

APPENDIX I

GLOSSARY

- A**
- ANTENNA**— A device used to radiate or receive radio waves.
- ANTENNA COUPLER**— A device used for impedance matching (tuning) between an antenna and a transmitter or receiver.
- ANTENNA RECIPROcity**— The ability of an antenna to both transmit and receive electromagnetic energy.
- ANTENNA TUNING**— The process where an antenna is electrically “matched” to the output frequency and impedance of the transmitter.
- ATTENUATION**— A deliberate reduction or an unintended loss in RF signal strength.
- B**
- BANDWIDTH**— Any section of the frequency spectrum occupied by specific signals.
- BIDIRECTIONAL ANTENNA**— An antenna that radiates in or receives most of its energy from only two directions.
- BLACK**— Cipher text or encrypted text or information
- C**
- CARRIER**— The unmodulated signal originally produced in the oscillator section of a transmitter.
- CARRIER FREQUENCY**— The final RF output without modulation. The assigned transmitter frequency.
- CHANNEL**— A carrier frequency assignment, usually with a fixed bandwidth.
- COMPLEX WAVE**— A transmitted radio signal composed of different frequencies.
- COUNTERPOISE**— The ground plane, or reflective surface, comprising an antenna’s reflected image at a given wavelength.
- CRITICAL FREQUENCY**— The highest transmitted frequency that can be propagated directly upward and still be bent, or “refracted,” back to Earth.
- CYCLE**— Two complete alternations of alternating current, or one complete revolution in any period of time, equal to 360°.
- D**
- DAMA (DEMAND ASSIGNED MULTIPLE ACCESS SUBSYSTEM)**— Subsystem that multiplexes several subsystems on one satellite channel.
- DIFFRACTION**— The bending of radio waves around the edges of a solid object or dense mass.
- DIRECTIONAL ANTENNA**— An antenna that radiates or receives radio waves more effectively in some directions than in others.
- DIRECTIVITY**— The sharpness or narrowness of an antenna’s radiation pattern in a given plan.
- DIRECT WAVE**— A radio signal that travels in a direct line-of-sight path from the transmitting antenna to the receiving antenna.
- DUMMY LOAD**— A nonradiating device used at the end of a transmission line in place of an antenna for tuning a transmitter. The dummy load converts transmitted energy into heat so that no energy is radiated outward or reflected back.
- E**
- EHF (EXTREMELY HIGH FREQUENCY)**— The band of frequencies from 30 GHz to 300 GHz.
- ELECTRIC FIELD**— A field produced as a result of a voltage charge on an antenna.
- ELECTROMAGNETIC ENERGY**— An RF source composed of both an electric and a magnetic field.
- ELECTROMAGNETIC WAVES**— Energy produced at the output of a transmitter; also called radio waves.
- F**
- FADING**— Variation, usually gradual, in the field strength of a radio signal that is caused by changes in the transmission path or medium.

FEED POINT— The point on an antenna at which the RF cable that carries the signal from the transmitter is connected.

FOT (FREQUENCY OF OPTIMUM TRANSMISSION)— The most reliable frequency for propagation at a specific time.

FREQUENCY— The number of complete cycles per unit of time.

FREQUENCY DIVERSITY— The method in which the information signal is transmitted and received on two separate radio frequencies simultaneously to take advantage of the fact that fading does not occur simultaneously on different frequencies.

FSK (FREQUENCY-SHIFT KEYING)— The process of shifting the incident carrier above and below the carrier frequency to correspond to the marks and spaces of a teleprinter signal.

G

GAIN— An increase in signal strength.

GIGAHERTZ (GHz)— A unit of frequency equal to 1000 megahertz.

GROUND— A term used to denote a common electrical point of zero potential.

GROUND-PLANE ANTENNA— A type of antenna that uses a ground plane (a metallic surface) as a simulated ground to produce low-angle radiation.

H

HALF-WAVE DIPOLE ANTENNA— A common type of half-wave antenna made from a straight piece of wire cut in half. Each half operates at a quarter of the wavelength. It is normally omnidirectional with no gain.

HERTZ (Hz)— A unit of frequency equal to one cycle per second.

HERTZ ANTENNA— An ungrounded half-wave antenna that is installed some distance above ground and positioned either vertically or horizontally.

HF (HIGH FREQUENCY)— The band of frequencies from 3MHz to 30MHz.

I

IMPEDANCE— The total opposition to the flow of alternating current.

INCIDENT WAVE— The RF energy that travels from the transmitter to the antenna for radiation.

INDUCTION FIELD— The electromagnetic field produced around an antenna when current and voltage are present on the antenna.

K

KILOHERTZ (kHz)— A unit of frequency equal to 1000 hertz.

L

LEASAT— Leased satellite.

LF (LOW FREQUENCY)— The band of frequencies from 30kHz to 300kHz.

LUF (LOWEST USABLE FREQUENCY)— The lowest frequency that can be used at a specific time for ionospheric propagation of radio waves between two specified points.

M

MAGNETIC FIELD— One of the fields produced when current flows through a conductor or an antenna.

MARCONI ANTENNA— A quarter-wave antenna that is operated with one end grounded; it is positioned perpendicular to the Earth.

MEGAHERTZ (MHz)— A unit of frequency equal to 1,000,000 hertz.

MF (MEDIUM FREQUENCY)— The band of frequencies from 300kHz to 3MHz.

MIRROR IMAGE— The part of the radiated signal of a quarter-wave antenna (Marconi antenna) appearing to come from an underground image of the real antenna. This image is also called ground reflection.

MODULATED WAVE— The wave that results after the information from the modulating signal is impressed onto the carrier signal. The wave that is transmitted

MODULATION— The process of adding, or superimposing, information on an RF carrier wave.

MUF (MAXIMUM USABLE FREQUENCY)— The highest operating frequency that can be used at a specific time for successful radio communications between two points.

O

OMNIDIRECTIONAL ANTENNA— An antenna that radiates or receives equally well in all directions, except directly off the ends.

OSCILLATOR— An electrical circuit that generates alternating current at a particular frequency.

P

PARABOLIC ANTENNA— An antenna that radiates its signal back into a large reflecting surface (called the dish) for radiation.

PERIOD (of a wave)— The time required to complete one cycle of a waveform.

POLARIZATION (of antennas)— The plane (horizontal or vertical) of the electric field as radiated from a transmitting antenna.

R

RADHAZ (RADIATION HAZARD)— Electromagnetic radiation hazard generated from electronic equipment.

RADIATION FIELD— The electromagnetic field that radiates from an antenna and travels through space.

RADIATION RESISTANCE— The resistance that, if inserted in place of an antenna, would consume the same amount of power that is radiated by the antenna.

RECIPROCITY— See antenna reciprocity.

RED— Plain text or unencrypted information

REFLECTED WAVE— An electromagnetic wave that travels back toward the transmitter from the antenna because of a mismatch in impedance between the two.

REFLECTION— Occurs when a radio wave strikes the Earth's surface at some distance from the transmitting antenna and is returned upward toward the atmosphere.

RF (RADIO FREQUENCY)— A frequency in the range within which radio waves can be transmitted. Frequencies used for radio communication fall between 3kHz and 300GHz.

RF ENERGY— Radio frequency energy. Energy produced at the output of a transmitter.

S

SATELLITE COMMUNICATION (SATCOM)— A type of worldwide, reliable, high-capacity, secure, and cost-effective telecommunications system utilizing satellites.

SHF (SUPER HIGH FREQUENCY)— The band of frequencies from 3 GHz to 30 GHz.

SIGNAL— Detectable transmitted energy that can be used to carry information.

STANDING WAVES— The stationary waves that buildup along an antenna during radiation.

SWITCHBOARD— Device that connects receiver outputs to numerous pieces of equipment.

SWR (STANDING-WAVE RATIO)— A term used to express the degree of resonance attained between the antenna and the transmission line when being tuned for transmission.

T

TRANSMISSION LINE— A device designed to guide electrical or electromagnetic energy from one point to another.

U

UHF (ULTRA HIGH FREQUENCY)— The band of frequencies from 300 MHz to 3 GHz.

UNIDIRECTIONAL ANTENNA— An antenna that radiates in only one direction.

V

VHF (VERY HIGH FREQUENCY)— The band of frequencies from 30 MHz to 300 MHz.

VLF (VERY LOW FREQUENCY)— The band of frequencies from 3 kHz to 30 kHz.

W

WAVEFORM— The shape of an electromagnetic wave.

WAVELENGTH— The distance traveled, in feet or meters, by a radio wave in the time required for one cycle.

APPENDIX II

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

A	
ASWIXS — Antisubmarine Warfare Information Exchange Subsystem.	FSB — Fleet satellite broadcast.
ASWOC — Antisubmarine Warfare Operations Center.	FSK — Frequency-shift keying.
AZ — Azimuth.	G
C	GHZ — Gigahertz.
CAT — Communications assistance team.	H
CONUS — Continental United States.	HDX — Half duplex.
CUDIXS — Common User Digital Information Exchange System.	HERO — Hazardous electromagnetic radiation.
CW — Continuous wave (Morse code).	HF — High frequency.
D	HPA — High Power amplifier.
DAMA — Demand Assigned Multiple Access Subsystem.	Hz — Hertz.
dc — Direct current.	I
DSB — Double-side band.	IF — Intermediate frequency.
DSCS — Defense Satellite Communications System.	K
E	kHz — Kilohertz.
EHF — Extremely high frequency.	L
EL — Elevation	LEASAT — Leased satellite.
EMCON — Emission control.	LF — Low frequency.
F	LNA — Low noise amplifier.
FDM — Frequency division multiplexing.	LOS — Line of sight.
FDMA — Frequency division multiple access.	LP — Log-periodic antenna.
FDX — Full duplex.	LPI — Low probability of intercept.
FFN — Fleet flash net.	LSTDMS — Low speed time division multiplexer.
FLTCINC — Fleet Commander-in-Chief.	LUF — Lowest usable frequency.
FLTSATCOM — FM satellite communications.	M
FOT — Frequency of optimum transmission.	MHz — Megahertz.
	MF — Medium frequency.

MPA— Medium power amplifier.

MUF— Maximum usable frequency.

N

NATO— North Atlantic Treaty Organization.

NAVCOMTELSTA— Naval Computer and Telecommunications station.

NAVMACS— Naval Modular Automated Communications System.

NCTAMS— Naval Computer and Telecommunications Area Master Station.

NCTS— Naval Computer and Telecommunications stations.

NECOS— Net control station.

O

ORESTES— Teleprinter subsystem.

OTAR— Over-the-air relay.

OTAT— Over-the-air transfer.

OTC— Officer in tactical command.

OTCIXS— Officer in Tactical Command Information Exchange Subsystem.

P

PRIS/S— Primary ship-shore.

PSK— Phase shift keying.

R

RADHAZ— Radiation hazard.

RF— Radio frequency.

RLP— Rotatable log-periodic antenna.

S

SAR— Search and air rescue.

SATCOM— Satellite communication.

SECVOX— Secure voice.

SHF— Super high frequency.

SSB— Single-sideband.

SSIXS— Submarine Satellite Information Exchange Subsystem.

SWR— Standing-wave ratio.

T

TACINTEL— Tactical intelligence system.

TADIXS— Tactical Data Information Exchange Subsystem.

TDM— Time division multiplexing.

TDMA— Time division multiple access.

U

UHF— Ultra high frequency.

V

VHF— Very high frequency.

VSWR— Voltage standing-wave ratio.

VLF— Very low frequency.

APPENDIX III

REFERENCES USED TO DEVELOP THIS TRAMAN

NOTE: The following references were current at the time this TRAMAN was published, but you should be sure you have the current editions.

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