

LAW ENFORCEMENT MANAGEMENT INSTITUTE

"NINE - ONE - ONE :
WHERE IT CAME FROM AND WHERE ITS GOING"

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NINE-ONE-ONE: WHERE IT CAME FROM AND WHERE IT IS GOING

INTRODUCTION

During the past few years, 9-1-1 has become a term indicating all types of emergency services. Law enforcement, fire, rescue, and emergency medical response units can all be mobilized with a single call to 9-1-1. No matter how well the system is utilized in a community, there are a number of considerations that literally mean the difference between life and death. In keeping with the belief that local governments should maintain the responsibility for determining and responding to their own emergency service needs, the philosophy has traditionally been to make 9-1-1 available to any community or municipality electing to install it. It is hoped, however that the value and benefits of a single emergency telephone number will receive sufficient recognition across the country to bring about the nationwide implementation of 9-1-1.

The three-digit telephone number, 9-1-1, can provide the American public with direct access to an emergency answering center. It is the number that has been designated for reporting an emergency and requesting assistance. Many communities in the United States have modified their existing emergency reporting systems to accommodate the number. 9-1-1 is intended to become a nationwide emergency telephone number, as a public service with the primary objective of preserving life and property. Ideally, this means that nearly every American citizen and visitor to the country

who has access to a telephone could summon aid by dialing an easy-to-remember number, regardless of location, familiarity with the area, time of day or type of emergency. Such an ideal situation does not exist at this time.

HISTORY OF 9-1-1

The concept of a common emergency telephone number is not new. Similar systems have been in service in several European countries for many years. Great Britain was the first country to establish a universal emergency telephone number. Since 1937 any individual in the United Kingdom has been able to dial 999, receive a prompt response, and have their request for police, fire, ambulance assistance quickly and efficiently directed to the proper agency. In developing similar systems, other countries have provided emergency numbers: Belgium-900, Denmark--000, Japan--119, Canada---911. Sweden--90 000. Although the selection of the particular agency to act as the answering center may differ from country to country or within a country, the concept of a single number received at a central reporting agency has been well-accepted and has proven in practice to be an effective component of the total emergency response mechanism in those countries.²

Such a system had been discussed in this country for some time by public safety officials at all levels. In 1967 the recommendation of the President's Commission on Law Enforcement and

¹ 9-1-1 Reference Guide (San Antonio, Texas: Southwestern Bell Telephone Company, (1991), 1-2.

² David Yandell, "How did 9-1-1 Begin? What are the Benefits of 9-1-1?", APCO Bulletin Vol 57 No 6 (June 1991) 80.

Administration of Justice stated that a single police emergency number should be established at least within a metropolitan area and preferably over the entire United States. In January of 1968, the American Telephone & Telegraph Co. announced that within its serving areas the digits 9-1-1 were available for installation on a national scale.

When the concept of 9-1-1 was initiated, its requirement was simple. Provide a short, simple telephone number that almost everyone could remember to call when help was required. Most communities had numerous seven-digit telephone numbers listed in their directories for emergency agencies.

When telephone companies began to offer Basic 9-1-1 service, it appeared that the requirement had been met. Any person in need of emergency response needed only to remember to dial "9-1-1" and the call would be routed to an emergency response operator who could handle the request or immediately connect the caller to an agency that could. The cost of Basic 9-1-1 service was modest in relation to today's costs, and communities across the nation began to offer Basic 9-1-1.

The choice of the specific number 9-1-1 was based primarily on cost factors, the comparative ease with which telephone company equipment could be modified to accept the number and on other considerations which indicated that the digits would be easily remembered and dialed by most persons.

OPERATIONAL FEATURES

Types of Service

There are three different levels of emergency telephone service available to the public:

Basic 9-1-1 provides dedicated telephone trunk lines which allow direct routing of emergency calls to a Public Safety Answering Point (PSAP). In most cases, call routing is based on telephone exchange area, not municipal boundaries.

Enhanced 9-1-1 (E9-1-1) is a system which can automatically route emergency calls to a pre-selected answering point based upon the geographic location from which the call originated. It offers features such as Automatic Number Identification (ANI), Automatic Location Identification (ALI), and Selective Routing (SR).

Automatic Number Identification (ANI) is the ability to display the telephone number of the phone from which 9-1-1 was dialed. This system is the minimum level of service required by the 1987 legislation. Automatic Location Identification (ALI) is the ability to display the address of the phone from which 9-1-1 was dialed. Selective Routing (SR) provides automatic routing of the 9-1-1 call to the appropriate Public Safety Answering Point without the caller having to make the determination of which public safety agency to call. ANI is more cost

effective and does not require the database development or rural addressing functions associated with Automatic Location Identification and Selective Routing.³
Flaws and Benefits

A major flaw of the Basic 9-1-1 service became increasingly apparent as service became more widespread. If the caller for any reason could not communicate his or her location, the 9-1-1 operator could not provide immediate response. The only method of determining any locations was to have the call traced by the phone company. This could be done only if the caller could be kept from hanging up the phone and at best it took several minutes to accomplish.

The ability of telephone companies to offer Automatic Number Identification (ANI) with the incoming call offered a solution by displaying to the 9-1-1 operator the location from which the call originated: Automatic Location Identification (ALI). Selective Routing is the enhancement which sends the call to the appropriate jurisdiction.

The advantages of this system are many. Persons needing to summon emergency aid are often under severe emotional and sometimes physical stress. They may forget the seven-digit number to call. If a phone directory is available, the callers may be presented with a confusing list of numbers. If the callers are strangers in

³E9-1-1 Reference Guide (San Antonio, Texas: Southwestern Bell Telephone Company, (1991), 12-1.

the community, their situation is intensified because they may not even know the jurisdiction in which they are located.

The number, 9-1-1, is an especially easy one to remember. In times of emotional stress even the most simple, well-known, seven digit number can be quickly forgotten or confused. In addition, a short, simple number is easier for children, retarded or illiterate persons, and non-English speaking individuals to remember and use. As the use of 9-1-1 increases, so will the familiarity with the number, until dialing 9-1-1 becomes a nearly automatic response in the event of an emergency. It is also easier to dial for faster access to emergency services. Dialing a simple three-digit number is obviously easier and faster than dialing any seven-digit number. Ease of dialing or finding touch buttons is particularly important to the blind or someone needing to dial in the dark. The positions of the numbers on the phone key pad make it an easy number to dial and the possibility of misdialing is usually remote. However, in Corpus Christi, citizens often confuse the prefix "9-9-1" and misdial quite often. Options are being discussed with the PSAP manager and the Southwestern Bell Telephone Company which could place a time delay sensor on the equipment. If within a specified amount of time a fourth number is dialed, an intercept recording would be activated to alert the caller to the mistake. An additional option was to phase out and replace the prefix with a different one that would not be as easily confused with 9-1-1. The

third option and one currently being used, is to just "put up with it" and advise the caller to redial..

The ease of remembering and dialing the number, the potentially quick response by an emergency agency, and the fact that a community chooses to provide its citizens with such a system has encouraged a less-aphathetic attitude on the part of the public. It has a very positive benefit to the community in increasing citizen awareness and acceptance of its public safety agencies and in promoting a sense of responsibility toward fellow citizens. Travelers are often in totally unfamiliar surroundings and in a particularly vulnerable position in the event of an emergency. The 9-1-1 system provides these individuals with a greater sense of security.

Another great benefit is that calls are received by personnel especially trained to obtain accurate and complete information from persons who may be distraught or who have difficulty communicating because of age, language or other speech barriers. The call-takers are generally knowledgeable about the jurisdictions they serve and of the larger region so that calls can be redirected if necessary. The old method of dialing "0" for operator could connect the citizen with a phone operator in a different part of the state or even of the nation and with someone with only telephone equipment training.

.Conversations with City of Corpus Christi dispatchers and call-takers. Dialogue with S. Kent Butler, (October 1991).

Problems

It has been estimated that every man, woman, and child in the United States will call 9-1-1 only one time in their entire life. As a result of the publicized success stories and the media attention, overwhelming public support been achieved, but also overwhelming public expectation of flawless success. This expectation has been the result of extensive campaigns showing the dramatic stories where Enhanced 9-1-1 has saved lives. With more and more enhanced systems going on line, the success stories continue to receive national and local media attention. The weekly television show "Rescue 9-1-1" reflects dramatically successful call received through 9-1-1.

Success does not come with all calls to 9-1-1. Failures can be attributed to many factors, some of the familiar ones are:

1. The emergency response agency does not have sufficient resources for immediate response. Enhanced on-site service isn't going to come out of a phone line. "There is no life-support truck that is available in Mc Mullen County. It doesn't matter how much you call 9-1-1, it's still going to take 45 minutes to get (on site) help. If you want something different from that, either you move from Mc Mullen County or you find a way of arranging to do some local support (to provide the resource)."⁵

2. Inadequate training &/or improper procedures used by call-takers and dispatchers. The public's expectations are that

⁵Jay Nelson, Director 9-1-1 Network, interview by S. Kent Butler, September 6, 1991, tape recording, Coastal Bend Council of Governments, Corpus Christi, Texas.

they will receive adequate and trained assistance whenever they telephone.

3. Incorrect dialing by the victim. It is important to refer to the individual numbers and not by "nine-eleven". There have been instances of delayed calls due to citizens looking for the number "eleven" on the phone dial and at least one citizen looked up and used the seven digit phone number of a national store chain (7-11) in an attempt to report a problem.

4. Failure of the victim to properly communicate what the emergency is. Language, age, disabilities, and emotional states all contribute to miscommunication.

5. Death has occurred long before the call is made to 9-1-1. There are many other reasons that the call fails. Regardless of where the failure occurred, the headlines almost always say "Victim Dies: 9-1-1 Fails." In most cases, the 9-1-1 system performed as it was designed, but the victim is still dead and 9-1-1 is blamed.

Regardless of those concerns, there are a number of advantages for the public safety agencies. Total response time can be reduced. In the addressing database, information such as directions to the location can be entered. Upon receiving and verifying the address, the dispatcher can then relay the information to the responding units. Previously, procedures have been time-intensive, have involved a lot of paperwork and relied on an individual's memory. The new technology is more efficient and provides better service to the community. As a result, there is a higher degree of public confidence in the ability of its safety and emergency

resources to serve its needs. Priority calls are immediately identified when received in the answering center. Whether or not all calls are emergencies greatly depends on an continuing public education program in the use of 9-1-1 and on the efficient disposition of non-emergency calls.

Because calls are received at a central answering point, better coordination between emergency agencies is possible. It is of great value to both the public and emergency resources to have such a capability when multiple services are required to handle a single incident. Information about each and every location in areas served by the various individual agencies can be collected and shared.

The ability to collect, store, and disseminate information quickly and accurately is invaluable not only for the responding units but also in terms of productivity and economy for the taxpayers. Better record-keeping procedures are possible and almost inherent in the initiation and operation of a 9-1-1 system. The ultimate worth of such data is dependent on the use to which a community chooses to put the statistics it has collected. Administratively, the statistics are used to substantiate budget requests, project planning and design, or public education.

Growing public concern over the increase in crimes, accidents and medical emergencies and federal government awareness that current emergency reporting methods were inadequate has focused attention on a large and mobile population. A common emergency number makes sense. In 1973 the Office of Telecommunications

Policy endorsed the concept of 9-1-1 and urged nationwide implementation. The Commission on Civil Disorders and the Federal Communications Commission urged the telephone industry to provide a three-digit emergency telephone number.

Texas Implementation

Cities and metropolitan areas within Texas began buying and implementing various levels of 9-1-1 service from telephone companies. 9-1-1 service was limited to pockets of geographical areas and population. Greater public use and expectation for the service over wider areas prompted more discussions by policy makers. The inconsistencies of coverage and service were glaring.

As an example of a specific local level effort, the City of Corpus Christi purchased and installed an ANI 9-1-1 system in 1980/81. The City Council authorized the City Manager and the Safety and Risk Management Department to implement a 9-1-1 system for the citizens of Corpus Christi. In doing so, the dispatch offices of the Fire/EMS Department and the Police Department were combined. They were housed and administered by the Police Department. Two major flaws were apparent from the outset. 1) a portion of the city known as "Wood River" was serviced by General Telephone (GTE) and not by Southwestern Bell Telephone Company. Because of this, a special seven-digit number was created to substitute for 9-1-1 in that area: 888-HELP. This created ill will and resentment on the part of the citizens of that area. It was not until January, 1991, that this portion of the city received 9-1-1 service as a result of the legislation to provide state-wide

9-1-1 service. 2 The second problem was the opinion that "dispatchers are dispatchers" and that additional training or personnel would not be necessary. Experience has shown that reasoning to be faulty. Additional personnel have since been added but administrators are requesting still more. However, city budget funding and expenditures are suffering the same stress felt across the state and nation. The largest gain in the Communications Center has been in training. Administrators and supervisors have recognized the value of the basic training required by the Texas Commission on Law Enforcement Officers Standards and Education (TCLEOSE) for, dispatchers. In addition, continued in-service training programs for the newly-installed technology of computer aided dispatch and 800 MHz trunking radio system have been implemented and plans to incorporate Emergency Medical Dispatch protocols are at this time being coordinated by the director of Emergency Medical Service.⁶

In 1987, the 70th Texas Legislature passed House Bill 911 which was recodified in 1989 as Health and Safety Code, Chapter 771. This legislation required counties with a population of 120,000 or more to provide 9-1-1 service no later than 1995. Cities and counties with less than 120,000 population could also implement 9-1-1 under House Bill 911 by resolution of their governing bodies. The legislation allows for the financing, planning, and implementation of Enhanced 9-1-1 emergency telephone

⁶Conversations with City of Corpus Christi dispatchers and call-takers. Dialogue with S. Kent Butler, (October 1991).

service in communities throughout the State of Texas. In addition the bill created the Advisory Commission on State Emergency Communications (ACSEC) to oversee the fulfillment of this project.

Texas is using the intergovernmental approach to provide this service instead of a centralized method. The ACSEC is responsible for the coordination of implementation efforts for 9-1-1 service statewide, establishment of guidelines and standards, review and approval of Regional Plans, and establishments of fees and allocation of revenues. In doing so, the ACSEC provides advisory services to regional and local authorities and interacts with other state agencies and telephone companies in those areas where support is needed.

The Commission consists of 17 members, representing various public and private sector interest in the 9-1-1 intergovernmental effort. Five are "ex-officio" members and the remainder are appointed by the Governor, Lieutenant Governor, and Speaker of the House. The members include representatives from city and county government, an emergency communications district, the state's three largest telephone companies, state agencies, and the regional council association. Program administration is provided by the ACSEC staff.

Texas' 24 Council of Governments (COG's) are responsible for planning, implementing and administering the 9-1-1 systems in each geographic region.

Legislation requires each COG to develop a plan for providing 9-1-1 service throughout its multi-county region. Existing

emergency communications districts and other agencies are encouraged to participate in the regional planning and development. The administration *of* each plan can be by the Council of Governments., an existing emergency communications district, county or city government, or any combination--as submitted in the regional plans and approved by ACSEC.1

Developing the 9-1-1 plan, procuring, installing and testing of the equipment, building the required data bases, and training call-takers is a lengthy process requiring several years to complete. In order to develop a regional 9-1-1 plan, each regional planning commission or Council of Governments (COG) had to determine which areas in its geographic territory will participate, as well as equipment and funding requirements. Those plans were required to be submitted to the ACSEC by September 1989. By January, 1990, the 9-1-1 plans for the 24 regional planning councils were approved by the ACSEC, and it is expected that by the end of 1992, over 97 percent of Texas communities will have fully operational emergency phone service in place. However, once approved, the COG's must implement 9-1-1 service in all participating areas by September 1995.

Financin~:

One of the most apparent problems with implementing a statewide 9-1-1 service appeared to be its extremely high cost. This problem began to be resolved with the development of some

1Handout material, Coastal Bend 9-1-1 Network, "The State of Texas 9-1-1 Program, Planning and Implementation of Emergency Telephone Service," (1989): pp 3-4.

innovative funding strategies and extensive public education showing the dramatic lifesaving advantages of the 9-1-1 system. The high costs of E9-1-1 required enabling legislation to allow communities to collect fees to fund the enhanced systems. These efforts have been successful in almost every community that submitted the proposal. Communities were allowed to finance the costs of 9-1-1 service in two ways: a service fee not to exceed 50 cents per month, on all phone lines and collected by the local telephone company and a monthly equalization surcharge, not to exceed one-half of one percent, on all long-distance calls within Texas.

Upon approval by the Commission of the regional plans, the local telephone companies in each region were authorized to begin assessing the 9-1-1 emergency service fee and equalization surcharge. In this way the need for local government funds and high interest rates is eliminated. These fees are intended to pay only for the costs to provide 9-1-1 service. Such expenditures would provide equipment directly related to 9-1-1 services: recording equipment, telephone instruments, logging printers and maintenance contracts. Salaries for training instructors and clerks directly involved in creating address databases can be justified. The monies are not intended to pay for services that presently exist in providing service to individual fire, police, or other emergency services. The funds cannot be used to pay regular salaries, purchase vehicles or life-support equipment.

The amount of the 9-1-1 service fee could differ from region to region based on costs to implement and operate the 9-1-1 service in a region. Only telephone customers residing within an area that is participating in a regional plan can be assessed the 9-1-1 emergency service fee. The local telephone companies act as billing agents and collect and remit the fees to the appropriate administrative entity identified in the regional plan.

Currently, a monthly surcharge on intrastate long-distance calls has been set at two-tenths of one percent for counties participating in a regional plan, and for counties with populations in excess of 120,000. Intrastate long-distance service providers collect the surcharges and remit it to ACSEC. The surcharge is used for allocating funds to the COGs as needed for use in implementing and operating the regional plan.

The Texas Treasury Safekeeping Trust Company (TTSTC) was created to serve as a bank for state agencies and local governments. The TTSTC makes it possible for public funds to receive maximum returns. By pooling cash on hand from over 200 participating government and state agencies and five Council of Governments, the Texas Local Government Investment Pool (TEXPOOL) has been able to generate rates of return 2% higher than investing with local investment depositories. The TTSTC designed TEXPOOL to be used for a money market fund pool for the investment of local 9-1-1 Service Fee funds. TEXPOOL combines funds from cities, counties, school districts, municipal utility districts and other local governmental entities to form an investment fund of over 4 billion dollars. The

influence gained from combining the monies from local governments allows TEXPOOL to get the highest returns available for local funds. Unlike other investments, such as Certificates of Deposit, the funds are available at all times. Also, the funds are protected against loss no matter what the total amount invested. TEXPOOL has been an excellent choice for 9-1-1 Service Fee revenues since, in most cases, they are held until adequate amounts are collected to purchase equipment. TEXPOOL provides the opportunity for 9-1-1 Service Fees to earn the highest return available without sacrificing safety or liquidity.⁸ Participants are not required to make minimum investments or to keep funds tied up for a specific length of time. Administrative fees to operate TEXPOOL are substantially less than using a depository because staffing costs are already covered by appropriations through the legislature. TTSTC acts as a primary broker dealer through the Federal Reserve directly without having to pay bank fees. Only those costs directly related to the funds are passed on to participants. Administrative fees are shared among participants and the pro-rata share of fees decreases as the number of participants increases.

9-1-1 service fees totalling \$86-89 thousand per month in the Coastal Bend Council of Government region represent a new and different type of public fund. These service fees are highly visible and require special handling to gain maximum return on citizen investment. The ACSEC in designing the 9-1-1 network for

⁸Vander E. Phelps "9-1-1 System Installed Ahead of Schedule," 9-1-1 Caller (January/February 1990) pg 1-2.

the Coastal Bend recognized the need for substantial database development and computer support to obtain the geographical location of callers. For the Coastal Bend Region, additional income of over \$30 thousand per year potentially available through TEXPOOL is to be devoted to procuring database development and computer equipment.⁹

Planning and implementation of a 9-1-1 system hinged on each county and incorporated city or town to pass a resolution to join the regional plan. A county resolution did not automatically include the incorporated cities within the county. Voter approval to implement 9-1-1 service was not required--only adoption of a resolution was required.

In areas where a 9-1-1 system was already operational, the existing 9-1-1 districts had the option of joining the regional plan or participating with the COGs in the planning process for the region. Each existing 9-1-1 district was grandfathered through the legislation, therefore allowing maximum flexibility in meeting the needs at the local levels. A county could not create its own 9-1-1 district using previous 9-1-1 legislation.

9-1-1 service could be established in a county served by more than one telephone company. Telephone companies work together with city, county, and Councils of Governments' officials to design a comprehensive 9-1-1 system to serve the area. The phone companies are included in the initial planning process.

⁹Coastal Bend Council of Government, Emergency Communications Advisory Committee minutes, April 18, 1990.

Addressin~:

9-1-1 implementation efforts have concentrated on rural addressing, so that those systems which have ALL can operate effectively. This huge task requires interaction and cooperation between the ACSEC, regional, local, public authorities, and private individuals.

In the early stages of discussions and planning for a state wide 9-1-1 system, the problem of addresses was underestimated. The early committees and participants were from densely populated or urban areas of the state where addressing was already in place. However as discussions progressed, it was found that 70 percent of all Texas highway miles are classified as rural. Two-thirds of these rural roads are either country roads or streets in unincorporated areas that were partially addressed. In geographic areas that had not converted from the rural route and box addressing to a definite form of street name or numbering system, problems are encountered in providing exact location information. Without adequate street naming or numbering, public safety agencies experience inaccurate reporting of emergencies, which causes delays in the response of emergency vehicles. In 1988, the ACSEC began to receive requests from local governments regarding the need for legislative, financial and technical assistance in the field of addressing.

The 71st Legislature enacted S.B. 1091 authorizing counties as the governmental body designated to assign street addresses in unincorporated territory. In July, 1989, the ACSEC published the

Addressin~ Handbook for Local Governments and allocated minimal staff support to conduct workshops throughout the state. However, as of July, 1990, the Commission had not allocated any additional funds or resources for the statewide coordination or implementation of addressing projects.

The Policy Subcommittee determined that S.B. 1091, combined with the commission's minimal administrative support was helpful to local governments, but that addressing projects were still hindered due to technical and financial constraints.. It was determined that the 24 Regional Planning Commissions were in varying stages of assisting local counties with their addressing systems. A regional framework for coordinating addressing was in place, but no state level coordinating program was in place.

County-wide addressing is necessary in order to derive direct benefit from implementing the Automatic Location Identification (ALL) feature. Counties with route and box addressing systems cannot provide accurate locational information for the 9-1-1 data base that displays the location feature. The best alternative for creating accurate data is the conversion of route and boxes to a street name or numbering addressing system. In some cases, when a rural resident moved from one location to another, he often took his route and box number with him.

The project was to be accomplished through a multi-phase approach, utilizing the governmental infrastructures created

through the assistance of the Regional Planning Commissions.¹⁰ In addition, the ACSEC offered guidelines and samples for local and county addressing ordinances. Suggestions for arranging financial support for street addressing and street signs through local business and community groups were offered to the regional councils of government.¹¹ Delivery services such as Federal Express, utilities companies, school districts, clubs such as Lions Club and United Way are convinced of the public safety value of 9-1-1 and the problems it encounters where there are no addresses. In addition, standardized addressing assists them in conducting their business in a more efficient manner.

Major funding sources were obtained from foundations such as the M. G. & Lillie A. Johnson Foundation, Inc. which is based in Victoria-Golden Crescent area. The Foundation has been helping local health-related and medical education causes for many years. In the past they have purchased ambulances, provided endowment funds to local colleges, purchased medical equipment and assisted with capital improvements at local hospitals. The Foundation's interest is health-related and they are local.¹²

¹⁰Ron Harris, Chairman. "Report of the Policy Subcommittee~" Emergency Communications Issues and Recommendations, Prepared for The Advisory Commission on State Emergency Communications. January 1991.

¹¹Darla Parker, Addressing Program Coordinator. Handout materials for the Advisory Commission on State Emergency Communications. February, 1991.

¹²Robby Kirk, "Foundation Funding in the Golden Crescent," 9-1-1 Caller Vol 3 No 3 (July/August, 1991): 5.

Another source of funds is from state and federal governments. Grants from the State Department of Highways and Public Transportation are to be used exclusively for rural addressing. The Federal Bureau of Census donated census maps and TIGER/Line files which have greatly assisted the addressing project. Texas was fortunate to be one of the few recipients of census paper maps, computer tape and floppy disks containing the information.¹³ In addition the u. S. Postal Service has provided listings of existing street names and block ranges used for mailing purposes for the affected areas, provided copies of ZIP+4 maps and files and offered guidelines. They asked that the agencies keep them informed of changes and in turn, would follow up with customer notification urging them to adopt the new address as soon as possible.¹⁴
Trainin~

The next major concern that needed attention was actually two fold: training and liability. Because the public's attention has been focused on the 9-1-1 system and national media has kept it in the spot-light, the role of the dispatcher/call-taker has become increasingly important. The duties and responsibilities of the telecommunicator are being examined and found to play an integral role in all-emergency response systems. Changing social conditions lead constantly to the recognition of new duties. Whether

¹³Darla Parker "What's Happening in Rural Addressing," 9-1-1 Caller, (January/February 1990): 3.

¹⁴Phillip A Pensabene, "Postal Service Offers Help, Advice in Rural Addressing Projects," APCO Bulletin Vol 57 No 6 (June 1991): pp 12-14.

dispatching police, fire, or medical units, dispatchers represent the life line between those in need and those providing the assistance. It is generally assumed that the person who answer emergency calls has all the time in the world to obtain every detail possible. In reality, that is rarely the case. It has been estimated that for a police-response incident, there may be three to four calls; for a fire-response event, seven or eight calls; ambulance calls are usually a one-to-one ratio.

There are three phases making up the dispatch function. The first phase is call receiving. The dispatcher must correctly obtain enough information necessary to process the call and to correctly classify the incident as a life-threatening emergency or non-emergency call. The dispatcher must then record the basic information such as address, call-back phone number, name of caller; to verify and followup if no contact can be made. It is not enough to give the communications personnel the basic eight hour CPR certification. There is a big difference between performing CPR and telling an untrained, half-hysterical caller how to perform it over the telephone. If an agency adopts certain protocols or pre-arrival instruction procedures, the dispatchers have a duty to question the caller and give correct instructions. Meeting this need are several private companies, professional associations, and governmental agencies. Medical Priority Consultants, Power Phone, APCD 80 hour national telecommunicators certification course, TCLEDSE 40 hour basic certification name just a few.

After obtaining correct information and classifying the incident correctly, the dispatcher must choose dispatch priority, response priority, which and how many units to respond. Whether to send any units, the type of units to send, and which call to dispatch first is of grave concern. In addition, in some instances, dispatching too many units is more dangerous than sending just enough. The chance of an accident involving emergency vehicles and citizens greatly increases as more units are dispatched.

The period after dispatch but before the time of arrival is classified as the post-dispatch phase. The dispatcher should not rely on a nonmedically trained person to influence whether or not emergency vehicles should be canceled. It has been a common occurrence to cancel an ambulance to a traffic accident scene because a police car drives by and sees several people walking around the vehicles or a fire engine because he doesn't see any smoke. At the very least, the emergency vehicles should reduce their speed but continue to the scene to give an expert appraisal of the situation. A second consideration is as volume of calls increase within a given time frame, the dispatcher should consider the nature and severity of the incidents and the variances in response times.

Most legal incidents involving dispatchers can be tied to one thing--the failure to use common sense. Most of this can be attributed to not taking enough time to do the job right; not asking enough questions or following policies or protocols; and failure to keep personalities and politics out of the decision

making. The objective is to improve the situation outcome for the citizen, not to protect egos or political turf.

Training will make the difference between quality call processing and negligent handling; between life and death. Accurate and complete record keeping of all radio and telephone communications may make the difference between a successful and unsuccessful defense to a negligence claim. Finally, agencies must develop quality assurance programs that identify deficiencies with personnel and policies before the deficiencies result in death or injury.¹⁵

These concerns are compounded by the fact that only in larger cities do the communications personnel perform only communications functions. In smaller towns and rural areas, the dispatcher may act as receptionist, switchboard operator, jailor/matron, and perform clerical duties such as typing and filing reports.

In addition to the liability factors is the high turnover rate due to the stressful nature of the job. There is a crucial need for a training program that will better prepare employees for long term employment as emergency dispatchers.

The Health and Safety Code authorizes the ACSEC to recommend minimum training standards for 9-1-1 telecommunicators. Initially the ACSEC recommended eight hours for equipment training only. That was later modified to 40 hours to coincide with the TCLEOSE requirements. An ACSEC subcommittee found that only employees of

¹⁵Richard Lazar, "Dispatch and the Law: How to Avoid the 9-1-1 Litigation Blues," Journal Emergency Medical Services (February 1989): pp 35-40.

law enforcement agencies handling emergency communications calls were subject to the Texas Telecommunicator Training Law (H.B. 750) administered by TCLEOSE. In other areas of emergency services, such as fire protection and emergency medical services, there are no established training standards.¹⁶ In 1990, the Emergency Communications Career Path Committee was established in conjunction with representatives from law enforcement agencies, fire departments, EMS, communications districts, and the ACSEC. The Committee identified four career series in the emergency communications field--management, operations, technical, and training. The goal is to further the professional development of emergency communications personnel.¹⁷ Through the committee's efforts a college curriculum is now available at a few colleges in the state.

Education that is two fold would accept the public's perception and continuously strives to meet it by aggressively pursuing improved training and technology. In addition, educating the public as to the realities of the system will focus on resources available to them. By seeking ways to provide better innovative service, citizens must be ready and willing to fund those discoveries.

¹⁶Ron Harris, Chairman. "Emergency Communications Training", Report of the Policy Subcommittee, (January 1991) 16.

¹⁷Carey Spence, "Emergency Communications: A Career Path," 9-1-1 Caller, Vol II No 2 (May/June 1990), 8.

Liability Issues

Chronic Callers:

What service is provided to chronic callers such as the elderly or retarded who have learned that someone will always answer their call regardless of time of day, weekday or holiday. The City of Corpus Christi PSAP has developed an interdepartmental information exchange with the city's Senior Community Services Department, Texas Department of Human Services and Nueces County Welfare Department. In addition, the Coastal Bend Council of Governments in co-operation with the American Red Cross has developed and, circulated to the various PSAP's a sample survey targeting frail, elderly and disabled citizens. The purpose would be provide faster service to this special population in event of hurricane or man-made disaster. The questionnaire provides emergency phone numbers to area agencies and provides an information release statement to emergency providers. If the PSAP's circulate the survey within their jurisdictions and the information collected in a useable method, it would prove to be extremely valuable during traumatic times for those who have no close friends or family to rely on for assistance .18

Disabled and Handicapped:

The Americans with Disabilities Act of 1990 (ADA) providing civil rights protection to 43 million people with disabilities in the United States has impacted public safety in general and E9-1-1

.18 Handout Flyer presented as part of program to assist local agencies to identify citizens with special needs. Coastal Bend Council of Governments, 1989.

specifically. According to a recent estimate, 4.3 percent of the population in Texas is hearing impaired.¹⁹ Equal provision of access to emergency services means direct TDD (Telecommunications Device for the Deaf) access for hearing and speech-impaired persons must be provided to 9-1-1 telephone networks. A TDD is a small computer-like device with a coupler, keyboard and modem. Costs range from \$200 to \$500 each. However, the machines and other related equipment can be purchased at discount rates. Many community service organizations and churches receive charitable donations to purchase devices for low income deaf adults and families. Programs are also offered by the Texas Rehabilitation Commission, Department of Human Services or the U. S. Veterans Administration. The Texas Association of the Deaf and the local Council for the Deaf have been excellent resources for assistance in complying with the legislation. Training which includes etiquette/protocol, communication and telephone habits of the disabled and the PSAP dispatchers are key subjects that need to be covered before an effective 9-1-1 access system can be implemented. In addition the equipment and accommodations must be maintained in operable working condition. All centers are required to have TDD equipment by January 1992.²⁰

¹⁹Toni Dunne, "Now that we have a TDD...Who's Gonna Call?" 9-11 Caller Advisory Commission on State Emergency Communications. Vol III No 5 (Nov/Dec 1991): 8.

²⁰John R. Lopez and Betty Dion, "The Americans with Disabilities Act... And Its Impact on Emergency Services," APCO Bulletin (June 1991): 40.

Language and Cultural Groups:

Other special target groups involve language & cultural barriers. It has been estimated that there are over 200 languages spoken daily in Texas: asian; middle eastern; african; and european languages. When translation in emergency situations is commonly thought of, Spanish most often comes to mind. However, just in the Coastal Bend Council of Governments region, there are pockets of Middle Eastern students at Texas A & I University at Kingsville and a large Viet Nameese community in Rockport. In addition, there is a growing volume of international shipping at the Port of Corpus Christi.²¹ E9-1-1 offers telephone numbers, address information, and selective routing benefits. However, language barriers can break down this vital link. At the very least, miscommunication and misunderstanding waste precious moments and results in inefficient reporting of emergency situations which jeopardizes the calling and responding parties. Many PSAP's subscribe to a language line service to provide interpretation of non-English speaking callers. Such a service is being investigated for the Coastal Bend region. This service gives the PSAP personnel access to a bank of languages and dialects, 24 hours a day, 7 days a week. When the 'call-taker determines that the caller cannot speak English, the PSAP dials a toll-free 800 number. An interpreter

²¹Jay Nelson, Director for CBCOG ECAC Committee, interview by S. Kent Butler, September 6, 1991, Coastal Bend Council of Governments, Corpus Christi, Texas.

comes on the line and relays information between the caller and call-taker.²²

In addition to the language, are cultural considerations. Many times, newly immigrated families hesitate to call for police assistance and when they do, they are most likely to have a child place the phone call because the child may know more English than they. The child may know more English but may not have an adult's understanding of situations that are occurring or have the vocabulary to express himself. ²³

Service Providers:

The Public Safety community owes a responsibility to serve all its citizens no matter what special or unique problem may be involved in providing the service. At the same time, the agency has a duty to protect its employees from abuse, injury and death. Some of the major issues being debated today involves how to alert police officers or paramedics to the fact that a person involved in the incident has the HIV virus (AIDS); how does the patient receive adequate care without violating his right to privacy and without endangering the responding care-givers.

Employee stress reduction has become an area of major research and creative experiments. New communications centers are more "high-tech" with specialized state-of-the-art equipment. These innovations bring new stressors. However along with this new

²²Carey Spense "Language Barriers in Emergency Communications, " 9-1-1 Caller. Vol II No 2 (May/June, 1990): 11.

²³Yelia Williams, "9-1-1: Building Bridges to Ethnic Communities," 9-1-1 Caller Vol III No 3 (July/August 1991) 1-2.

technology is a growing concern for the people who operate it. Open spacious areas with glare-free lighting are replacing dark cramped cubbyholes. Everything from ergonomic chairs to work schedules of three 12 hour workdays are being considered in order to facilitate this goal. 24

GROWTH AND DEVELOPMENT

Response Number vs. Emergency Number

Some communities and agencies promote the use of 9-1-1 system as a "response" number and not as an "emergency" number. The ideas behind this were twofold: (1 To decrease the high volume of emergency calls which were still being received on seven-digit phone lines, and increase the volume of calls to 9-1-1 lines; and (2) strive toward receiving all calls which result in a mobile response via 9-1-1. One reason for this is that the public is largely unable to decide what is and what is not an emergency. Even professionals cannot agree on a universal definition for what is an emergency and what is a non-emergency. Some studies found the public was very narrowly defining the term "emergency" and were only dialing 9-1-1 in cases that almost exactly matched the wording in original advertising campaign: "Call 9-1-1 to save a life, report a fire, or a crime in progress." Often the perception of the caller changes. A prowler at his neighbor's house may not be perceived as an emergency, it only becomes an emergency if it is happening to them. Also many dispatchers still think of 9-1-1 as

24Lee, Rikki T., "Public Safety and Its People", Radio Resource (Summer, 1991): 42.

the "emergency number". There are some communications centers that require their dispatchers to answer by asking if the caller is reporting an emergency. If the caller says " " tJl e y are instructed to hang up and call the seven-digit number. no . This mayor may not be without first questioning the caller regarding the circumstances of the call. Lack of a consistent policy can lead to conflicts between citizens and call-takers and of valuable time wasted. There may be instances when the caller cannot call back again due to the circumstances of the "non-emergency". The civil liability placed on the communications center for such actions is very great.

One of the main reasons for having dispatchers question callers regarding the circumstances of the call, is to properly decide if the call is or is not a "real emergency." The dispatchers are trained in determining what actually constitutes an emergency and then prioritizing their calls according to the severity. Dispatchers and citizens alike should not rely on the citizens' judgement of what constitutes an emergency.

One revised policy criteria stated "A qualifying 9-1-1 call...is any call in which the caller desires an immediate response fFom a police, fire or ambulance unit."²⁵ It was irrelevant whether the caller actually received an immediate response, or if the dispatcher thought is was an emergency call, or if the agency provided a response to the type of call. What mattered was

²⁵Roy Meredith, "Promoting 9-1-1 As the APCO Response Number'," Bulletin Vol 57 No 6 (June 1991): 30.

whether the caller wanted an immediate response to his call, and though the response would come from a police, fire or ambulance unit. The policy shifts the decision of when to dial 9-1-1 from the personal desires or wishes, of the dispatchers to the wishes and desires of the caller.

The goal of trying to get citizens to utilize 9-1-1 more often is to gain all of the advantages which the system officers by trying to obtain more of the operational and administrative benefits of the Enhances 9-1-1 ALI and ANI data on more calls. More and more agencies (Public Safety Answering Point) are using computer aided dispatch systems which interface with the 9-1-1 systems. The use of 9-1-1, even in non-emergency situations, can provide valuable data base information for those PSAP's which can assist them in making future management and planning decisions. The more calls received on E9-1-1 system, the more it assists dispatchers in doing their jobs quickly and accurately, which, also assists the callers.

There are many times when people need to call for assistance that is not an emergency, but where 9-1-1, and especially E9-1-1, can help both the caller and the dispatcher who answers the call. Such callers include children who do not know their address or telephone number, elderly who have become confused, visitors who do not know the address from which they are calling, people with speech problems, or similar-sounding street names.

It is better that the public err by dialing 9-1-1 for something that turns out to be a non-emergency, than err by dialing

the old seven-digit number for a call which turns out to be a real emergency. Citizens and dispatchers alike need to be educated to understand and use the 9-1-1 system any time that a response from police, fire, or emergency medical service is desired.²⁶

On the other hand, people will use 9-1-1 as an resource when faced with a situation that they are uncertain where to obtain help or when a telephone book would be in order. Some people use the system as an excuse to be lazy. In spite of frequent news media announcements, Communications Centers are usually flooded with calls as the public report power outages, water pipes frozen or to inquire if roads or bridges are open to traffic. They have been known to ask for the correct time.

Governmental Communication

At the same time that the public is demanding more from government, resistance to tax increases makes it difficult to pay for services. Citizens are demanding to know exactly what they are getting from their tax dollars. There is a growing trend to shift more responsibility away from centralized federal, and in some cases, state governments.

City, county and state officials are looking for ways to deliver current and new services faster and more efficiently. They are trying to extract more from existing resources, especially from information and information technology. Systems integration is one

²⁶Roy Meredith, "Promoting 9-1-1 As the 'Response Number'" APCP Bulletin Vol 57 No 6 (June 1991): 34.

ans to that end. ²¹me It isn't just a matter of putting pieces of equipment together,...it's also a new way of redefining government tasks and how those tasks should be carried out most efficiently and effectively.²⁸

The major focus of this paper is emergency public safety response, specifically through the use of dedicated telephone trunk lines. The pieces of the system are not just the maps and addressing, radios, computers for call entry & data storage, personnel and training. To support all of those is a multitude of governmental & quasi-governmental offices with information files and personnel who have developed procedures and programs to accompany them. Roderick Chu, managing partner for Anderson Consulting, says a critical component is people, "When you talk about the systems of today, you're no longer talking about systems that affect the lives of a few people but tens of thousands of people. ²⁹ Quite often, those people are resistant to change and fearful of what consolidation or interaction may do to their data and even their jobs. However, governments can no longer afford' to meet the need for shared information by purchasing more equipment and hiring more people. To make information as widely and efficiently available as possible to government employees, across

21M. J. Richter, "Sharing Information," Governin«. The States and Localities Vol 3 No 5 (February, 1991) 37.

28Ibid, p 38.

29M. J. Richter "Putting the Pieces Together," Governin«. The No 5 States and Localities, Vol 3 (February 1991) 48.

division and agency boundaries, states and localities must begin designing and implementing systems integration projects.

Since 9-1-1 is linked to a community's communications system, improvements to increase the efficiency and effectiveness of that system may be suggested as planning for 9-1-1 proceeds. The more efficient a community's communications network, the more effective its response to the public it serves.

One of the most important subjects under discussion in the Public Safety communications field today is Interagency Communications. The ability of various levels of government, and various lateral departments of adjoining cities and counties, to communicate with each other during times of extreme emergency and disaster. The key failure in the response to the Air Florida Crash was in emergency communications. The systems of all jurisdictions involved were overloaded with non-priority traffic. Two command posts were activated with no coordination between them. There was also no radio equipment available to directly talk with aircraft. An Interagency Communications System with a conference patch would have established coordinated efforts between the responding agencies allowing emergency equipment and supplies to reach the scene of the disaster.³⁰

By concentrating all calls for emergency services into the 9-1-1 PSAPs, a standard set of procedures for handling the calls must be developed. This requires a very close cooperation between

³⁰Herb Perkins, "New System Enhances Interagency Communications Capability," APCO Bulletin, Vo 52 No 2 (February 1986) 34.34

all the responding agencies. A myriad of details that have probably gone unnoticed for years must be written down into policy and procedures manuals.

In some areas, formalization of inter-local agreements and mutual aid agreements together with the formation of a county- or area-wide organization has been required by the implementation of the 9-1-1 service.³¹ The City of Amarillo, Potter County, and Randall County have developed an emergency management program that has been carefully developed in cooperation of city and county planners, various local agencies and area volunteer organizations. It established a structures, rational methodology for handling a wide variety of crisis situations. The program includes an inter jurisdictional support system, the creation of an Emergency Operations Center, the implementation of a comprehensive indoor and outdoor warning system, the extensive use of volunteer resources within the community, and the active involvement of emergency management personnel in various training and educational programs.³²

As the legislation expires in 1995, the way that 9-1-1 is administered and the funds used may be modified. In other states, there is a trend toward Public Safety Districts. These districts, which are a minimum of one county-wide area, would combine law

³¹ Aaron G. Thompson, "9-1-1 Promotes Togetherness," 9-1-1 Caller, Vo III, No 5 (November/December 1991) pg 1,9.

³²Wal t Kelly, "Local Government and Volunteers Join to Produce a Mobile EOC in Amarillo, Texas," APCO Bulletin, Vo 57 No 2 (February 1991) pg 14.

enforcement, fire and emergency medical services into one entity with a common tax base. An advantage would be to eliminate duplicated efforts and expenditures for personnel, equipment and services. There would be a consistent mechanism to maintain and upgrade those services and equipment. It would also provide a method to keep politics and personalities out of the decision making. The objective is to improve the situation outcome for the citizen, not to protect egos or political turf.

Cellular Technology

Some of the new technological advances can greatly enhance or limit 9-1-1 capabilities and thereby, delivery of services to citizens. One of these is the cellular phone. Although these phones provide immediate on-the-scene communications for the traveler without the need to locate and use a convention telephone, they present some challenges for the Enhanced 9-1-1 system. Since the termination point of a convention telephone is in a fixed location, that location can be identified within telephone records and used when a call is placed to provide selective routing and ALL A cellular phone is transmitting to a tower where the call is routed into the normal telephone network, therefore the only identifiable termination point is the tower. All of the 9-1-1 calls coming through that tower can be selectively routed to a specific PSAP. That would be sufficient if only one PSAP were responsible for the area from which the tower receives calls. However, in many cases, the tower will cover an area that stretches into the jurisdiction of two or three PSAPs. In addition, the

caller's telephone number is not provided. The future of cellular phones and 9-1-1 may include location information based on triangulation between cellular phone tower sites being fed directly into an interactive computer mapping system.³³

With the advance of mobile satellite systems (MSS) and increased personal communications products, cellular's role will also explode as a major communications resource. Earthquakes and hurricanes have increased the awareness of both public and private sectors in cellular phones and disaster professionals have begun including cellular in their recommendations for communications alternatives in disaster plans. Portable or transportable cellular phones make excellent emergency communications devices and can be implemented quickly and located virtually anywhere. Laptop computers and fax machines are increasing as tools for patrolmen. Laptops can transmit reports and photos for more efficient use of time in the vehicle. Cellular fax machines can be used in offices as well as in squad cars and mobile command posts.

³³Mark Adler, "Cellular Phones Limit 9-1-1 Capabilities," APCO Bulletin, Vo 57 No 2, (February 1991) 20-21.

REMAINING ISSUES

Privacy is always an issue with two-way radio transmission and it is possible to monitor cellular conversations. An analog encryption scheme can be added to the cellular fax system, which will allow a reasonably secure conversation.³⁴

With the pace with which new technology is being introduced, "conventional" telephone communications may be replaced with a personal telephone number that would be retained for life. Completely mobile telephones that fit into a shirt pocket or purse and could be used at any location with complete ANI and ALI may not be too far in the future.

Personal Communications Networks and services are predominantly wireless, have a vast quantity of micro-cells, serve inexpensively convenient low-power portable telephone instruments, and have service quality comparable to the wired public switched telephone network. It is predicted that over the next 10 years, more than 30 percent of business executives and 60 percent of residences will acquire these low-cost, pocket-sized digital cordless phones. Some of the pressing questions involved are "Where does the call go? How does it display an ANI or ALI or does it? Where does the public safety responder turn for help if there is no voice on the other end of the 9-1-1 call? Is there a call

³⁴Marty Nelson, "Disaster Management Planners Including Cellular Communications Options," APCO Bulletin, Vo 52 No 2 (February 1991) 22.

These are real concerns for the
Public Safety community and ones that should be brought to the
attention of the general public.

Also on a national level, the Telephone Service Priority System (TSP) is the regulatory, administrative and operational system authorizing and providing priority treatment of restoring telecommunication services during times of disaster. The Federal Communications Commission issued a report and order in November of 1988 that establishes the emergency preparedness TSP System. The system was put into effect September 10, 1990, with regulatory oversight by the FCC. 36 It involves the filing of intrastate and interstate tariffs with individual state public utility commissions and the FCC. There would be a charge for restoration of public safety telecommunications services, including 9-1-1, that will have a significant impact on the operating budgets of Public Safety agencies. This is an issue which is being discussed in order to develop a strategy for dealing with it. There is no policy or solution at present.

CONCLUSION

The 9-1-1 Network System has grown far beyond its original purpose to touch upon many technologies, social issues, and political systems. 9-1-1 has been a catalyst to change. The impact that the 9-1-1 emergency communications system has on lives

35Roanne Rubin Tall, "The Newest Problem for Enhanced 9-1-1?" APCO Bulletin, Vo 52 No 2 (February 1991) 28.

36Sam F. Gargaro, "What is TSP?" APCO Bulletin Vo 52 No 2 (February 1991): 6.

is immeasurable. Real-time access to fire and police departments has become a requirement and the public will accept nothing less. The needs and demands of the public change. The 9-1-1 Network System has created an opportune environment to make a difference and to be part of a problem-solving process. Public officials, systems managers in the public and private sectors, volunteer groups, and just plain "concerned citizens" are working together to develop a good working relationship with the equipment and the service providers. There is always a seemingly endless list of system modifications which just evolve but considering the scope of the entire project, it is well worth the effort.

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