

HISTORY OF
ORDNANCE DRAWING NUMBERS
AND

ORDNANCE PART NUMBERS

DATED 8 OCTOBER 1945

ROCK ISLAND ARSENAL
ROCK ISLAND, ILLINOIS

Forward

The following history of the use of Ordnance Drawing Numbers and part numbers has been produced as a result of the many inquiries received regarding the different types of such numbers.

The information contained herein was compiled and written by Richard W. Aubry, civilian chief in charge of the drawing files and edited by Arthur W. Rodler, Ordnance Engineer in the drafting division.

It is hoped that this booklet will serve the purpose for which it is intended.

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Ordnance Drawing Numbers and Part Numbers

1. The first known type of drawing number used by the Ordnance Department consisted of a class number, a division number, and a drawing number such as 2-94-43 in which the numeral 2 represents the class, 94 the division, and 43 the drawing number. Class and Division drawings dated as early as September 1888 are available at the Rock Island Ordnance Center. Apparently the first drawing number assigned was 1-01-1 which is a Side Elevation of the 37-MM. Automatic Field Gun Carriage (V.M.). Unfortunately the drawing bears no date. Records at this Arsenal disclose that the drawing was used in building the first twelve carriages. The records show Class and Division numbers for Six Pounder Gun Materiel, 1819, but the numbers were not assigned until after the Class and Division numbering system had been established.

2. The first piecemarks were assigned to individual parts in 1902 shortly after the Spanish-American War. The piecemarks consisted of the drawing number portion of the Class and Division number with a letter suffix or prefix, or both, added. Piecemarks of details for major items, which were assigned Class and Division drawing numbers, were composed of the drawing number portion with letter suffixes in alphabetical sequence for each part shown on the drawing; example 41C, 41D, 41E, etc. Where a drawing was revised sufficiently to destroy the interchangeability of a part the revision number was added directly after the letter suffix; example 41E5.

3. Each class and Division for common parts, standard parts, tools,

etc. is represented by a letter symbol. The symbol U, for example, represents Class and Division 15-5. A cross-index for identifying the symbols relative to the various Classes and Divisions is available at Ordnance Establishments. In this system, the piecemark includes the letter symbol as a prefix, the drawing number portion of the Class and Division number, and the letter suffix assigned to the part; example U315D. Letter suffixes, in alphabetical sequence, are assigned to each part shown on the drawing. Where drawing revisions affect interchangeability, the revision number is added directly after the letter suffix, example U315D2.

4. The first Ordnance Standard system was also developed shortly after the Spanish-American War. The classification 30-2, represented by the symbol Q, was assigned. The Ordnance Standard embraced screws, cotter pins, washers, and bolts. The drawings were prepared in tabular form similar to the present standards.

5. The policy, with respect to the aforementioned drawing system, was to assign a piecemark to every component part excepting assembly drawings. The drawing number portion of the Class and Division drawing was used for the identification of assemblies in cases where only the assembly appeared on the drawing.

6. Lists of Drawings and Lists of Parts were introduced into the Ordnance System in 1915. Drawing number one (1) was assigned to the List of Drawings. For example, the entire identification of the List of Drawings for Class and Division 3-16 was 3-16-1 in which the numeral "1" represented the drawing number. The List of Parts carried the same

drawing number excepting that letter suffixes were added in alphabetical sequence; for example, 3-16-1A, 3-16-1B, etc. All Parts were listed alphabetically and included the material and quantities required to procure or manufacture the various items.

7. The Class and Division was the only system in use up to, and including, the first world war period. Authorized types of drawing numbers and piecemarks were as follows:

	<u>Drg. No.</u>	<u>Piecemark</u>
Major Items, Lists of Drawings and		
Assemblies	2-66-1	None
Sub Assemblies or Finding Diagrams	2-97-15	None
Lists of Parts	2-66-1A	None
Parts peculiar to Major Items.....	3-41-41	41E
Parts revised (non-interchangeable).....	3-41-41	41E5
	(15-5-315)	U315D
Common Parts and Tools	(24-10-37)	LH37M
Standard Parts	30-2-51	Q51AN

8. No significant changes in the drawing system occurred during the first world war. However, the experience gained during this period of crisis served as a basis for the inauguration of a new drawing system in 1922. Five basic drawing sizes, represented by the letters A, B, C, D, and E, were established. The drawing number consisted of a letter followed by a number; example, A6942. The numbers assigned for each size of drawing began with number one (1) and continued in numerical order.

The adopted drawing sizes were as follows:

Size A --- 8 $\frac{1}{2}$ "x14"

Size B --- 12"x20"

Size C --- 18"x30"

Size D --- 24"x40"

Size E --- 40"x (length to suit condition)

Inasmuch as the number series for the above letter size drawings begin with number one (1) for each individual size, it is apparent that the only distinguishing characteristic between the various letter sizes is the letter prefix. It is therefore obvious that the prefix is of the utmost importance for identification.

9. Normally only one detail or assembly was shown on a drawing and the piecemark and drawing number were identical. In some cases more than one part was shown on a drawing, and in order to distinguish between the different parts, letter suffixes were added to the piecemarks. Generally, letter suffixes were used as a part of the piecemarks for identifying standard parts tabulated to various lengths, right and left hand parts, alternative parts, canvas material, anti-friction metal, etc. When more than one sheet was required to show a particular part, assembly, or list, the additional drawings carried the same number as the basic drawing with letter suffixes added. The addition of a revision number for indicating non-interchangeability was retained.

10. Lists of Drawings and General Assemblies for ammunition and major items remained as Class and Revision drawings. "B" size drawings instead of Class and Division drawings were used for Lists of Parts which included Finding Diagrams, Material Specifications, and Spare Parts.

All assembly drawings except general assemblies of major items became Finding Diagrams on which all the names and drawing numbers (or part numbers) comprising the assembly were shown.

11. The cross reference system was introduced for the purpose of designating the assembled location of the individual details. Under this method every letter size drawing has a drawing number in the "drawing pertains to" column which refers to the Finding Diagram, List of Drawings, or Major Item. This method makes it possible to determine the exact function of the part shown on each drawing.

12. Standard parts, formerly shown on drawings in classification 30-2, were now shown on "B" size drawings in the same general form by using letter suffixes. The first Ordnance Standard drawings having separate series of drawing numbers and piecemarks were shown on letter size sheets in 1927. The drawing number consisted of three letters with an "X" plus a numeral. Letter suffixes were added to indicate piecemarks. The first standard of this type was TAAXL. Immediately the Ordnance Standard became unofficially known as a "Taxi" drawing. Reference to "Taxi" drawings in official orders is not unusual. As the Ordnance Standard program became more comprehensive, the old type of classified standards and "B" size standards were nearly eliminated. Piecemarks remained unchanged until 1939 when a numerical suffix was added to the part number in order to specify particular types of plating.

13. At the time of our entry into the second world war, there were three types of drawing numbers in general use, namely, the Class and Division, the letter size, and the Ordnance Standard. The following is

an illustration of the various types:

	<u>Drg.No.</u>	<u>Piecemark</u>
Major Items (List of Drawings and		
General Assemblies)	3-185-1	None
Ammunition Drawings	75-1-285	285B
List of Parts (sheet 1)	E105585	None
List of Parts (sheet 3)	E105585B	None
Finding Diagrams	C7239	None
Parts, Common Parts, and Tools	A19187	A19187
Parts revised (non-interchangeable)..	A25168	A25168-3
Parts (more than one shown on Drg.)..	C53239	C53239B
Standard Parts (1922 to 1927)	B6458	B6458BM
Standard Parts (1927 to 1943).....	BCAXI	BCAXIAB
Standard Parts (plated)	BCAXI	BCAXIAB-3

14. Piecemarks were used by the Field Service for stock purposes for over half a century. The introduction of I.P.M. machines in 1941 revealed inadequacy in the Ordnance piecemarks and resulted in item code numbers being assigned by the Field Service to each item of Ordnance material for stock purposes. The consequence was that the Ordnance Department was burdened with two series of numbers, namely, piecemarks assigned by the Industrial Service which were shown on the part, and item code numbers assigned by the Field Service which were used for stocking purposes. Inasmuch as only the latter were used for stocking purposes, and that no relationship existed between the two series, it was necessary to maintain extensive cross reference records.

15. In 1943 the engineering Administrative Section of the Office, Chief of Ordnance, charged with the responsibility for all drafting room procedure, was established. One of the immediate problems confronting this section was the coordinating of the stock and part numbers then used by the Industrial Service and the Field Service. The culmination of the numbering problem was reached in the fall of the year 1943 when the most extensive change in the history of Ordnance numbering was begun. When this change is completed, a new part number will have been assigned to every piece of current Ordnance material in existence. The basic principal involved in the new system is to use the same number for the part number, the drawing number, and the stock number. In this system the part number is a plain seven digit number such as 7106842. The part represented by this number is shown on drawing A7106842. The drawing number is the same as the part number excepting that a letter prefix is added. The prefixes are A, B, C, D, and E. They are determined by the size of the drawings as previously mentioned. In this particular case, the stock number used for part number 7106842 is C040-7106842 in which C040 pertains to the applicable Standard Nomenclature List (S.N.L.). The applicable S.N.L. is used as a prefix to part numbers in all cases when a stock number is assigned in the seven digit system.

16. An Ordnance part number will be assigned to every part or assembly which is stored or issued as such. The use of the term piecemark has been officially discontinued.

17. A series of numbers from 7000000 to 9999999 has been designated for all new Ordnance material except standard parts, major

items, and tools. The seven digit numbers are assigned in numerical sequence regardless of the drawing size. In the old system each drawing size carried its own series of numbers beginning with number one (1).

18. Letter suffixes are no longer permissible with drawing numbers. Where more than one sheet is required to show a part, assembly, or list, the additional sheets will carry the same drawing number as the basic sheet. For identification the respective sheets will bear the notes "Sheet 1 of 3", "Sheet 2", "Sheet 3", etc.

19. Eventually all A, B, C, D, and E size drawings pertaining to active materiel will bear drawing numbers of the seven digit series. Therefore, existing drawings of the old system, which apply to active materiel, will be converted to 5000000 or 6000000 series numbers. In these conversions the letter prefix for the drawing number is retained, but the prefix is removed for the part number. The conversion is accomplished by adding seven digit series to the existing numbers as follows; 5000000 to A sizes, 6000000 to B sizes, 5500000 to C sizes, 6500000 to D sizes, and 6900000 to E sizes. In cases where more than one part is shown on a letter size drawing, the conversion can be applied only to one of the parts. The part to be converted is normally the one bearing the basic drawing number for a piecemark. If the basic number is not used as a piecemark for one of the parts, then the part with the letter suffix "A" should be converted. Each remaining part is transferred to a separate drawing which is assigned a drawing number in the 7000000 series.

20. In no case will a seven digit part number include a letter prefix, letter suffix, or numerical suffix to indicate non-inter-

changeability. When revisions involving interchangeability are made, a new part number must be assigned.

21. Tools, tool equipment (tool accessories), and bulk material are assigned Federal Stock Catalog numbers which appear on the drawings in the same manner as part numbers. The assignment of these numbers is a responsibility of the Office of the Chief of Ordnance where completed drawings are forwarded for this purpose. Standard tools such as hammers, screwdrivers, etc., which are shown on Ordnance Standard drawings are also assigned Federal Stock Catalog numbers.

22. Ordnance Standard numbers are in the series from 100001 to 999999. Ordnance Standards which are identical to automotive standards such as used by the General Motors Corporation are assigned two series of numbers; from 100001 to 232000 and from 420001 to 457500. Standard parts peculiar to the Ordnance Department are assigned numbers in the series from 500000 to 999999. Of these numbers anti-friction bearings are assigned numbers in the 700000 series. The existing type of drawing numbers such as TAAXL is being retained.

23. Numbers in the series from 5700000 to 5949999 have been assigned for the identification of packages containing matched gear sets, spare parts sets, etc.

24. Class and Division Drawings are being retained for Lists of Drawings, ammunition drawings, and general assemblies of major items. The series of numbers from one (1) to 99999 have been assigned to major items and major combinations by the Office of the Chief of Ordnance. These numbers are commonly referred to as "ONR" numbers and appear in the Official Nomenclature Record. Class and Division numbers under

classification 101 are assigned to major combinations. These numbers appear on the pages of the Official Nomenclature record in the lower right hand corner.

25. An additional step towards the coordination of the various manufacturing facilities and the Field Service was taken in 1944 when the new Combined List of All Parts, Spare Parts, Equipment, and Tools was initiated. This list is commonly known as a "Combined List" because it combines the List of Parts, List of Accessories, List of Maintenance Tools, List of Spare Parts, etc. into a single list which is prepared jointly by the Industrial Service and the Field Service. Combined Lists are shown on "C" size drawing sheets. For identification, a note such as "sheet 1 of 43" appears on the first sheet of the list. Additional sheets carry the notes, "sheet 2", "sheet 3", etc.

26. Upon completion of the present program there will be only five basic types of part numbers. They will be represented by series of numbers as follows: 1 to 99999 for major items and major combinations, 100001 to 999999 for all Ordnance Standards except tools, 5000000 to 6949999 for conversion of drawings in the old letter system and for packaging (see paragraphs 19 and 23), 7000000 to 9999999 for all new work excepting tools for major items and tools shown on Ordnance Standards, and Federal Stock Numbers for all tools and tool equipment. The various types of part numbers and related drawing numbers are illustrated in the following:

	<u>Drg.No.</u>	<u>Part No.</u>
Major Items.....	2-298-1	08309 (ONR)
(See paragraph 24)		

	<u>Drg. No.</u>	<u>Part No.</u>
List of Parts (1st sheet)..... (See paragraphs 18 and 25)	(C7117498 (Sheet 1 (of 43	None
List of Parts (3rd sheet)..... (See paragraphs 18 and 25)	(C7117498 (Sheet 3	None
Finding Diagrams and Sub-Assemblies.....	B7102685	7102685
Parts revised (non-interchangeable)..... (See paragraph 20)	New Drg. & Part No. Req'd.	
Parts (details)..... (See paragraphs 15 and 17)	D7106799	7106799
Parts (converted details or assemblies) (See paragraph 19)	C5561330	5561330
Tools shown on old system drawings..... (See paragraph 21)	15-5-285	41-W-1538-10
Tools shown on new system drawings..... (See paragraph 21)	D7123335	41-S-375
Tools shown on Ordnance Standards..... (See paragraph 21)	TKAX3	41-W-484
Standard Parts (common to General Motors Corporation)..... (See Paragraph 22)	BBCX2	218441
Standard Parts (peculiar to Ordnance)..... (See paragraph 22)	BBQX1	503469
Standard Parts (Anti-Friction Bearings).... (See paragraph 22)	CAAX1	700073

27. Two major and many minor changes have been made in Ordnance numbering since the beginning of the numbering system. It is interesting to note that, in spite of the many changes, every type or part number or drawing number ever used is still in existence on some current vehicle.

28. The basic Class and Division number of the type used in the

original numbering system is still retained for the principal drawings of major items. The advantageous features of the original letter size drawings have been combined with the present seven digit system.

29. It is significant that every major change in Ordnance numbering methods can be attributed to a war. Research and development in scientific and technical fields have resulted in many new weapons of warfare. Existing weapons have also undergone extensive changes to meet the demands of modern warfare. It is only natural that the many changes in the design of weapons will, from time to time, reveal inadequacies in the drawing and numbering procedure which, in order to keep pace with new developments, must be revised as occasion demands.