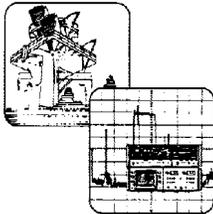


Communications Glossary

Management Briefing Number 1

ONE OF A SERIES OF NOTES ON
TECHNOLOGY FROM ADCOMM

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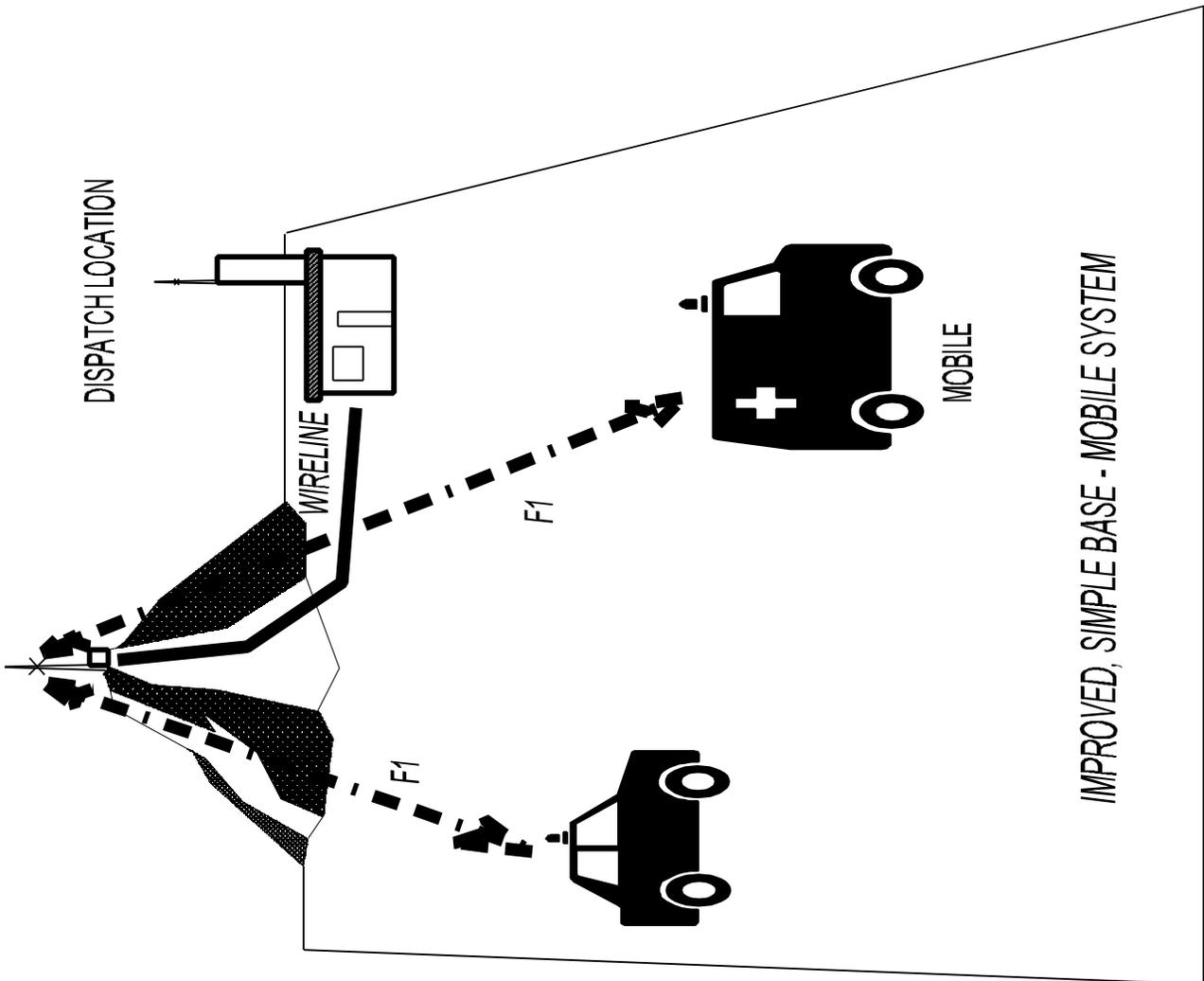


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ACCESS LINE:	The telephone service line that is a subscriber's main connection to the telephone company's switching office.
ADJACENT CHANNEL:	Frequencies above or below an operating frequency.
ALI (Automatic Location Identification):	A system capability that allows automatic display of the physical location (e.g., a street address) of the telephone used to place a 9-1-1 call; this feature is available in Enhanced 9-1-1 systems.
AMPLITUDE COMPANDORED SINGLE-SIDEBAND (ACSB):	A bandwidth-efficient modulation technique for voice radio. It preserves the efficiency of older single-sideband (SSB) modulation, without the manual tuning that had limited SSB use to amateur and military use. ACSB offers a three- to five-times' improvement over FM.
ACSB:	See Amplitude Compandored Single-Sideband.
ANI (Automatic Number Identification, Telephone):	A system capability that shows call answerers the seven-digit directory number of the telephone caller; this feature is commonly used in 9-1-1 systems.
ANI (Automatic Number Identification, Radio):	A coded signal transmitted by some radios to identify which specific radio is transmitting.
ANTENNA:	A specially arranged wire or wires used to convert radio waves into electrical signals and vice-versa.
ARRESTOR:	A device from protecting sensitive electrical equipment from high voltage surges like lightning.
AUDIBLE:	A signal intended for drawing attention audibly, such as an alarm.
AUTOMATIC TRUNKING MOBILE SYSTEM:	See Trunking Radio.
AUTOMATIC VEHICLE LOCATION (AVL):	A system for continuously radio monitoring the location of vehicles in the field.
ATTENUATION:	A reduction in the strength of a signal. For example, a radio signal is attenuated by passing through concrete walls.

AVL:	See Automatic Vehicle Location.
BAND:	A group of radio frequencies, usually with a common purpose. For example, the "VHF High Band" of 150 MHz to 175 MHz is used for mobile communications.
BANDWIDTH:	A measure of the amount of radio frequency space consumed by a transmitter. Sometimes refers to the window of frequencies a radio receiver is sensitive to.
BASE STATION:	A radio transmitting and receiving station with a fixed location (rather than mobile). It uses a higher power transmitter and better antenna system than the mobile units it communicates with.
BASE-MOBILE SYSTEM:	A simple, common type of radio system in which a base station at a fixed point communicates with mobile units. The base has a more powerful transmitter and typically places its antenna in the best place to both reach mobile units, and to hear their weaker transmissions. See figure.
BASIC 9-1-1 SYSTEM:	A telephone system that automatically connects a person dialing the digits "9-1-1" to a PSAP. Requires verbal identification of caller and caller's location. Allows call answerer to hold, re-ring, or drop the line.
BAUD:	A measure of data transmission speed. Refers to the rate at which data bits or clusters of bits are sent. Data are often sent to simple printers at 110, 300, or 1,200 baud, for example.
BIT:	A single digital information element. Can only have two states: ONE or ZERO (or OFF and ON). Groups of bits are assembled to represent more complex data such as words or sounds.



BEEPER:	A radio pager that beeps when it receives an alerting transmission.
CAD:	Computer Aided Dispatch — primarily a data base system used for providing dispatch history, hazardous materials notes, emergency equipment status, and service areas.
CALL ANSWERER:	The receiver of a 9-1-1 call at the PSAP responsible for taking the report and establishing the nature of the call.
CALL CHECK:	A term referring to instant recall recorders used to replay and verify information taken verbally by phone. Trademark of Dictaphone.
CALLED PARTY HOLD:	A telephone system feature that enables the PSAP to control the release of a 9-1-1 call, maintaining connection through the telephone system's switching facilities even if the 9-1-1 caller has hung up the telephone (to permit the tracing of a call, for example).
CALL RELAY:	The 9-1-1 call is answered at the PSAP where the pertinent information is gathered, after which the call answerer relays the caller's information on to the appropriate public safety agency for further action.
CALL SIGN:	The letter-number identifier assigned by the FCC to licensed radio stations. A commercial broadcast station may be assigned KWXY, for example, while a base radio station for mobile communications may receive KVA123. The call sign must be transmitted periodically to identify the station.
CALL TRANSFER:	When a PSAP call answerer determines that another agency should handle the call, it is transferred by telephone to that agency.
CAVITY:	A frequency-selective filter used to reduce radio interference.
CELLULAR TELEPHONE:	A radio system operating in the 800-MHz band that simulates the operation of the public telephone system. Cellular telephone sets are actually radio transceivers. Dozens of base stations under computer control form the heart of an area system.

CENTRAL OFFICE (CO):	A telephone company switching facility, sometimes known as a wire center. It is the basic element of a telephone system, providing connections between calling and called lines.
CHANNEL:	A communications path. It might be a wire connection, a radio frequency, or a pair of radio frequencies for instance.
CIRCUIT:	Usually refers to a wireline channel.
CITIZEN BAND (CB):	A general purpose radio band for unlicensed low power transceivers (4 watts maximum). It uses frequencies from 26.96 MHz to 27.43 MHz (40 channels). Channel 9 is designated as a United States/Canadian emergency calling frequency.
CO-CHANNEL INTERFERENCE:	Interference caused by other transmitters operating on the same frequency. This is common on both low and high VHF bands, where signals often travel farther than desired. The interfering agency may be in a different city, county, state, or even country.
COIN FREE ACCESS (CFA):	Coin-free dialing enables a pay-phone caller to dial 9-1-1 or "0" for Operator without depositing money.
C.O.:	See "CENTRAL OFFICE."
CONSOLE:	A furniture-type mounting frame for equipment that is frequently accessed by operators. Examples are radio control consoles and 9-1-1 answering positions.
CONTINUOUS TONE-CODED SQUELCH SYSTEM (CTCSS):	This is a radio channel masking system in which a special low frequency "key" tone is transmitted with the voice. Receivers are equipped with CTCSS tone decoders so only those with matching CTCSS "keys" will produce audible voice. This does not eliminate interference, but it keeps users from having to listen to signals that are not meant for them. Equipment manufacturers sometimes use trade names for this capability such as: Private Line (PL), Channel Guard (CG), or Quiet Channel (QC).
CORONARY OBSERVATION RADIO:	A portable radio unit that can gather and transmit coronary telemetry.

CRYSTAL:	A small, polished slice of quartz that is used to control the frequency of radio transmitters. Packaged in small metal cases, they offer high stability and accuracy in control with little flexibility.
CTCSS:	See "Continuous Tone-Coded Squelch System."
CUT-OVER:	Transferring from the use of one system to another. An often troublesome aspect of putting in communications systems, as it may disrupt communication.
DDD:	Direct Distance Dialing; switched telephone service that permits subscribers to dial their own long distance or "toll" calls.
DECIBEL:	A relative measure of signals. A 3-decibel (3 dB) increase in signal level is a doubling of signal power. It is useful in describing wide ranges of signal levels.
DEDICATED LINE:	A communications line, private or leased, that is dedicated (not dial up) to provide a continuous communications path between two points for voice or data. It may be wire, fiber, optic, or microwave.
DEGRADATION:	Reduced receiver sensitivity caused by adjacent channel transmitters. The effect is a reduction in the ability to hear weak signals. See also Attenuation.
DIGITAL:	When information is carried using a two-level code (binary code), it is known as digital. Though digital requires higher bandwidth, the binary code is very hardy and provides precise transmission of information.
DIGITAL CODED SQUELCH (DCS):	A radio-channel masking system similar to CTCSS except that a low-frequency digital signal is sent instead of a tone.
DIGITAL ENCRYPTION:	A method of voice or data scrambling that converts signals into unintelligible noise. This is the most secure way of preventing eavesdropping. There are millions of possible codes.
DIGITAL PRIVATE LINE (DPL):	See Digital Coded Squelch.

DIRECT DISPATCH:	Dispatching is considered direct if both 9-1-1 call answering and aid dispatch functions are performed at the PSAP.
DIRECT TRUNKING:	A dedicated telephone system arrangement with no intermediate switching (and potentially blocking) points between the originating CO and the PSAP.
DISPATCH:	Designate and direct an emergency response unit to a service location.
DISPATCH CENTER/RADIO DISPATCH CENTER:	The location from which a public or private safety agency's mobile units are dispatched.
DISPATCHER:	An individual who uses radio or other means to dispatch public or private safety agency's resources. This person may or may not function as a 9-1-1 call answerer.
DMS (Data Base Management System):	Used to provide and maintain the 9-1-1 caller ALI and service information for PSAP use.
DOCTOR-INTERRUPT:	The ability of a physician or hospital-based care advisor to interrupt a voice or data transmission from the field.
DOWN LINK:	The transmitting link from a repeater to mobile units or a control station. In UHF frequencies it is usually the lower frequency of a frequency pair.
DPL:	See Digital Coded Squelch.
DUPLEXER:	A device used in repeater antenna systems, allows repeater to transmit and receive at the same time using one antenna and feed line. It also helps to reduce receiver degradation.
DTMF:	Dual-tone, Multi-frequency (DTMF) signals are tones generated by pushbutton telephones, primarily for dialing. Also known as touchtone or touchcall.
DUPLEX:	This is a condition in which two persons in conversation can hear and speak simultaneously. Telephone calls are typically duplex, while calls on a single radio channel are simplex and require alternating speaking and listening periods.

- ELECTRONIC MAIL (E-Mail):** Available on some CAD systems, E-mail allows one person to leave messages for another using the same computer network. Passwords are used to keep messages private.
- EMERGENCY CALL:** A telephone request for service that requires immediate action to prevent loss of life, reduce bodily injury, prevent or reduce loss of property, and other emergency situations determined by local policy.
- EMD:** See "Emergency Medical Dispatch."
- EMERGENCY MEDICAL DISPATCH (EMD):** Provision of special procedures and trained personnel to ensure the efficient handling of medical emergencies and dispatch of aid. Includes pre-arrival instructions for CPR, mouth-to-mouth resuscitation, and other verbal aid to callers.
- EMS:** Emergency Medical Services.
- E 9-1-1 (ENHANCED 9-1-1):** Enhanced 9-1-1 is the general term referring to emergency telephone systems with specific electronically controlled features (such as ALI, ANI, or selective routing) and that use the MSAG address geofile. It may also refer to systems with some, but not all, of those features.
- EPROM:** A digital data storage chip that can be erased and re-programmed. Often used to hold software or other large pieces of data. EPROMs are used in some mobile radios to store channel programming data and other codes.
- EXCHANGE:** A defined geographic telephone service area covered by one or more central offices.
- FADE MARGIN:** The amount of additional signal loss a radio link can tolerate before the signal-to-noise ratio falls below a minimum level. Expressed in decibels.
- FEDERAL COMMUNICATIONS COMMISSION:** A branch of the U.S. government charged with regulation of radio and other types of communications.
- FEEDBACK:** High-pitched sound generated when a speaker and open microphone are too close together (e.g., a portable left on in

a car while the mobile is transmitting on the same frequency).

- FIBER OPTICS:** A technology using fine glass fibers and pulsed light to carry digital signals. Provides very high information capacity and excellent immunity to electrical noise.
- FILTER:** An electronic circuit that selectively rejects or amplifies signals based on signal frequency. Useful in many ways for audio and radio purposes.
- FIRE TELEPHONE TREE:** A telephone company arrangement that allows a group of telephones to talk to each other in conference—used to inform volunteer fire companies of the nature and location of an emergency.
- FIRMWARE:** The term usually applied to microprocessor software that is stored in EPROMs (in hardware, but erasable and therefore "firm").
- FIXED TRANSFER:** A 9-1-1 CO feature that allows the call answerer to transfer calls to secondary PSAPs by use of a single button - each button corresponding to a designated secondary PSAP.
- FLOAT:** Keeping a battery charged by continuously feeding current and using the charger and battery in parallel to support electrical loads.
- FORCED DISCONNECT:** A telephone system feature that allows the PSAP to break or disconnect a telephone connection and avoid caller jamming of 9-1-1 lines.
- FOREIGN EXCHANGE:** Foreign exchange service (FX) provides local telephone service for subscribers who are outside (foreign to) a local exchange area. For example, having "455" service and phone number even though located in the "869" exchange area.
- FM - FREQUENCY MODULATION:** A method of transmitting information on an analog channel by varying the carrier frequency.

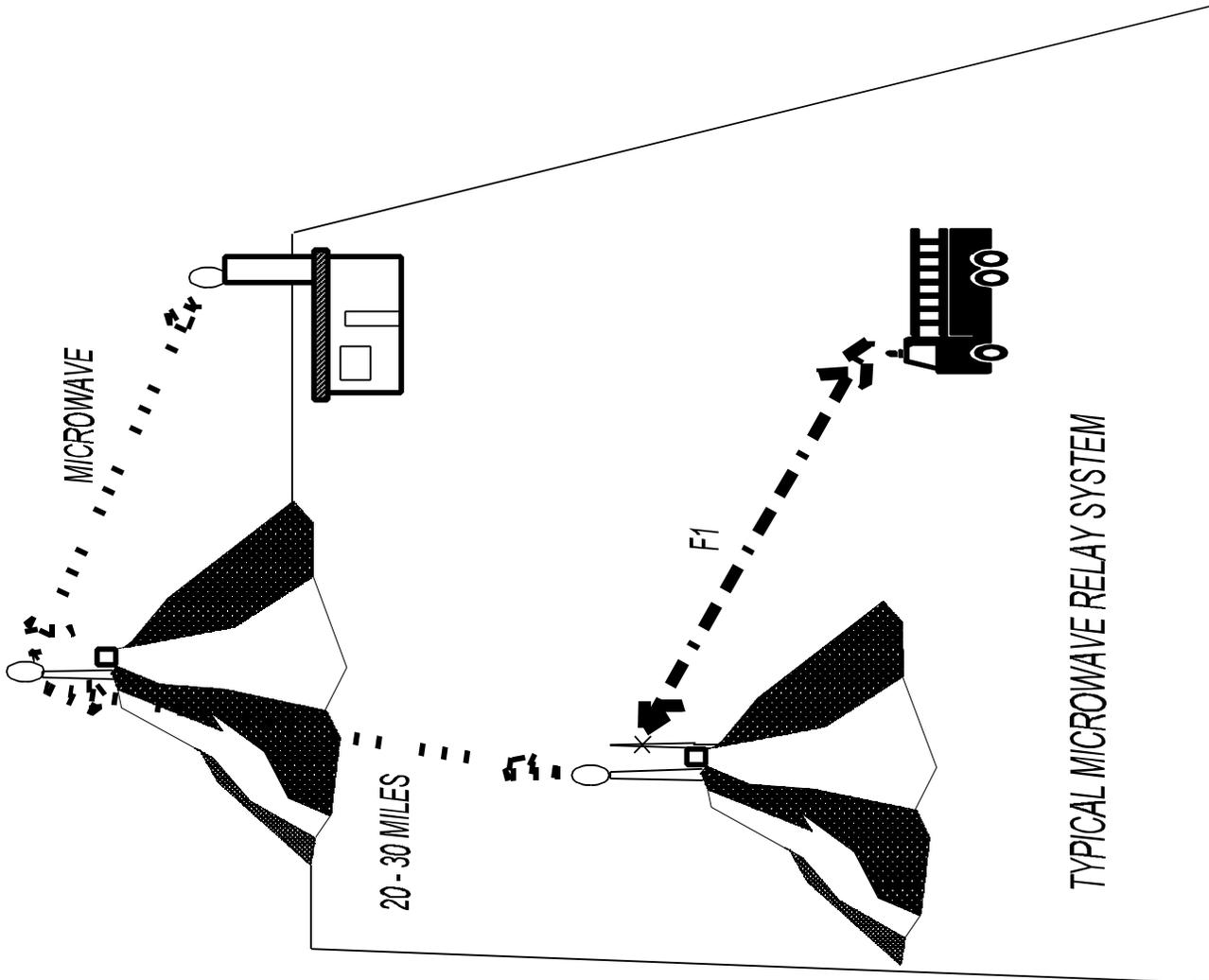
- FREQUENCY COORDINATOR:** An individual or organization that keeps records and makes recommendations for radio frequency assignment, i.e., APCO, ASHTO, SIRSA, IMSA, and NABER.
- FREQUENCY DIVISION MULTIPLEX (FDM):** A term usually associated with microwave communications. FDM basically takes a channel and subdivides it into two or more subchannels. Some systems have more than 100 different subchannels active.
- GENERATOR:** A method of generating electricity when no commercial power is available (e.g., blackouts, and remote sites). Common fuels: gas, diesel, propane, and LPG. Capacity is measured in kilowatts per hour.
- GIGAHERTZ - GHz:** A measure of radio frequency. One gigahertz equals 1,000,000,000 (one billion) cycles per second.
- GROUND:** An electrical reference point. Electrical voltages are measured with respect to ground. It may also refer to an established connection to earth that is used to tie reference points together or to discharge hazardous electrical surges safely.
- GROUND-TO-AIR NET:** A radio network for tactical communications between ground units and airborne suppression and rescue units. Tactical nets may also be used for this purpose.
- GUY:** A cable used to secure antenna structures like towers to anchors or other solid points.
- HALF DUPLEX:** Base and mobile units using two radio channels, one to transmit and one to receive, though they only can talk or listen alternately.
- HAM:** An amateur radio operator. Hams are licensed by the FCC to operate over a wide range of bands and use both mobile and fixed radio equipment.
- HEAR:** Hospital Emergency Administrative Radio. Primarily assigned to 155.340 MHz. A statewide common frequency for ambulance-to-hospital and hospital-to-hospital communications.

HERTZ - Hz:	A measure of frequency. One hertz equals one cycle per second.
HF (HIGH FREQUENCY):	Radio bands from 3 to 30 MHz. These frequencies are mostly used for international shortwave, CB, and operation secure. They offer long range but have constantly shifting gaps in coverage.
HIGH BAND:	Radio frequencies in the range of 150 to 174 MHz. Also called VHF band.
HIGH UHF BAND:	Frequency range of 460 to 461 MHz and 465 to 466 MHz. The first group of frequencies are for base station, repeater, and mobile direct transmission. The second set is mobile to repeater.
HOOKSWITCH:	The switch in a telephone set that senses the position of the handset. If the handset is lifted for use, the set is referred to as "off hook."
IDLE CIRCUIT TONE APPLICATION:	Telephone system feature that applies a tone to the 9-1-1 call answerer to indicate that the line is open (9-1-1 lines are incoming only). This tone may indicate that a calling party has hung up before or after the PSAP answers.
IMAGES:	Spuriously created radio signals that can result from incidental mixture of radio signals.
IMPROVED MOBILE TELEPHONE SERVICE:	The successor to the original operator-handled mobile telephone service provided by telephone companies and predecessor to cellular telephone.
IMTS:	See "Improved Mobile Telephone Service."
JACK:	A receptacle for an electrical plug.
KEY TELEPHONE EQUIPMENT:	Telephone sets that have the capability of multiple line operation. Many phones in offices that have six, ten, or more "buttons" are examples of key telephones. Each line can be accessed by depressing one of the buttons or "keys."
KILOHERTZ - kHz:	A measure of frequency. One kilohertz equals 1,000 cycles per second.

LAND LINE:	A telephone line, as opposed to a radio channel.
LAND MOBILE RADIO SERVICE:	Refers to several bands of radio frequencies as designated by the FCC: 30 to 50, 150 to 174, 450 to 470, etc.
LATA:	See "Local Access and Transport Area."
LEASED LINE:	See Dedicated Line.
LICENSE:	A permit to operate a radio facility on certain frequencies or bands, issued in the United States by the FCC. It specifies responsible owners and operators and details the location and capability of the radio facility. Licenses are mandatory and require maintenance to keep current.
LOCAL ACCESS AND TRANSPORT AREA (LATA):	The geographic area set by law that defines the scope of local telephone service. Telephone companies (or local exchange carriers as the FCC terms them) may only provide service within LATAs. Long distance carriers provide all service between LATAs.
LOCAL SERVICE AREA:	That telephone area that can be called without incurring a toll charge. Sometimes called the base-rate area.
LOGGING RECORDER:	A large tape recorder that has multiple recording channels. Used for recording time, date, telephone, and radio traffic. Most tapes last 24 hours each.
LOW BAND:	Frequencies in the range of 30 to 54 MHz. Also called low VHF. Offers the greatest range of the public safety radio bands. Antennas are typically around 6 feet long.
LOW UHF BAND:	One segment of the UHF radio band—frequency range of 453 to 454 MHz and 458 to 459 MHz. The first group of frequencies are for base station, repeater, and mobile direct transmission. The second set is mobile to repeater.
MANUAL TRANSFER:	A telephone call routing feature that allows the call answerer to transfer an incoming call by dialing either a telephone number or a two-digit speed calling code.
MEDCOM:	Ten channel pairs from 462.950 to 463.175 and 467.950 to 468.175. Channels 1 through 8 are for EMS provider-to-

hospital/doctor communications. Channels 9 and 10 are for EMS dispatch.

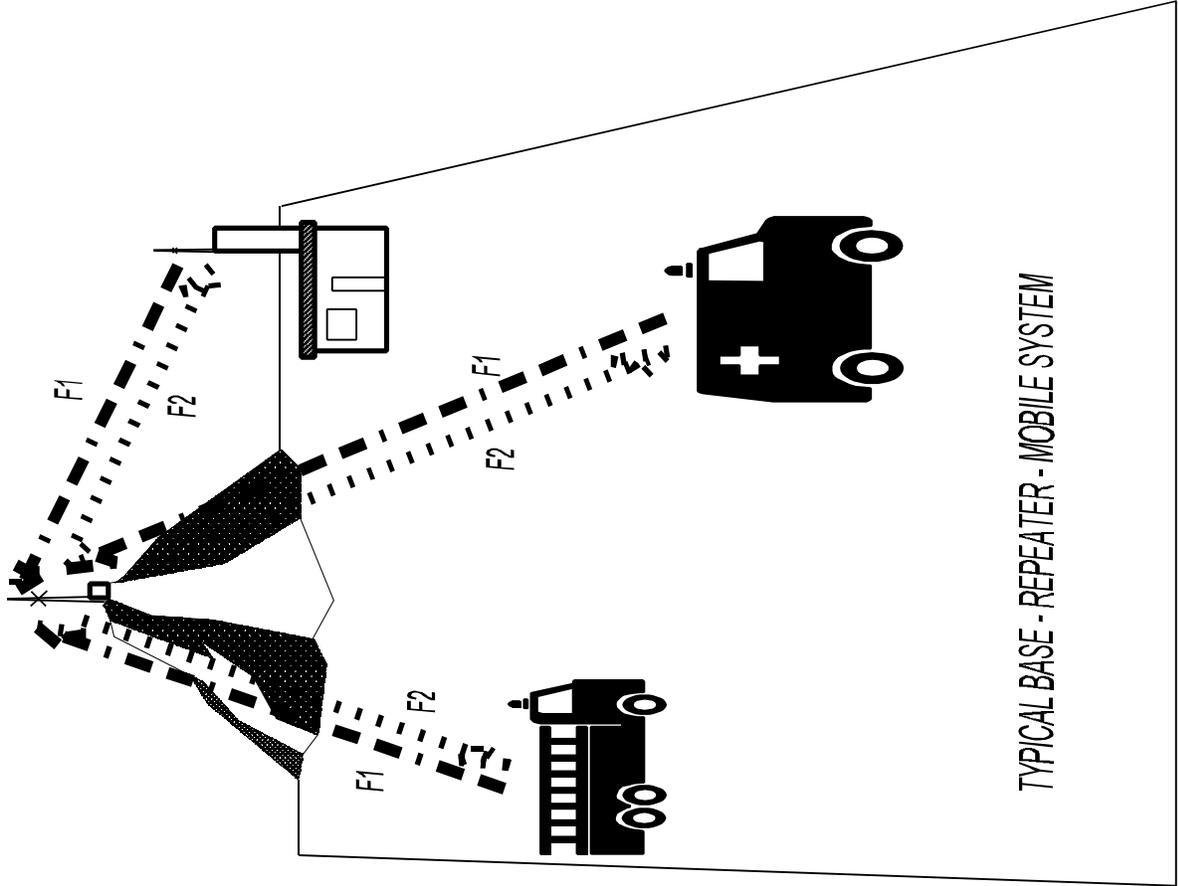
MEGAHERTZ - MHz:	A measure of radio frequency. One MHz equals 1,000,000 cycles per second.
MF:	See Multifrequency.
MICROWAVE:	Radio frequencies from 1 to 300 GHz. Often used for point-to-point communications.
MICROWAVE RADIO:	A line-of-sight, high-capacity radio that carries many voice channels simultaneously. Used for point-to-point distances of about 20 miles, often to back up or replace telephone circuits. See figure.
MLOS:	Microwave line-of-sight. A direct, unobstructed path between two microwave sites.
MOBILE DATA TERMINAL:	A computer terminal mounted in a vehicle, linked via radio to a stationary computer usually associated with a CAD system. Allows inquiry to data bases and exchange of electronic mail.
MODEM:	A device that allows computer data to be sent over voice circuits. Actually stands for MODulator/DEModulator.
MODULATION:	The method of putting information onto a radio channel. An example is sending the voice or data by using it to vary the radio transmitter frequency (frequency modulation or FM).
MSAG (MASTER STREET ADDRESS GUIDE):	A compilation of valid address ranges and the emergency service zones associated with them. Required by Enhanced 9-1-1 for correct routing and identification of callers.



MTSO (MOBILE TELEPHONE SERVING OFFICE):	A central office dedicated to serving cellular telephones and owned by the cellular service provider (not the telephone company). Typically supports a number of radio cell sites.
MULTIFREQUENCY:	Signals containing more than one frequency. In public safety, it usually refers to the tone codes that are used to deliver telephone calling party identity to 9-1-1 PSAPs. May also refer to radios that operate on more than one channel or frequency.
MULTIPATH:	The propagation of a radio signal via several paths. These paths are the direct signal route plus reflections from buildings, steep terrain, and other features. The separate arrival of these signals can degrade reception.
MULTIPLEX:	Sharing a communications channel. A term usually associated with microwave (frequency division multiplex) and computer (time division multiplex) communications. See Frequency Division Multiplex and Time Division Multiplex.
NCIC:	National Crime Information Center. Computer data base on criminal activity, commonly accessed by law enforcement officers in the field.
9-1-1 CALL ANSWERER:	See Call Answerer.
9-1-1 CENTER:	See "PSAP."
9-1-1 SYSTEM:	A 9-1-1 (nine-one-one) system causes a person dialing the national emergency number "9-1-1" to automatically connect to a PSAP. The 9-1-1 system is sometimes viewed by the public as the total emergency response capability involving the 9-1-1 emergency number; the dispatch function; radio equipment; staffing the PSAP facility; and the management of a coordinated effort for law enforcement, fire, and emergency medical aid.
NIGHT SERVICE:	An arrangement allowing an answering PSAP to operate only during chosen hours and, at other times, to have 9-1-1 calls to it forwarded to an alternate agency.

NLEC:	National Law Enforcement Communications System. 155.475 MHz. A nationwide common emergency radio channel for law enforcement. Monitored by most state police agencies.
NNX:	The first three digits of a seven-digit telephone number are used to identify the exchange and are generally known as the exchange "NNX" (EN-EN-EX).
OMNI DIRECTIONAL:	Refers to antennae that transmit equally in all directions.
ONE STAGE SYSTEM:	The person answering 9-1-1 calls also functions as a dispatcher at a PSAP.
PART 90:	The part of the FCC's rules that govern much of public safety radio communications.
PATCH:	Connection of one system to another. Often used to refer to a link made between a radio channel and a telephone line or two radio channels.
PATH:	The route a radio signal takes from one point to another.
PBX:	Private Branch Exchange: A telephone switchboard that provides communications for private clusters of telephones. The telephones may call among each other or to the public network (through a limited number of trunks). PBXs have fewer public network connections than private telephone sets, which means that for 9-1-1 purposes it is technically difficult to associate each set with a telephone number and, therefore, a location for emergency response.
PL TONE:	See CTCSS.
PRIMARY PSAP:	The preferred answering location for 9-1-1 calls in a selected area.
PRIVATE BRANCH EXCHANGE:	See PBX.
PRIVATE LINE:	A telephone line used only for communication between two points and that does not connect with the public switched telephone network.

PROPAGATION:	Propagation is the way radio waves spread out from the transmitting antenna. Different frequency radio waves bounce, scatter, and become absorbed differently.
PSAP:	Public Safety Answering Point; answering location for 9-1-1 calls. Sometimes called a 9-1-1 center.
PTT:	Push to Talk. Usually refers to use of a transmit button or bar on a radio.
PUBLIC SAFETY AGENCY:	Any unit of state or local government, a special purpose district, or a private firm that provides or has authority to provide firefighting, police, ambulance, or emergency medical services.
RACK:	A metal frame for mounting electrical equipment.
RADIO FREQUENCY SPECTRUM:	Electromagnetic waves with frequencies between 100 kHz and 300 GHz are generally called radio waves. Frequencies are grouped into usable clusters (bands) for different purposes, depending on the spreading or propagation characteristic of that band.
REACT:	Radio Emergency Action and Coordination Team. A nationwide group of volunteers that monitor the citizen band radio Channel 9 for emergency communications from motorists in need of assistance.
RECEIVER:	An electronic device capable of receiving electromagnetic transmissions on a specific frequency and converting the transmissions into intelligible sounds or usable data.
REPEATER:	A radio station that receives a signal and retransmits it, usually to extend coverage for the base transmitter. Typically mounted on a high elevation. See figure.



- RF:** Radio frequency. Generally used to refer to signals that consist of high frequency electromagnetic waves, such as radio.
- RFI:** Radio Frequency Interference. Interference to an electronic device.
- RING:** One of the two wires in a telephone "pair," the other being tip. Term is a carry-over from the old operator plugs with three contacts on each—the tip, a ring contact, and the metal sleeve.
- RINGBACK:** Permits the PSAP answerer to ring a hung-up telephone on a Basic 9-1-1 line. This feature is useful when a calling party has failed to provide all necessary information to the PSAP before hanging up.
- RINGDOWN:** A telephone circuit that rings the remote end whenever the handset is lifted (off hook). Commonly used for quick, reliable access between emergency facilities.
- RURAL:** Nonurban and areas of lower population density. Generally conceived to be an area that has fewer than 30,000 persons within a 20-mile radius. See Urban.
- SATELLITE RECEIVER:** See Voting Receiver. Used to improve reception from mobile units. Not to be confused with a television satellite receiver used for program reception.
- SCANNER:** A radio that allows fast, sequential channel scanning for traffic. Scanning will pause when a busy channel is found.
- SECONDARY PSAP:** A location to which 9-1-1 calls are sometimes transferred to for dispatch.
- SELECTIVE ROUTING:** A telephone system feature that allows 9-1-1 calls originating from within an exactly defined geographical region (usually a political jurisdiction) to be answered at a designated PSAP, regardless of which telephone exchange he is in. Commonly a component of an Enhanced 9-1-1 system.

SELECTIVE TRANSFER:	Another term for a (fixed) transfer that allows the call answerers to transfer an incoming call by pressing a single button. For example, one button would transfer calls for to a fire district, and another button would be used for the state patrol.
SERS (SPECIAL EMERGENCY RADIO SERVICE):	A group of frequencies allocated by the FCC in Part 90 of their rules for various emergency services.
SERVING CENTRAL OFFICE:	The telephone company's central office area in which a given PSAP is located.
SIGNAL-TO-NOISE RATIO (SNR, S/N RATIO):	The measure of the strength of a signal compared to the noise present in the channel. Often expressed in decibels (dB).
SIMPLEX:	A condition in which two persons in conversation must take alternating turns listening and speaking, because the channel on which they are communicating cannot carry signals in both directions at the same time (e.g., a single radio channel).
SKIP:	Some signals transmitted in the VHF band may bounce at a low angle between the surface of the earth and atmospheric layers, "skipping" for great distances. This can result in interference with other radio systems.
SOLID STATE:	Equipment using transistors and integrated circuits, as opposed to vacuum tubes. Except in certain high power radio transmitters, vacuum tubes have been entirely replaced by solid state circuits.
SPEED CALLING:	Dialing of a special code causes telephone equipment to automatically dial a pre-designated telephone number.
SQUELCH:	Silencing the audio from a radio when there is either (1) no carrier or signal present or (2) when signals in the channel do not have the "key" CTCSS tone expected by the receiver.
SS7 (SIGNALING SYSTEM NUMBER SEVEN):	A data network used to move telephone signaling and other information around separately from actual call paths. Allows high performance telephone call setup, routing, and

data base access among the elements of a switched network, making SS7 suitable for control of Enhanced 9-1-1 networks though it is not yet widely available.

SWITCHED NETWORK:

A complex of telephone channels and switches that can automatically establish communications between calling and called stations.

SWITCHHOOK STATUS INDICATION:

The PSAP can monitor, by means of supervisory lamps, the "hook" status of a calling party being held. Indicates whether the calling party still is connected, is on hold, or has disconnected.

SYNTHESIZED RADIO:

Radio equipment that accommodates a great variety of channels because it digitally "synthesizes" frequencies from a single, stable source.

TAIL:

Automatic equipment such as repeaters often have latency programmed into their operation for various reasons. Radio carrier from a repeater may remain for a second after a base or mobile has stopped transmitting. This delay on the part of the repeater is known as a repeater tail.

TANDEM CENTRAL OFFICE:

A telephone company central office (CO) that switches calls to other switches. The tandem CO that handles precise routing of 9-1-1 calls is called a selective routing tandem.

TARIFF:

A document filed by a telephone company with the state Utilities and Transportation Commission that lists the communication services offered and gives a schedule of rates and charges.

TDD:

See Telecommunications Device for the Deaf.

TELECOMMUNICATOR:

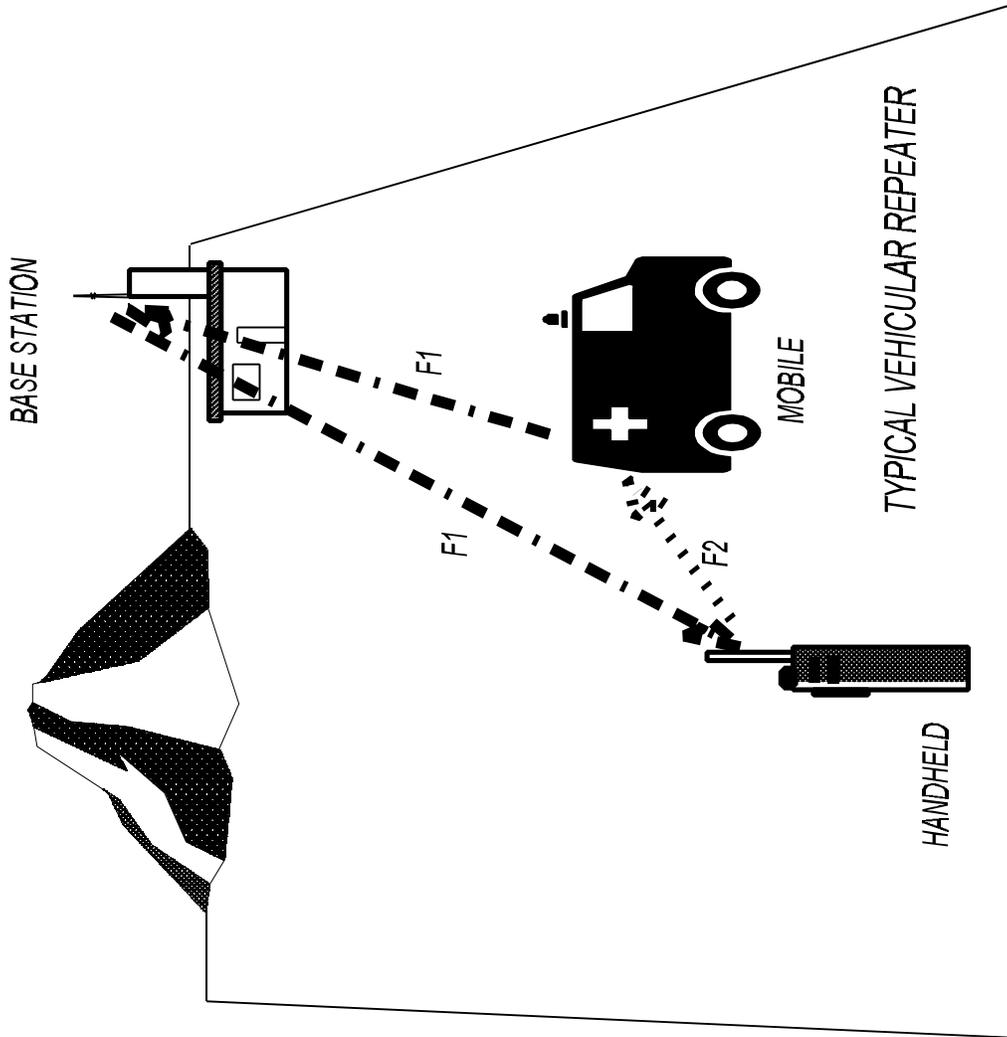
An individual trained for and employed in public safety communications. The term applies to persons answering telephones, operating radios, and operating data terminals in a PSAP.

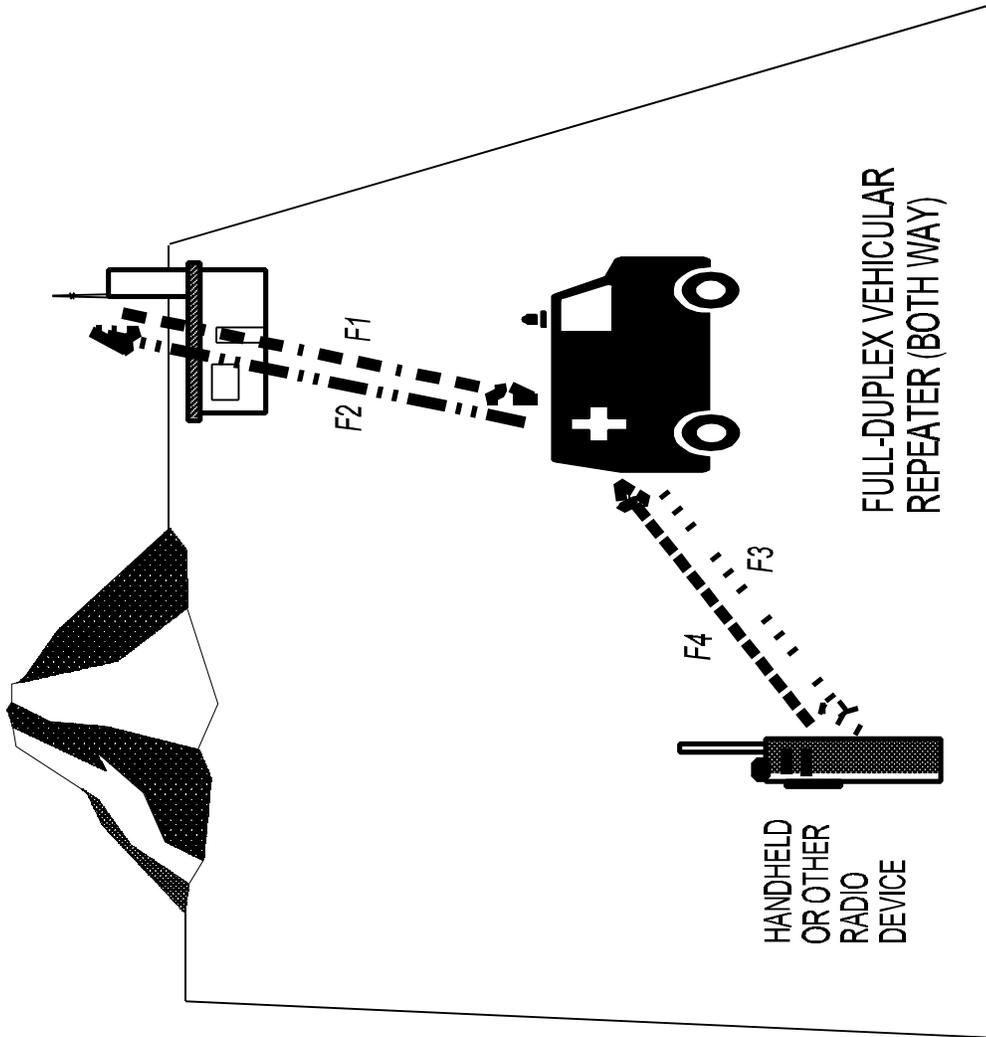
TELEMETRY:

Sending data on local conditions to a remote site. The data may consist of temperatures, pressures, or human medical information, for example.

TELECOMMUNICATIONS DEVICE FOR THE DEAF (TDD):	A keyboard and display unit connected via the caller's phone to a similar device at the PSAP, which allows an emergency call to be made without speaking, or hearing. Sometimes referred to as a "TTY."
TELEPHONE ACCESS LINE:	See Access Line.
TELEPHONE LINE:	A service connection from a telephone company central office that gives access to the telephone network. See ACCESS LINE.
TELEPHONE UTILITY:	Means any public utility that is engaged in the business of supplying the public with telephone or telephonic service or operating a telephone exchange.
TERMINAL EQUIPMENT:	Telephone equipment that when connected to a telephone line can answer, originate, or otherwise control a telephone connection.
TIP:	One of the two wires in a telephone pair, the other being ring.
tone:	An audio-frequency signal of relatively steady level and frequency.
TOUCH-TONE:	Bell System service mark for DTMF dialing. See "DTMF".
TRANSCEIVER:	A radio unit designed to both send and receive.
TRANSFORMER:	A device using magnetic coils to pass electrical energy. Important in providing electrical isolation and in reducing voice circuit susceptibility to some kinds of noise.
TRANSMITTER:	A radio signal source with a controlled frequency, usually allowing modulation with voice or data for transmission to a remote receiver.
TRUNK:	A circuit that is designed to connect switching equipment to switching equipment, as opposed to a line that connects a terminal or user to switching equipment.

TRUNKING RADIO:	Radio systems that use a limited number of radio channels to provide a large number of "private" talking channels. This is done with computer-controlled reassignment of channels based on momentary demand and, giving very flexible, private access to many groups of users. Commonly applied on the 800 MHz bands.
TTY:	Teletypewriter. See "TDD."
TWO-STAGE SYSTEM:	The PSAP call answering and dispatching functions are performed by separate individuals.
UHF:	The Ultra-High Frequency portion of the radio spectrum is often used for communications. UHF public safety channel frequencies are typically on the order of 450 MHz. UHF radio works over shorter distances than HF or VHF and is more influenced by terrain.
UPS (UNINTERRUPTABLE POWER SUPPLY):	A battery-supported power unit used to provide electricity to critical equipment in the event of failure of commercial power. It typically has a capacity on the order of minutes or hours.
VEHICULAR REPEATER:	A radio repeater carried by a vehicle to extend the range of lower-powered hand-held radios that may be operated near the vehicle. Full duplex repeaters can provide telephone-like communications and telemetry. See figures.
VHF:	The Very-High Frequency portion of the radio spectrum is often used for communications. VHF public safety channel frequencies are typically on the order of 150 MHz. VHF radio works over shorter distances than HF but generally longer than UHF.
VOICE GRADE:	A channel that offers a bandwidth of about 300 Hz to 3,400 Hz (3.4 kHz) is voice grade.
VOTING RECEIVER:	One of a group of receivers deployed in an area to improve reception of mobile transmissions. The receivers "vote" to determine which has the best reception, and the winner is selected for use.





WATT:

A measure of electrical power, closely related to heating ability. The radiated power of a typical public safety radio is less than a household light bulb, ranging from 5 watts to 150 watts. A personal hair dryer uses 1,000 watts (1 kilowatt).

WAVELENGTH:

A physical dimension associated with a radio frequency. At the speed of light, a radio wave will move a certain distance in each cycle; this is an important factor in the design of antennae and in propagation characteristics. The wavelength at 450 MHz (UHF) is about 2 feet, and antennae are often made to be one-quarter wavelength long; a simple 450 MHz antenna would then be just over 6 inches long.