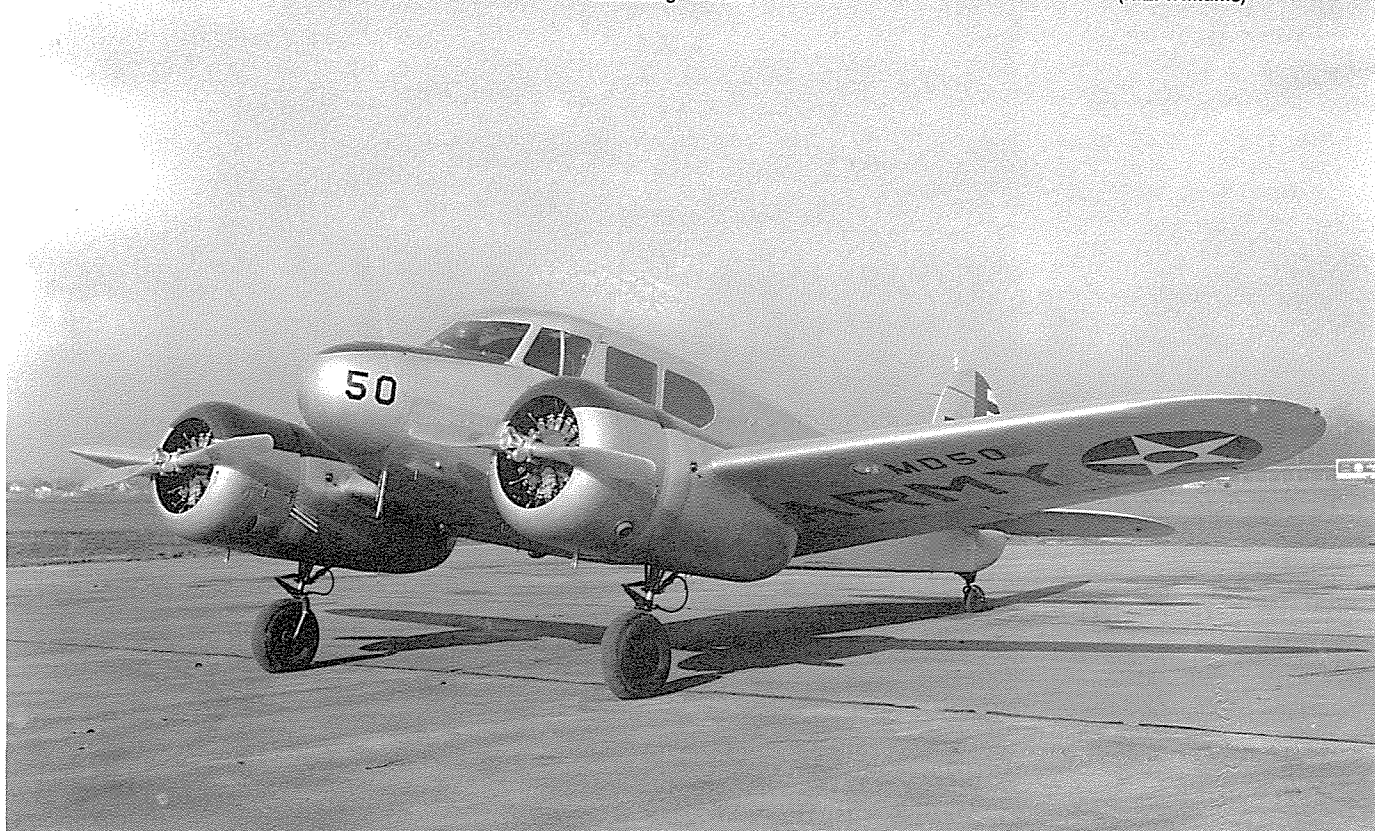
spar problem had gross weight limitations lowered. Instrument panels of all *Bobcats* were placarded to show their maximum gross weights as well as having the limits painted in half-inch red letters on the trailing edge of the wing in view of the crew upon entering the aircraft. To further identify those aircraft which were weight restricted, the Army changed their model letters: a weight-restricted AT-17 became the AT-17E, the AT-17A became the AT-17F, AT-17Bs became the AT-17G, and the AT-17C became the AT-17H. Likewise, a weight-restricted UC-78A became a UC-78D, the UC-78B would become a UC-78E, and a limited UC-78C appeared as a UC-78F.²

Although WWII was not officially over until 1945 (Germany surrendered May 7—Japan, August 14), commencing in March 1944 and over a two-year period more than 64,000 planes were declared surplus and put up for sale by the U.S. Government. Included in this fleet were AT-17, UC-78 and JRC-1 models of twin-engine Cessnas. The number of planes available was such that they could be bought directly from storage fields without worrying about any kind of a priority list. However, all planes were sold "as is where is." Some planes were sold at a flat price while others were priced within a range—depending on condition. Prices for "flyable" Cessnas ranged from \$1,000 to \$8,500.³

Because the airplane had been certificated by the CAA prior to its adoption by the military, only minor changes were required in order to receive civilian licensing and an NC tail number for AT-17s and UC-78s. (The AT-8 was not eligible for commercial licensing.) The requirements for NC licensing basically consisted of removing Army markings regarding operation and limitations and installation of CAA decals (on individual instruments and the instrument panel) plus incorporation of six Cessna Service Bulletins.

In a letter to all prospective buyers of government surplus AT-17/UC-78s, Cessna offered to provide kits of required parts and instruction for licensing. The company also recommended that only those planes with the 5,700-

An early Cessna AT-17 (Model T-50) on the flight ramp at Wright Field, near Dayton, Ohio, during the acceptance trials there. Note the early markings, including "MD 50." (R.E. Williams)



SYNOPSIS — THE CESSNA AT-17/UC-78 SERIES
(Data as Provided by Cessna)

Model	Cessna S/N	Army S/N	Manufactured	Wing	Remarks
AT-17 (or AT-17E)	1701 thru 2150	42-2 thru 42-451	1-1-42 — 6-29-42	5100 lbs	Silver, 24V sys, 2 pl
AT-17A (or AT-17F)	2301 thru 2490	42-13617 thru 42-13806	12-16-41 — 7-27-42	5100 lbs	RCAF, yellow, 12V sys, 2 pl
	2551 thru 2583	42-13867 thru 42-13899	12-19-42 — 12-23-42	5700 lbs	12V sys, 5 pl
AT-17B (or AT-17G)	2901 thru 3011	42-38692 thru 42-38802	6-29-42 — 12-19-42	5100 lbs	Silver, 24V sys, 2 pl
	3012 thru 3366	42-38803 thru 42-39157	6-29-42 — 12-19-42	5700 lbs	Silver, 24V sys, 5 pl
AT-17C (or AT-17H)	2491 thru 2550	42-13807 thru 42-13866	7-25-42 — 8-14-42	5100 lbs	RCAF. Yellow, 12V sys, 2 pl
UC-78	3601 thru 4031	42-58110 thru 42-58540	7-13-42 — 3-26-43	5700 lbs	Olive Drab, 24V sys, 5 pl
	4801 thru 5373	43-7281 thru 43-7853	3-26-43 — 12-11-43	5700 lbs	Olive Drab, 24V sys, 5 pl
	5701 thru 6050	43-31763 thru 43-32112	12-11-43 — 3-17-44	5700 lbs	Silver, 24V sys, 5 pl
UC-78B (or UC-78E)	3367 thru 3555	42-39158 thru 42-39346	1-13-43 — 3-1-43	5700 lbs	Silver, 24V sys, 5 pl
	4161 thru 4800	42-71465 thru 42-72104	3-2-43 — 7-22-43	5700 lbs	Silver, 24V sys, 5 pl
	5374 thru 5700	43-7854 thru 43-8180	9-1-43 — 10-25-43	5700 lbs	Silver, 24V sys, 5 pl
	6051 thru 6700	43-32113 thru 43-32762	7-22-43 — 1-15-44	5700 lbs	Silver, 24V sys, 5 pl
UC-78C (or UC-78F)	2584 thru 2850	42-13900 thru 42-14166	1-26-43 — 5-28-43	5700 lbs	Silver, 12V sys, 5 pl
	4101 thru 4160	42-72105 thru 42-72164	5-28-43 — 6-7-43	5700 lbs	Silver, 12V sys, 5 pl

pound wing design be purchased. To help identify which planes were which, the company provided a chart in their data package which clearly listed Cessna serial numbers versus Army serial numbers for each model. The author recently found an original 48-year-old copy of this data package while rummaging

through the trash inside a dumpster behind a hangar at the Washington County Regional Airport, Hagerstown, Maryland. "One man's trash is another man's gold." The synopsis of this data as presented herein may be of value to those aviation historians interested in the Cessna *Bobcat*. □

REFERENCES

1. "Cessna History," Product Manual SPA 66124-15, Cessna Aircraft Company, Wichita, Kansas, 1966, 15 pages.
2. Cessna data package (plus cover letter) mailed to prospective purchasers of AT-17 and UC-78 series aircraft from government surplus agencies, undated, 10 pages.
3. *War Wings for Peace* booklet, Division of Information, War Assets Administration, Washington, D.C., November 1, 1946, 29 pages.