NOMENCLATURE FOR ELECTRONIC VALVES

An account of the history of this subject may help to dispel some confusion which exists at present.

OLDER SYSTEMS.

Whenever a valve is introduced into Service use, it has to be given some tag which will enable it to be specified, bought, stored, listed and finally put into the socket where it is needed. In the commercial world there is a rich profusion of curious names, almost all the product of complex mnemonic systems, the key to which is almost always forgotten. The three Services, therefore, produced their own systems, which are illustrated by the following examples:-

(a) "NR1"; which roughly means "Naval Receiving Valve No. 1".

(b) "ARTH2"; or "Army Receiving Triode-Hexode No. 2".

(c) "VGT2"; or "R.A.F. Gas Triode No. 2".

In addition to these names, a stores reference was required (in the Navy, an "Admiralty Pattern Number"). As the three Services, in peace-time, standardised valves separately, the same commercial valve could collect as many as six "numbers". (See Fig. 1a).

THE BEGINNING OF THE CV SYSTEM

In 1941, the three Services and the G.P.O. agreed to use a common system of nomenclature, and from then onwards the old systems were discontinued, as far as new valves were concerned. It was also agreed that each Service would make use of valves in other Services' old ranges, rather than introduce new CV names. For example, the Navy would use "VR91" as such. The new Inter-Service nomenclature made no attempt to describe the function of the tube but was merely two letters "CV" (i.e. Common Valve) followed by a number in a simple series:-

CV1
CV2
CV3 and so on

At present, CV300 is being approached.

This CV number serves both as the name, and as the stores reference (i.e. pattern) number for all Services, although the Army and R.A.F. require special prefixes (ZA and 10E/) which should be ignored for Naval purposes.

THE EXTENSION OF THE CV SYSTEM

In 1943, as a result of difficulties in storing valves which had no Admiralty Pattern number, the Admiralty proposed that all valves be given CV Numbers retrospectively, and the scheme is now in use in the Admiralty (A.F.O. 4683/44 or later orders) and is about to be used in the other Services. These CV Numbers are in the ranges CV500 - 1999, 2500 - 2999 and 3500 - 3999. Ultimately, this scheme will achieve the aim: "one valve, one name" (see Fig. 1b).

Another, separate, source of CV Numbers which is linked with the nomenclature of experimental valves, will result in newly developed valves bearing numbers in the range CV300 - 499 and in the first five hundred numbers in every thousand, up to 9499.

HOW TO USE THE CV SYSTEM

It is intended that the new numbers will be fully cross-referred to all the other numbers which may be applied to a valve. This has already been done for "pre-CV" types by the "Services Index of Valves, etc." (Short Title: "SIVCRED") which is being distributed by A.S.E. Extension, Waterlooville, Hants. An appendix covering "CV" numbers is being prepared, and it is hoped to issue both parts to overseas recipients of the A.S.E. Bulletin. Collaboration with the United States to produce a common International Index is now taking place.

The rule in future will be: whatever valve name you think of first, translate it to the CV number before using it officially. BR783 (The Services Radio Valve Manual) is being revised accordingly.

AMERICAN NOMENCLATURE

The Signal Corps of the U.S. Army until recently used a nomenclature consisting of VT followed by a number in a simple series. (There is a liability of confusing these valves with British R.A.F. valves in their "VT" family). The U.S. Navy used a five digit number in the 38 thousand series. Now both Services use the commercial name prefixed by "JAN" and the maker's code. "JAN" stands for Joint-Army Navy.

OTHER MARKINGS ON VALVES

There are other markings on valves which have significance for those making and specifying them. They are not required for demanding from stores BUT SHOULD ALWAYS BE QUOTED WHEN REPORTING DEFECTS.

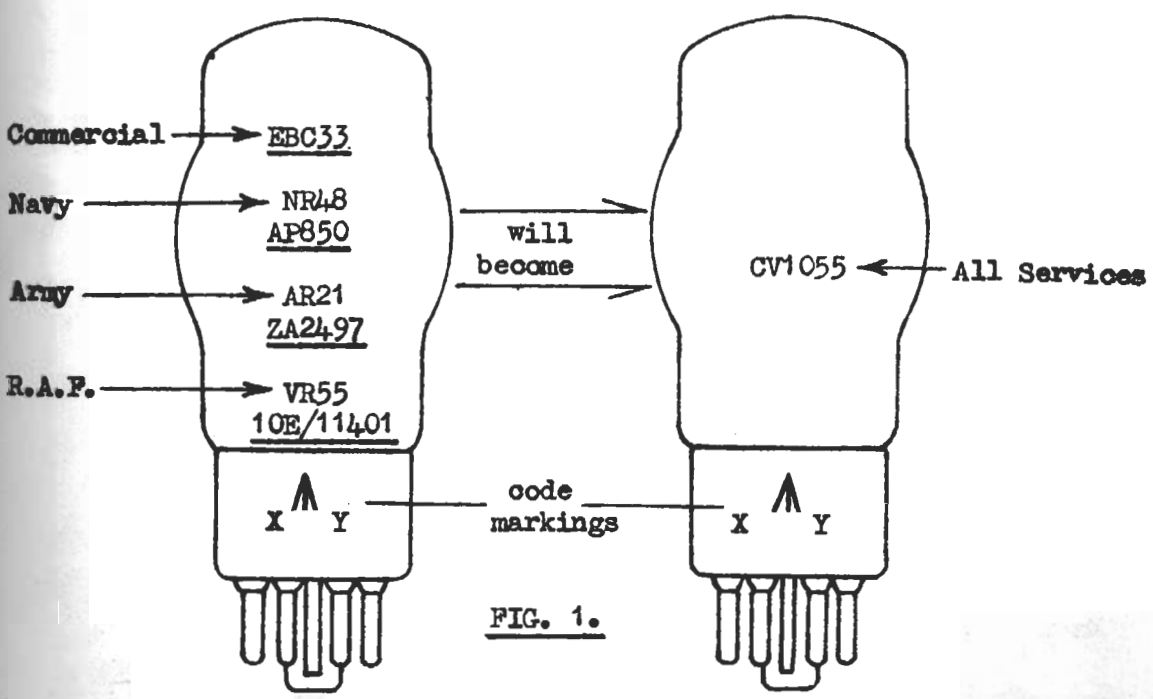

FIG. 1.

QUARTZ CRYSTAL GRINDING

AND SERVICING UNIT

NAVAL RADIO VAN 87.

This unit has been produced as a result of experience gained in Crystal Grinding at the Combined Operations Signal Maintenance Depot, and is intended to be capable of producing from crystal blanks, provided in the unit, or by regrinding existing crystals to new higher frequencies, up to 100 crystals a week in the frequency range 1.5 to 9 megacycles.

The unit is manned by a crew of four consisting of one Petty Officer Radio Mechanic in charge, one Leading Radio Mechanic and two Able Seamen or Ordinary Seamen, all of whom have been specially trained in the latest crystal producing and servicing methods. For convenience in handling and shipping, all the necessary apparatus has been fitted into a Ministry of Supply 13 foot Signals Container which may be supplied already mounted on a 3 ton 4 x 4 chassis or unmounted for use in a fixed position. The van (Naval Radio Van No. 28 or 28A) will require a power supply of approximately 3 kVA at 230 volts, 50 cycles A.C. When it is supplied in mobile form the unit will be complete with a 5•6 kVA Diesel power trailer. Where possible the unit should have available an adequate supply of running water which may be connected by a rubber hose to a suitable adaptor already provided on the container. In its mobile form this may be dispensed with by providing an adequate static water supply.

The container, dimensions of which are 13' 6" x 7' 6" x 7' 3" high, can be sited inside an existing building or where this is not possible may be placed in the open, under its awning in the tropics; a space measuring approximately 30 x 20 feet is required under the latter circumstances.

The unit is not intended to mass produce quartz crystals but rather to supplement existing supply facilities in producing, up to the limits previously mentioned, immediate operational requirements of small numbers of crystals together with the servicing of large quantities of existing crystals which have failed due to loss of activity. Lost activity crystals were previously either discarded completely or cleaned by unskilled personnel who did not realise that cleaning had the effect of increasing the frequency of the crystal, the new frequency often being outside the permissible frequency tolerance. All crystals produced by these units will be acid etched to final frequency thus avoiding to a large extent loss of activity during shelf life and where subsequent cleaning is necessary much less frequency change in the process.

Equipment is provided in the unit for accurate frequency measurement and also for putting all produced and serviced crystals through a temperature cycle in order that their performance may be checked at extremes of temperature. Blanks have been provided on what is considered an adequate scale, but to prove the adequacy of equipment early and frequent reports of the performance of any unit in service would be appreciated. Reports (in duplicate) should be sent to Admiralty Signal Establishment.

QUARTZ CRYSTAL GRINDING & SERVICING UNIT
NAVAL RADIO VAN Nº 87.