

THE EVOLUTION OF NOVEMBER CHARLIE

United States Civil Aircraft Registration System between 1927 and 1946

By Dan Hagedorn

Before 1926, although a gross generalization, civil aviation in the United States may be described as little short of completely unorganized chaos.

True, commercial interests – notably the insurance underwriters, which saw direct benefits in attaching the governmental cache to ownership of licensure of all sorts of conveyances – had lobbied intensively for some national standard for the emerging phenomenon called the aeroplane. In fact, they had been the prime movers on the short-lived, and far from complete, Underwriters' Laboratories Aviation Record of 1922, which is story for another day.

Despite the inadequacies of the Underwriters initiative, they managed to assert sufficient lobbying pressure on the U.S. Congress to spur the normally ultra-conservative legislators of the day to finally do something to address the growing problem.

The first attempt to organize a nationwide Federal response to civil aeronautics came in May 1926 when Congress finally passed the Air Commerce Act, which did not become effective until January 1927.

The Department of Commerce (DoC) was handed the task of organizing an Aeronautics Branch, which must have been an exciting but daunting challenge. Besides attending to the process of properly licensing all known aircraft in the country, it was also tasked with developing standards for construction and certification. In time these would become known as Approved Type Certificates (ATC's). Included was the periodic inspection of each and every aircraft attendant to renewals of their licenses. But that was not all.

Even though the subtitle of the new law seemed simple, reading "*An act to encourage and regulate the use of aircraft in commerce and for other purposes*," the relatively small Branch was stunned to learn that the devil was indeed in the details. They were also charged with:

- Encouraging the establishment of airports, civil airways and other air navigation facilities.
- Making recommendations to the Secretary of Agriculture concerning weather service.
- Studying the possibilities for the development of air commerce, the aeronautical industry itself, the [then] current state of the art, and to collect and disseminate information on these subjects.

- Advising the Bureau of Standards and other agencies concerning research and development relating to air navigation facilities.
- Investigating, recording, and making public the causes of accidents in civil air navigation.
- Exchanging information with foreign governments pertaining to civil air navigation.

To execute these tasks, the first Assistant Secretary of Commerce appointed to oversee all of this was William Patterson MacCracken, Jr. He was just 37-years old. A WWI era U.S. Army Air Service veteran himself, he was an unusually well qualified Presidential appointment, and unquestionably the right man for the job.

His first measure, in sizing up the task before him, was to organize his Branch into three functional Divisions: Air Regulations, Airways, and Air Information. One of his original staffers was Clarence Marshall Young. MacCracken assigned him as head of the Air Regulations Division – yet another fortuitous posting, and a name that soon became one of the best known amongst U.S. civil aircraft owners and operators.

Before any of these measures could be addressed, the Aeronautics Branch was faced with a much more immediate and pressing task: locating the owners of all aircraft then extant in civilian hands in the country.

Word of the new rules and regulations was circulated as widely as possible nationwide and into the (then) Territories of Alaska and Hawaii. For the most part this was done using the solitary practical media available at the time – newspapers. Data was amassed from the aeronautical literature of the day that supported the efforts of the infant Branch,

The relatively small staff, comprised for the most part of clerks and a sprinkling of engineers, was overwhelmed by the deluge of inquiries, quasi-applications, and protests that descended upon them.

These inquiries were nearly all hand-written, and with rudimentary addresses. The supervisors assigned stacks of incoming mail to each clerk, who then attempted to make sense of each item of correspondence. Then, by return mail, send each correspondent copies of the application forms and copies of the new Federal rules for the regulation of aviation. These had been initially drafted in September 1926, but that, after

Form AB-88		AIRPLANE	
Bowles, f			
15570 Southfield Road, Detroit, Michigan			
MAKE	TYPE	TYPE ENGINE	INSPECTOR
Simplex			
Special		Am.Cirrus	
REMARKS: Mfg.No. S-2.			LICENSE NO. 11358
Approved for Ident. 8/11/31-Robertson.			Approved Disapproved

11358			
S. Bowles, 15570 Southfield Road, Detroit, Mich.			

The hard-copy, 3 inch by 5 inch index cards used to manage the U.S. Civil Register over the years have evolved. This one, for a Simplex Special, Identified Aircraft 11358, was originally issued in 1931. The make of the aircraft was later changed to the Gross Model 4 glider! (FAA)

five drafts, weren't finally released until December 31, 1926. Given the state of the tools available at the time was really quite commendable for a government bureaucracy, .

The Branch had included provisions that would allow aircraft owners, pilots, and mechanics subject to the regulations to operate without a Federal license until July 1, 1927, provided that they applied for the appropriate license prior to March 1, 1927. In light of the unexpected demand, this deadline was extended to May 1.

In an effort to bring order to the process, the Branch constructed a three inch by five-inch index card system for managing and, to a limited extent, cross-referencing individual aircraft, engines, licensed pilots, and mechanics. This card index, which survives to this day in the care of the Kansas Aviation Museum, eventually contained some 3.3 million cards, and was the very heart and soul of what became the United States Civil Aircraft Register.¹

As completed, all-purpose Form AB-9's (Application for Commercial, Restricted, or Experimental Airplane License or Unlicensed Identification Mark) started rolling in. Each clerk was assigned a stack to process. For each application they assigned an Application Number and a preliminary

Form AB-9		DEPARTMENT OF COMMERCE AERONAUTICS BRANCH	
APPLICATION FOR COMMERCIAL, RESTRICTED, OR EXPERIMENTAL AIRPLANE LICENSE OR UNLICENSED IDENTIFICATION MARK			
To the Secretary of Commerce:			
Application in duplicate is hereby made for (Restricted license) (Experimental license) (Identification mark)			
I. RECORDED OWNER			
(See definition of ownership as follows at bottom of reverse side)			
1. Name	Curtiss Flying Service of California.	(Print or type)	
2. Permanent address	1240 Pacific Mutual Bldg., Los Angeles, California.	(State)	(City)
3. Is owner individual, partnership, or corporation?	Corporation	(Check one)	
a. If an individual, is he or she a bona fide citizen of the United States?			
b. If partnership, names and citizenship of each partner			
c. If a corporation, names of president, directors, and managing officers and citizenship of each	J. B. Crawford, Jr., Pres. - D. S. Jones, N. Pres. - G. C. Mosely V. Pres. - J. E. Ross, Secy. - J. A. B. Smith Treas.		
Give per cent of voting interest in the corporation which is controlled by citizens of the U. S.	100 %		
NOTE.—See Section III, "OPERATING AGENCY," at top of reverse side.			
II. DESCRIPTION OF AIRPLANE			
4. Name of manufacturer	Ireland Aircraft, Inc.	5. Date manufactured	August 1929.
6. Manufacturer's model	N-2-B	7. Manufacturer's serial number	39
8. Manufacturer's approved type certificate number	158		
9. Engine type	4 (R 975-A) 300 H.P.	10. Manufactured by	Wright Aeronautical Corp.
10. From whom was airplane purchased?	Ireland Aircraft, Inc.	(Date)	August 1929
11. Does the airplane now display any license or identification number issued by the Department of Commerce?			
a. Has the airplane been previously inspected by Government or State?	No	When?	
Where?		Was it approved or disapproved?	
13. Has the airplane been remodeled?	No	If so, by whom and describe remodeling	
14. Were parts used for replacement manufactured by the manufacturer of the airplane?			
15. If Experimental or Restricted license is requested, give detailed description of purpose for which plane will be used.			
16. State most convenient flying field and nearest town where airplane may be inspected for airworthiness	Roosevelt Field #2, Garden City, L. I.		
AFFIDAVIT—RECORDED OWNER			
STATE	New York	COUNTY	Westchester
D. J. Erlam, Jr., being first duly sworn, upon his oath deposes and says that the foregoing statements are true of his own knowledge.			
* That he is the Agent of the above-named corporation, and by the authority of its Board of Directors makes this application on its behalf.			
Subscribed and sworn to before me this 14th day of August, 1929.			
* To be filled out if applicant is a corporation.			
IMPORTANT.—Applicant should read section IV on the reverse side of this application before answering any questions. Failure to do so may cause serious delay in obtaining numbers.			

III. OPERATING AGENCY	
(See definition of ownership below)	
NOTE.—If recorded owner and operating agency are the same, Section III should be signed, but questions need not be answered.	
17. Name	(Print or type)
18. Permanent address	(State) (City) (Post office)
19. Is owner individual, partnership, or corporation?	
a. If an individual, is he or she a bona fide citizen of the United States?	
b. If partnership, names and citizenship of each partner	
c. If a corporation, names of president, directors, and managing officers and citizenship of each	
Give per cent of voting interest in the corporation which is controlled by citizens of the U. S.	
I hereby certify that the above statements are correct:	
(Date)	Authority for signature
IV. NOTES—DEFINITIONS	
Recorded Owner is individual, company, or corporation which has presented evidence of its legal title to the plane, which is acceptable to the Department of Commerce for purpose of registration or identification.	
Operating Agency is the individual, company, or corporation which is in possession of the aircraft and is entitled to control its operation.	
Commercial Airplane Licenses "C" or "NC" are issued only to planes constructed in exact similarity and i. accordance with the terms of an approved type certificate or to planes constructed prior to the issuance of an approved type certificate and for which approved engineering data are on file. In no case is a license issued until the plane has been inspected and approved as airworthy by an inspector of the Department of Commerce. Commercial airplane licenses are issued for the purpose of carrying for hire, persons, property, or both, and a plane so licensed must be flown by licensed pilots only.	
Restricted Airplane Licenses "R" or "NR" are issued to airplanes not eligible for commercial passenger-carrying license, but on inspection and approval by a Department of Commerce inspector are found to be airworthy for specially designated purposes. Such planes are to be flown only by pilots licensed by the Department of Commerce.	
Experimental Airplane Licenses "X" or "NX" are issued for experimental purposes and for demonstration only. Persons or property are not to be carried for hire. Experimental planes are not inspected before licensing, but must be flown by licensed pilots exclusively.	
Identification Mark Assignments (no symbol) are issued for those planes not eligible for any class of license and for planes for which the owners specifically request identification only. Unlicensed identified planes are restricted in commercial operations wholly within one State and are not to be flown by licensed pilots when carrying persons or property for hire or reward.	
Application will be submitted to the Secretary of Commerce, Washington, D. C., in duplicate, the original of which must be notarized.	
Unless all questions are answered, it will be necessary to return the application.	
A fee is not required.	
In the event owner's address is changed, this office should be immediately notified.	

The front and reverse sides of an all-purpose Department of Commerce Form AB-9, completed on August 14, 1929, for a Curtiss Flying Service of California Ireland N-2-B, msn 39. Note that the presentation of the marks issued, N.C.113-H may well have led the owner to paint the marks on the aircraft in the same manner. This license was cancelled in 1931 and was later reissued to a Globe GC-1B Swift. Note how the CAA clerk has carefully checked off all the key items, probably against the index card created. "Section IV. Notes-Definitions" on the lower section of the reverse side is also of special interest. (FAA)

Department of Commerce Number. They would create a corresponding Index Card and create a permanent file. It was rigidly dictated, that every piece of incoming and (carbon copy) outgoing piece of correspondence or appropriate form file copy would be placed in this file. Clerks were also entrusted with the responsibility to check each form for completeness, that it was dated, signed, and that it pertained to the aircraft, airman, or mechanic in question. Each clerk was, apparently, given a certain number of Commerce Numbers to assign, in strict numeric order. It quickly became an item of faith within the clerical pool that no duplication of numbers would be tolerated. This simple, but logical rule was observed with few exceptions until around 1946. This was a heroic task considering the often-frenetic atmosphere in which all of this was orchestrated, and performed manually, without the aid of any form of computer, using only manual typewriters, pens, and pencils.

During the course of serving as successive Project Officers for the so-called Pre-1946 U.S. Civil Aircraft Register Project at the National Air and Space Museum, Smithsonian Institution, the late, great Richard S. Sanders and this author personally reviewed more than 40,000 actual DoC/Bureau of Air Commerce and FAA aircraft registration files that had been held in dead storage at the time at the Washington National Records Center at Suitland, Maryland. The 1,500 boxes containing the files comprised only those registrations that had been permanently cancelled, with all others being retained at either Oklahoma City or Fort Worth, Texas. The exception, was records for aircraft that had been exported. These had been placed into a separate records set and all destroyed in 1972 except for one “representative” box.

Members may be interested to know that *American Aviation Historical Society*, along with *Air-Britain*, played a part in the emergence of this project.

Over the signature of Chairman C. J. Chatfield (*Air-Britain*), a resolution was passed sometime in 1979 that read as follows:

Air Britain (Historians), Ltd., the International Association of Aviation Historians, supports the concept of a master historical listing of American aircraft as proposed by Mr. Richard Sanders Allen. The importance of ensuring that no records are disposed of without proper evaluation for their historical content is paramount; and the number of American aircraft built means that the records of the Federal Aviation Administration are the keystone of this project. The Council would like to be kept apprised of the progress of the project and will possibly offer actual assistance at some time in the future.”

Kindly regard this article as, rather belatedly, fulfilling upon this obligation.

Through it all, one constant was observed over and over again: the absolute fairness, professionalism, and courtesy that was communicated to every correspondent owner or operator. The amateur, novice builder of a home-built Heath kit Parasol received precisely the same attention as one of the mighty airline fleet operators or kings of industry.

Initial Challenges

First and foremost, the Branch was determined that it would locate and identify every aircraft in the country, hence the evolution of the officially termed Unlicensed Identification Mark.

As of late 1926, new, manufactured civil aircraft were a distinct minority. The overwhelming majority of aircraft comprised an astonishing mishmash of WWI surplus aircraft, many of which had been modified almost beyond recognition, or hashed-together from assorted components. This included the odd aircraft of questionable foreign origins and what we would today describe as “homebuilts” of highly questionable airworthiness.

Needless to say, variants of the legendary Curtiss JN-4 were very numerous, but there were also a surprising number of modified Thomas-Morse S-4s, Standard J-1s, etc.

It quickly became evident to the staff at the Branch that the majority of the owners of the aircraft being submitted for licensing held a very poor understanding of what to call their aircraft, let alone other required criteria. The most important questions asked on the AB-9 were numbers 4 (Name of manufacturer), 5 (Date manufactured), 6 (Manufacturer’s model) and 7 (“Manuf’rs serial number”, as it appeared on the AB-9). These were the primary elements used to create an Index Card.

At first, the Branch staff sent every applicant the courtesy of an acknowledgment, followed by what was termed a Temporary Number. This then, *in most instances*, became a “permanent” Identification Mark or Commercial License – but *only* after the aircraft had passed an inspection by a DoC Inspector. The extremely hard-pressed and relatively small number of inspectors, particularly in some remote regions, took as long as two years to inspect and approve some aircraft. By then some of these aircraft no longer existed, or their owner/applicants could not be located. It should be noted, as well, that Commercially licensed aircraft could *only* be flown by Federally licensed pilots.

If an aircraft was actually owned by an unlicensed pilot, which very often was the case, and was to be used by an unlicensed pilot (or if the owner was not a U.S. citizen), he could cover this with the Identification Mark assignment as well. Incredibly at the beginning, even though not a Federal licensed pilot – or holding a license of any kind, for that matter – this owner could in fact carry passengers for hire “locally.” But, the same aircraft could *not* be flown by a Federally licensed pilot!

Many applications arrived with just “Curtiss” or “Jenny” and with very vague dates for manufacture, often no Manufacturer’s model whatsoever, and almost never with the crucial “Manuf’rs serial number,” which the Branch judged to be crucial in properly managing the service history and registration record of individual aircraft.

This lack of information generated a flurry of letters from the Branch to these owners, requesting specific clarification on such items. It soon became clear that the owners or operators themselves were in no position to help, as only a very few aircraft actually had what today is described as Manufacturers

Form No. 1-22

DEPARTMENT OF COMMERCE
AERONAUTICS BRANCH

INSPECTION REPORT
(FOR USE FLIGHTS)

MANUFACTURED BY Ludington Lizzette
ADDRESS Ludington Lizzette
TYPE Lizzette DATE INSPECTED 1 February 1927

PILOT'S COCKPIT

Is cockpit accessible? Yes Is seat comfortable? Yes
Interference to prevent easy movement of legs, feet, and arms? Ample
Is rudder connected with tail skid? Yes Is sufficient control surface movement obtained? Yes
Is tail plane adjustment satisfactory and accessible? Yes
Is pilot's head clear of all instruments in case of accident? Yes
Possibility of control stick jamming in any position? No
Is control stick too long or too short? No
Is rudder bar too far forward? No Two close? Yes
Does it jam in extreme positions? No Is there sufficient rudder movement? Yes
Can rudder and elevators jam? No Are shutter controls conveniently located? Yes
Do all controls work freely? Yes Is observer's stick easily removed and replaced? None
Are engine controls rods or flexible cable? Board on table and piano wire
Are controls positively operated in both directions? Yes
Are pulleys provided where cable changes direction? Yes
Is flexible cable run through tubes or flexible sheathing? Yes Do engine controls open forward? Yes
Are engine controls on pilot's left hand and conveniently located? Yes
Are they easily visible day and night? No Are they clearly marked? No
In case of dual control, are all controls easily reached by either pilot? Single
Do engine controls stay fixed in all positions? Yes Can switches be plainly seen while flying? Yes
REMARKS: Recommend that safety arrangement be changed to give more room for pilot and rudder bar moved forward.

ENGINE COWLING

Are ignition devices covered by cowling? No Is cowling easily removed and replaced? No
What means of attachment are used on cowling? None Pins? None Rods? None
Is cowling attached to engine at any point? Yes
Are inspection doors provided at the proper points for easy access to engine accessories? No
Is fire wall satisfactory? Yes
REMARKS: Carburetor takes engine cowling. Magneto back of fire wall in cockpit.

FUEL SYSTEM

Is gasoline gauge visible from pilot's seat? None Is gasoline filler cap accessible? Yes
Are there means for indicating gasoline level in gravity tank? None
Is emergency gasoline tank provided? No
Can it be easily and rapidly connected to the carburetor while in flight? None
What feed system is used from main gasoline supply? Gravity
What type of fuel pump provided? None
Are main gasoline pumps below lowest point in gasoline system? None
If not, what suction head is introduced? None
Are wind pump propellers mounted to prevent impeller breakage? None
Is check valve installed in line between pump tank and emergency tank? None
Do they drain outside the fuselage? None Is there slight overflow from gravity? No
Will gravity tank feed engine at any angle of attack? Yes Are tank caps properly marked and fastened? No
Does overflow pipe return to main tank? No Are tanks easily and quickly drained? No
Do tanks easily and quickly drain? No Are tanks accessible? No
Does removal of the drain plug entirely drain the system with tail skid on the ground? None
Is screen provided in filler neck? No What size vents? 3/16"
Are tanks vented? Yes

FUEL SYSTEM—Continued

Are vents carried out so they will not spray the pilot? Yes
Can tank supports be easily and quickly adjusted? None
Is standard strainer installed between tanks and pumps? None
Is it easily accessible for draining and cleaning? None Does drain cock discharge below the fuselage? None
Is strainer supported by airplane structure or fuel pipes? None
Is each gasoline pipe banded with red paint? No
Is each air line banded with blue paint? No Are connections silver soldered? No
Are sharp bends present in gasoline system? No
In case of leakage will gasoline fall on electric apparatus or exhaust? Yes or magneto
In case of main fuel system failure what provision is made for getting gas to engine? None
REMARKS: 9 manometer tank is provided to shut off gasoline before main tank and carburetor.

DISTRIBUTING VALVE

Can emergency tanks be shut off from carburetor? None From main tanks? None
Can main tank be shut off from carburetor? Yes
Can emergency tank be connected to carburetor with main tank disconnected? None
Is the distributor valve accessible to pilot? None
Are all valves plainly marked showing direction and effect? No
Are these markings visible day and night? No Are there positive stops provided? Yes
In multi-engine installation, are there cross connections between gasoline systems of the various engines? Single
REMARKS: main tank and carburetor.

COOLING SYSTEM

If the radiator is set near the ground, is it suitably protected against mud, dirt, and stones, thrown from wheels or propeller? None
What other parts of airplane or engine must be removed to remove radiator? None
Does radiator retract? None If so, does retracting mechanism function properly? None
Are thermometers located in cooling system to indicate hottest engine water temperature? None
Are they properly marked? None
Are thermometers easily visible from the pilot's seat day and night? None
If cooling system is entirely closed, are pressure relief valves easily adjusted? None
Is radiator pressure gauge easily visible from pilot's seat day and night? None
Is manual control provided for venting closed system? None
Is filler cap secured to radiator when removed from filler neck? None
If radiator is below engine, is it properly vented to prevent air lock? None
Do shutter valves lap when closed? None
Have they a positive control in both directions? None Are positive stops provided for any position? None
If shutter controls become disconnected or break, will shutters automatically open during flight? None
Is all water piping free from sharp bends or air traps? None
Are lines connecting expansion or auxiliary water tanks protected from freezing? None
Is section hose reinforced to withstand pump suction? None
Are all water lines banded with white paint? None
Is relief valve operation visible from pilot's seat? None Will water overflow pipe spray on crew? None
Is overflow line protected against freezing? None
Can cooling system be easily, quickly, and completely drained with tail skid on the ground? None
Is drain plug securely fastened? None
REMARKS: See cockpit.

EQUIPMENT—MISCELLANEOUS

Is wind shield sufficiently large? Yes Is oxygen supply accessible? None
Is oxygen regulating device visible and accessible? None Are parachute seats provided? No
Are safety belts accessible and easily adjusted and removed? No
Are five extinguishers easily reached from outside of fuselage? None
REMARKS: For pilot yes

An early version of the comprehensive, four-page Inspection Report that hard-pressed Department of Commerce Inspectors performed on every aircraft that was subject of an application. This one was for an obscure Ludington Lizzette and was one of the very earliest, dated February 1, 1927. Note that nowhere on the form is there any mention of the Identification Mark, engine type, configuration or Manufacturers Serial number! (FAA)

Page 2 of the Inspection Report for the Ludington Lizzette. The pilot was provided with a safety belt, but the passenger was not!

Data Plates, listing the specific model and “Manuf’rs serial number,” let alone the date of manufacture. In some instances, where some remnant of a former Army, Navy, or even Post Office number was submitted by the owner/operator, these were accepted – or in some abbreviated form. This was the best that could be achieved, although often these were found to be bogus, incomplete, or corrupted.

The Branch was determined that each aircraft would have a Data Plate and, as a minimum, a unique “Manuf’rs serial number.” Not always in coordination with the owner/operator, it commenced issuing metal data plates to be installed on each aircraft that did not already possess a genuine plate. The plate was to be installed at a location in the aircraft that might be reasonably expected to withstand a crash. Most owners/operators were permitted the courtesy of selecting a “Manuf’rs serial number” for their aircraft, usually comprising the owner’s initials and the numeral “1” (e.g., DPH1 or DPH-1). Sometimes, in childish pokes at the DoC, outrageous combinations of letter and numbers for a primitive aircraft, such as XYZ34789011 were submitted.

It is not known how many of these plates were issued, or, indeed, how many of them were actually installed, but since

EQUIPMENT—ELECTRICAL

Are generator fans liable to damage from mud, stones, etc.? None
Are telegraph keys well located for pilot's and observer's right hand? None
Are switch panels and junction boxes accessible? None
Can fuses be replaced during flight? None Is spare fuse container provided? None
Are all switches conveniently located and properly marked? None
Are storage batteries rigidly secured? None Are they easily accessible for replacement? None
Can starter switches be unintentionally operated? None
Is all electrical equipment protected from gasoline, oil, and water under all conditions? None
Is signal light key accessible to pilot? None
REMARKS: None

ENGINE MOUNTING

Can the engine be removed from the airplane without detaching water pump or other engine installations? Yes
Can ignition device be removed from the engine as a unit without detaching other parts? Yes
Can breaker point be cleaned and adjusted without removing any accessories? Yes
Can the distributor be inspected without removing wires or other parts? Yes
Can carburetor be easily removed? Yes
Can carburetor float level be adjusted without removal from engine? Yes
Can jets be changed without removal of carburetor from engine? Yes
Can jets be cleaned without removal from carburetor? Yes
Can gasoline strainer be cleaned without removing carburetor or other parts? Yes
Can water pump be removed from engine without moving other accessories? None
Can water pump be removed without pulling the engine? None
Can water pump be easily replaced or repaired? None
Can oil strainer be cleaned without moving any accessories? None
Is oil relief valve accessible for cleaning and adjusting? None Can oil pumps be easily removed? None
Can engine-driven gasoline pump be cleaned without removing engine from plane? None
REMARKS: None

LUBRICATING SYSTEM

Is the oil filler cap fastened to the engine? No Can the oil tank be easily filled without special funnel? Yes
Will overflowing oil fall on the airplane structure? No What size drain plug is installed? None
Is this at the lowest point of the system? None Is it safetied? None
Is expansion space about 1/4 gallon provided in oil tank which can not be filled? No
Are air vents provided? No What size? None
Are they properly located? None Do they drain so that oil will not reach airplane? None
Are oil pipes likely to be chilled in cold-weather flying? No
Are oil pipes banded with yellow paint? No Is oil pump below level of oil tank? Yes
REMARKS: None

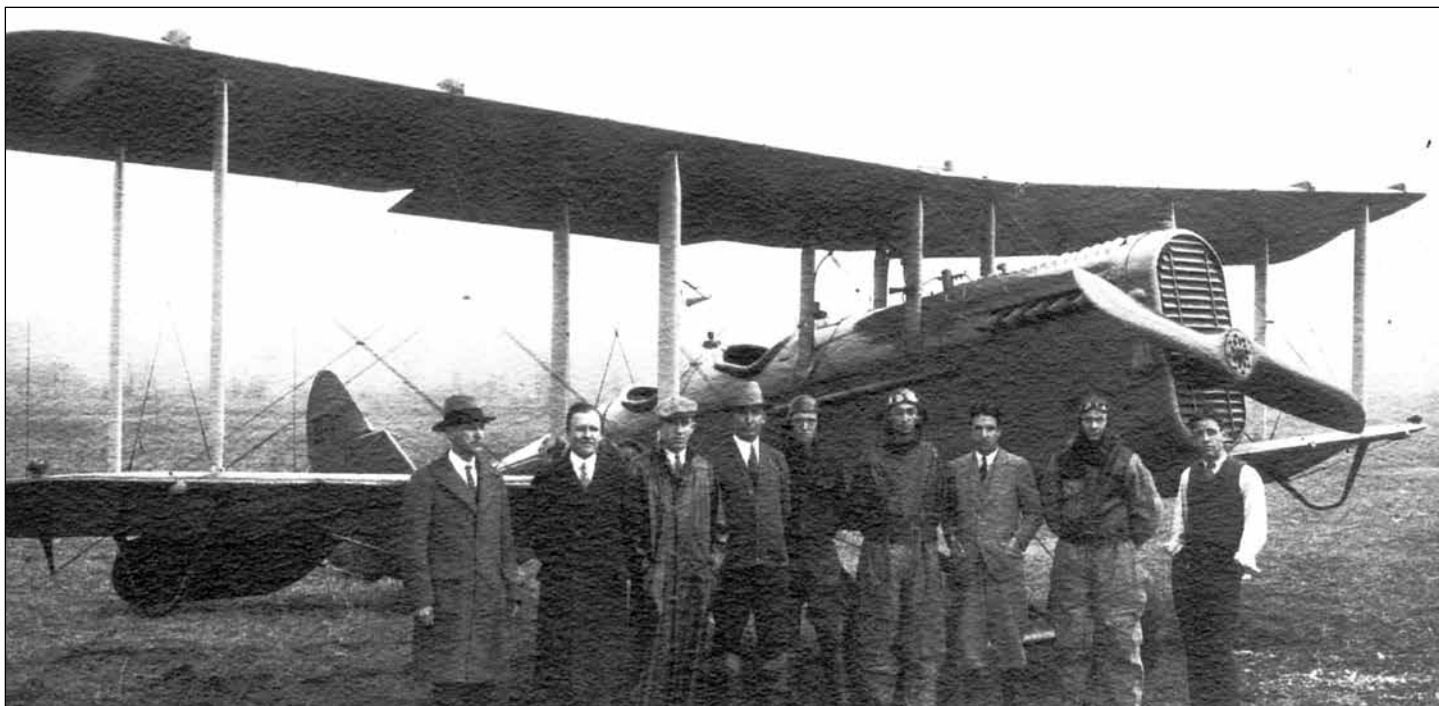
EXHAUST

Do exhaust pipes carry exhaust gases away from cockpit? Yes
Do exhaust gases clear all parts of airplane structure? Yes Are gasoline lines near exhaust pipes? No
Is exhaust manifold within cowling? No Is exhaust manifold properly supported? Yes
What is minimum clearance between exhaust manifold and fabric parts of airplane? 3 ft.
REMARKS: None

IGNITION SYSTEM

Are wires accessible? Yes Are ignition wires unnecessarily slack? No
Are they properly supported? Yes Are all wires continuous? Yes
Note any splices used? None Are all wires soldered to a metallic terminal? Yes
Are wires plainly marked to indicate their point of attachment? No
Are wires likely to have oil, water, or gasoline drip or spray on them? Yes
Are conduits provided? No If so, what material? None
Is there chance of friction between any wires and metallic structure? Yes
Are ground wires connected to the engine properly? Yes
Is the storage battery properly housed and supported? None
Will acid leakage injure any vital part of the airplane? None
REMARKS: None

Page 3 shows that the Inspector suspected that engine wiring was likely to have oil, water, or fuel to leak onto them if the main tank leaked!



Purported to be the same aircraft, this may in fact be the D.H.4M-1 of slightly later date. The nine folks posing for the camera man are alleged to have been Young and his principal deputies and the first three Inspectors, in flying togs. (NASM 20230726214930-001)

PYROTECHNICS	
Is pilot's Very pistol equipment conveniently located at right side of cockpit?	None
Is there sufficient clearance between wheels and struts?	Yes
Are landing gear struts easily inspected and removed?	Yes
Are wheels equipped with grease cups?	Yes
Are wheels equipped with mud guards?	Yes
Are shock absorbers easily removed and replaced?	No
Will shock absorbers chafe against the fairing?	No
Are mud guards necessary?	No
REMARKS:	
LANDING GEAR	
Are wheels easily removed and replaced?	Yes
Can tail skid shock absorbers be easily removed and replaced?	No
Can tail skid shock absorbers be inspected?	Yes
Is tail skid shoe sufficiently heavy?	Yes
REMARKS:	
TAIL SKID	
Are tail skid fittings accessible?	No
Can tail skid shock absorbers be easily removed and replaced?	No
Can tail skid shock absorbers be inspected?	Yes
REMARKS:	
WINGS	
Are wing fittings accessible?	Yes
Are flying wire fittings accessible?	None
Can all the above parts be easily removed and replaced?	Yes
REMARKS:	
CONTROL WIRES	
Are aileron control cables or tubes accessible?	No
Are inspection doors properly located for inspecting the aileron controls?	Yes
Are rudder control cables accessible?	Yes
Are inspection doors properly located for inspecting the rudder controls?	Yes
Are elevator control cables accessible?	No
Are inspection doors properly located for inspecting the elevator controls?	Yes
Are control cables properly protected against chafing or jamming?	Yes
Are pulleys provided at all sharp bends in control cables?	Yes
REMARKS:	
OBSERVER'S COCKPIT	
Is cockpit accessible?	No
Is seat comfortable?	None
Interference to prevent easy movement of legs, feet, and arms?	None
Is rudder connected with tail skid?	None
Is observer's head clear of all instruments in case of accident?	Yes
Possibility of control stick jamming in any position?	None
Is rudder bar too far forward?	None
Does it jam in extreme positions?	None
Is observer's stick easily removed and replaced?	None
Are engine controls on observer's left hand and conveniently located?	None
Are they easily visible day and night?	None
Do engine controls stay fixed in all positions?	None
Is windshield sufficiently large?	Yes
Is oxygen regulating device visible and accessible?	None
Is it easy to clear airplane in case of forced parachute descent in any flight position?	No
Are safety belts accessible and easily adjusted and removed?	None
Do exhaust pipes carry exhaust gases away from cockpit?	Yes
Is signal light key accessible to observer?	None
REMARKS:	
INSPECTED BY: W.R. Jones	

Nowhere on the form, signed by Inspector W.R. Jones, was there any space set aside for "Approval" or "Failure" as the actual Identification Mark application would have included this crucial determination. The Inspection was performed regardless.

some of these primitive aircraft soldiered on for much longer than the DoC had ever imagined, the rise of what became known as the Identified Aircraft or Identification Mark – a simple, un-prefixed one, two, three, four or five digit number² – persisted far longer than the Branch wanted.³ Initially, these plates were almost universally installed in such aircraft. The plates actually issued to directly to owners by the DoC, however, only persisted for a matter of months before it became simply untenable. The DoC then started accepting the owner's assurances that (a) they had installed some sort of plate and (b) the "Manuf'rs serial number" they had selected was verified, in the field, by a DoC Inspector.

First Inspections, Licenses and Approvals

To his credit, one of the first actions by MacCracken was the acquisition of a de Havilland DH-4 from the Post Office Department by his nascent agency.

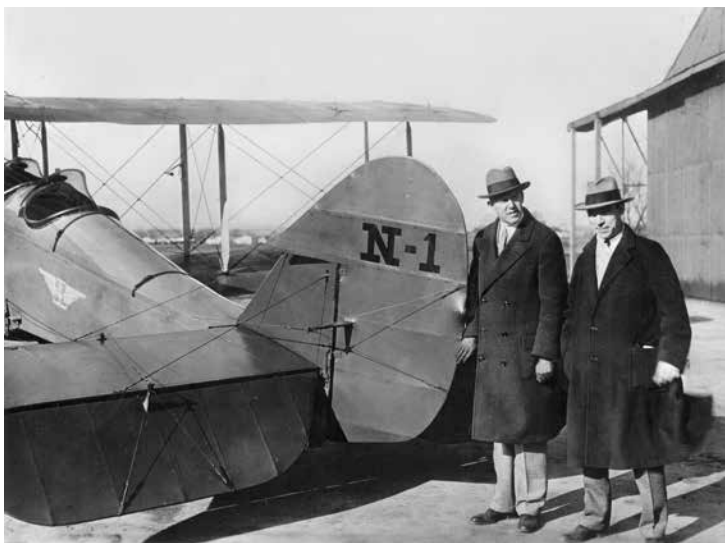
This venerable aircraft had been found at Bellefonte, Penn., and was flown down to the DoC's primary operating field at the time of College Park, Md., just north of the District of Columbia.

It is not absolutely clear if this was the aircraft that, with suitable celebration, became N-1 at Bolling Field, D.C., in December 1926 or January 1927. The aircraft was emblazoned with the Department's new logo on her rear fuselage, and the Identification Mark N-1 on her rudder. Ironically, since the aircraft type did not qualify for an ATC, it could not be marked as NC-1 or C-1, based on the Departments own regulations. In fact, should have been marked as either N-S1 or NS-1!

A month later, Clarence Young and a group of eight of his zealot young engineers descended upon the Ludington Flying

Status of Registered Aircraft by State or Territory, October 6, 1928

State or Territory	Licensed Aircraft	Temporary Numbers	Identified Aircraft	Total
Alabama	3	2	5	10
Arizona	2	4	0	6
Arkansas	23	13	24	60
California	234	105	249	588
Colorado	15	6	10	31
Connecticut	36	9	9	54
Delaware	7	1	0	8
District of Columbia	35	3	1	39
Florida	26	6	27	59
Georgia	26	6	19	51
Idaho	1	2	2	5
Illinois	136	69	175	380
Indiana	29	24	50	103
Iowa	25	15	39	79
Kansas	52	39	50	141
Kentucky	8	4	8	20
Louisiana	22	8	18	48
Maine	4	0	5	9
Maryland	22	6	14	42
Massachusetts	49	17	35	101
Michigan	110	77	63	250
Minnesota	53	19	37	109
Mississippi	9	1	2	12
Missouri	91	38	75	204
Montana	8	5	23	36
Nebraska	25	19	50	94
Nevada	0	1	4	5
New Hampshire	4	1	1	6
New Jersey	46	25	28	99
New Mexico	1	1	3	5
New York	211	65	106	382
North Carolinas	22	8	12	42
North Dakota	1	1	18	20
Ohio	92	60	98	250
Oklahoma	51	24	57	132
Oregon	14	6	14	34
Pennsylvania	135	44	36	215
Rhode Island	0	3	13	16
South Carolina	8	1	3	12
South Dakota	7	6	7	20
Tennessee	18	4	10	32
Texas	73	28	30	131
Utah	6	4	3	13
Vermont	2	1	1	4
Virginia	21	6	14	41
Washington	53	14	23	90
West Virginia	7	5	8	20
Wisconsin	43	26	45	114
Wyoming	5	1	3	9
Alaska	7	7	1	15
Hawaii ⁵	1	2	0	3
TOTALS	1,879	842	1,528	4,249



Cited as a de Havilland D.H.4B, but clearly modified, N-1 must be carefully described, as of this January 1927 image, as the lowest mark issued, but officially, not the first license issued, as explained in the text. McCracken is at left, and the indefatigable Clarence Young is on the right. This was the first aircraft to be emblazoned with the Department of Commerce logo on her fuselage. (NASM 20230726265004-001)

Service in relatively nearby Philadelphia to conduct under the new Regulations the first comprehensive inspection of an operating company, its fleet of aircraft, and its crews. However, this event overshadowed the fact that the very first actual inspection of a U.S. civil aircraft had taken place earlier, on December 7, 1926, when Inspector Ralph Lockwood tested a new Stinson SM-1 Detroit before, ironically, its export delivery to *Canadian Air Express*.

From that day on, DoC Inspectors fanned out across the width and breadth of the country, searching out owners and operators in the most remote reaches, a monumental undertaking that has received scant appreciation.

A year later, in February 1928, the Branch was able to announce that, to that point, it had licensed, identified or issued temporary numbers (pending inspection) to not fewer than 2,715 aircraft. This was out of, to that date, a total of an astonishing 4,555 applications it had attempted to process.

It is instructive at this point to take a look at what was achieved by the Branch between that announcement and eight months later, October 6, 1928, by State or Territory. [See table]

The Coveted Number 1, a Retrospective

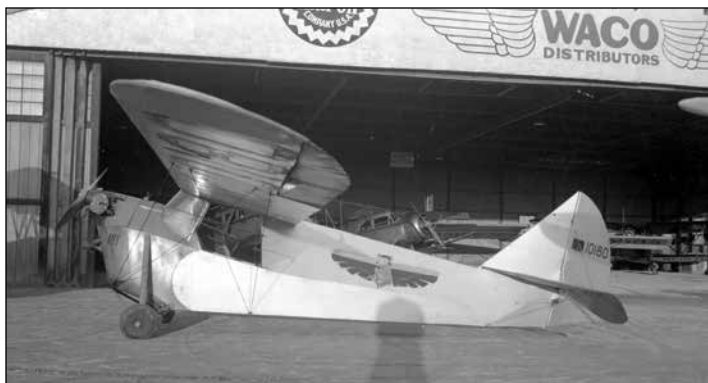
Although the DoC publicized the assignment of “N-1” to a de Havilland DH-4, as noted, the simple fact is that this was little short of a publicity stunt. Not a solitary document has ever been located showing that an actual application, as required by its own regulations, or for that matter, a file folder, was ever created for this aircraft.

We do not even know, with any certainty, if DH-4 “N-1” was a U.S., Canadian, or British aircraft. The known fact of its previous ownership would suggest a U.S. built example. The Bill of Sale from the Post Office to the DoC Aeronautics Branch, dated in September 1926, states that it was being acquired for “experimental purposes.” DoC records do show that she was modified by the U.S. Army’s Middletown Air Depot in Pennsylvania by January 1, 1927, and described subsequently as “...DH Club Type.”

After all of this had taken place, someone within DoC seemed to feel that an actual application, under its own rules, was probably prudent. So, on January 12, 1927, such a document was completed, and approved the same day. It appears, however, as no subsequent record or file could be located, that the aircraft



An early example of an Identified Aircraft, Waco ATO (Speedwing 220 J-5) 8508 was one of five acquired on an urgent basis by the Mexican Government March 12, 1929, and armed with A-3 bomb racks, to attempt to deal with the insurgency sweeping the country. However, such was the urgency of the cash transaction that the actual DoC paperwork for 8508 was not issued until September 16, 1930, by which time the aircraft had experienced numerous adventures in Mexico. The DoC arbitrarily cancelled the Identification Mark on December 30, a purely administrative action. The FAA web site makes no mention of the aircraft going to Mexico. (Waco via Ray Brandley)



Another early Identified Aircraft that experienced a number of permutations. Purchased new as an Aeronca C-2 Standard June 27, 1930, by J.D. Rodeheaver of Jacksonville, Fla., initially and approved for Identified Status as 10180, he requested this be changed to NC-10180 and this became so on July 9. However, when the DoC Inspector went to inspect her around May 22, 1931, he noted that the aircraft had been “disassembled and in storage – has not been used.” On Inspection April 22, 1932, it was discovered that she had been converted to “...tripod landing gear and narrow type fuselage.” By April 4, 1933, the next owner had assembled her and flown some 127:10 before selling her again on November 30, 1933, to S.F. Sapp of Albany, Ga., who requested she be changed once again to Identified status, shown her by the simple expedient of overpainting the “NC-” prefix. She became NC-10180 again September 25, 1934, suffered eight subsequent owners, last being reported in North Carolina in April 1939 and administratively cancelled April 15, 1940, upon expiration of her CofA. Interestingly, on the period negative jacket of this image, Howard Libersky, for some reason, described the aircraft as a “...Aeronca C-2 Special Stunt,” but no reference whatsoever was found to such a title in the FAA file! (Howard Libersky via Dave Ostrowski)

in fact became Identified Aircraft number 1026! But even this was confused with a completely different “de Havilland,” as will be seen further on.

Then the DoC, apparently not having found a file for N-1, probably inadvertently broke its own rules and assigned NS-1 to Northrop Alpha 2 msn 3, which had been completed in November 1930. It is believed to have been the first DoC aircraft to be painted in the Departments striking black and orange scheme and was usually flown by Clarence Young himself. She was sold to the Ford Motor Company April 16, 1931, and survives to this day, displayed as 11Y, at the National Air and Space Museum.

On May 14, 1931, the DoC acquired Ford Model 5-AT-D msn 5-AT-101 – and promptly registered her as NS-1. She served faithfully as the flagship for the bureau until July 15, 1935, when she was sold to the Beech Aircraft Co. in Wichita, probably as a trade-in on the following.

A brand-new, striking Beech C17R Staggerwing, msn C-17R-80, was then registered as NS-1 on August 8, 1936, but was suddenly cancelled on November 17 as “washed

By 1933, the straight numerics of the U.S. Civil register – not counting the issues with suffixes – had passed through 12,000, and snazzy Monocoupe D145, NC-12386, (msn D-103), owned by one R.B. Battle of Park Avenue, New York City was a state-of-the-art status symbol. Painted black and white with gold trim, she was exceptionally well maintained, and survived with a private owner in Massachusetts until cancelled September 2, 1970, at age 37. (via Dave Ostrowski)

out.” Undaunted, the very next day, the (by then) Bureau of Air Commerce bought Lockheed Model 12-A Electra Junior msn 1204 – and promptly assigned it marks NS-1, which was changed to NC-1⁴ effective December 1, 1937, serving with the Bureau through the war.

We could go on with the subsequent issuances of N-1 to the CAA and FAA into the postwar years, but they are beyond the remit of this feature. This brings us to not the first aircraft to bear the marks “N-1” but, rather more to the point, *the first known U.S. aircraft license issued*, which logic would suggest must have been N-1 – but wasn’t.

The Branch received what was called at the time a Form R-8 (Application) on January 12, 1927, which someone at the office marked with the words “Official No.1”.

In fact, the aircraft was not American built at all but, rather, a de Havilland D.H.60 Moth, msn 273 mounting a Cirrus Mark II engine built by A.D.C. Aircraft, Ltd., November 12, 1926. The owner, Kenneth B. Walton of Haverford, Penn., a few miles west of Philadelphia, was issued Identification Mark 1026.

The file contents noted that the aircraft had been brought to New York City “...personally for de Havilland” by Sir Alan Cobham aboard the S.S. *Homeric*. The new owner produced British Air Ministry Certificate of Airworthiness #1059, which the Aeronautics Branch was not sure how to deal with. He had also arranged for Huff-Daland Airplanes, Inc., of Bristol, Penn., to make unspecified “adjustments” to the aircraft.

Walton then sold the aircraft to J. H. Holley, resident at the Kenilworth Apartments, Winnipeg, Manitoba, Canada, on September 29, 1927, at Buffalo, N.Y. He then flew it home, arriving on October 11, with the aircraft subsequently being assigned the early Canadian mark G-CAIL (CofA



Staying in strict numeric sequence, the DoC intermingled Commercially Licensed aircraft, such as this well-kept Travel Air S-2000, NC-2027, as they worked through the numbers. Licensed around April 1928 to Horace Mallette in Illinois with a nominally 102hp Curtiss OXX-6 engine (s/n 6347), she was listed, oddly, as msn 3A. This aircraft was built in 1925 and was almost certainly previously Identified Aircraft 2027. (via Dave Ostrowski)



By November 7, 1932, the sequence had reached 12841, despite the ongoing depression, as evidenced by this rare Hammond-Parks P-1H (msn 201) sold new to S.W. Sun at Ann Arbor, Michigan – but not until October 13, 1933! She had previously been approved, however, for X-12841 in the Experimental category even earlier on June 29, 1932, and was cited on some documents simply as a Parks P-1H. She was approved for NC-12841 under a Group 2-428 approval. She endured eight subsequent owners and wasn't finally retired from service, in Indiana, until around July 30, 1945. (Steve Kovack via Dave Ostrowski)

No.328) the same day. U.S. marks 1026 were cancelled by the DoC twice, for some reason: first on November 18 and again on December 3.

Unfortunately, the institutional memory of this action must have been forgotten by July 13, 1934. On that date, in response to a question from a citizen in Tampa, Fla., the Department replied that “...a check of the files discloses that the first aircraft license was C-26, issued to Wendrell Pavey, Madison & Edwards Roads, Cincinnati, Ohio, for a Standard aircraft, Model J-1.” Definitions are important! What they described to the citizen in Tampa was the first *Commercial* license!

By all accounts, the small initial staff at the Branch had been inundated with applications, and had to request clerical help from other DoC branches. This almost certainly had something to do with fact that the first officially Federally registered aircraft in the country was a British machine, shortly sold into Canada!

Two unrelated events of 1927 suddenly placed yet additional burdens on the young Aeronautics Branch: the first, of course, was Charles Lindbergh's truly epochal flight, which spurred untold numbers of aspiring aircraft designers and builders in the Identified category. The second being the provisions of the ATC portion of the Air Commerce Regulations themselves that encouraged investment into truly mass production of capable aircraft and corresponding government approval of same. The stifled U.S. aeronautical industry had long been yearning for the latter. It amounted to a “Good Housekeeping Seal of Approval,” but with concurrent and unprecedented demands on the relatively small engineering staff at the Branch.

Individual owners and manufacturers were also quick to note that acquiring an Identification Mark for an aircraft

was cheaper than the Commercial License marks, and thus commenced a seemingly endless controversy over what constituted “commercial” operation.

Early Variations

A discussion of the assignment of the nationality prefix “N” to aircraft registered in the United States has been thoroughly described on numerous occasions, and will not be belabored again here.

However, in the beginning, aircraft owners and operators appear to have been confused by the rules governing the application of this prefix. Not the least because of the actual language of the DoC regulations, which seemed to suggest that the “N” needed only be displayed on the aircraft if it was to be flown or operated outside the territorial limits of the U.S. or its territories.

The language denoting function was initially much more explicit: the capital letter “C” could only be applied to aircraft engaged in Commercial aviation, and that, in most instances, had benefited from an ATC in its manufacture.

The letter “S” was reserved for aircraft owned or operated by the Federal government, the individual State or Territorial governments, or agencies of the same.

But what is generally not known is that initially the DoC regulations had also contained provisions for the letter “P” to be displayed on Private aircraft. Though not a solitary example of its application has been located, suggesting that cooler heads had prevailed and somehow truncated this use. It may have persisted only for about a month, till March 1927. Most sources seem to agree that a preponderance of the States themselves lobbied for the discontinuance of this device, based on the



Larger, more durable aircraft, such as this elegant Lockheed 5C Vega Executive, were seldom placed in Identified Status, but here 538M (msn 107, built as a 5A) is seen after her accident at Port Columbus, Ohio, at the hands of none other than Amelia Earhart. Most of her service life, despite the change of designations and rebuilt, as spent as NC-538M until being lost October 14, 1931, at Greencastle, Indiana. Note the very common addition of a “dash” between 538 and “M”, which was not dictated by the DoC regulations. (via Dave Ostrowski)



The vast majority of aircraft that retained Identified Aircraft status for long periods of time were personal, light types, and frequently one-off, locally built aircraft such as the handsome Keen 130 Special (msn 15) built by Charles F. Keen in 1930-31 in Madison, Wis., with a LeBlond engine. The FAA website makes no mention of this exotic aircraft, even though it survived as such through at least April 12, 1938. (Oliver R. Phillips via Dave Ostrowski)

preference for aircraft Federally recognized and owned as Private aircraft to bear either a “C”, “NC-“ or simple, numeric Identification Mark.

As can be discerned from the preceding tablet, by late 1926, the numbers issued had already reached 4,249, but the rapid emergence of a multitude of new-build aircraft manufacturers, large and small, accelerated the growth of the civil register beyond even the most sanguine expectations. By November 10, 1928, 10,000 had been reached.

A note of caution is appropriate at this juncture, however. While it is absolutely true that the DoC had issued every single number between “1” and “10000,” not all of these were actually taken up by the person, persons or entity to whom they had been issued. This accounts for the “gaps” or “missing” numbers in the early register. These numbers were only rarely were any of these reissued, such was the determination of the Branch not to have duplications. As with aviation at this time everywhere, events often overtook best intentions, and some aircraft were either not actually completed, failed to satisfy the DoC Inspector, had crashed, burned, or been sold. In more than a few instances, could simply not be located following rudimentary application forms with very weak addresses.

A Few Words About Identified Aircraft, Initial Version

The original 1926 Act had included specific provisions for aircraft that did not, and probably never would, meet the rather demanding minimum airworthiness requirements, although in most instances, they were in fact proven designs, such as the JN-4, SC-4, DH-4, J-1 and many others.

These aircraft were thus the very definition of the genre Identified Aircraft and wore simple numbers, at the time without prefix or suffix, known as Identification Mark Assignments

(IMA) numbers. Although this was initially to have been a short-term solution to “identifying” all of these aircraft, the system was found to have utility beyond this. With the addition of a simple “N-“ (N Dash) around 1937, it continued as a component of the Regulations as late as March 1939.

A letter dated April 20, 1927, from the DoC to the Ludington Exhibition Co., Inc., in Philadelphia was typical. It read: “There is enclosed herewith your “Identification Mark Assignment,” together with a metal identification plate. The identification mark that has been assigned you must be prominently displayed on your aircraft in accordance with the provisions of Section 41 of the Air Commerce Regulations, an extract from which is attached hereto. The metal plate must be permanently affixed to the fuselage in a prominent place, in order that it may be readily inspected. No letter or other mark or symbol of any kind shall immediately precede or follow the identification mark thus displayed on your aircraft. Strict observance of the Air Traffic Rules with respect to the proper marking of aircraft will become effective May 1.” Significantly, the addressee was asked to kindly acknowledge receipt of this letter, which further added to the bulk of early registration files.

Bear in mind that each of these letters was individually typed and signed at the time. Pre-printed form letters did not appear until much later.

The DoC started out issuing concurrent numbers which, at some point was recognized as a mistake, for both Temporary and Identification Mark numbers. Thus, a certain Waco located in Delaware might bear the same Temporary Number, 1181 for example, while awaiting inspection and issuance of a Commercial License while at the same moment, an Alexander Eaglerock in New Mexico might already have Identification Mark 1181.



An exceptional image, for several reasons. Sharp readers will identify this small amphibian as the one-and-only Piper-Applegate P1 – sort of. The aircraft has always assumed to have remained marked as NX-27960. But in this image, barely visible under the horizontal tail is her simple, Identified Aircraft status as 27960. What is more, the outrigger sponsons are simply not there, and the pusher engine cowling has been modified. But what is most astonishing is that this image was taken at Havana, Cuba, where she was crudely painted ship number “3” in a mass excursion flight in the late 1930s to the island playground – something that her Identified Status was not permitted to do! One historian has reported that she was briefly registered in Cuba as ND-3 before returning to Florida. (Hagedorn Collection)

Examination of more than 40,000 registration files revealed some administrative impossibilities. On September 8, 1927, for instance, dozens of applications are on record as having been processed but, in fact, this was more likely a date agreed upon within the office, as it would have been physically impossible to type, label, and dispatch that many completed issuances the same day.

This probably accounts for the emergence of Identified Aircraft 1026 (previously mentioned) as the first “official” application No.1. The clerk who processed this application almost certainly was supplied with a list of numbers to issue that just happened to have 1026 at the top of the list.

Examination of the actual files, in that pre-computer age, reveals numerous instances when a Temporary Number would be issued. The actual subject aircraft sold. The new owner would then write to the Branch requesting, quite rightly, a number for his ship without probably knowing that the original owner had already done so. Unless or until the assigned clerk checked the card indexes, the aircraft would almost invariably be assigned a new Temporary Number. There were several instances wherein a Temporary Number was issued, the plane sold, another Temporary Number issued, sold again, and an Identification Number issued. All different numbers issued for the same aircraft! Sorting this out is only possible through careful review of the dates and applicant names, provided the Bills of Sale were legible.

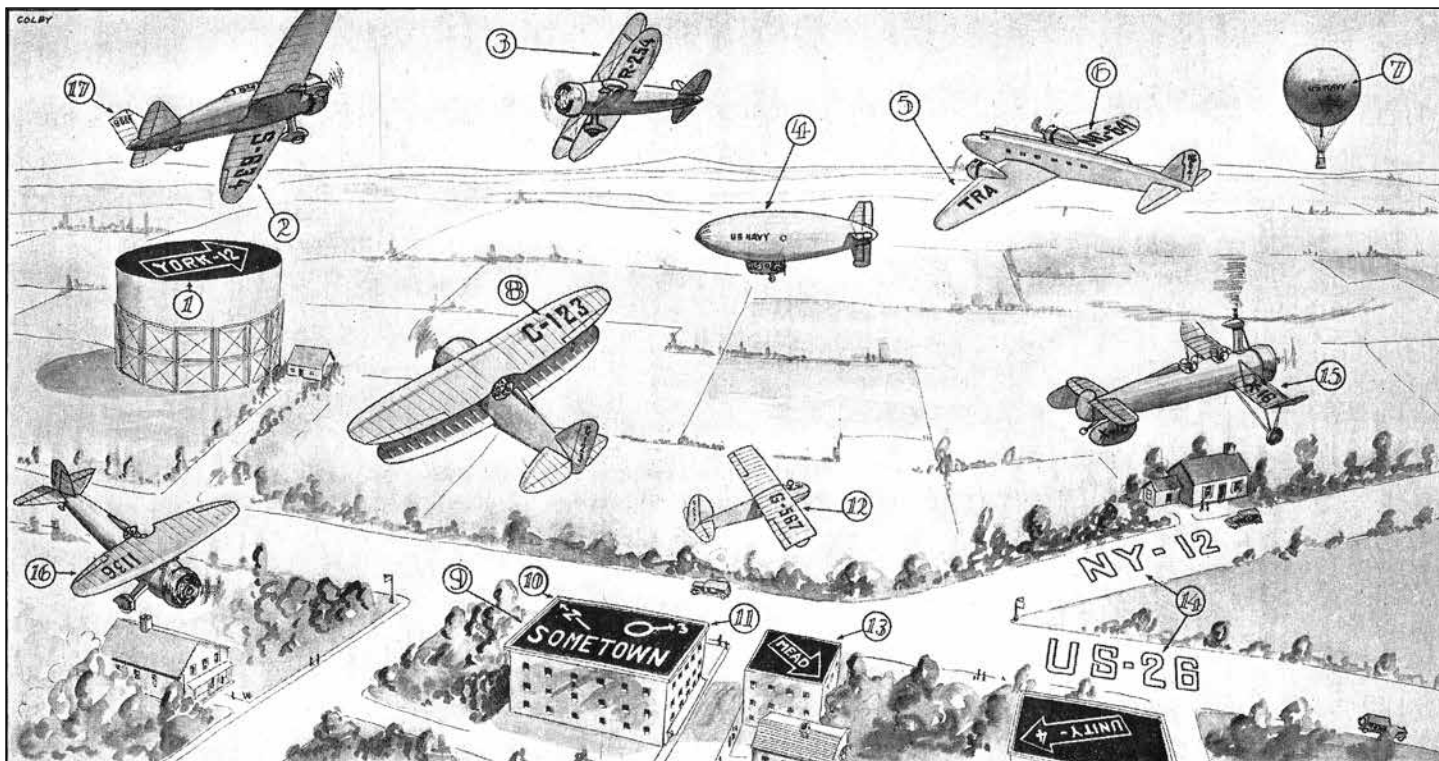
Owners made mistakes and the DoC did as well.



Gaining the cockpit of this stout Loening C-2-C, NC-9156 must not have been a task for the faint of heart! Fleet Number 1 with the Kohler Aviation Corp. in Michigan as early as 1929, she is pictured here on July 22, 1934, and was msn 224, last owned by Barton Cuyler of Norwalk, Conn., not being cancelled until July 1, 1939 – a good run for an amphibian. Her markings are letter perfect by regulation. (Oliver R. Phillips via Dave Ostrowski)



The progress of the numeric register series was far more rapid than anyone would have believed. NC-11105 – missing the required “dash,” probably for lack of space – was a seldom pictured International F-17 Sportsman (msn 154) that was initially acquired July 8, 1930, new as Identified Aircraft 11105 by James C. Welsch of Norwood, Ohio. The depression apparently overcame her own, and she passed into receivership – and the DoC dispatched quite a few letters regarding her Manufacturers Serial Number, which was not one covered by ATC 35 – and the owner changed it to “33” as of December 4, 1930. By June 23, 1931, when approved for NC-11105, it was changed again to “28” – the msn originally cited, it turned out, having been the Auctioneers Sale Number! She then passed through the hands of six owners, last with Aubrey P. Harmon of Rockville, Md., by September 19, 1939 (when this image was taken). Her license was suspended December 31, 1939, when she failed to show up for CofA inspection and her fate is unknown. (via Dave Ostrowski)



Circulated to nearly all of the plethora of aviation periodicals of the day to aid in understanding of the meaning and placement of the newly legislated aircraft markings, this keyed and rather busy drawing, dated sometime after 1936, displayed not only aircraft marks of all types but ground marks as well, another responsibility of the Department of Commerce from the start. (Hagedorn Collection)

Temporary Number 2070 was issued to a start-up aircraft manufacturing company in Illinois for its first aircraft. They understood, somehow, that it was a number that could be used to ferry their products to buyers. They subsequently painted the same number on the next six ships!

Temporary License Numbers

The Branch gradually realized that the initial practice of issuing what in some instances were different Temporary Numbers and permanent License Numbers was the road to madness. By February 21, 1928, they had adjusted their procedures accordingly.

A letter of that date to Pitcairn Aviation, Inc., in Philadelphia, is a case in point.

It involved the very first Pitcairn PA-4, msn 1, finished on February 1, and the DoC issued what it now referred to as Temporary License No.4290 to this aircraft with the language that "...this will be your permanent number when plane passes inspection" but cautioned, additionally, that it "...may not be used [underlined in original] until the license has actually been issued by this office and received by you," which was a new, and rather confusing provision.

Federally Reserved Numbers

The DoC recognized it, and its wide-spread regional inspectors, was going to need aircraft to perform its myriad of assigned duties. This included the less widely known task

to popularize and encourage new advances by enterprising designers and manufacturers. The DoC rather belatedly decided that it would arbitrarily reserve "low" numbers for their own use, on the premise that they would thus be more readily recognized.

At first, only numbers "1" to "20" were reserved. It then was increased to include "1" to "99," the belief being that this would be more than sufficient. Curiously, of these, the first 10 were painted on the aircraft as N-S1 to N-S10, rather than the proper NS-1 (yet another, different de Havilland DH-4M1 that the "original" N-1 cited earlier) to NS-10 (a Laird LC-B Commercial, msn 155). This was apparently later corrected. NS-11 to NS-20 were marked within the original intent of the regulations.

However, the DoC wasn't the only Federal agency that wanted to operate this new and prestigious form of "Admiral's barge." The Bureau of Standards also owned at least two, one of which was the former DoC DH-4M1, N-S2, the other being N-S8 (Fairchild FC-2, msn 10).

The Branch soon realized that the total of marks it had reserved was insufficient, and, initially, expanded it to encompass numbers "1" to "300." Unfortunately, several clerks quickly stepped up and reminded their supervisors that the numbers above 20 and well over 300 had already been issued to private citizens and operators. The Department was faced with the onerous and contentious task of notifying these same owners and recalling the numbers for their own use.



The rather flamboyant Hammond 100 (a conversion of a Parks P-1H), NC-13533, was originally sold March 26, 1934, as Identified Aircraft 13533 to Grow Yoy & Company of Detroit but was approved for NC-13533 on April 10, 1934. Besides the stylish wheel streamlines and speed ring, she had a tail wheel, gyroscopic compass, a Sperry artificial horizon, Bank and Turn Indicator (all usually non-standard in such aircraft at the time). She subsequently moved through nine other owners before ending up with Air-Activities at Cedar City, Utah, December 15, 1942, and from there her fate is unknown, being administratively canceled April 9, 1948. The presentation of her registration was a growing trend, placing the prefix above the number, in order to fit everything in! (Steve Kovack via Dave Ostrowski)

By July 23, 1935, when George W. Edwards of Flushing, N.Y., bought Aeronca C-3 NC-15255 (msn A-322) new, owners had started leaving more of a space between the prefix and the numbers on assigned registrations when painted on. Edwards installed floats at some point, before the aircraft was damaged beyond repair in a hangar fire on October 8, 1935, but there was not a solitary mention of this conversion to PC-3 status in the CAA/FAA file. (via Dave Ostrowski)

To their credit, most of the private citizens did not object, and accepted either a new number, or a modified number agreed upon with the DoC. However, this recall threw an unnecessary and poorly understood wrench into the carefully laid plans for the register. It also accounts for some of the earliest register conundrums and apparent duplications.

The DoC practice of reserving “low” numbers continues to this day. There have been numerous exceptions over the years, as more agencies and states started acquiring and operating aircraft.

The Question of Dual Licenses

While probably contrary to the prevailing sense of order and predictability that the DoC had worked to establish, there were a number of instances of what the Aeronautics Branch itself described as “dual licenses.” No complete accounting of these has ever been collected.

Around March 14, 1932, well into the rhythm by that time, the Curtiss-Wright Flying Service (CWFS) unit located at the Curtiss Airport in East St. Louis, Ill., owned a Curtiss-Robertson Robin C-2, NR-919K, msn 578. They argued, they needed to use it on an intermittent basis for what was defined as Restricted operations for aerial photography purposes, and another for strictly Commercial applications.

It turned out that the only reason the CWFS wanted a Commercial (NC-919K) license for the aircraft was so that they could transport a potential customer over the territory he

wished to have photographed “...for the effect it would have on getting his business,” in which the cameras, mounts and associated equipment – they claimed – would be removed, and would thus be a standard Robin C-2 in every other way.

The Branch thus issued two separate License Cards: one for NR-919K and one for NC-919K, which were to be switched out depending on the manner in which the plane was being flown. Left unsaid was what to do with the actual markings on the aircraft, which are assumed to have remained NR-919K.

Rebuilt, Remodeled and Salvaged Aircraft

By August 1933, the question of what to do with aircraft that had either crashed, then been rebuilt entirely to a new configuration, had, according to a letter to the Department Supervising Inspector in Inglewood, Calif., C.A. Rowe, come up repeatedly.

They were very patient in explaining their rationale for the guidance. They provided him with a case which, in this instance, revolved around a Kinner Model 100K, msn 2, NC-12276, which Rowe was advised that Kinner wanted a brand-new number for this aircraft after being completely rebuilt by the originating factory.

The Branch stated that the Department had consistently refused to assign new numbers to aircraft when there was “...sufficient identification of the salvage to connect it with some aircraft of which we have a record and to which a number has previously been assigned.” They ruled that this was particularly true in instances where a fuselage and some additional parts



As early as 1929, it became apparent to the DoC that the straight numeric sequences of numbers being issued were going to quickly exceed 10,000. As a means of coping, instituted a series of suffixes, commencing with the letter “E” between 1E and 999E. Here, a sturdy Hamilton H-47, NC-537E (msn 54), of Northwest Airlines awaits her next traffic. Note that the “dash” between the NC and 537E is there, just very small on the upper rudder, while it does not appear under the wing at all! Last owned by a bush flyer in Fairbanks, Alaska, she was cancelled June 17, 1943. (via Dave Ostrowski)

The DoC used up all 999 of the “E” suffixes very quickly and moved to Plan B, which was to continue these side sequences using alpha suffixes which, it was hoped, would not be mistaken for numbers. Next up was the “H” series, and NC 895H, labeled on her vertical fin as an Inland Sport, had nearly exhausted this series as early as the end of 1929, and was actually modified as the solitary Inland/Nelson S300 (msn S306) owned by J.B. Dahl of Chicago, Ill., as early as 1929. It is pictured here at Tulsa, Okla., some distance from home. Her fate is unknown. (via Dave Ostrowski)

or components were used in the rebuild. They were blunt, stating further that “...it is apparent that the Kinner factory is attempting to make the Department a party to representation that an aircraft is new and recently built when, as a matter of fact, it is not.” They feared that granting Kinner’s request would set a precedent that would come back to haunt them. This was almost certainly correct, in retrospect, and in view of some of the shenanigans that took place in the years that followed.

They concluded by saying that “...we have the industry fairly well educated to the fact that, once a number is assigned to an aircraft, it remains with it throughout its existence.” This fervor had remained true in the years that followed.

Identified Aircraft (Uncertified Aircraft), Second Version

By 1938, the Bureau had hoped that the need for the use of Identified Aircraft status would have been well behind them. It was felt that the overwhelming majority of aircraft served by this solution would have by then been attrited.

However, the economics of the widening Depression had brought an entirely different aspect of the class to the fore. It was simply cheaper than a full Commercial class “NC” license, and was no longer purely the attire of war surplus, home-built, or cow-pasture aircraft. Manufacturers and aircraft dealers, in particular, found it convenient as a sort of “interim” and inexpensive way to keep an aircraft “in the loop” while awaiting sale to an owner with grander plans.

Thus, CAR Part 2, Paragraph 02.133 revised the definition of Identified Aircraft in 1938. Waco CDC, msn 3515, owned by Anthony E. Allgier, Jr., of Risco, Mo., is an example. The Bureau stressed that, as an Identified Aircraft, his aircraft should be painted and marked not as NC-11471, but N-11471.

They went on to describe the “dash” between the “N” and the number as a “bar symbol.” This class persisted into at least January 1940, and had disappeared entirely during the war years. The actual date has eluded verification.

So How Were the Marks Painted onto Actual Aircraft?

To its credit, the DoC was very explicit in how they expected aircraft to be marked. These instructions were outlined in detail in Section 41 of the Regulations. They are described as written herewith:

On airplanes – On the lower surface of the lower left wing and the upper surface of the upper right wing, the top of the letters or figures to be toward the leading edge, the height to be at least four-fifths of the mean chord, provided, however, that in the event four-fifths of the mean chord is more than thirty inches the height of the letters and figures need not be more but shall not be less than thirty inches. If the lower left plane is less than one-half the span of the upper left plane, the letters or figures thus described shall be on the under surface of the upper left plane, as far to the left as is possible. In the case of a monoplane the marks shall be displayed on the lower surface of the left wing and the upper surface of the right wing in the manner thus described. The marks shall also appear on both sides of the rudder, of size as large as the surface will permit, leaving a margin of at least 2 inches.

On airships – On both sides near the maximum cross section and on the lower under surface of the nose, the height to be equal to at least one-twelfth of the circumference at the maximum transverse cross section of the airship, but it need not exceed 8 feet.



Another Inland S300 Sport, although marked as simply "N573K" in this July 23, 1939, in the next of the suffixed series of "K's." The markings reveal this to have been one of the "modern" Identified Aircraft, and her marks should have been applied N-573K (msn S310). This aircraft spent nearly its entire service life in California but in fact survives to this day in the collections of the Western Antique Airplane and Automobile Museum at Hood River, Oregon, marginally airworthy. (Gordon S. Williams)

On balloons – Twice, near the maximum horizontal circumference, as far as possible from one another, the height to be equal to at least one-twelfth of the circumference of the balloon, but it need not exceed 8 feet.

The width of the letters and figures of all marks shall be at least two-thirds of the height and the width of the stroke shall be at least one-sixth of the height. The letters and figures shall be painted in plain black type on a white background or in any color on any background, but there must be a strong contrast between the two. The letters and numbers must be uniform in shape and size. A space equal to at least one-half of the width of a letter shall be left between each figure or letter.

Needless to say, these very explicit instructions were modified and interpreted broadly as the process evolved, but some owners, home-builders and even highly organized, big-name manufacturers took them to heart and labored to ensure that they were properly observed.

Not long afterwards, the DoC was moved to release a Memorandum to all known registrants to try to clarify the rules for painting on the "N" nationality prefix as clearly, significant confusion reigned.

It read as follows:

"Due to the fact that some confusion exists among owners as to the privilege of using the international symbol "N" on aircraft, licenses will be issued to cover international operation, except that in accordance with the Air Commerce Regulations, effective September 1,

As the DoC exhausted the "K" suffix series, they quickly moved on to the "M" series, and NC 71M, a Pitcairn PA-7S, originally operated by Pitcairn Aviation of Richmond, Virginia as NC-71M, was originally identified in manufacturers correspondence as a PA-6 Super-Mailwing. This legendary operator changed its name to Eastern Air Transport, Inc. by January 3, 1931, however and, following an accident at Greensboro, NC March 9, 1931, was rebuilt as a PA-7 by July 12, 1933. However, on her license, dated June 1, 1934, she was identified as a PA-7M! After passing through the hands of four intermediate owners, Clyde R. Putman of Pontiac, Michigan, registered her March 2, 1937, as type PA-7S. She was cancelled February 19, 1940, as dismantled, with major components used to rebuild NC-7967! The number "94" on her vertical fin is believed to have been a remnant from her airmail days. (via Dave Ostrowski)

1929, planes licensed for experimental purposes shall not display the letter "N". Hereafter, licenses (other than experimental) will not be issued as C-100 or R-100, but as NC-100 or NR-100.

"Owners of planes, except experimental, may paint the international symbol "N" on the wings and tail for operation in the United States, but will not be required to do so. The symbol, however, must be applied before the plane is operated either temporarily or regularly in a foreign country."

This memo was signed by Edward P. Howard who, was Chief of the Division of Regulations & Licensing. This memo must be regarded as a pivotal date in the evolution of "November Charlie" and came more than two years after the first licenses were issued.

Groups 1, 2 and 3 Approvals

Many readers will be familiar with the gradual emergence and significance of the coveted Group 1 approvals that, for the most part, were manufactured aircraft that had been awarded an Approved Type Certificate. These were eligible for any class of license.

Group 2 approvals covered aircraft that were judged to be airworthy and safe when operated within the rather carefully worded language of each Approval. Not all Group 2's were



Another “M” series suffixed aircraft, but with a “dash” between the NC and her individual number, 368M, was this handsome Travel Air Model 10-D (msn 10-2002) sold new to the Curtiss-Wright Flying Service August 20, 1930, although, oddly, a subsequent Bill of Sale to the Wright Aeronautical Corporation of Patterson, N.J., was dated July 26th! Note that the “dash,” in this instance, is also included on the wing presentation. She was last owned by Robert F. Sliker of Newark, N.J., but was cancelled July 1, 1939, when this owner did not reply to DoC correspondence. She is suspected of having been smuggled out of the country to Mexico without the benefit of export licenses. (via Dave Ostrowski)

Oddly, the next suffix selected for use by the DoC was the letter “W” and Aeronca C-2 (identified as such by the CAA) NC-649W (msn 351), built in March 1930, was sold new as such to J. Warren Smith, doing business as Northern Airways, Inc., of Wausau, Wis., on May 13, 1930, as Identified Aircraft 649W. For some unknown reason, the photographer, Pete Sarkus, identified the aircraft, as of the unknown date of the image, as a C-2 Standard/Norman Benner 001” – but no such person ever owned the aircraft! She was cancelled May 16, 1941, when the last known owner, R. Harding Briethaupt, of Reading, Penn., failed to submit the necessary documents for renewal and her fate is unknown. (Pete Sarkus)

issued to established manufacturers; some were issued to individuals who could, and did, make changes to the aircraft without the original manufacturers concurrence or approval, many of these long after actual production had terminated. These were usually issued to individual aircraft, but not always. This system ended in 1947, replaced by Supplemental Type Certificates (STC’s).

A few readers may know of the Group 3’s.

These were applied to aircraft that had been built before the issuance of the December 31, 1926, DoC regulations, but yet were found to be airworthy for commercial, revenue operation on the basis of a very thorough aircraft inspection. It applied mainly to surplus WWI aircraft and some pre-1927 production civil aircraft.

The Emergence of Suffixes

The realization that the total number of civil aircraft in the country, a significant proportion of which were displaying unexpected longevity, added to its own rules for displaying the marks on (at first) the vertical fin/rudder, starboard upper wing and port lower wing, in specific proportions, soon led DoC planners to realize that, with the growing “size” of numbers, operators were experiencing difficulties in painting the marks on – especially the vertical fins and rudders – in accordance with the rules: they were simply too long or too large dimensionally, as they exceeded 10,000.

In 1929⁷, the Air Commerce Act itself was amended to –

initially – issue a new set of marks running from “1” to “999” but with the added suffixes “E,” then “H,” “K,” “M,” “N,” “V,” “W,” and “Y” – these being selected because they could not be easily confused with numerals. Thus, we started first with 1E to 999E – but, to the consternation of the DoC, even these eight new blocks had been entirely used by the end of calendar year 1934! Other alpha characters did not enter common use as suffixes until after 1946 and the original remit to limit the initial batches between “E” and “Y” to between “1” and “999” was amended at the same time to go, potentially, from “1E” to “9999E” for example. The alpha characters “I” and “O” however, were specifically excluded, and the solitary exception to all of this was the suffix “A” that was reserved exclusively for lighter-than-air aircraft of the dirigible type; hot-air balloons, oddly, in the prewar period, were issued simple un-suffixed Identification Marks in nearly every instance.

A brief “snapshot” of these suffixes, which have been widely misunderstood over the years, may be gained by looking at the first known uses of each – and the fact that the Bureau utterly confused the issue much later, as will be seen.

- **NR-1E** was initially assigned to a Mercury *Special* racer, msn 1 (sometimes cited in error as msn “49”). This aircraft had actually been built by the Naval Aircraft Factory around August 1, 1929, but was sold to the Mercury Flying Corp. of New York (Seth Low, President and none other than Alford J. Williams, Test Pilot) and



Homebuilt aircraft – in astonishing numbers – sustained U.S. general aviation during the very depths of the Depression and included such obscure aircraft as this Heath Soarer Glider, Identified Aircraft 272V (msn 134) in the next suffix series from 1V to 999V. Built in 1929 by Charles F. Abel of Chicago, Ill., it was notionally a two-place aircraft, but where the second body was deposited is not obvious! It was soon attrited, as no subsequent references to her have been located. (Cliff Edwards)



The last of the pre-1946 suffixed series were the “Y’s,” from 1Y to 999Y, represented by one of the first 100, this very masculine Howard DGA-15P, NC-79Y (msn 531). Very little is known regarding this 1940 built aircraft, as she does not appear on the FAA website nor in the last two, pre-Pearl Harbor Aeronautical Chamber of Commerce Civil Registers. The significance of the large white star on her fuselage has suggested a Civil Air Patrol connection, but this has not been verified. (B. Schurrman)



Pre-war Restricted Category licenses were rare, and NR-656E, a rare Metal Aircraft Corporation Flamingo G2W (msn 4) pictured here is an example. She was sold new to the Embry-Riddle Company in Cincinnati, Ohio, then to two subsequent owners, neither of which was listed as United Air Services, as noted by her titles! The strange ventral fairing is believed to have been fitted for her subsequent service in Honduras as a duster with TACA as XH-TAU from September 1937. (via Dave Ostrowski)



Aircraft issued the coveted Experimental category “X” prefix were very carefully vetted by the DoC before such issues, and so far as can be determined, no comprehensive listing of known issues prior to 1946 has been attempted. X-312Y, pictured here, was built as a Great Lakes 2T-1A (msn 199) in 1931 for Roy Norton of Roswell, N.M., by January 1938 was owned jointly by O.P. Cagle, Jr. and Virgil Kennedy of Clovis – but as NC-312Y. By 1941, she had disappeared, so the radical modifications evidenced in this image must have taken place between 1938 and 1941. (via Dave Ostrowski)



Left: X-777N was issued for an aircraft for which the DoC regarded the “Experimental” category entirely fitting, the one-off Hall Aluminum design of 1930 that has been described as the Monoped in some sources, but on which the FAA is silent. She persisted into January 1934, and then disappeared. (Oliver R. Phillips)



NX2311 was built in 1939 as a Stinson SR-10F Reliant (msn F7-5910) was a curious anomaly. By the Fall of 1942, she was being operated for the USAAF as an XC-81D by All-American Aviation on glider pick-up trials, all the while seen as pictured here, and with a civil Experimental License, but was never issued a USAAF serial. (NARA RG342FH)

NR-1E was issued August 24, 1929. The BoC inquired about the fate of the aircraft but got no response, and the marks were cancelled May 23, 1930.

- **NC-1H** was initially assigned to a Command-Aire Model 5C3C (msn W-112) in 1929 but, unusually, was cancelled for reasons unknown and reissued to Curtiss-Robertson Robin B msn 361, which wasn't cancelled until June 1, 1936.
- **NC-1K** was Fairchild Model 71 msn 674 issued in 1929.
- **1M** as an Identified Aircraft was issued for an Alliance *Argo*, msn 107 in 1929 and, unusually, was owned by a woman, Mrs. H.H. Burrell of Hinsdale, Illinois.
- **1N** as an Identified Aircraft was issued to the Longacre Glider #1, msn 1, built by C.L. Longacre of Lindsay, Calif., in 1930.
- **NC-1V** was assigned to a Sikorsky S-38-B msn 314-5 in 1929, and was owned by R.R. McCormick of the *Chicago Tribune*.
- **1W** was issued as an Identified Aircraft to Nicholas-Beazley Model R msn 1 in 1930 to the manufacturer in Marshall, Mo., and is thought to have become NR-1W as a racer.
- **1Y** was issued as an Identified Aircraft to Bowlus S-1000 glider, msn S-25 March 9, 1931, to Raymond Stafford, San Francisco, Calif., but had apparently been initially owned by M.S. Boggs who actually worked at the Aeronautics Branch in Washington. It was cancelled October 15, 1931.

Most of these marks, representing the first issuances in the original eight suffixed series were apparently regarded as extinct by December 3, 1941, when the CAA arbitrarily notified several manufacturers of production aircraft, including Boeing-Stearman and Culver, that they were authorized from that date to utilize marks **1E**, **1K**, **1M** and **1V** '...over and over again on each aircraft as it is flight tested in accordance with our letter

of November 24, 1941." Stearman is known to have exercised this permission on at least 12, and possibly more, Model A75N1s built for Peru using **1E**, while Culver used all four on assorted Model LCAs and LFAs built specifically for a U.S. initiative in Latin America.

The Class prefixes "R" for Restricted and "X" for Experimental continued. However, the DoC Inspectors in the field soon started reporting that the "X" prefix, which was being applied for with puzzling frequency, was being widely abused by aspiring young "practical aeronautical engineers" to elude the stricter conditions of Commercial licenses. In at least some instances, to bolster the egos of young men who desired to acquire status by being able to boast that they were building an Experimental aircraft that had the tacit blessing of the Department! One Inspector reported back to Washington that, "...this contraption will never fly, and in fact probably will never be completed, and the builder was utterly unable to explain the features of the heap that qualified it in any way for an Experimental license!"

The earliest known Experimental marks were X-32 issued, properly, to a Fairchild FC-2C, msn 385, which the Curtiss Flying Service, Inc., of Garden City, N.Y., had, for some reason, converted to mount a Curtiss C-6 engine. The "X" prefix gained popularity, in the beginning, with start-up aircraft manufacturers such as American Eagle of Kansas City, General Airplanes Corp. of Buffalo, N.Y., Boeing, the obscure Arkansas Aircraft Corp. of Little Rock, Kreutzer of Los Angeles, etc., in a quite legitimate manner, as they struggled to complete new designs that, hopefully, could then aspire to the prized ATC. Then of course there was the immortal N-X-211 of Charles Lindbergh, one of the first to feature the international symbol in front of the "X" designator, and that the owner clearly struggled to interpret properly, adding a second, unnecessary "dash".

"Restricted" or "R" prefixed licenses were slow to appear as owner/operators in the field apparently were reluctant to attach the term to an aircraft at a time when they were attempting to



Short-lived, for nearly three years, the DoC authorized some gliders and sailplanes to use a "G-" prefix but this Goppingen Go 3 Minimoa was one of a very few which carried the "N" prefix as well, which was not, specifically, authorized. The small titles on the rear fuselage read "Civic Aeris Sum". (via Richard Cawsey)

promote "unrestricted" utility in their respective designs. In fact, the earliest known application was NR-1455, approved in 1927 for a Ryan B-1 Brougham (msn 34) owned by the Royal Aero Corporation of Culver City, California.

By September 1936, however, the Air Regulations Division was moved to issue a user-wide Memo to all owners of Restricted class aircraft advising that in future, only the "R" licenses would be issued, and that the symbol "N" would, thereafter, only be used on aircraft complying with the airworthiness requirements of Bulletin No.7-A. The exception being for applications involving international flights such as a certain Lockheed Model 10-E Special, NR-16020. All other owners were instructed to remove the "N" prefix from their otherwise "Restricted" markings.

The amendment also included the first language specifically written to cover engineless aircraft, i.e., gliders and sailplanes, which was a genre apparently overlooked entirely in the original planning.

Assigned rather irregularly, a "G" (for Glider) prefix was authorized, although the vast majority of primary and secondary sailplanes and gliders built and licensed between 1927 and 1946 wore simple, numeric Identification Numbers, as it was much less expensive. After all, the aircraft were not going very far in any event! The "G" prefix was attractive to established glider manufacturers, however, and a significant number left the factories with these prefixes. The Nationality mark "N" has been rarely seen linked to this prefix. This prefix was terminated in 1937 by the provisions of Part 02, Section 02.110 of the regulations, and disappeared quickly, to be all but forgotten. In a few instances it was "grandfathered" until such time as owners could repaint an "NC" prefix onto their aircraft. The "S" for "State" or government owned/operated aircraft was also deleted in 1937.

Some readers will have noted photos of U.S. civil aircraft taken in the 1930s where a "dash" has been painted on the aircraft between the last digit of the identification mark and the

As the numbers being issued moved into five digits, the DoC continued well into the late 1938 to utilize the "Dash" between the prefix and number in official documents. Inspectors in the field, faced with the reality of the impossibility of owners being able to meet the letter of the law in terms of size on the vertical fins or rudders due to the increasing number of smaller aircraft, merely winked at the inevitability. The "highest" registration to officially use the "dash" was NC-20306, a Taylorcraft Model A (msn 407) but there were almost certainly others. This Rearwin 4000 Junior, NC-12543 (msn 221) is a case in point. Sold to Leroy Cleveland of Marfa, Texas, new on November 18, 1932, Leonard R. Peterson, Inc., of Boeing Field, Seattle became her second owner on May 5, 1934. She had seven subsequent owners – including one woman – until being lost in an accident March 20, 1937, at Ephrata, Wash., which was fatal to pilot Burley Nicks. (Gordon S. Williams)

suffix. Most of these appeared early after the emergence of the suffixes, as owners and manufacturers struggled to understand exactly what they were supposed to do.

This brings us to the question of the "dash" as a regulated device.

Yes, the "Dash" Was Part of the Registration

In its determination to make the authorized prefixes meaningful, the DoC ruled, from the start, that the "dash" between any assigned prefix and the Identification Number that followed *was in fact a component of the full registration*. It was not until sometime between January 1, 1938, and January 1, 1941, that this regulatory convention was rescinded.

Rampant Growth

By this time, the DoC had renamed its aviation branch as the Bureau of Aeronautics (BoA) and then the Civil Aeronautics Administration (CAA) in 1938, and this vastly expanded authority became an unbridled force in the promotion and advancement of aviation in all forms.

Its leadership, by 1935, was confidently speaking of expanding its base range of numeric Identification Numbers from 10000 to 99999. It in fact did, as can be verified by this writer.



The distinctively marked Department of Commerce, Bureau of Air Commerce fleet, with their blue fuselages, orange wings and prominent legend on their fuselages, often struck fear into the hearts of aviators and owners when they would suddenly swoop into some remote airfield on an inspection visit. The DoC aircraft, however, were almost invariably in violation of their own rules when it came to the presentation of their marks, as seen here on Monocoupe 110 NS-29 (msn 6W00) registered in 1931. It should have had the “dash” between the “NS” prefix and the numerals. (via Dave Ostrowski)

Someone must have fussed at the DoC, as this later, 1934 Monocoupe D145 (msn D118) of the Bureau, complete with a radio mast on the upper fuselage and landing lights, shows her marks painted on properly. Oddly, the register showed this aircraft as a One Place Cabin Land Monoplane (1PCLM). The state-of-the-art aircraft that the DoC acquired not only provided their far-flung corps of inspectors with reliable rides, but also highlighted the most recent advances in the science in many ways. (via Dave Ostrowski)



Noted earlier, this rare Hayden & Clark Timebuilder W6 (msn 1, built in 1931) – clearly an air show performer – should have been marked N-10613 in the second Identified Aircraft series, but the owners could apparently not squeeze the required “dash” in on the rudder. At the time of this image, she was registered to Al Warner and mounted a 40hp Salmson engine. Note that the owner had painted on the word “Experimental” under the cockpit. (Al Warner)

Errors in presentation and anomalies on U.S. registrations between 1926 and 1946 abound and could make a story unto itself. We present several here, however, by way of illustration. Here, the number 1 Lockheed Model 14-H (msn 1401) with her Northwest titles with the “C” unsuccessfully painted over on her vertical fin with an “R” – this, too, partly removed, but, for some reason, with a letter “B” (and possibly a modified letter “R”) prefixing the numbers on her upper, starboard wing! Although known to have been painted as NC-17382 with the Northwest titles briefly, she never operated for that line, spending nearly her entire service life with TACA in Central America. (via Dave Ostrowski)



An earlier image of the same aircraft with the correct presentation of her Experimental License, X-17382. (via Dave Ostrowski)

This should be taken with a grain of salt as certain ranges, in the approximate ranges of 46000 to about 79999 were set aside during WWII for the expected post-war glut of surplus aircraft that were sure to materialize. At about the same time, the “L” prefix, for “Limited” was also briefly introduced. It was intended to be applied specifically to ex-military aircraft that had not been, or could be, entirely demilitarized. Some of these persisted into 1948 and beyond.

Finally, the long-standing class prefixes “C,” “R,” “X,” and “L” were dropped in 1948, at least as applied to the exterior surfaces of the actual aircraft as a component of the license. Instead, placards were to be displayed at or near the entrances to such aircraft denoting their Restricted, Experimental or Limited license status.

Some General Observations

With all of the forgoing in mind, it is important to take a moment to comment on some, more-or-less, universal considerations that must be borne in mind when studying this subject.

First, and this is important, with only a very few exceptions, between 1927 and 1946 the DoC and its subsequent aviation governing branches *were absolutely determined not to reissue the same number to a different aircraft*. In other words, if you see a photo of an aircraft bearing a U.S. civil mark taken before 1946, you can enjoy nearly complete confidence that it is the one-and-only aircraft to wear these marks.

Second, however, is a slight qualifier of the above, and is central to a complete understanding of what has gone before. It is simply this: *while the number and suffix remained unchanged, the prefix, or lack of prefix, could and did change often*. In other words, an aircraft rolled out of a factory, new, as 675E (an Identified Aircraft), could then have become C-675E or NC-675E, depending on whether the owner was interested in operating the aircraft (which would have had to have been

manufactured under an ATC) in the full, Commercial category. However, from the time she was built to the time she was cancelled, the very same aircraft may have also worn X-675E, NX-675E, R-675E or NR-675E, even if for only brief intervals.

There are qualifiers to all of this, of course, and exceptions.

Many aircraft that were acquired by the U.S. military services during WWII and assigned military serial numbers and type identifiers, survived to return to civil service starting as early as 1944.

This presented the, by then, CAA with something of a challenge.

As often as possible, they attempted to re-register the aircraft with a form of the registration it may have carried just prior to being “drafted.” In some instances, especially with regard to air transport types, new owners wanted entirely different registrations, to service their own purposes.

It was at this point that the U.S. Civil Aircraft Register descended into an endless series of bureaucratic calamities, as it conscientiously attempted to cope with not only these “veteran” aircraft, but the deluge of surplus aircraft that had never had a previous civil identity.

It is vital to understand that licenses were issued to *owners* by this point, not to aircraft, and were cancelled by the CAA upon sale, destruction or withdrawal from service.

The Little-Known Ferry Marks

As early as 1937, the CAA, succumbing perhaps to industry pleas, had developed a relatively short-lived series of approved marks that could, in the absence of normal U.S. or foreign Identification Marks or Registrations, be applied to aircraft, both new and used, strictly for the purposes of ferrying the aircraft to a foreign destination.

By February 23, 1938, at least six of these – F-1, F-2, F-3, F-4, F-5 and F-6 – had been issued. The latter to Stinson SM-1F *Detroit*; the former NC-910W (msn M-522) that had been built in May 1930, and that, by the date the ferry marks were assigned, had been owned by not fewer than eight U.S. operators. It was sold to Alberto Genty of Coahuila, Mexico, and may have become XA-BFW, but this has not been verified.

Other CAA issued ferry marks included F-4 (apparently marked on as F4-13331) on a Boeing 247 (msn 1713, NC-13331) also bound for Mexico, earlier, in 1936.

The CAA clearly did not like this system and, so far as can be determined, no comprehensive listing of these poorly understood conventions has ever been attempted.

Following is a summary of known allocations.

CAA Ferry Marks	Manufacturer	Type	MSN	Notes
F-2	Douglas	DC-2-115	1565	Bought new by N.V. Nederlandsche Vliegtuigenfabriek 7May37 on E-2888. Worth noting that on <i>all</i> Douglas documents, the type was entered as “DC2-115”
F-4	Boeing	247	1713	NC-13331. Apparently marked as “F4-13331” on delivery. To XA-BEZ
F-6	Stinson	SM-1F	M-522	Formerly NC-910W. To Alberto Genty, Torreon, Mexico 29Jan38 from Lambert Field, MO.

Wartime Hiatus

Not long after Pearl Harbor, other than established airlines and certain essential industrial aircraft operators, civil recreational and sport aviation in the United States, with the notable exception of the Civil Air Patrol (CAP), came to an abrupt halt.

The CAA remained very much active throughout the war years, as a substantial number of essentially civilly registered aircraft were engaged in not only CAP activities but both the Civilian Pilot Training Program (CPTP) and the similar War Training Service (WTS) schemes as well.

Experimental licenses were also processed and, seldom noted, a number of purely military aircraft were issued civil Experimental and Identification Marks to perform special flights. These included an active U.S. Navy Martin PBM-3 *Mariner* (BuA6469, msn 2922) issued a civil license to fly between Florida and the Nicaro Mines in Cuba between August 13, 1942 and April 11, 1944 as NX28995, and a number of Consolidated B-24s⁸ and at least one Boeing B-17 that flew between Britain and Sweden on ostensibly Air Transport Command runs, to name just a few. ➔

End Notes:

1. It is thought that initially, the 3x5 cards were used to record aircraft data only, and was not expanded to include engines, propellers and cross-reference to changes of ownership until around December 1948 – some 20 plus years hence. It is worth noting that the CAA provide each of the U.S. state aeronautics bureaus with copies of these cards pertaining to aircraft known to be registered in their state.
2. In early correspondence, the Branch appears to have been laboring under the assumption that the numbers involved

would not, in any event, exceed four digits, and so planned no issues beyond 9999, which they at the time appear to have felt was utter fantasy.

3. It appears that the practice was discontinued and replaced by a pre-printed card issued to the owners instead, which had to be carried in the aircraft. The Cessna 140 in which this writer soloed in 1962 had such a card.
4. All of the NS-numbers of aircraft owned by the U.S. Government apparently had their prefixes changed to NC around this same time. By January 1941, these ranged from NC-1 to NC-400! Some aircraft, operated by the individual States, were slower in making the transformation.
5. The Commonwealth of Puerto Rico was to have aircraft operated there covered by normal licensing regulations in the fullness of time, while the Commonwealth of the Philippines and the Panama Canal Zone were enabled to create their own civil aircraft registers, managed, however, by serving U.S. Army Air Corps officers appointed to act on behalf of the DoC in these semi-autonomous U.S. possessions. Guam was not cited.
6. Against all odds, Identified Aircraft Number 10000 was issued to J.H. Ecker for his Sopwith 1½ Strutter, which he cited as msn JHE1, mounting a most unlikely 90hp Curtiss OX-5 engine!
7. It should be noted, that there is evidence that aircraft with “E” suffixes were known as early as January 26, 1929, which suggests that the change was actually drafted in 1928.
8. These included B-24D-1, 41-23721, which became N-15558; B-24D-65, 42-40499, which became N-15557; B-24D-95, 42-40759, which became N-15559 and B-24D-100, 42-40800, which became N-15560, all on August 2, 1944 and Boeing B-17G, 42-102642, which became N-19929 on October 25, 1944.

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