

CHAPTER 3

COMPONENT AND EQUIPMENT NOMENCLATURE AND DESIGNATIONS

The following information, condensed from chapter 67 of Bureau of Ships Technical Manual, NavShips 250,000, will be helpful to ETs.

JOINT ELECTRONICS TYPE DESIGNATION SYSTEM (AN SYSTEM)

The Electronic Type Designator System (AN System) for electronic equipment was adopted in 1943. The system is designed to:

1. Be logical in principle so that the nomenclature type numbers will be readily understood, and the operation of the armed forces supply services will be facilitated.
2. Be flexible and sufficiently broad in scope to cover present types of equipment and new types and uses of equipment that will be developed in the future.
3. Avoid conflict with nomenclature at present assigned to the equipment used by the armed services.
4. Provide adequate identification on nameplates with or without the name part of the nomenclature.
5. Provide a ready means of identifying equipment in correspondence and other types of communication.

The system is designed so that its indicators will tell at a glance many things that pertain to the item. For example, it tells whether the item is a SET or a UNIT and such other information as where it is used, what kind of equipment it is, and what it is used for. (See table 3-1.)

SET IDENTIFICATION

To explain the system, a typical example of set nomenclature, Radar Set AN/APS-2, is included in table 3-2. Thus, Radar Set AN/APS-2 is a search radar set installed and operated in an aircraft.

Other equipments in the same category are the AN/APS-4 and AN/APS-6. Another set of a different category is the AN/SRC-1 which, as indicated in table 3-1, is a shipboard radio communications set for receiving and transmitting.

To identify a set that has been modified, but which still retains the basic design and is interchangeable with the unmodified set, a modification letter is used (see table 3-1, column 5). Thus, if Radar Set AN/APS-2 is modified, it becomes AN/APS-2A. The next modification would be the AN/APS-2B, and so on.

A special indicator (see table 3-1, column 6) is used when the only change to a set is in its input power, or when it is an experimental or a special model. For example, if the same basic design is kept but the input power is changed from 13 volts to 26 volts, the letter "X" is added to the nomenclature, as AN/APS-2AX. The second power input change would be identified by the letter "Y."

A special indicator (T) for training sets is also available and is used in conjunction with the other indicators to show that it is a training set for a specific equipment. Likewise, it may be used to indicate a trainer for a special family of equipment. For example, the first training set for the AN/APS-2 would be AN-APS-2T1.

The system also provides for identifying a series of sets by the use of parentheses after the type number. Thus, the AN/APS-2() refers to the AN/APS-2 set and all its modifications such as the AN/APS-2A, AN/APS-2B, as well as its experimental versions such as the AN/APS-2(XB-1).

Experimental sets are identified by the use of the development organization indicators (see table 3-1, column 6). A number is used to indicate a particular developmental or reproduction model. Thus, the first developmental model of the AN/APS-2 could be identified as the AN/APS-2(XB-1), assuming, of course, that the Naval Research Laboratory did the work.

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Table 3-1.--Equipment Indicator Letters.

1	2	3	4	5	6
Installation	Type of Equipment	Purpose	Model Number	Modification Letter	Miscellaneous Identification
A--Airborne (installed and operated in aircraft)	A--Invisible light, heat radiating	A--Auxiliary assemblies (not complete operating sets used with or part of two or more sets or sets series)	1 2 3 4 Etc.	A B C D Etc.	X Y Z } --change in input voltage, phase, or frequency
B--Underwater mobile, submarine	B--Pigeon				Experimental indicators
C--Air transportable (inactivated, do not use)	C--Carrier	B--Bombing			XA--Communications --Navigation Laboratory, WADC, Dayton, Ohio
D--Pilotless carrier	D--Radiac	C--Communications (receiving and transmitting)			XB--Naval Research Laboratory, Washington, D.C.
F--Fixed	E--Nupac (nuclear protection and control)	D--Direction finder and/or reconnaissance			XD--Cambridge Research Center, Cambridge, Mass.
V--Ground, general ground use (include two or more ground type installations)	F--Photographic	E--Ejection and/or release			XF--Frankfort Arsenal, Philadelphia, Pa.
K--Amphibious	G--Telegraph or teletype	G--Fire control or searchlight directing			XG--U.S.N. Electronic Laboratory, San Diego, Calif.
M--Ground, mobile (installed as operating unit in a vehicle which has no function other than transporting the equipment)	I--Interphone and public address	H--Recording and/or reproducing (graphic meteorological and sound)			XH--Aerial Reconnaissance Laboratory, WADC, Dayton, Ohio
P--Pack or portable (animal or man)	J--Electromechanical (not otherwise covered)	L--Searchlight control (inactivated, use "G")			XJ--Naval Air Development Center, Johnsville, Pa.
	K--Telemetry	M--Maintenance and test assemblies (including tools)			XK--Flight Control Laboratory, WADC, Dayton, Ohio
	L--Countermeasures	N--Navigational aids (including altimeters, beacons, compasses, racons, depth sounding, approach and landing)			XL--Signal Corps Electronics Research Unit, Mountain View, Calif.
	M--Meteorological				
	N--Sound in air				
	P--Radar				
	Q--Sonar and underwater sound				
	R--Radio				
	S--Special types, magnetic, etc., or combinations of types				
	T--Telephone (wire)				
	V--Visual and visible light				
	W--Armament (peculiar to armament, not otherwise covered)				

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Table 3-1.—Equipment Indicator Letters—Continued.

1	2	3	4	5	6
Installation	Type of Equipment	Purpose	Model Number	Modification Letter	Miscellaneous Identification
<p>S—Water surface craft</p> <p>T—Ground, transportable</p> <p>U—General utility (includes two or more general installation classes, airborne, shipboard, and ground)</p> <p>V—Ground, vehicle (installed in vehicle designed for functions other than carrying electronic equipment etc., such as tanks)</p> <p>W—Water surface and underwater</p>	<p>X—Facsimile or television</p>	<p>R—Receiving, passive detecting</p> <p>S—Detecting and/or range and bearing</p> <p>T—Transmitting</p> <p>W—Control</p> <p>X—Identification and recognition</p>			<p>XN—Department of the Navy, Washington, D. C.</p> <p>XO—Redstone Arsenal, Huntsville, Ala.</p> <p>XP—Canadian Department of National Defense, Ottawa, Canada</p> <p>XS—Electronic Components Laboratory, WADC, Dayton, Ohio</p> <p>XU—U.S.N. Underwater Sound Laboratory, Fort Trumbull, New London, Conn.</p> <p>XW—Rome Air Development Center, Rome, N. Y.</p> <p>XAN—Naval Air Facility, Indianapolis, Ind.</p> <p>For complete details see MIL-STD-196</p>

Table 3-2.—Designation For Radar Set AN/APS-2.

Radar Set	AN/	A	P	S-	2
Item name as prescribed	A major equipment	See the designated column in table —			Second equipment in this category (col. 4)
		Airborne (col. 1)	Radar (col. 2)	Search (col. 3)	

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COMPONENT IDENTIFICATION

So far, consideration has been given only to the indicators used in SET nomenclature. Indicators for major COMPONENTS of a set are now considered.

Components are identified by means of indicating letters (which tell the type of component it is) (see table 3-3), a number (which identifies the particular component), and finally the designation of the equipment of which it is a part or with which it is used.

Table 3-3.—Table of Component Indicators.

Comp Ind.	Family Name	Examples of Use (Not to be construed as limiting the application of the component indicator)
AB	Supports, Antenna -----	Antenna mounts, mast bases, mast sections, towers, etc.
AM	Amplifiers -----	Power, audio, interphone, radio frequency, video, electronic control, etc.
AS	Antennae, Complex -----	Arrays, parabolic type, mast-head, etc.
AT	Antennae, Simple -----	Whip or telescopic, loop, dipole, reflector, etc.
BA	Battery, primary type -----	B batteries, battery packs, etc.
BB	Battery, secondary type -----	Storage batteries, battery packs, etc.
BZ	Signal Devices, Audible -----	Buzzers, gongs, horns, etc.
C	Controls -----	Control box, remote tuning control, etc.
CA	Commutator Assemblies, Sonar -----	Peculiar to sonar equipment
CB	Capacitor Bank -----	Used as a power supply
CG	Cable Assemblies, R. F. -----	R. F. cables, waveguides, transmission lines, etc., with terminals
CK	Crystal Kits -----	A kit of crystals with holders
CM	Comparators -----	Compares two or more input signals
CN	Compensators -----	Electrical and/or mechanical compensating, regulating or attenuating apparatus
CP	Computers -----	A mechanical and/or electronic mathematic calculating device
CR	Crystals -----	Crystal in crystal holder
CU	Couplers -----	Impedance coupling devices, directional couplers, etc.
CV	Converters (electronic) -----	Electronic apparatus for changing the phase, frequency, or from one medium to another
CW	Covers -----	Cover, bag, roll, cap, radome, nacelle, etc.
CX	Cable Assemblies, Non-R. F. -----	Non-R. F. cables with terminals, test leads, also composite cables of R. F. and non-R. F. conductors
CY	Cases and Cabinets -----	Rigid and semirigid structure for enclosing or carrying equipment

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Table 3-3.—Table of Component Indicators—Continued.

Comp Ind.	Family Name	Examples of Use (Not to be construed as limiting the application of the component indicator)
D	Dispensers -----	Chaff dispensers
DA	Load, Dummy -----	R. F. and non-R. F. test loads
DT	Detecting Heads -----	Magnetic pick-up device, search coil, hydrophone, etc.
DY	Dynamotors -----	Dynamotor power supply
E	Hoists -----	Sonar hoist assembly, etc.
F	Filters -----	Band-pass, noise, telephone, wave traps, etc.
FN	Furniture -----	Chairs, desks, tables, etc.
FR	Frequency Measuring Devices -----	Frequency meters, tuned cavity, etc.
G	Generators, Power -----	Electrical power generators without prime movers.
		(See PU and PD.)
GO	Goniometers -----	Goniometers of all types
GP	Ground Rods -----	Ground rods, stakes, etc.
H	Head, Hand, and Chest Sets -----	Includes earphone
HC	Crystal Holder -----	Crystal holder less crystal
HD	Air Conditioning Apparatus -----	Heating, cooling, dehumidifying, pressure, vacuum devices, etc.
ID	Indicators, Non-Cathode-Ray Tube -----	Calibrated dials and meters, indicating lights, etc. (See IP.)
IL	Insulators -----	Strain, standoff, feed-through, etc.
IM	Intensity Measuring Devices -----	Includes SWR gear, field intensity and noise meters, slotted lines, etc.
IP	Indicators, Cathode-Ray Tube -----	Azimuth, elevation, panoramic, etc.
J	Junction Devices -----	Junction, jack and terminal boxes, etc.
KY	Keying Devices -----	Mechanical, electrical and electronic keyers, coders, interrupters, etc.
LC	Tools, Line Construction -----	Includes special apparatus such as cable plows, etc.
LS	Loudspeakers -----	Separately housed loudspeakers, intercommunication station
M	Microphones -----	Radio, telephone, throat, hand, etc.
MA	Magazines -----	Magnetic tape or wire, etc.
MD	Modulators -----	Device for varying amplitude, frequency or phase
ME	Meters, Portable -----	Multimeters, volt-ohm-milliammeters, vacuum tube voltmeters, power meters, etc.
MF	Magnets or Magnetic Field Generators -----	Magnetic tape or wire eraser, electro-magnet, permanent magnet, etc.

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Table 3-3.—Table of Component Indicators—Continued.

Comp Ind.	Family Name	Examples of Use (Not to be construed as limiting the application of the component indicator)
MK	Miscellaneous Kits -----	Maintenance, modification, etc., except tool and crystal. (See CK, TK.)
ML	Meteorological Devices -----	Barometer, hygrometer, thermometer, scales, etc.
MT	Mountings -----	Mountings, racks, frames, stands, etc.
MX	Miscellaneous -----	Equipment not otherwise classified Do not use if better indicator is available
O	Oscillators -----	Master frequency, blocking, multivibrators, etc. (For test oscillators, see SG.)
OA	Operating Assemblies -----	Assembly of operating units not otherwise covered
OC	Oceanographic Devices -----	Bathythermographs, etc.
OS	Oscilloscope, Test -----	Test oscilloscopes for general test purposes
PD	Prime Drivers -----	Gasoline engines, electric motors, diesel motors, etc.
PF	Fittings, Pole -----	Cable hangar, clamp, protectors, etc.
PG	Pigeon Articles -----	Container, loft, vest, etc.
PH	Photographic Articles -----	Camera, projector, sensitometer, etc.
PP	Power Supplies -----	Nonrotating machine type such as vibrator pack, rectifier, thermoelectric, etc.
PT	Plotting Equipments -----	Except meteorological. Boards, maps, plotting table, etc.
PU	Power Equipments -----	Rotating power equipment except dynamotors. Motor-generator, etc.
R	Receivers -----	Receivers, all types except telephone
RC	Reels -----	Reel, cable. (See RL.)
RD	Recorder-Reproducers -----	Sound, graphic, tape, wire, film, disc, facsimile, magnetic, mechanical, etc.
RE	Relay Assemblies -----	Electrical, electronic, etc.
RF	Radio Frequency Component -----	Composite component of R. F. circuits. Do not use if better indicator is available.
RG	Cables, R. F., Bulk -----	R. F. cable, waveguides, transmission lines, etc., without terminals

Table 3-3.—Table of Component Indicators—Continued.

Comp Ind.	Family Name	Examples of Use (Not to be construed as limiting the application of the component indicator)
RL	Reeling Machines -----	Mechanisms for dispensing and rewinding antenna or field wire, recording wire or tape, etc.
RO	Recorders -----	Sound, graphic, tape, wire, film, disc, facsimile, magnetic, mechanical, etc.
RP	Reproducers -----	Sound, graphic, tape, wire, film, disc, facsimile, magnetic, mechanical, etc.
RR	Reflectors -----	Target, confusion, etc. Except antenna reflectors. (See AT.)
RT	Receiver and Transmitter -----	Radio and radar transceivers, composite transmitter and receiver, etc.
S	Shelters -----	House, tent, protective shelter, etc.
SA	Switching Devices -----	Manual, impact, motor driven, pressure operated, etc.
SB	Switchboards -----	Telephone, fire control, power, panel, etc.
SG	Generators, Signal -----	Test oscillators, noise generators, etc. (See O.)
SM	Simulators -----	Flight, aircraft, target, signal, etc.
SN	Synchronizers -----	Equipment to coordinate two or more functions
ST	Straps -----	Harness, straps, etc.
T	Transmitters -----	Transmitters, all types except telephone
TA	Telephone Apparatus -----	Miscellaneous telephone equipment
TD	Timing Devices -----	Mechanical and electronic timing devices, range device, multiplexes, electronic gates, etc.
TF	Transformers -----	Transformers when used as separate items
TG	Positioning Devices -----	Tilt and/or Train Assemblies
TH	Telegraph Apparatus -----	Miscellaneous telegraph apparatus
TK	Tool Kits -----	Miscellaneous tool assemblies
TL	Tools -----	All types except line construction. (See LC.)
TN	Tuning Units -----	Receiver, transmitter, antenna, tuning units, etc.
TR	Transducers -----	Magnetic heads, phono pickups, sonar transducers, vibration pickups, etc. (See H, LS, and M.)
TS	Test items -----	Test and measuring equipment not otherwise included; boresighting and alignment equipment.

Table 3-3.—Table of Component Indicators—Continued.

Comp Ind.	Family Name	Examples of Use (Not to be construed as limiting the application of the component indicator)
TT	Teletypewriter and Facsimile Apparatus - - - - -	Miscellaneous tape, teletype, facsimile equipment, etc.
TV	Tester, Tube - - - - -	Electronic tube tester
TW	Tapes and Recording Wires - - - - -	Recording tape and wire, splicing, electrical insulating tape, etc.
U	Connectors, Audio and Power - - - - -	Unions, plugs, sockets, adapters, etc.
UG	Connectors, R. F. - - - - -	Unions, plugs, sockets, choke couplings, adapters, elbows, flanges, etc.
V	Vehicles - - - - -	Carts, dollies, trucks, trailers, etc.
VS	Signaling Equipment, Visual - - - - -	Flag sets, aerial panels, signal lamp equipment, etc.
WD	Cables, Two Conductor - - - - -	Non-r.f. wire, cable and cordage in bulk. (See RG.)
WF	Cables, Four Conductor - - - - -	Non-r.f. wire, cable and cordage in bulk. (See RG.)
WM	Cables, Multiple Conductor - - - - -	Non-r.f. wire, cable and cordage in bulk. (See RG.)
WS	Cables, Single Conductor - - - - -	Non-r.f. wire, cable and cordage in bulk. (See RG.)
WT	Cables, Three Conductor - - - - -	Non-r.f. wire, cable and cordage in bulk. (See RG.)
ZM	Impedance Measuring Devices - - - - -	Used for measuring Q, C, L, R or PF, etc.

For example, the receiver for the AN/SPS-2 would be identified (table 3-4 as follows):

Table 3-4.—Designation of Components.

Radar Receiver	R	7	/APS-2
Item name as prescribed	From table 3	The 7th receiver to which an "AN" designation has been assigned	The set it is used with or is a part of

Thus, the R-7/APS-2 is a receiver that is used with or is a part of airborne radar search

set No. 2. Another receiver, such as the R-8/ARN-8, would be indicated by the tables as a receiver used with or as a part of airborne radio navigation set No. 8.

To identify a component that has been modified but which still retains the basic design and is interchangeable physically, electrically, and mechanically with the modified item, a modification letter is used, as on sets. Thus, the R-7A/APS-2 would be a modified version of the R-7/APS-2.

Components that are part of or used with two or more sets are identified in the usual way, except that after the slant bar, there will appear only those indicators that are appropriate and without a set model number. Thus, a modulator that is part of or used with the AN/APS-2 and the AN/APS-6 might be identified as MD-8/APS.

NAVY MODEL LETTER SYSTEM

Table 3-5.—Navy Model Letters.

The assignment of a particular model letter to Navy equipments depends on the primary function of the equipment, such as receiving, direction finding, etc. This system of assigning model letters is applicable to all radio, radar, and sonar equipments and once learned, makes easy the recognition and identification of all Navy equipments.

In this system, the first letter indicates the basic purpose of the equipment. These designations, which are listed in table 3-5, are followed by another letter of the alphabet to indicate the order in which designations are assigned. Thus, TA was the first transmitting equipment assigned, TB, the next, etc. When the alphabet was exhausted, triple letters were used—for example, TAA. The order of assignment was then indicated by a change in the third letter. Thus, the model letter assigned after TAA was TAB. When the alphabet was again exhausted, a third series of model letters was formed by changing the second letter to B—for example, TBA, TBB-----TBS-----.

Numbers following model letters indicate a modification of the equipment or the award of a new contract. To indicate a change in equipment after delivery has been made, lower case letters are assigned.

The Navy model letter system of equipment designation is no longer in primary use, now that the AN system has been instituted. There are, however, still some equipments with this type of designation in the naval establishment.

The Navy model letters used in sonar equipment are shown in table 3-6. The first letter indicates the general use of the equipment. The second letter of the "Q" series equipment designates the type of projector used, as indicated in table 3-6.

WIRING DIAGRAMS

Wiring diagrams are shorthand records (with symbols) which represent electronic equipments and their terminals. Primarily, these diagrams indicate which terminals are interconnected with wires.

The uses, arrangements, and interpretation of symbols are found in MIL-STD-15-1, entitled Military Standards of Graphical Symbols for Electrical and Electronic Diagrams, Part 1. Information on this subject is given also in

Model Letters	Primary Function of the Equipment
A	Airborne—used as a prefix to indicate airborne installation as: AR series —airborne radio receiving, etc.
B	IFF
CX	Commercial experimental
D	Radio direction finding
E	Emergency power
FS	Frequency-shift keying
G	Formerly aircraft transmitting (now superseded by "A" series)
J	Sonar listening (receiving)
K	Sonar transmitting
L	Precision calibrating
M	Combined radio transmitting and receiving
MARK	Fire-control radar
N	Sonar navigational aids including echo sounding
O	Measuring and operator training
P	Automatic transmitting and receiving
Q	Sonar ranging
R	Radio receiving
S	Search radar
T	Radio transmitting (includes combination transmitting and receiving)
U	Remote control (includes automatic keyers)
V	Radar repeaters
W	Combined sonar ranging and sounding
X	Naval experimental
Y	Navigational and landing aids
Z	Navigational and landing aids (airborne)—superseded by model Y series

Table 3-6.—Navy Model Letters Used In Sonar Equipment.

Model Letters	Type of Projector Used
QA	Quartz steel
QB	Rochelle salt
QC	Magnetostriction
QD	Depth determining (not echo sounding)
QG	Magnetostriction—split-lobe type
QH	Scanning sonar

Blueprint Reading and Sketching, NavPers 10077-B.

Not only do symbols and usages change from time to time but new ones are introduced. Accordingly, it is well to check current publications (diagrams versus standard symbols).

TERMINAL DESIGNATIONS

The following information condensed from Dictionary of Standard Terminal Designations for Electronic Equipment, NavShips 900,186, will be helpful to ETs.

TERMINAL BOARDS

Terminal boards are marked with a three- or four-digit number preceded by "TB." This marking is easily identified by the technician. The first one or two digits of the "TB" number represent the unit number in an equipment. This number is assigned by the manufacturer in a logical order. The last two digits represent the terminal board number in a unit, starting with 01, 02, 03, - - - - - 11, 12, 13, etc. Thus, a terminal board marked TB1003 indicates the third terminal board in the 10th unit of an equipment.

As an example, an equipment might be composed of a transmitter, a receiver, and a power supply, with the transmitter having six external terminal boards, the receiver four external terminal boards, and the power supply two external terminal boards. The manufacturer will then assign numbers to the units—perhaps 1 for the transmitter, 2 for the receiver, and 3 for the power supply. Figure 3-1 shows how the terminal boards would then be marked.

TERMINAL MARKING

The marking of terminals on terminal boards indicates a specific function for the following circuits: (1) common primary power circuits, (2) ground terminals, (3) common servo and synchro circuits, (4) video circuits, (5) trigger circuits, and (6) audio circuits. The breakdown of these categories into specific functions, with

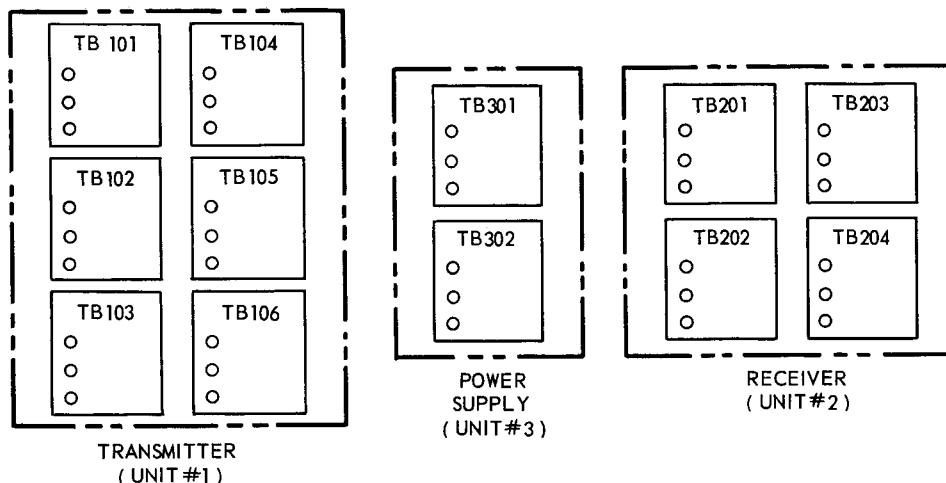


Figure 3-1.—Terminal board marking.

the terminal designation of each, is listed in NavShips 900,186. These are RIGIDLY ASSIGNED DESIGNATIONS.

Terminals whose functions do not fall under the categories listed are assigned designations by the equipment manufacturer in accordance with NavShips 900,186. These are MANUFACTURER-ASSIGNED DESIGNATIONS.

Only those terminals that will be connected together externally will have exactly the same designation within any given equipment.

RIGIDLY ASSIGNED DESIGNATIONS.—Functional designations for circuits in the previously listed categories may be recognized by a one- or two-digit number preceded by a single or double letter (I and O are not used) such as S1, S2, S11, SS11, etc. These designations are stamped or engraved on the terminal board beside each terminal, as shown in figure 3-2.

If the same function appears more than one time in an equipment it is distinguished by the addition of a letter or letters after the designation, beginning with "A," as shown in figure 3-3.

If more than 25 sets of terminals have the same function in an equipment, the letter following is then doubled (for example, S1AA). If these letters are used up, combinations of letters (for example, S1AB) are used.

MANUFACTURER - ASSIGNED DESIGNATIONS.—These designations begin with a number rather than a letter, as opposed to rigidly assigned designations.

When a "nonrigidly assigned" function is brought out to a terminal, the manufacturer assigns 1A to the first such terminal and also 1A to the terminal that is to be tied to this point. The designation, 1A, does not appear again unless

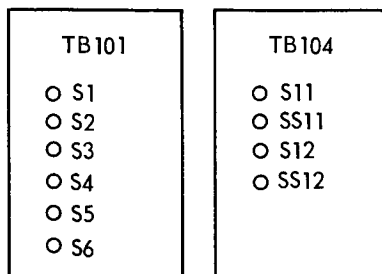
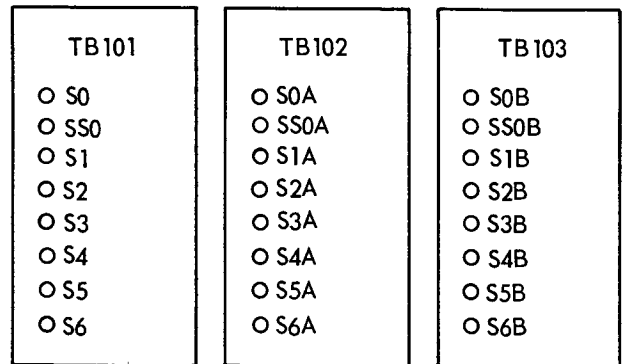


Figure 3-2.—Designations appearing beside terminals. 70.2



70.3
Figure 3-3.—Designating terminals of the same function.

it is to be tied directly to either of the terminals already marked.

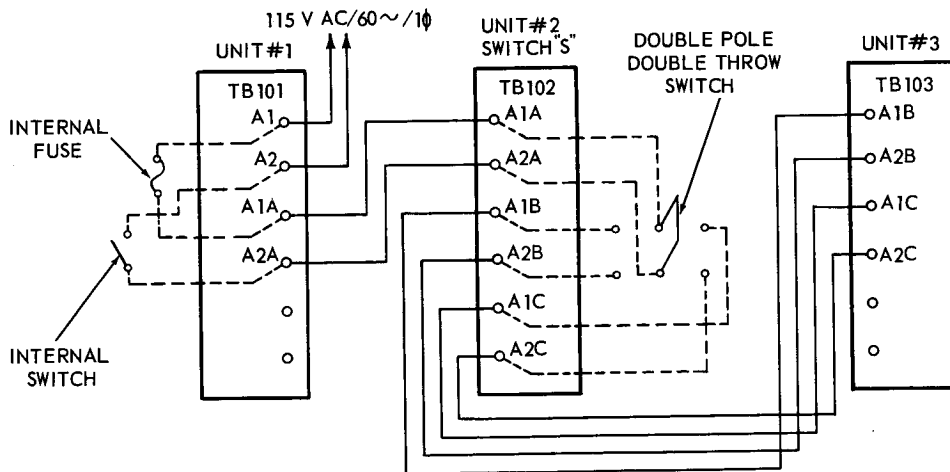
As more manufacturer-assigned designations are used, 2A, 3A ----- 99A are used; then 1B, 2B ----- 99B and up to 1Z, 2Z----- 99Z (omitting I and O) are used. If additional numbers are needed, the letters are doubled or combinations of two letters are used.

SWITCHING AND FUSING DESIGNATIONS

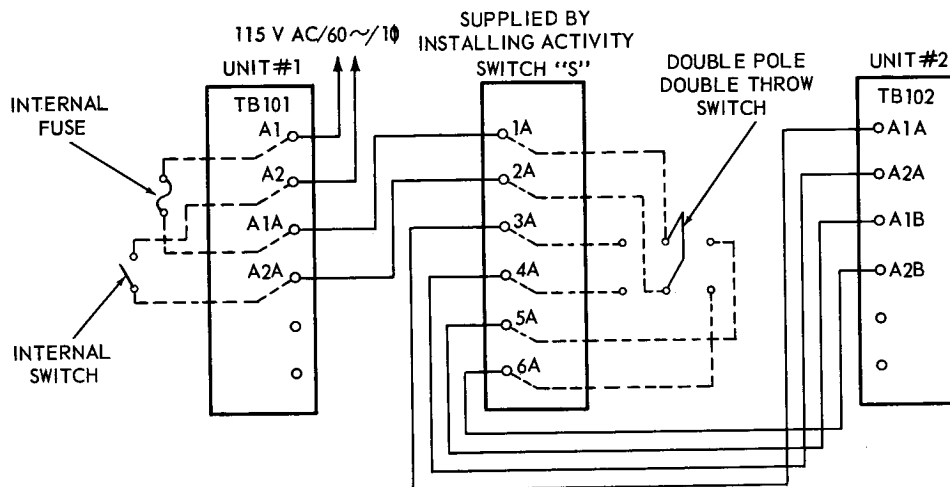
Possible switching designations are illustrated in figure 3-4. If switch "S" is designed to be used with the equipment, the markings would be as shown in part A. If switch "S" is Government supplied, the terminals would be marked differently, perhaps as 1A through 6A, as illustrated in part B.

ORDER OF TERMINALS ON TERMINAL BOARD

All circuits of a given function on a terminal board are grouped and arranged in a particular order. This grouping applies for rigidly assigned and manufacturer-assigned designations. Primary power circuits, unless connected to a separate fuse block instead of a terminal board proper, are the first connections on a terminal board. Synchro/servo circuits are arranged in sequence of reference or excitation. No particular position or area of any terminal board is reversed for a synchro function, but a logical order is illustrated in figure 3-5.



A MARKING OF MANUFACTURE-SUPPLIED SWITCH AND DESIGNATED INTERNAL SWITCHING



B MARKING OF TERMINALS WHEN EXTERNAL SWITCH IS NOT SUPPLIED WITH EQUIPMENT

70.4

Figure 3-4.—Possible switching and fusing designations.

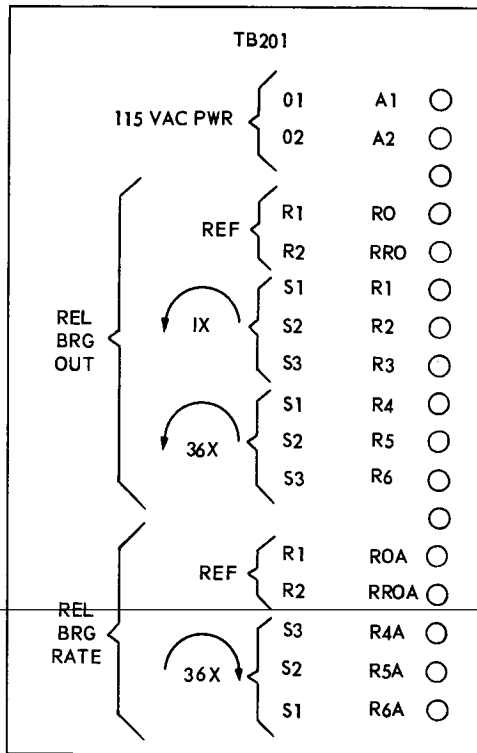
All circuits of each video, trigger, or audio function will appear in sequence, each with its associated ground where such ground is unique to that particular function.

CONDUCTOR MARKING

On the conductor lead, at the end near the point of connection to a terminal post, spaghetti

sleeving is used as a marking material and insulator. The sleeving is engraved with indelible ink, or branded with identifying numbers and letters by a varitype machine, and slid over the conductor.

The order of marking is such that the first appearing set of numbers and letters reading from left to right will be the designation corresponding to the terminal to which that end of the



70.5

Figure 3-5.—Functional grouping of terminals, showing proper order within groups.

wire is connected. Following this, there is a dash and then the number (without the "TB") of the terminal board to which the other end of the conductor is attached. There is another dash and then the designation of the particular terminal to which the other end of the wire is connected. For example, assume that a conductor of a cable runs between units Nos. 1 and 2 of an equipment. The terminal boards are TB101 and TB201, and the terminals are designated A1 on both terminal boards. Figure 3-6A shows the order and method of marking spaghetti sleeving under these conditions. Figure 3-6B illustrates conductor marking between unlike terminals.

LEAD DESIGNATIONS ON SCHEMATIC DIAGRAMS

Navy receivers like the AN/SRR 11, 12, and 13 series are compartmentalized into assemblies

and subassemblies. All circuits to an assembly (with certain exceptions) are disconnected when the assembly is lifted from the chassis and connected when the assembly is fitted into position. The individual subassemblies consist of a subminiature electron tube and the circuit for one stage. The subassembly plugs into an appropriate socket of the assembly. The circuits terminate in connector receptacles, as illustrated in figure 3-7. Each terminal is identified by letter. Where connecting leads merge into a single cable the identity of the individual circuits is maintained by letter-number designation. For example, the Out-Hi lead to terminal L of J126 is connected through the matching connector receptacle plug-jack arrangement to L of J253. The outgoing lead is marked J254-B. This lead is marked at terminal B of J254 as J253-L. Thus the outgoing lead is identified with the letter-number designation of the connector in which that lead terminates J254-B. At this termination the lead is identified with the letter-number designation of the connector in which that lead originates (J253-L). This system facilitates servicing and troubleshooting. Simplified schematics can easily be developed from this method of designating leads.

DESIGNATIONS FOR ATTENUATOR NETWORKS

Attenuator networks are illustrated in figure 3-8. They are used to attenuate signal voltages, and in many cases to effect an impedance match as well. The name of the network appears just above the schematic diagrams in the figure.

A BALANCED circuit is one in which both lines are at equal potential above ground. An UNBALANCED circuit is one in which one line is at ground potential.

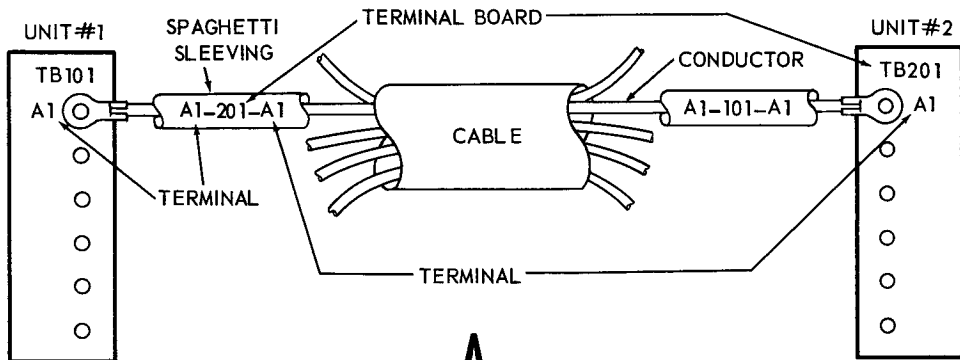
WIRING COLOR CODE FOR ELECTRONIC EQUIPMENT

To aid in testing and locating faults in electronic equipment, and in subsequent repair, the Department of Defense has set up a military standard (MIL-STD-122), which establishes a uniform wiring color code for all military electronic equipment. This standard is used in manufacturing and should also be followed in maintenance practices when circuit changes and part replacements are involved.

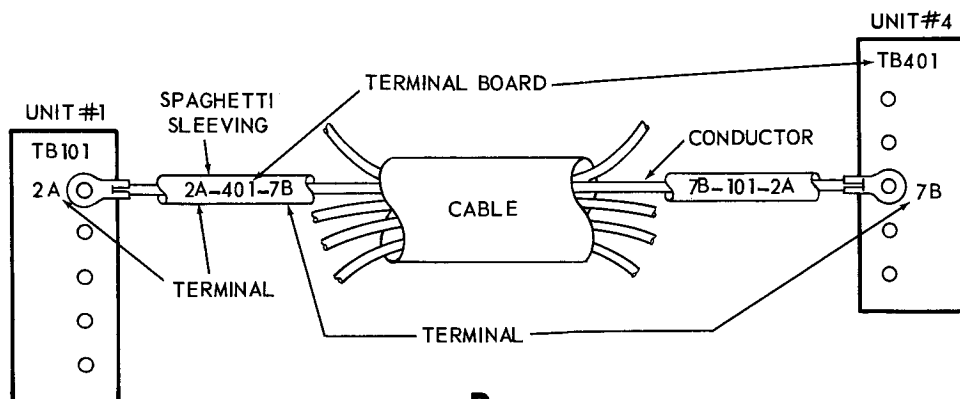
The standard colors used in chassis wiring are listed in table 3-7.

Table 3-7.—Wiring Color Code For Electronic Equipment.

Circuit	Color
Grounds, grounded elements, and returns -----	Black
Heaters or filaments, off ground -----	Brown
Power supply, B plus -----	Red
Screen grids -----	Orange
Cathodes -----	Yellow
Control grids -----	Green
Plates -----	Blue
Power supply, minus -----	Violet (purple)
A-c power lines -----	Gray
Miscellaneous, above or below ground returns, AVC, etc. -----	White



A



B

Figure 3-6.—Designating conductor marking between terminals.

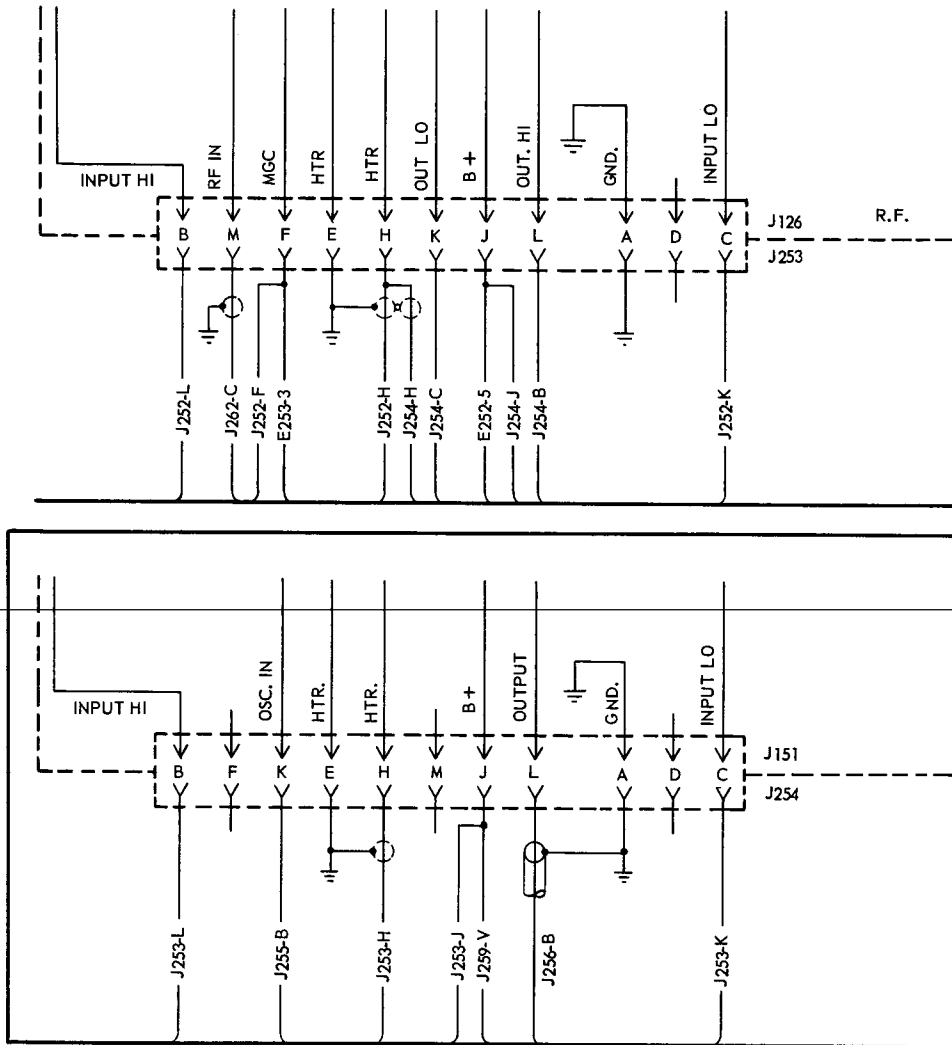


Figure 3-7.—Illustration of lead designations on schematic diagrams.

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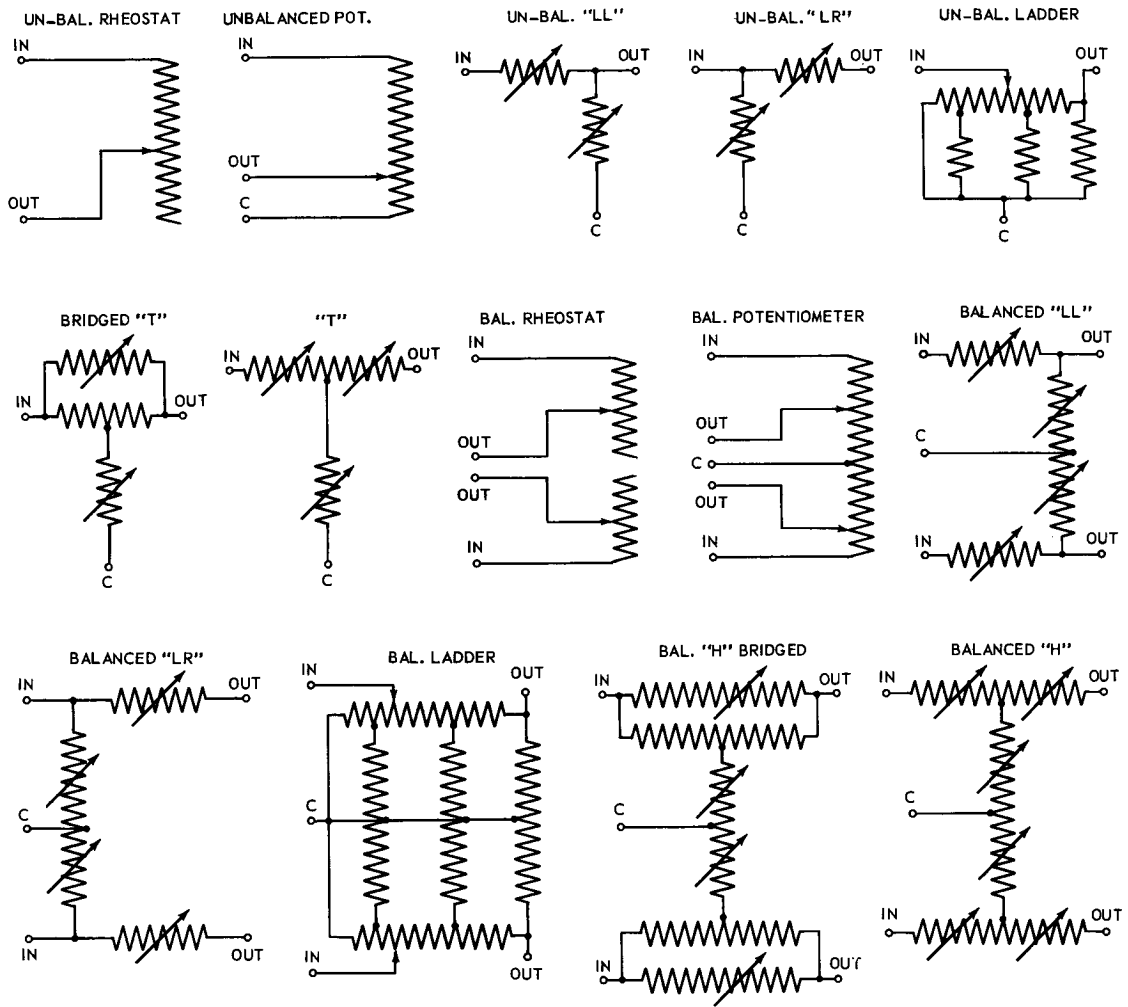


Figure 3-8.—Attenuator networks.

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