MEDICAL ISSUES
NOTES FOR THE INSTRUCTOR

During this unit you will describe several medical issues of concern during and after disasters. This unit builds, in particular, on the material contained in the Medical Control unit.

Major points to be made include:

1. Triage is an absolute necessity for effective personnel usage.

2. Correct processing of medical intervenors. Make special note of the need to insure that these personnel are properly identified and referred to the command post (or in some cases to the incident commander and/or the EMS officer).

3. Disaster planning is an effective way of resolving potential problems prior to their occurance. For example, planning should resolve problems of incompatible equipment or protocols.

MEDICAL ISSUES

In this unit you receive an overview of the major medical issues that may arise during and immediately after disaster operations.

At the end of this unit you should be able to:

1. Discuss several medical issues that are of concern during disaster operations.

2. Define triage and list its objectives.

3. Describe the processing of a medical intervenor.

4. List two medical issues that deal with ALS.

In this unit we will do the following:

1. Discuss triage: it's definition, objectives, and rationale.

2. Listen to a lecture on medical control and how to process medical intervenors.

3. Discuss the concept of advanced life support as it applies to disaster operations.

NOTETAKING OUTLINE

1. Triage

   A. Definition

   B. Objectives

   C. Categories

2. Medical Control

   A. Protocol Compatability

   B. The Medical Intervenor

3. Advanced Life Support

   A. Equipment Standardization

   B. Documentation

   C. Personnel Integration

MEDICAL ISSUES
BACKGROUND READING FOR THE STUDENT

Close cooperation between EMS personnel and the Emergency Program Manager is especially necessary during disaster operations. This unit presents an overview of several major issues and concerns, both operational and administrative, that should be addressed.

MEDICAL ISSUES

Triage, medical control, and advanced life support will all be subject to scrutiny during, and after, a disaster. Each of these three areas should by now be familiar to the Emergency Program Manager. However, special concerns often arise during a disaster.

1. TRIAGE

The word "triage" is derived from a French word which means "to sort, or choose". It has been in the English vocabulary for several hundred years: products (such as coffee beans) were sorted according to quality. In the military usage of the word it meant a sorting station for wounded personnel, who would be sent on to a more appropriate facility. A working definition of the word follows:

> TRIAGE is the assessment and classification of patients in order to provide efficient and effective treatment and transportation.

It is understood that in a disaster our resources are often

limited. Consequently, we attempt to make the best use of what we have in manpower and equipment. This includes making the difficult decision to "bypass" a victim who, after assessment, appears to be unsalvable. This is done so that other patients, who can benefit from our assistance, will receive needed emergency medical care in a timely manner.

Triage Objectives

The objectives that we desire to accomplish via triage include: 1) rapid patient assessment; 2) immediate (but brief) life-sustaining care, as necessary; 3) "tagging" and sorting of patients; and 4) medical treatment/transportation given to most critically injured. Finally, medical treatment and transportation is given to other patients according to the severity of their injuries.

Triage Rationale

Anyone presented with a crowd of milling patients, some injured more seriously than others, knows that order must be brought to this chaos. Mere patient assessment, without documentation, wastes valuable time since other rescuers must perform another patient assessment, ad infinitum. Thus, as each patient is given a quick assessment a tag, usually color-coded, is affixed to the patient. The rescuer also jots some brief comments on the tag. These comments include recording basic patient identification, results of physical assessment, treatment given, etc. Color-coded tags allow for immediate

visual recognition of the various categories of patients.

Triage Categories

Generally, there are four categories of patients: minor injuries, urgent injuries, life-threatening (but correctable) injuries, and victims who are dead. After the patients are sorted into these broad categories they can be given further emergency medical treatment and moved to a secondary triage area prior to transportation. Usually, at the secondary triage area a physician (or the highest medically trained person) performs an additional physical assessment and confirms or corrects the tag. Further medical care is often rendered at this sorting station.

Patient Transportation

At this point, a designated transportation officer arranges for the most appropriate method of evacuation (i.e., ground ambulance, helicopter, school bus, etc.). It is extremely important for the transportation officer to keep a record of where each patient is sent. Most of the triage tags have a perforated strip at the bottom or corner for the transportation officer's use. In addition, the transportation officer, or designated assistant, must advise the receiving hospital of the patient's impending arrival so that the emergency department, intensive care unit, etc., is ready. Finally the dead are tagged and moved to a temporary morgue for definitive identification and disposition of the remains.

Remember that triage is a simply a method of patient "sorting" that maximizes scarce EMS manpower.

2. MEDICAL CONTROL

The concept of medical control as a method of securing quality medical care is as necessary during a disaster as it is at any other time. Medical control is defined as the provision of adequate medical supervision designed to insure quality medical care. Certainly, the final product (patient care) will be critiqued, scrutinized, and "blitzed" by the media to the ultimate degree. Any mistakes, even minor ones, may outweigh much of what is done well at a disaster. Interface between jurisdictions increases overall manpower. Yet at the same time it also increases the potential for medical control problems. Personnel trained by different hospitals, operating with different procedures and equipment, are working at a built-in disadvantage.

Protocol Compatibility

Regional cooperation and planning can minimize problems prior to the occurance of a disaster. Objective analysis of most operational ALS protocols will usually reveal that they are more similar than dissimilar. The commonalities of these protocols should be emphasized. By standardizing these protocols many potential operational problems can be avoided.

The Medical Intervenor

One additional area that the medical control element should address is the handling of the on-scene medical intervenor. Usually, a medical intervenor is a physician; but any medical person (EMT, nurse,etc.) not part of your EMS system could also be considered a medical intervenor. At the scene of a disaster these people can be personnel-extenders or "big trouble". The medical director of your EMS system, with input from others (including you), should devise basic guidelines on how to handle on-scene medical intervenors. The most appropriate place to codify these guidelines is in your system's ALS protocols.

The guidelines should include the following: identification of the medical intervenor, examples of activities that they may perform on-scene, and a statement that indicates that ultimate medical authority rests with your system's medical director. After the guidelines are written the medical control element should insure that all personnel in the system understand how to handle medical intervenors that appear at the scene of a disaster.

3. ADVANCED LIFE SUPPORT

In the field of EMS, advanced life support (ALS) is a concept that is taken almost for granted. Yet, during a disaster the concept of advanced life support...of bringing the skills of the hospital to the scene via paramedical personnel takes

on great importance. The paramedics become the "cutting edge" of the whole EMS disaster effort. The range of sophisticated skills that paramedics perform; such as starting IVs, giving medications, etc., are known as advanced life support techniques.

Equipment Standardization

Once again, in the planning stages of any regional system standardization of protocols and equipment pays dividends at the scene of a disaster. Since the contents of most drug boxes are largely similar it should be no inconvenience to standardize the types of medications carried, and their physical location in the drug box. Likewise, other pieces of ALS equipment (such as monitor/defibrillators, medical anti-shock trousers, IV administration sets,etc.) should, if possible, be standardized.

Documentation

One element of ALS (and also of basic life support) that is often forgotten during, and even after, a disaster is the documentation of what treatment has been rendered, and to whom. These specifics are needed for several reasons. For example, documentation of treatment rendered assists the medical director in determining appropriateness and adequacy. Another, less pleasant, reason is to refresh the memories of personnel subpoenaed as the result of legal activity.

Personnel Integration

The integration of personnel into useful, temporary work teams can, indeed, be accomplished on the scene. But, this process can be facilitated by training EMS, and other disaster, workers together both in classrooms and during drills. Public safety officers, who have completed a first responder course, can also assist basic EMTs or paramedics in performing emergency medical care.

COMMUNICATIONS
NOTES FOR THE INSTRUCTOR

During this brief unit you will reiterate the need for Emergency Program Managers and others on the planning team to communicate on the interpersonal level.

Next, you will quickly describe some of the more common types of communications equipment that EMS personnel use. In all probability many of your students will be familiar with much of this equipment. The point to be made, then, is that this is one area where the same technical language is spoken.

In closing this unit indicate to the class that there is an extensive glossary included at the end of the unit for their out-of-class use.

COMMUNICATIONS

In this unit you will learn about the different types of EMS communications systems.

At the end of this unit you should be able to:

1. List several different types of EMS communications equipment.
2. Describe one communications concept that may prove useful in a disaster.

In this unit we will do the following:

1. Discuss the two different types of communication,
2. Listen to a lecture on the forms of electronic communication used by EMS agencies,
3. Discuss other options for electronic communication.

NOTETAKING OUTLINE

1. Types of Communication

   A. Interpersonal

   B. Electronic

2. EMS Electronic Communication

3. Other Options

COMMUNICATIONS
BACKGROUND READING FOR THE STUDENT

TYPES OF COMMUNICATION

It the broadest sense there are two types of communication: interpersonal and electronic. In this course the bulk of the classroom time is spent on electronic communication. Some brief remarks, however, are in order about interpersonal communication.

Interpersonal Communication--The highest level of interpersonal communication between the emergency program manager and others on the emergency management team is absolutely essential if disaster planning and operations are to be handled effectively.

You must make a special effort to communicate with these other team members: in particular with the police, fire and EMS personnel. In turn they should render you that same courtesy.

The content of this course is designed to make communication with EMS people easier. Many of their technical terms are explained in detail during the course. Terms like "medical control", "advanced life support", and "abandonment" should now have meaning for you. There are other terms that have not

been explained here. For these you may find a medical dictionary or local paramedic helpful. How ever you accomplish it learn to speak the language of EMS.

Electronic Communication--One type of communication method gaining in popularity is the mobile telephone. Several recent disasters have proved their value. By using the vehicular-mounted telephone the EMS officer can have the operator keep the line "open" in a disaster situation. Thus, a clear line is available for equipment and personnel requests.

The radio is the commonest mode of communication during day to day operations and during disasters. EMS personnel use VHF (Very High Frequency) radios to transmit information between ambulances and their dispatch/communications center. In addition the Federal Communications Commission (FCC) has allocated 16 frequencies into 8 "medical channels" in the UHF (Ultra High Frequency) range. These UHF channels are usually devoted to the transmission of voice coupled with telemetry. Essentially, telemetry is a method of connecting a monitor/defibrillator to a patient and to a transmission system. This permits the paramedic to send both voice and a signal of the patient's heart rythmn to a hospital-based doctor.

Overview of System Availability--As an Emergency Program Manager you probably already have a good working knowledge of radio systems. The EMS system has many of these same systems in operation.

The simplest type of radio system is simplex. This means that one frequency is used and only one person may speak at a time. In duplex operation two frequencies are used and simultaneous talk can take place. Duplex is similar in concept to the ordinary telephone. Often a repeater is used to boost the range of a portable radio. Usually the repeater is located in the ambulance itself.

The world of public safety communications changes daily. But there is a non-profit organization, the Associated Public Safety Officers Association, which has Chapters in most states. They can assist you with specific technal information on the radio systems in operation in your area. In addition a glossary is included at the end of this unit.

Other Options--The EMS system in your area should have many other communications options. For example, it is not uncommon for their dispatch/communications center to monitor the Citizan's Band radio emergency channel 9. They also may have made some plans for the use of Ham radio operators and the REACT system. In addition they may be included in a special hospital radio system, the Hospital Emergency Administrative Radio (HEAR). Inquiries should disclose what they are now using or contemplating using.

GLOSSARY OF COMMUNICATIONS TERMS

ANTENNA: A system of wires or electrical conductors employed for reception or transmission of radio waves. Specifically, a radiator which couples the transmission line or lead-in to space, for transmission or reception of electromagnetic radio waves. (Also known as aerial.) (See also gain)

AUDIO: Pertaining to frequencies corresponding to a normally audible sound wave. The voice component of the transmitted signal. The normal ear responds to audio frequencies.

BAND: A range of frequencies between two definite limits. By international agreement, the radio spectrum is divided into nine bands. For example the very high frequency (VHF) band extends from 30 MHz to 300 MHz. Term applied to a group of frequencies.

BASE STATION: An item of fixed radio hardware consisting of a transmitter and a receiver. A land station in the land mobile service carrying on a service with land mobile stations.

BROADCAST: Radio or television transmission intended for general reception.

CARRIER: Radio wave radiated by a transmitter without modulation.

CHANNEL: Sometimes used synonymously with "frequency." It is the electronic signal path through which radio frequency flows.

CHANNEL, RADIO: An assigned band of frequencies of sufficient width to permit its use for radio communication. The necessary width of a channel depends on the type of transmission and the tolerance for the frequency of emission.

CO-CHANNEL INTERFERENCE: Interference caused by other parties using the same transmitting frequency already being used.

COMMUNICATIONS LINK: Established communications between two parties. Example: Emergency Program Manager to units on scene.

COMMUNICATIONS NETWORK: A combination of links that are complete as to some specific function. Examples: A network to serve command personnel; A network to serve air-to-air control.

CONTINUOUS DUTY: A rating applied to receivers and transmitters to indicate their capability for use in a continuous duty cycle (as opposed to the term "intermittent duty").

CONTROL CONSOLE: A desk-mounted enclosed panel which contains a number of controls used to operate a radio station.

COVERAGE: In a radio communications system, the geographic area where reliable communciations exist; usually expressed in terms of miles extending radially from a fixed radio station.

CRYSTAL: An item of electronic equipment which determines the exact frequency to be utilized in a radio system. A device which controls the exact operating frequency of the transmitter or receiver.

CRYSTAL-CONTROLLED TRANSMITTER OR RECEIVER: A radio transmitter or receiver in which the carrier frequency is controlled directly by a crystal oscillator.

DASH MOUNT: Term applied to equipment capable of installation under and/or attached to the vehicle dash panel.

DECIBEL (dB): A unit which expresses the level of a power value relative to a reference power value. Specifically, the level of a power value P relative to a reference value PR in decibels is defined as $10 \log_{10} (p/P_r)$.

DEMODULATION: The process of recovering the modulating function from a modulated wave.

DIRECTIONAL ANTENNA: An antenna possessing the ability to strongly radiate signals in a specific direction.

DUPLEXER: A device which is used in radio equipment to provide simultaneous transmit and receive (full duplex operation) on a single antenna.

DUPLEX OPERATION: The operation of transmitting and receiving apparatus at one location in conjunction with associated transmitting and receiving equipment at another location, the processes of transmission and reception being simultaneous. The operation of associated transmitting and receiving apparatus concurrently as in ordinary telephones without manual switching between talking and listening periods. A separate frequency band is required for each direction of transmission.

ECG (Abbreviation of Electrocardiogram): A visual representation of heart muscle electrical activity.

FACILITY: A communciations facility is anything used or available for use in the furnishing of communications service.

FREQUENCY: The number of complete cycles per unit of time. When the unit of time is one second, the measurement unit is Hertz (cycles per second).

FREQUENCY BAND: A continuous range of frequencies extending between two limiting frequencies.

FREQUENCY MODULATION (FM): A method of modulating a carrier-frequency signal by causing the frequency to vary above and below the unmodulated value in accordance with the intelligence signal to be transmitted. The amount of deviation in frequency above and below the resting frequency is at each instant proportional to the amplitude of the intelligence signal being transmitted. The number of complete deviations per second above and below the resting frequency corresponds at each instant to the frequency of the intelligence signal being transmitted.

GAIN OF AN ANTENNA: The effectiveness of a directional antenna in a particular direction, compared against a standard (usually an isotropic antenna). The ratio of standard antenna power that will produce the same field strength in the desired direction.

GEOGRAPHIC ASSIGNMENT: The assignment and use of communications channels on a dedicated user basis within a given geographic area.

INTERFERENCE: Interference in a signal transmission path is either extraneous power which intends to interfere with the reception of the desired signals or the distribution of signals which results in loss of signal or distortion of information.

HALF-DUPLEX CHANNEL: A communication channel providing duplex operation at one end of the channel, but not the other. Typically, the base station is operated in the duplex mode. (For comparison, see "Simplex Channel").

HIGH BAND VHF: Radio frequencies from 142 to 174 MHz.

INTERMODULATION DISTORTION: Nonlinear distortion characterized by the appearance of frequencies in the output, equal to the sums and differences of integral multiples of component frequencies present in the input.

LAND MOBILE: Communications between base stations and mobile radios; or from mobile radio to mobile radio.

LOW BAND VHF: Radio frequencies from 30-50 MHz.

MEDICAL CONTROL TERMINAL: A unit of electronic equipment located in hospital emergency rooms and/or cardiac care units which displays ECG and records voices and data information received from an EMS scene by transmission via radio or telephone path.

MEGAHERTZ (MHz): This is a common technical term that refers to the frequency of the radio. 1 MHz = 1,000,000 cycles per second or hertz.

MICROWAVE: A term applied to radio waves in the frequency range of 1,000 MHz and upward. Generally defines operations in the region where boundaries are used instead of conventional lumped-constant circuit components.

MOBILE RELAY STATION: A fixed station established for the automatic retransmission of mobile service radio communications which originate on the transmitting frequency of the mobile stations and which are re-transmitted on the receiving frequency of the mobile stations.

MOBILE STATION: A two-way radio station in the mobile service intended to be used while in motion or during halts at unspecified points.

MOBILE UNIT: A two-way radio equipped vehicle or person. Also, sometimes the two-way radio itself, when associated with a vehicle or person.

MODULATION: The process of modifying some characteristic of an electromagnetic wave (called a carrier) so that it varies in step with the instantaneous value of another wave (called a modulating wave or signal). The carrier can be a direct current, an alternating current (providing its frequency is above the highest frequency component in the modulating wave), or a series or regularly repeating, uniform pulses called a pulse chain (providing their repetition rate is at least twice that of the highest frequency to be transmitted). Strength of your voice applied to the microphone.

MONITOR: To listen to mobile radio messages without transmitting.

MULTIPLEX OPERATION: Simultaneous transmission of two or more messages in either or both directions or the same transmisison path.

OMNI-DIRECTIONAL ANTENNA: An antenna that radiates signals with equal strength in all directions.

OUTPUT: The energy resulting from the work the radio performs. Power output: the strength of the signal as it leaves the transmitter. Audio output: the strength of the voice wave as it leaves the speaker. Both are usually measured in watts.

PERSONAL RADIO: A small portable radio intended to be carried by hand or on the person of the user.

POINT-TO-POINT RADIO COMMUNICATIONS: Radio communication between two fixed stations.

PORTABLE/PERSONAL COMMUNICATIONS EQUIPMENT: Radio transmitters, receivers or combinations of both, which can be handcarried or worn on the person, and which are operated from their own portable power sources and antenna. Personal equipment is further defined as that which is capable of being worn within the clothing, and is, therefore, subject to less severe environments than other classifications of portable equipment.

PORTABLE RADIO: A completely self-contained radio which may be moved from one position to another.

PUSH-TO-TALK OPERATION (PTT) (PRESS-TO-TALK): That method of communication over a speech circuit in which transmission occurs from only one station at a time, the talker being required to keep a switch operated while he/she is talking.

RADIO INTERFERNCE: Undesired disturbance of radio reception. Man-made interference is generated by electric devices, with the resulting interference signals either being radiated through space as electromagnetic waves or traveling over power lines or other conducting media. Radiated interference is also due to natural sources such as atmospheric phenomena (lightning). Radio transmitters themselves may interfere with each other.

RADIO RELAY SYSTEM (RADIO RELAY): A point-to-point radio transmission system in which signals are received and retransmitted by one or more intermediate radio stations.

RADIO STATION: A complete assemblage of equipment for radio transmission or reception, or both.

REAL TIME ALLOCATIONS: The assignment and use of communications channels on an incident by incident basis.

RELAY STATION: Radio stations that rebroadcast signals the instant they are received, so that the signal can be passed onto another station outside the range of the originating transmitter.

REMOTE: A control, usually desk mounted, for operating a distantly located station transmitter.

REMOTE CONTROL EQUIPMENT: The apparatus used for performing monitoring, controlling, supervising, or a combination of these, a prescribed function or functions at a distance by electrical means.

REPEATER: A combination of apparatus for receiving either one-way or two-way communications signals and delivering corresponding signals which are either amplified or reshaped or both.

REPEATER CHANNEL: A two-frequency channel that utilizes an intermediate repeater to extend the range of the channel. The repeater unit simultaneously receives on one frequency and transmits on another. It is inefficient in that two discrete frequencies are required to establish one communications channel.

REPEATER STATION: An operational fixed station established for the automatic retransmission of radio communications received from any station in the mobile service.

SERS (SPECIAL EMERGENCY RADIO SERVICE): That portion of radio communications frequency resources authorized for use in the alleviation of emergency situations endangering life or property.

SIMPLEX CHANNEL: A communication channel providing transmission in one direction only at any given time.

SIMPLEX CHANNEL, SIGNAL FREQUENCY: A simplex channel utilizing only one assigned band of frequencies. (For comparison see "Simplex Channel, Two-Frequency.")

SIMPLEX CHANNEL, TWO-FREQUENCY: A simplex radio system utilizing two distinct assigned bands of frequencies. (For comparison see "Simplex Channel, Signal Frequency.")

SIMPLEX OPERATION: A method of operation in which communication between two stations takes place in one direction at a time.

SINGLE-FREQUENCY CHANNEL: A channel which is direct from transmitter to receiver. Transmitter and receiver frequencies are identical.

SPECTRUM: Any series of radiant energies arranged in order of wavelength or frequency. The entire range of electromagnetic radiation extending from the longest known radio waves to the shortest known cosmic rays.

SQUELCH: A circuit function that acts to suppress the audio output of a receiver when noise power that exceeds a predetermined level is present.

SQUELCH CONTROL: The control to eliminate receiver noise when no signal is being received. It should be set up to just eliminate this noise. Turning it further will reduce the receiving range of the receiver.

SUBCARRIER: A carrier used to generate a modulated wave which is applied, in turn, as a modulating wave to modulate another carrier.

SYNTHESIZER: Radios in which each operating frequency is determined and controlled by some multiple of one single precisely controlled quartz crystal. Each multiple can be selected to dial-up the required operating frequency. These are truly all-channel radios within their frequency range. FM radios with synthesizer channel selection techniques are just now coming on the market.

TALK BACK: A term commonly utilized to describe the transmission of radio communications from portable and mobile radios to a base radio.

TALK OUT: A term commonly utilized to describe the transmission of radio communications from a base station radio to mobile and portable radios.

TELECOMMUNICATION: Communication at a distance, as in telegraph, telephone cable, or electromagnetic radiation.

TELEPHONE PATCH: An instrument that allows a radio to be used as an entrance and exit point from the commercial telephone system.

TONE: Tone as applied to a selective signaling system is an audio or carrier of controlled amplitude and frequency.

TONE CODE: Tone code specifies the character of the transmitted tone signal required to effect a particular selection.

TRANSCEIVER: The combination of radio transmitting and receiving equipment in a common housing, usually for portable or mobile use, and employing common circuit components for both transmitting and receiving. Generally used in push-to-talk operation.

TRANSMISSION LINE: A material structure forming a continuous path from one place to another, for directing the transmission of electromagnetic energy along this path.

TWO-WAY RADIO: A radio which is able to both transmit and receive.

ULTRA HIGH FREQUENCY (UHF): Radio frequency from 300 to 3000 MHz. The upper portion from about 1000 to 3000 MHz is often referred to as low capacity microwave.

UNIT IDENTIFIER: An identifier is assigned by the licensee to a mobile station for exact identification as "Car 3" or "797" etc. Not the same as or eliminating the need for FCC assigned station identifier or call sign.

VEHICULAR REPEATER: A vehicular unit that is used to relay signals to and from a radio remote to the vehicle.

WHIP: Term applied to the long, slender mobile antenna usually found mounted on vehicle bumper.

MUTUAL AID
NOTES FOR THE INSTRUCTOR

In this unit you will define mutual aid. Give special emphasis to the phrase "as needed" in the definition. Mutual aid, in other words, is an orderly way of obtaining resources when you decide that you need them.

Also discuss the need for expanding existing mutual aid agreements to include activities of special pertinence during disasters. These include operational command issues and provision for post-disaster critiques.

Close the unit with a restatement of the need for Emergency Program Managers to have input in the development of mutual aid agreements.

MUTUAL AID

In this unit you will review the concerns involved in the provision of mutual aid. At the conclusion of this unit you should be able to:

1. Define mutual aid
2. Be able to cite three practical considerations that deal with mutual aid.

In this unit we will do the following:

1. Define the concept of mutual aid.
2. Discuss mutual aid practical considerations that the Emergency Program Manager should know.

NOTETAKING OUTLINE

1. DEFINITION OF MUTUAL AID:

2. PRACTICAL CONSIDERATIONS:

   A. EQUIPMENT INVENTORY

   B. FORMAL AGREEMENTS

   C. LOST/DAMAGED EQUIPMENT

   D. OPERATIONAL COMMAND

   E. POST-DISASTER CRITIQUE

MUTUAL AID
BACKGROUND READING FOR THE STUDENT

Most jurisdictions have on-going EMS mutual aid agreements with neighboring jurisdictions. Mutual aid is defined as:

> An agreement to provide reciprocal EMS service between neighboring areas on an "as needed" basis.

Daily responses across jurisdictional lines are common in most areas of the country. Since our disasters are initially handled in the same manner as our everyday emergencies mutual aid response can add manpower and equipment in our time of need. Many jurisdictions will commit up to 50% of their available manpower to a mutual aid disaster assistance response.

Practical considerations must be addressed in mutual aid responses. First, in the planning stage it is important to update the equipment inventory and distribution of surrounding jurisdictional areas. If you need three boats you need to know how far away they are located, what kind of condition they are in, what equipment they carry, etc.

Formal written agreements between jurisdictions can iron out potential problems before they can even occur. Questions about who will respond where and/or when, what ALS procedures are authorized, etc. can all be answered in ad-

vance.

The written agreement can also include some advice about avoiding equipment loss. In addition, it can clarify the format necessary for reporting lost or damaged equipment, and to what extent the "host" jurisdiction will reimburse "visiting" jurisdictions for these equipment shortfalls.

On-scene operational command is another area that can be pre-planned in a written agreement. Is the "host" jurisdiction always in command? Who takes charge if the "host" is represented by a basic EMT; while the "visitor" is a paramedic Captain? If a volunteer Lieutenant responds into a nearby jurisdiction does he take command from the "host's" paid (career) Sergeant? Questions like this need early resolution.

Once the disaster is under control the "host" jurisdiction should give some thought to presentation of a post-disaster critique. Each agency that was present at the scene of the disaster should be represented at the critique. Time should be allowed to ventilate complaints. Any constructive criticism should be researched further. Begin and end the meeting with an acknowledgement of your appreciation for the assistance rendered. If possible, mend all fences in-house.