USE OF SUFFIX LETTERS IN MODEL DESIGNATION OF NAVAL AIRCRAFT

(A rough draft prepared from materials in this office and therefore subject to review and check. AOVW May 1955)

Suffix letters have been used from time to time in the model designation of naval aircraft, although never to the extent reached after World War II. As early as 1921 the Vought VE-7 existed in several configurations each identified by a different suffix. One of these was the single seat fighter. To distinguish between it and the more common two seater, the letters SF were added to the standard designation. Other suffix letters were not so obvious an abbreviation but all used at this time and into 1941 were exceptions to the designation system in effect and, as near as is known, did not follow a standard pattern.

Suffix letters came into a more general use during the period of rapid expansion immediately prior to the entry of the United States into World War II. At that time, the letter A was commonly used to indicate a Navy plane built for the Army and B served the same purpose in identifying aircraft built for the British. Early confusion existed, however, particularly with the letter A. At the same time, it was used to identify Army aircraft it also meant amphibian in the PBY-5A, J2F-2A, JRF-1A, while in the TBF-1A it meant twin float landing gear, and in the F4F-3A folding wings. This confusion continued when an SC-2C carrying the suffix A was one fitted for carrier operations, and was compounded when the C came into use to indicate carrier adaptation as well as a number of other things. At this time, for example, the PBM-3C was a "British-American Standardized version of the PBM-3. By late 1942 and early 1943, the C in S03C-2C indicated a 24 volt electrical system, hydraulic brakes, and improved radio, and in the TEF-1C indicated
two .50 calibre wing guns. The letter B on the other hand had fairly standard usage. The same was true of the P for photography which came into use in 1941\(^1\) and of the R for transport which came along in 1943.

The apparent random use of letters during this early war period, indicates that they may have developed from the convenience of abbreviation rather than from any official act or decision.\(^2\) The first publication of suffix letters and their meanings appeared in the Bureau of Aeronautics publication of "Model Designation of Navy Aircraft" in April 1944.\(^3\) Although this was the first and was probably intended to sum up the suffix letter situation, it hardly covered the subject. Its complete statement was:

Suffix letters are used where an airplane has a minor modification of not enough importance to change the modification number or where the airplanes have been diverted to another service or for a special purpose. No fixed rule has been established for the suffix letter to identify the aircraft. The following suffix letters are used only for the purpose stated:

(a) Letter "A" indicates either amphibious version or that the airplane was built for the Army Air Forces.

(b) Letter "B" indicates the airplane was built for the British.

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1. Although in common use at this early date, the P was first officially established as the suffix for "aircraft modified primarily for photo-reconnaissance missions" by Aviation Planning Directive 93-A-44 of 24 October. (In our files)
2. An observation based on what we have on file rather than an extended search, appears to be borne out by italics below, which are mine.
3. The first in our files; see Model Designation Reports 1936-45 and July 1944.
(c) Letter "N" indicates night fighter version of the basic airplane. 

(d) Letter "R" indicates the basic airplane has been converted to a transport.

(e) Letter "P" indicates that the airplane has fixed provisions for photographic missions.

Other additions soon appeared, the January 1945 issue defining F5, H, and S, and the April issue adding the E. Official designation again lagged far behind usage. Neither the C, which by this time had acquired an entirely new meaning, nor the D are defined, yet both are used to identify aircraft in these same publications issued as early as July 1944. The status of suffix letters are given in April 1945 as follows:

A - indicates either amphibious version or that the airplane was built for the Army Air Forces.

B - indicates airplane built for the British.

E - indicates special radar installation.

F - indicates flagship.

H - indicates hospital ship (except for PBJ-1H).

N - indicates night operating version of the basic airplane.

P - indicates fixed provision for photographic reconnaissance missions.

R - indicates converted to a transport.

S - indicates anti-submarine patrol.

2. Letter "N" appears to have been first used in AFD of 16 Oct. 1943 in reference to the F6F-3N but its unofficial nature seems to be established in AFD 32-A-44 of 15 March which, in reference to the F6F-3N designation, states, "...no such has ever been officially established" and then goes on to establish it. (both in our files)

3. Established by AFD 117-A-44 of 19 Dec. to "distinguish certain modifications of patrol bomber and transport aircraft which have been converted to flag configuration." (in our files)

4. Usage of the two letters suggests the following meanings:

C - an aircraft equipped with 20 mm guns rather than the usual .50 calibre

D - aircraft equipped with twin pylons for droppable wing tanks or 1000 pound bombs, and having no internal wing tanks.

Use of these letters was at first confined to the Corsair, P4U and FG.

7. Designations of the FBW, which is the Army B-25, carried several suffixes that were exceptions to the rule as C, D, G, and J in addition to the above H. These were simply AAF designations carried over with AAF meaning.
Use of the suffix F was shortlived. Aviation Circular Letter 86-45 of 27 July\(^8\) discontinued it as well as use of the terms "flag aircraft, flag plane and flagship" in referring to this type of plane modification. Instead, it established the letter Z and the term "administrative."

The January 1946 issue of Model Designations was a summing up of developments during the war. However, it offered no explanation for the C and D which were used so extensively during the war and in fact were used in the very issue in which the suffix letters were summed up.\(^9\) It made several changes in past usage, omitted the B, and added J, K, L, Q, and W.\(^10\) The entire list was published as follows:

A. Either amphibious version or that the airplane was built by the Navy for the Army Air Forces.  
B. Electronic night bombing installation.  
C. Hospital ship (except for PBJ-IH).  
D. Converted to a utility airplane.  
E. Modified for use as a target aircraft.  
F. Equipped with search light.  
G. Night operating version of the basic airplane.  
H. Fixed provision for photographic reconnaissance missions.  
I. Electronic countermeasures missions.  
J. Converted to a transport.  
K. Anti-submarine patrol.  
L. Special search mission.  
M. Administrative aircraft.  

*Note:* The suffix letters not listed herein are considered open letters and may be used for more than one purpose.

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\(^8\) In our files, APD 66-A-45 of 9 August repeats the information without referring to the original order.  
\(^9\) (Refer to some directives as examples of use before and after - as APD 81-A-45 of 6 November, establishes F6F-2C.  
\(^10\) APD 82-A-45 of 27 November, established the suffix K to identify service type aircraft modified primarily for pilotless operations. This appears to be a definition than that given above. The same directive established F6F-3K as the designation for the F6F-3's under modification to pilotless aircraft targets. The letter Q was established for use indicated by APD 78-A-45 of 31 October.
By this time the list had assumed proportions to warrant the publication of a special Aviation Circular Letter. It appeared on 11 March 1946 under number 43-46, and incorporated a number of changes. The J was omitted, E, C, G, M, and T were added, and A and F meanings were revised. 11 The new list was as follows:

Suffix letters shall be assigned only from the list below and for the purpose listed. This letter indicates that the modifications are of a permanent nature and limit or augment the primary mission accordingly.

A Amphibious version  
B Special armament version  
C Carrier operating version of a non-carrier aircraft  
E Special electronic version.  
G Air-sea rescue version.  
H Hospital version  
K Target drone version  
L Search light version  
M Weather reconnaissance version  
N Night operating version  
P Photographic version  
Q Countermeasures version  
R Transport version  
S Anti-submarine version  
T Training version  
W Special search version  
Z Administrative version

Modifications to this list in April 1946 and in September of the next year, 12 added the following letters:

J Target Towing version  
U Utility version  
D Drone Control Version

All these were repeated in a new Circular Letter in July 1946. 13

Suffix M, Weather Reconnaissance version, was omitted from the new list and four definitions were revised. These were:

11. Use of the letter C reverted to its meaning at the beginning of World War II and was entirely different from its meaning in the later stages of that war.  
12. ACLs 60-46 of April and 87-47 of 9 September, both in our files.  
G formerly air-sea rescue; now search and rescue
N formerly night operating; now all weather operating
R formerly transport; now support/transport, and
W formerly special search; now air warning.

In spite of the publication of these lists, or perhaps because of it, confusion still existed, particularly in some of the curious applications resulting. For example, an R4D-6R, which designation appears regularly in aircraft listings during this period and years following, is literally a support/transport version of a transport aircraft. Since all transport aircraft have a "support/transport" mission, the designation hardly contributes much to the understanding. Although letters have set forth more exact definitions for this particular application, its special meaning is not included in published model designation lists and therefore remains obscure.

One such letter defined the designation in 1946 as a "transport version of R4D aircraft in which twenty one individual passenger seats are installed."¹⁴ Six months later that definition was qualified by the insertion of "...and soundproofing and insulation equivalent to commercial airline standards."¹⁵ As late as 1953, issues of model designation technical notes still carried the "support/transport" definition without further elaboration.

Transport aircraft designations contain another exception that is confusing—use of the suffix C. By official definition C means a "carrier operating version." While transport aircraft have flown from carrier decks, they have not operated and as yet are not equipped to operate from carriers in the sense implied by the definition. No, in this instance, an R5D-1C is an "R5D-1 aircraft in which the R5D-2 type of fuel system is installed."¹⁶

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¹⁴ ACL 138-46 of 17 Sept. Above is not a direct quote, letters in R4D file.
¹⁵ ACL 27-27 of 7 March in R5D file.