The Practical DICTIONARY of ELECTRICITY and ELECTRONICS

- Includes Handbook

OLDFIELD

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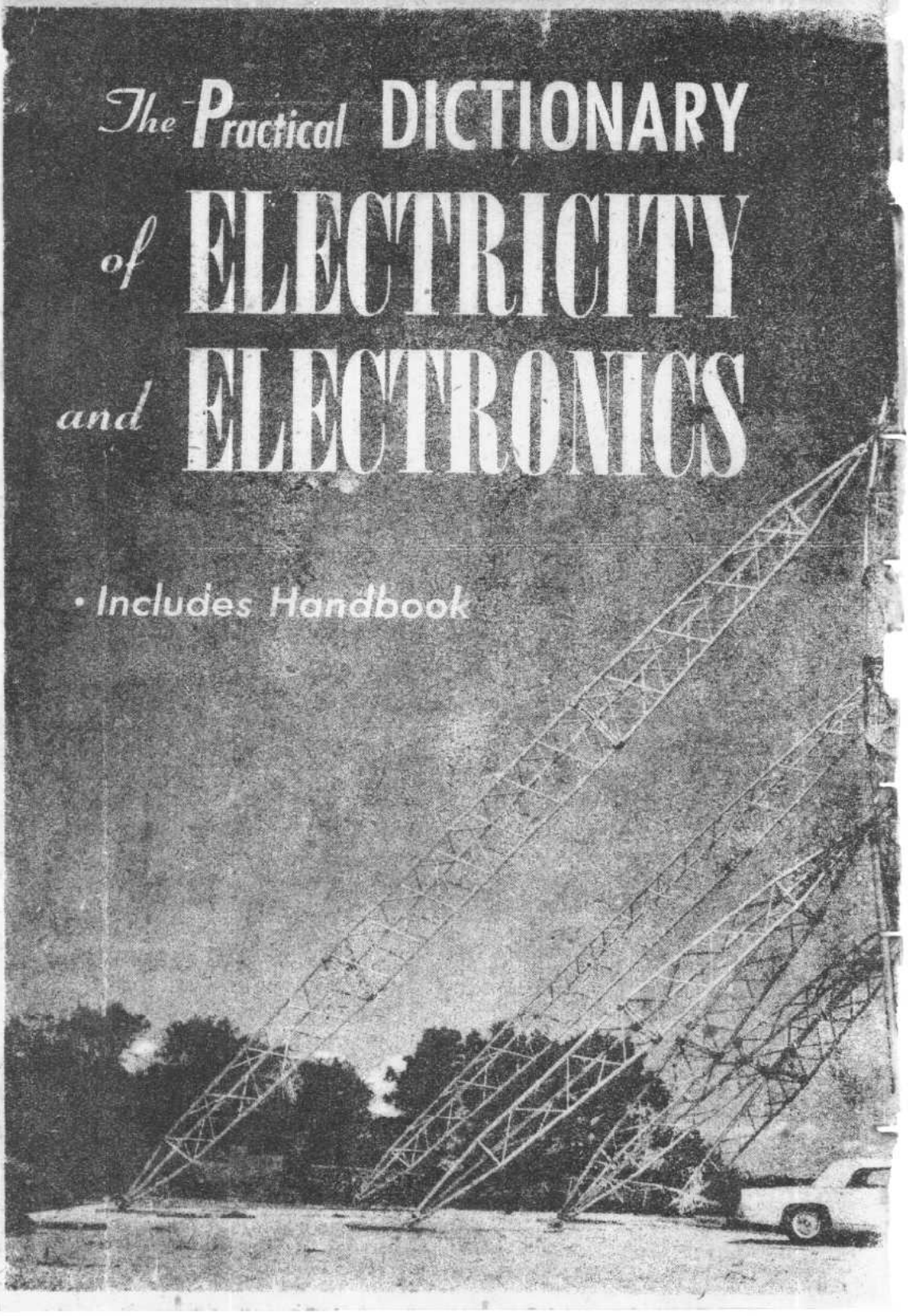

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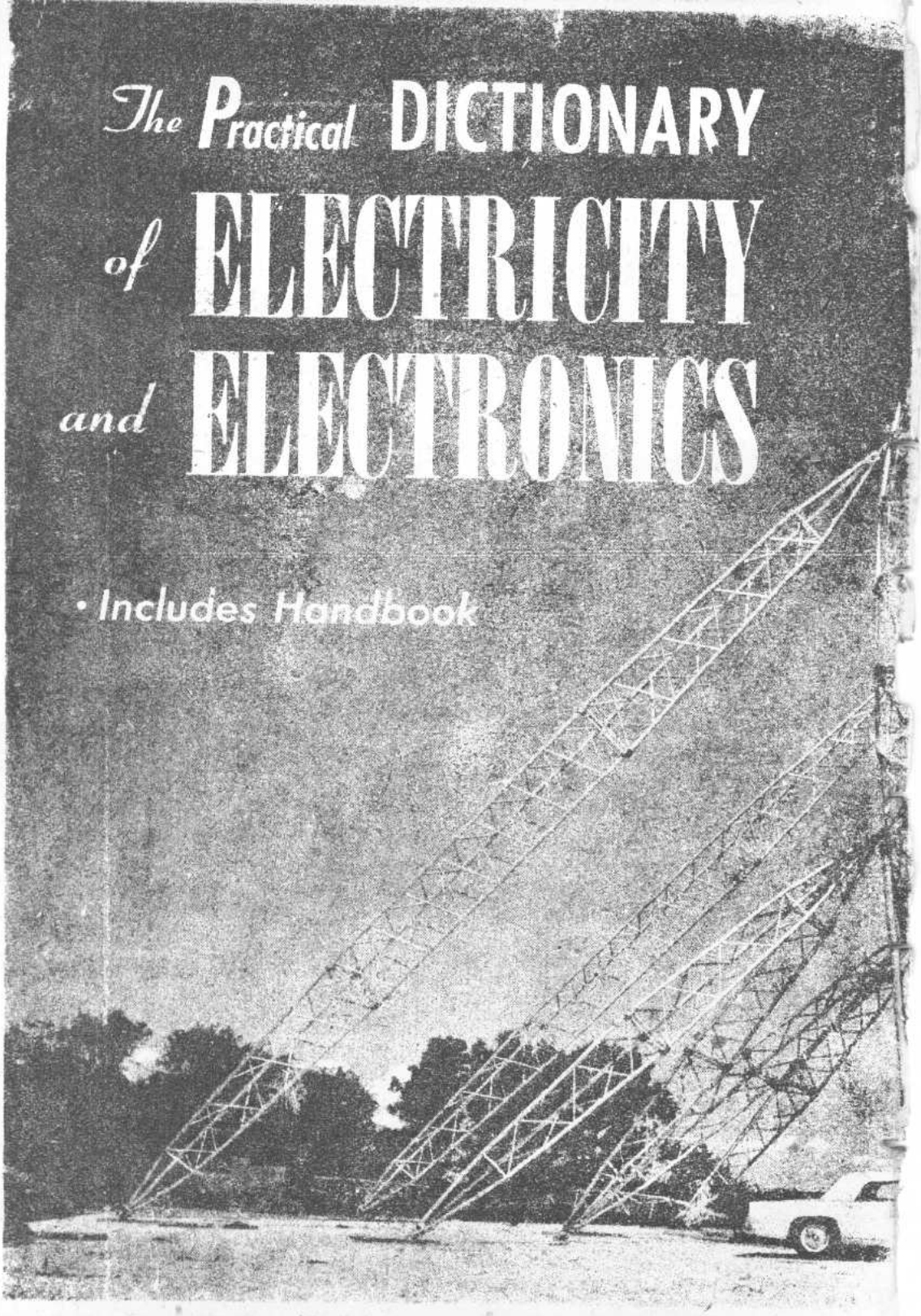

Preface

Our principle objective in preparing this dictionary was to define those terms most used in electrical and electronics applications, especially terms of a "tricky" nature like **image frequency** and **saturation**. The definitions are written clearly and simply so that the dictionary will be valuable to beginner and veteran alike. The book's compactness makes it handy to carry any place.

Briefly, this dictionary contains the following:

(1) Complete definitions of fundamental concepts. (*See* **dynamotor** *and* **potentiometer** entries.)

(2) Definitions that explain the basic meaning of more complex terms. (*See* **electrolysis** *and* **oscilloscope** entries.)

(3) Simple definitions of terms representative of the many fields embracing electricity and electronics. (*See* **chromaticity** *and* **servomechanism** entries.)

(4) Definitions of important terms related to electricity and electronics. (*See* **grain** *and* **lumen** entries.)

(5) Illustrations of terms in which a pictorial supplement seemed advisable for better understanding. (*See* **Beam Rider Guidance** *and* **Phototube** *illustrations.*)

To compile this dictionary, we collected up-to-date material from trade journals, suppliers' catalogs, company manuals, and a variety of other publications covering electricity and electronics, and made a detailed analysis of this information. From the analysis we established critical standards by which our main objective in compiling a truly practical dictionary could be realized. Based on these standards, the selecting and defining of terms was carried out.

A brief handbook section has been added after the dictionary section. It contains those formulas, tables, symbols, and circuit diagrams we felt someone working in electricity and electronics would have need for again and again. The handbook will also be useful to the student, especially the beginner, since basic formulas and other fundamentals are included.

The author wishes to acknowledge the fine work of Carrie Alden, Art Burke, and Jack Smith in the preparation of illustrations. Acknowledgment is also due William McHugh, Harry Kaste, and Thomas Elliott for their editorial and technical assistance.

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The photograph for the title page illustration was furnished by D. S. Kennedy and Co. A sixty foot tropospheric scatter propagation antenna is shown.

How To Use This Dictionary

Above left hand column, catchword indicates first definition in column; above right hand column, last definition.

COMPOSITE COLUMN

amplifier

Words and terms defined are shown in **bold face.**

amplifier A device which produces amplification, or increases strength of a signal.

Dashes replace words common to definitions in a group. In general, the common words are nouns and represent basic electrical and electronic terms. Here, the common word is **amplifier.**

—, **audio** An amplifier, generally consisting of one or more electron tubes and associated components, designed to amplify electrical signals in the audio frequency band. A high fidelity audio amplifier will amplify from 20 to 20,000 cycles per second without amplitude distortion.

—, **binaural** *See* **binaural amplifier.**

—, **class A** An amplifier in which the grid bias and the signal on the grids is such that plate current flows throughout the entire cycle.

The compound terms that are grouped like the **amplifier** terms are cross referenced this way.

audio amplifier *See* **amplifier, audio.**

autoregulation induction heater An induction heater in which a desired control is effected by the change in characteristics of a magnetic charge as it is heated at or near its **Curie point.**

Within the definition, words or terms in **bold face** indicate they are also defined. Here, **Curie point** is cross referenced.

balanced currents Currents flowing in the two conductors of a balanced line which, at every point along the line, are *equal* in magnitude and *opposite* in direction.

Words or terms in *italics* indicate they are emphasized but not cross referenced, or they represent a distinct field (other fields: *Optics, Radio, Medical,* etc.)

booster converter *Power.* A booster designed for the voltage applied when the booster field is zero. It is an integral part of the converter and is mounted on the same shaft. Greater voltage variations and greater flexibility are obtained with a booster converter.

Numbers in **bold face** are used in the definitions of those words or terms that have multiple meanings, which are *not* listed according to importance.

bunching 1. A succession of electron groups, rather than a continuous stream of electrons, flowing from the cathode to the anode of an electron tube. 2. In microwave tubes, the action in a velocity-modulated electron stream that produces an alternating convection-current component as a direct result of the differences of electron transit time produced by the velocity modulation.

candlepower distribution curve The graph shows the angular distribution of the output of a **luminaire.**

Six point type is used in definitions requiring elaboration, where the additional information is secondary but still important enough to warrant its inclusion.

This type of graph (see illustration) is widely used to indicate the performance of lamps, reflectors, and fixtures. The area within the curve, however, does not indicate the total light output. Light intensities are shown where the curve intersects with the grid. The lamp illustrated produces more light directly below, than at the sides.

Contents

A

A— (A minus) Symbol which is used to indicate either the negative terminal of the dc supply or that point in the circuit to which this negative terminal is connected.

A+ (A plus) Symbol which is used to indicate either the positive terminal of a dc filament supply or that point in the circuit to which this positive terminal is connected.

abampere The unit of current in the **electromagnetic unit** system. Equal to one **abcoulomb** per second, or 10 amperes.

A-battery The battery used to supply heating current to the filament of an electron tube.

abcoulomb The unit of charge in the **electromagnetic** unit system. It is equal to 10 **coulombs.**

A-B power pack A combination of batteries designed to furnish operating potentials for the A (filament) and B (plate) circuits of electron tube equipment, especially portable receivers.

A board The switchboard used by telephone operators in taking calls and asking the number desired. *Compare with* **B board.**

abohm The unit of resistance in the **electromagnetic** unit system. It is equal to one one-thousand millionth (10^{-9}) **ohm.**

absolute units Measuring units which are based on physical principles and from which other units are derived. *See* **units.**

absorbed dose *See* **dose, absorbed.**

absorption 1. Generally, the dissipation of energy as a wave passes through a medium. 2. *Acoustics.* A measure of the effectiveness of sound deadening materials. 3. *Illumination.* Loss of light flux when light passes through a translucent material such as a diffuser.

absorption coefficient 1. *Physics.* The rate of decrease of intensity as a beam passes through a substance. 2. *Acoustics.* The fraction of sound energy absorbed by a surface or medium. (In optics and photometry, it is called absorption factor.)

absorption wavemeter A device for the measurement of a wavelength by tuning a resonant circuit until it absorbs maximum energy from the source whose wavelength is being measured.

abvolt The unit of voltage in the **electromagnetic unit system. One abvolt** is equal to one one-hundred **millionth** (10^{-8}) **volt.**

accelerated life test A test in which cables are operated at higher temperatures, voltages, etc., than normal in order to cause deterioration thus making it possible to estimate operating life under normal conditions. Term is also applied to the testing of appliances, relays, and motors.

accelerating electrode An electrode which is used to increase the velocity of the electrons or ions in a beam, as for example, in a cathode ray tube. The beam is accelerated by the high positive potential on the accelerating electrode. Sometimes also called accelerator. *See* **tube, cathode ray.**

acceleration The rate at which a velocity changes.

accelerometer An instrument which measures acceleration. The electronic version consists of a transducer which translates changing velocities into varying voltages.

accentuation In an audio frequency amplifier, the emphasizing of a certain band of frequencies. Also, in the audio frequency amplifier of a frequency modulated transmitter, the method of placing emphasis on the higher audio frequencies.

acceptor circuit A circuit which has a minimum impedance at its resonant frequency.

acceptor impurity *See* **impurity, acceptor.**

accumulator 1. British term for a storage battery. 2. In an electronic computer, a device which stores a number and which, on receipt of another number, adds it to the number already stored and stores the sum.

AC-DC Pertaining to any device which will operate satisfactorily on either alternating or direct current.

acetate, cellulose The most common plastic used as a base in the manufacture of magnetic recording tape. *Compare with* **Mylar.**

ac generator *See* **generator, ac.**

acorn tube *See* **tube, acorn.**

acoustic feedback The return of a fraction of the sound waves from a **loudspeaker** to the input circuit of an audio system, such as to the microphone, in such a way as to reinforce the initial power of the input circuit, thereby increasing the amplification of the system. An excessive feedback will pro-

duce an undesirable prolonged noise known as audio howl or howling.

acoustic filter A device which selectively suppresses certain audio frequencies, while allowing other frequencies to pass.

acoustic radiator The part of a sound-producing device at which the sound waves originate, as the cone of a loudspeaker.

acoustics The science of the production and transmission of sound.

acsr Aluminum conductor steel reinforced. Used for high voltage transmission lines with long spans.

active materials In the plates of a storage battery, the materials, such as lead oxides or other active substances, which react chemically to produce electric energy. During the processes of charging and discharging of a storage battery, the materials undergo reversible chemical changes.

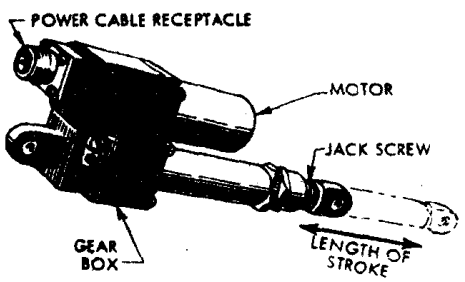
active power The average value of power which is used to do work (as turning a motor) or lost as heat as opposed to reactive power. It is expressed in watts and is the true or actual power in the circuit.

activity The number of disintegrations per unit time of a **radioisotope.**

actual power *See* ***active power.***

actuating transfer function In a **feedback control loop,** the transfer function which relates a **loop actuating signal** to the corresponding **loop input signal.**

actuator A device for providing positioning power, generally in a straight line. The type illustrated is called a ***linear actuator,*** and consists of a motor, a speed reducing gear, a jack screw, and motion limiting switches. Typically, this type of actuator is used where it is necessary to move a mechanism by remote control from a distance; for example, aircraft flaps, and machine tool positioning mechanisms.



Linear Actuator

Adcock antenna *See* **antenna, Adcock.**

Adcock direction finder A radio direction finder using a system of Adcock antennas for the directional reception or transmission of vertically polarized radio waves.

adder In electronic **computers,** a device which can register the sum of two or more numbers or quantities.

additive color mixture *See* **color mixture.**

adjacent-channel interference Interference which is produced by a signal from an adjacent channel.

admittance The ability of an ac circuit to allow current to flow freely; the reciprocal of impedence. Admittance is expressed in **mhos.**

advance ball In disk recording, a small ball which travels ahead of the cutting stylus. Use of the advance ball assures that the depth of the grooves is kept uniform.

advance wire An alloy of copper nickel used for electric heating units, and wirewound resistors.

aerial An antenna. The use of this term has been generally superseded by the term **antenna.**

af Abbreviation for audio frequency. *See* **frequency, audio.**

AFC Abbreviation for **automatic frequency control.**

AGC Abbreviation for **automatic gain control.**

AIEE Abbreviation for American Institute of Electrical Engineers.

air blast transformer A transformer cooled by forced circulation of air around its windings.

air capacitor *See* **capacitor, air.**

air cleaner, electronic *See* **electrostatic precipitation.**

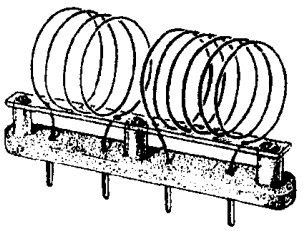
air core A term used to indicate that a coil has only air through its center and not a magnetic material. Compare **iron core.**

aircraft bonding The connecting of the metallic parts of an airplane, such as the engine, structure, tubing, shielding of wires, enclosures, etc., together to form one integral electrical unit. Purposes of bonding are to minimize radio interference; to prevent static discharges between metal parts that might cause fires; to provide a path for lightning around equipment; to ground all electrical equipment; and to provide

an antenna counterpoise. *See* **bonding.**

air gap 1. Air space between magnetic poles. 2. Space between stationary and rotating parts of an electric motor or generator. 3. In relays or contactors, the space between the contacts.

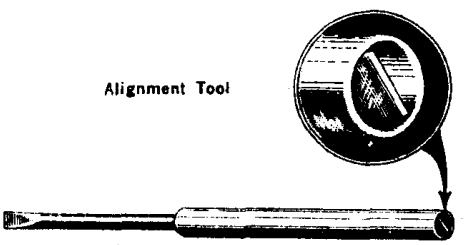
air inductor An inductor which does not have a magnetic core. *See illustration.*



Air Inductor

alley arm A special type of cross arm used on pole line construction in alleys and other tight locations. Wires are arranged to clear obstructions by offsetting the arm on one side of the pole.

alignment In electronic equipment, the adjusting of tuned circuits so they will respond properly to a given frequency.



Alignment Tool

alignment tools Special nonmetallic tools used in adjusting trimmer and padder capacitors or in adjusting the position of the iron core in tuning inductances. These tools are nonmetallic so that body capacitance will not affect the tuning. *See illustration.*

alive Carrying a voltage or current.

alkaline battery *See* **battery, alkaline.**

all-day-efficiency The total output divided by the total input of energy for the entire day.

Allen screw A screw having a hexagonal hole in its head; often used as a set screw because of the high holding power provided. An Allen wrench consists of a hexagonal bar which fits the socket.

alligator clip *See* **clip, alligator.**

alnico An alloy used to make small-size permanent magnets which hold their magnetism indefinitely. A combination of aluminum, nickel, and cobalt gives this alloy its high retentivity.

alpha particle A particle emitted during radioactive disintegration which is identical with the nucleus of an ordinary helium atom.

alternating current An electric current of constantly changing value which reverses direction of flow at regular intervals.

alternation That portion of an alternating current cycle between two successive zero values.

alternator An alternating current generator.

AM Abbreviation for **amplitude modulation.**

amateur A person who operates and experiments with electronic equipment as a hobby, not for profit. Most amateurs take the **FCC** License examinations so that they can "go on the air" with their equipment. Also called "ham." Amateur bands are those frequencies assigned by the FCC for amateur use.

ambient temperature The temperature of the air surrounding equipment. Equipment is often designed to operate within a range of ambient temperature. Also applies to the temperature of coolants such as gas or liquid which come into contact with heated parts of apparatus.

American Morse Code A dot-and-dash code for telegraphic communication. Since some of the letters are distinguished by the spacing of the dots and dashes, and would therefore be difficult to read by radio, its use is limited to telegraphy. *Compare with* **International Morse Code.**

American Radio Relay League The organization of radio amateurs who operate "ham" stations (not for profit). With fifteen U. S. divisions and one in Canada the ARRL renders public service in emergencies and stimulates radio research.

American wire gage The gage which designates the sizes of solid wires used in the United States. Formerly called Brown and Sharpe Gage.

ammeter An instrument that indicates the quantity of flow of electric current in a circuit.

ammeter shunt A special low resistance conductor connected across the terminals of an ammeter. The shunt carries almost all the current, allowing only a very small current to flow through the meter movement. This extends the useful measuring range of the meter.

amortisseur windings A short circuited winding used on generators and synchronous motors, consisting of copper bars inserted in the pole faces. The purpose is to increase the starting torque of synchronous motors; and on generators, to lessen hunting by minimizing crosscurrents. *Compare with* **damper windings.**

ampere The practical unit of current flow in an electrical circuit. Equivalent to the passage of 6.28×10^{18} electrons past a given point in a circuit per second. *See* **coulomb.**

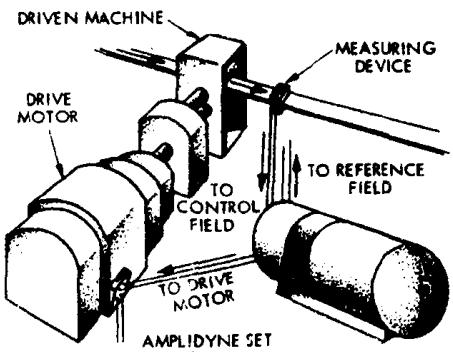
ampere hour A current of one ampere flowing for one hour, or the equivalent. Used in rating storage batteries.

ampere-hour meter An instrument which registers the number of ampere-hours that have been used in the operation of equipment.

Ampere's law *See* **Biot-Savart's law.**

ampere turns The product of the current flowing through a coil by the number of turns in the coil. If the geometries of circuits are similar, ampere turns are a comparison of electromagnetic field strength. *See* **gilbert.**

amplidyne A direct current generator used especially in variable speed railroad transmission equipment. Since the generator field is externally driven, sensitive control of large power outputs by small currents is possible.



Typical amplidyne installation in steel plant controls rolling mill drive.

amplification The process of obtaining an output voltage, current or power which is greater than the input.

amplification factor The ratio of a small change in plate voltage to a small change in grid voltage, with the plate current held constant.

amplifier A device which produces amplification, or increases strength of a signal.

—, audio An amplifier, generally consisting of one or more electron tubes and associated components, designed to amplify electrical signals in the audio frequency band. A high fidelity audio amplifier will amplify from 20 to 20,000 cycles per second without amplitude distortion.

—, binaural *See* **binaural amplifier.**

—, class A An amplifier in which the grid bias and the signal on the grids is such that plate current flows throughout the entire cycle.

—, class AB An amplifier in which the grid bias is set so that plate current flows through more than half but less than the full cycle.

—, class B An amplifier in which the grid bias is set approximately at cutoff. The plate current flows through only one-half the cycle.

—, class C An amplifier in which the grid bias is much greater than the cutoff value. The plate current flows through less than one-half the cycle.

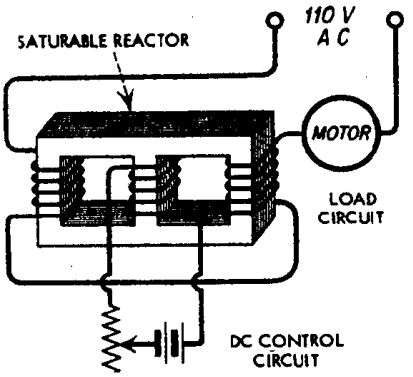
—, direct current An amplifier capable of amplifying dc or very low frequency ac (5 to 10 cps). The grid of the second tube is directly coupled to the plate of the first tube in such an amplifier.

—, intermediate frequency The portion of a superheterodyne receiver which amplifies the intermediate frequency. This portion is included between the mixer and detector.

—, intermediate power (IPA) In a transmitter, any stage used for amplification purposes between the driving oscillator and the final power amplifier.

—, linear An amplifier which has a flat straight line frequency response over its frequency range. At any frequency the output voltage is directly proportional to the input voltage.

—, magnetic An amplifier, used in control devices, which utilizes the square hysteresis loop of **saturable core reactors.** The control (signal) current produces more or less saturation of the



Aerovox Corporation

Magnetic Amplifier Circuit

core, thus varying the power or voltage output.

—, power An audio frequency or radio frequency amplifier which is capable of producing relatively large amounts of power in an output circuit.

—, push-pull An amplifier which uses two tubes connected in such a way that the grid of one tube is always positive when the grid of the other tube is negative. *See* **push-pull circuit.**

—, radio frequency An amplifier which is used to increase the strength of radio frequencies.

—, stereophonic *See* **binaural amplifier.**

—, voltage An amplifier using one or more electron tubes, the purpose of which is to increase a given input signal voltage.

amplitude The highest value reached by voltage, current, or power during a cycle. *See* **sine wave** *for illustration.*

amplitude limiter *See* **limiter.**

amplitude modulation (a.m.) The system of modulation in which the amplitude of a carrier wave is varied in accordance with an applied signal. This type of modulation results in the production of sidebands.

amplitude separator Another name for ***sync separator*** in a TV receiver. It separates the blanking and sync pulses from the picture information.

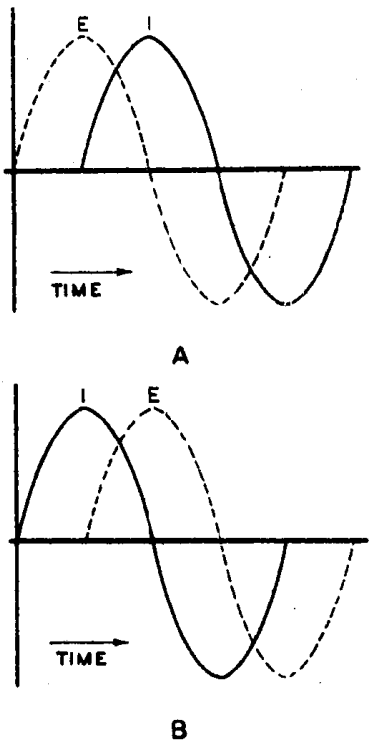
analog computer *See* **computer, analog.**

analyzer Generally an instrument which is plugged in to quickly test electrical equipment during operation. Special purpose analyzers are built to test radio and TV sets, computers, vibrating machines and ignition systems.

anchor An object driven into the ground, such as a metal rod, to which guy wires are fastened to brace power line poles. Buried logs, concrete structures and rocks are also used as anchors.

anchor, deadman A log anchor buried in the ground to which the guy wire of a telephone or light pole is attached.

angels A slang term for indications on a radar screen when no planes are in the area. Typical causes for the phenomena are insects, birds, tropospheric layers, water vapors, organic particles, and radio waves in space which reflect back echos.

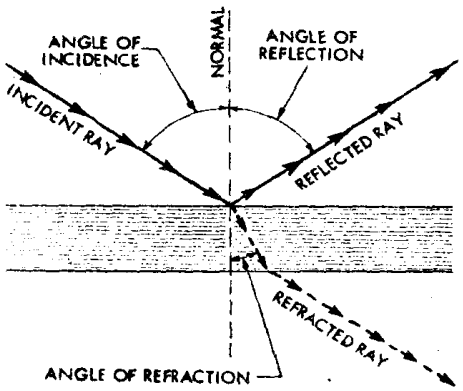


Graph A shows current lagging voltage and graph B shows current leading voltage.

angle of lag and lead The amount expressed in **electrical degrees** or radians that one component in an ac current circuit leads or lags another. For example, induction motors cause the current to lag behind the voltage. The cosine of this angle is called the **power factor.**

angle of incidence The angle between a ray of light which strikes a surface, and the normal line. (A *normal* is a line perpendicular to the surface.)

angle of reflection The angle between a ray of light reflected from a surface (after reflection) and the normal.



Reflected and refracted angles when a light ray strikes a glass plate.

angle of refraction The angle between the normal to a surface and a ray of light bent (refracted) as it passes from one medium into another of different density at the surface. An example is light striking a glass plate at an angle.

angular frequency Frequency expressed in angular measurement rather than in cycles per second. The angular frequency is expressed in **radians** per second and is equal to the frequency in cycles per second multiplied by the factor 2π.

angular velocity The rate at which an angle is generated (swept) by a rotating line. Angular velocity is measured in **radians** per second.

anion The **ion** which moves toward the anode in an **electrolytic** cell.

anneal To heat a substance such as a metal or glass to high temperature and allow to cool slowly. Purpose is to relieve strain, or destroy magnetism, or soften.

annular conductor *See* **conductor, annular.**

annunciator An electrical remote signaling device. Often arranged to indicate signals from a number of push-button stations, as on an elevator. Electromagnets, lamps or buzzers are used in annunciator circuits.

annunciator wire *See* **bell wire.**

anode 1. The element in an electrical device which attracts electrons. The positive electrode; for example, the plate of an electron tube. 2. The **electrode** toward which current flows. *See* **current flow.**

anode current The current which passes to or from the anode of an electron tube.

anode voltage In an electron tube, the voltage which exists between the anode and the cathode.

anodizing A process for protecting the surface of aluminum. The metal is immersed in a tank of acid, which acts as an **electrolyte**. A direct current is applied, with the metal acting as the anode, resulting in a satiny oxide coating.

antenna A structure or arrangement of conductors used for receiving or radiating electromagnetic waves.

—, Adcock An antenna system usually comprising two or more vertical antennas. The antennas are connected in a manner which insures that the horizontal wires interconnecting them have almost no horizontal pickup or radiation. The system thus transmits or receives only vertically polarized waves.

—, aperiodic Any antenna which is designed to have essentially constant impedance over a wide range of frequencies, due to suppression of reflections within the antenna system. Examples are terminated rhombic antennas and terminated wave antennas.

— coil The inductance either in a receiver or transmitter through which antenna current passes.

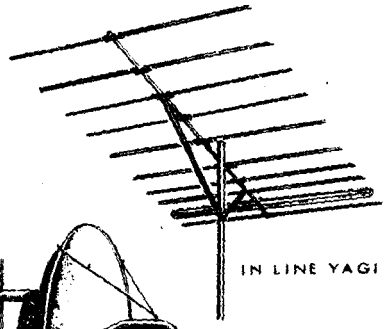
— coupler Any device which couples the antenna to the rest of the transmitting or receiving equipment. The device may include switching circuits for matching the antenna under special conditions.

— current The current in the antenna. The current distribution (the nodes and antinodes) is much the same as it is for a transmission line.

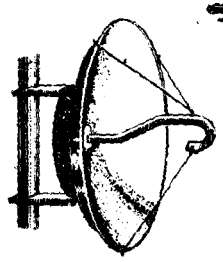
—, dielectric A microwave antenna in which a dielectric rod extends from a waveguide and acts as a directional antenna. The waves in the waveguide follow the dielectric and are gradually transferred to the surrounding air.

—, directional 1. An antenna or system of antennas designed to transmit the

STACKED ARRAY

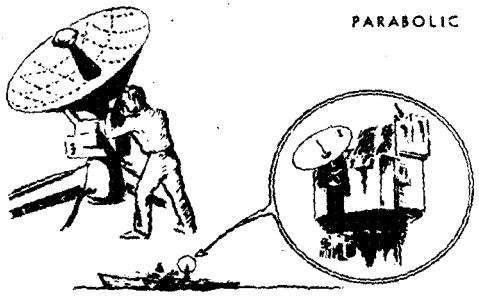


IN LINE YAGI

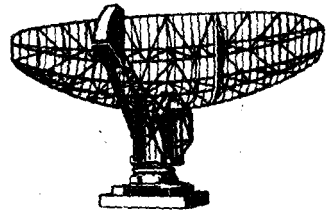


PARABOLIC

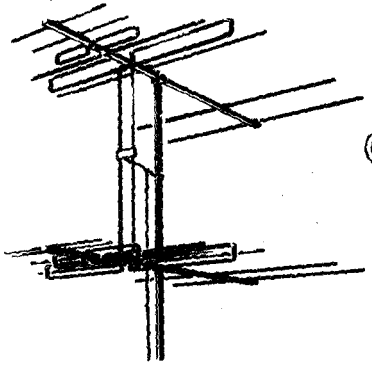
TURNSTILE
(WITH FIVE BAYS)



RADAR
(USED ON NAVAL VESSELS)

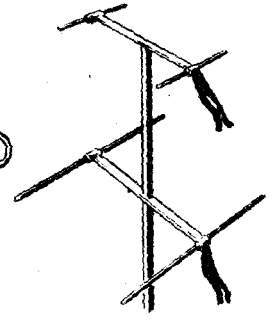


RADAR



TWO BAND TV RECEIVING
(FOR FRINGE AREAS)

FOLDED
DIPOLE



HIGH FREQUENCY DIPOLE
AND REFLECTOR
(MOUNTED ABOVE A
LOW FREQUENCY PAIR)

Various Types of Antennas

major portion of its output in a given direction. 2. An antenna designed to receive signals most effectively from a given direction.

—, **dummy** A substitute for an antenna such as a resistor, which has equal electrical value but does not radiate appreciably. Used in checking transmitters.

— **effect** In navigation, any output signal due to a directional antenna acting as a nondirectional antenna. This can lead to erroneous readings.

— **field gain** A measure of the effectiveness of a transmitting antenna. It is the ratio of the effective free space field intensity at one mile, in the horizontal plane, expressed in millivolts per meter, for an antenna input power of one kilowatt to 137.6 millivolts per meter.

— **gain** A measure of the directivity of the field pattern of a directional antenna compared with that of a standard antenna. It is the ratio of the power that must be supplied to a standard antenna to the power that must be supplied to the antenna under consideration to obtain the same field strength in the same direction.

—, **half-wave** An antenna, usually center-fed, whose radiators are one-half wavelength overall length. The most common half-wave antenna is the half-wave dipole. *See* **dipole, half-wave.**

—, **Hertz** A pair of center-fed radiators, each often one-quarter wavelength. The Hertz antenna is the basis from which the half-wave dipole was developed. A Hertz antenna is not necessarily a half-wave dipole, however. *See* **dipole, half-wave.**

—, **horn** A directional antenna used for microwaves. It does not involve a resonant element and is therefore usable over a wide frequency range. It is often used with a wavelength and can match the impedance of the waveguide as well as give the desired directional pattern.

— **lens** An antenna element which is used to give a particular pattern or direction to the radiated signal. The name comes from optics where a lens is used to focus (or direct) light rays.

—, **loop** An antenna constructed in the form of a large diameter coil, used generally for its directional characteristics.

—, **parabolic** A directional antenna for microwaves. It usually consists of a dipole placed at the focal point of a parabolic reflector.

—, **parasitic** 1. A transmitting antenna which is not directly fed but is excited by voltage induced in it from a directly fed antenna. It is used in directional arrays to achieve a particular radiation pattern. 2. A receiving antenna which is not coupled directly to the receiver but rather to another antenna, through mutual impedance, to which the receiver is coupled.

— **pedestal** *Radar.* The structure which supports the antenna including the takeoffs, drive motors and the antenna feed.

— **reflector** An element which is placed near the antenna itself to modify the field pattern (in a transmitting antenna) and increase the gain. In a receiving antenna, a reflector increases the gain and reduces interference from stations in back of the antenna.

— **relay** In radio stations, a relay used to switch the antenna to the receiver, or to the transmitter. The receiver circuits are thus automatically protected from the rf power.

— **resistance** The sum of the radiation resistance and loss resistance of the antenna. It may be obtained by dividing the power delivered to the entire antenna circuit by the square of the effective current at a particular point.

—, **rhombic** An array of directional antennas consisting of four long conductors which form the sides of an equal-sided parallelogram or rhombus.

—, **slot** An antenna in which the radiator is merely a slot in a metal surface.

—, **turnstile** A transmitting antenna for TV or fm. It consists of a series of turnstiles spaced along the antenna mast. Each turnstile is two half-wave dipoles, crossed at their midpoints.

—, **vertical** A vertical rod or mast used to radiate or receive radio waves.

—, **Yagi** A directional antenna array. It consists of an element which is directly fed and one or more parasitic antennas in front and in back of the driven antenna. *See also* **antenna, parasitic.**

anti-hunt circuit In regulating systems, a circuit generally consisting of a capacitor and transformer arranged to oppose changing voltages thus preventing the system from **hunting** following minor voltage changes.

antinode A point of maximum amplitude of a voltage or current wave. *Compare with* **node.**

anti-resonant circuit A parallel resonant circuit. It offers maximum imped-

ance to the passage of the resonant frequency, hence the name.

anti-side tone circuit A circuit in telephones which prevents the feed of microphone volume into the earpiece, which would otherwise cause the user to lower his voice.

aperiodic Not resonant to a definite frequency.

aperiodic antenna *See* **antenna, aperiodic.**

aperiodic damping Motion of a mechanical system in which the system returns to its rest position after being displaced from that position without overshooting.

aperture In electronics, any opening, usually small, through which a beam of particles, such as an electron beam, can pass.

aperture compensation Boosting the high frequency response of the video amplifiers of the TV camera to reduce aperture distortion.

aperture distortion That distortion in a TV signal which is due to the scanning beam being focused through an aperture. Some of the scanning beam hits the side of the aperture and is lost.

aperture lens Any aperture used to focus the particle beam passing through the opening.

aperture mask In a color TV picture tube, a perforated plate between the electrodes and the phosphorescent screen which insures that only the dots of the proper color glow at each instant.

A-power supply The voltage source which provides power for heating the cathode of an electron tube.

apparent power The product of current and voltage in a circuit at which the values of voltage and current reach their peaks at different times.

Apple color picture tube *See* **beam-index color picture tube.**

applicator In dielectric heating, appropriately shaped conducting surfaces between which is established an alternating electric field for the purpose of producing **dielectric heating.** ***Also called applicator electrode.***

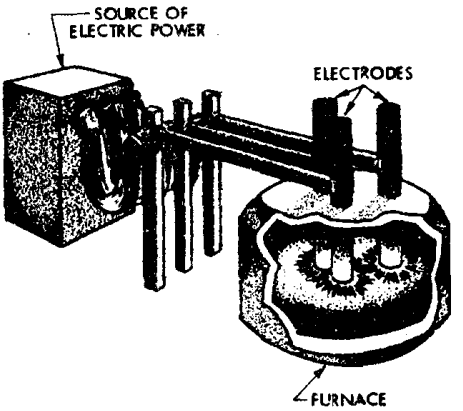
Araldite An epoxy resin used for potting, surface coating, and adhesion. It may be cast in a closed container since no volatile vapors are released during the process, and has a high tensile strength and high resistivity. Trademark of Ciba Company.

arc 1. A discharge of an electric current across a gap, which causes a glow or light. 2. In electron tubes, a discharge of an electric current through a gas, normally characterized by a voltage drop approximately equal to the ionization potential of the gas.

arcback *See* **backfire.**

arc chute On heavy duty switches and contactors, a passageway of resistant material through which the arc is directed to extinction.

arc furnace An electric furnace in which heat is produced by an arc between two electrodes.



Arc Furnace

arc lamp *See* **lamp, arc.**

arc welding The process of joining two pieces of metal together by use of an electric arc.

arithmetic unit In an electronic computer, that part which performs arithmetic operations.

armature 1. The moving part of a magnetic device. 2. The rotor of a generator, from which the electric energy is obtained. 3. The rotating part of a motor, which receives electric energy. 4. The moving part of a balanced armature loudspeaker. 5. The spring-mounted part of a buzzer. 6. The hinged or pivoted moving part of a relay. 7. Any moving part (of a relay) which actuates contacts in response to a change in coil current.

— **air gap** The air space between the stationary and rotating parts of a motor or generator where the magnetic lines of force pass from one part to the other.