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EMERGENCY RESPONSE SYSTEM STUDY COMMISSION

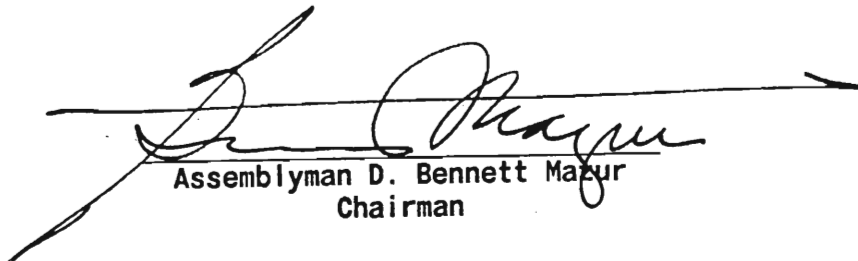
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TRENTON, NEW JERSEY 08625
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March 1, 1988

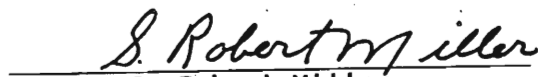
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Ladies and Gentlemen:

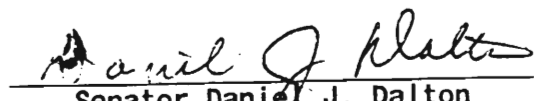
The Emergency Response System Study Commission, created by P.L.1985, c.542, hereby respectfully submits its second phase report in compliance with the provisions of its enabling legislation.



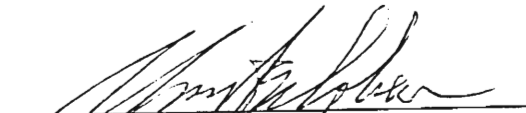
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Vice-Chairman



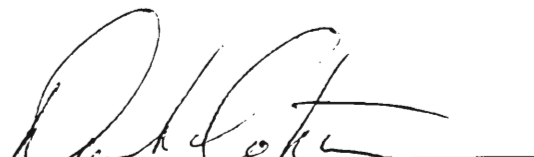
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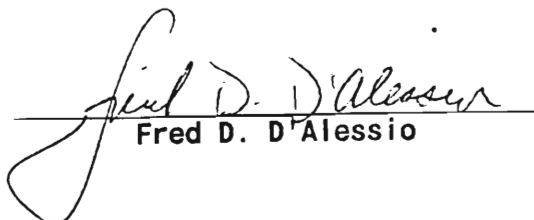
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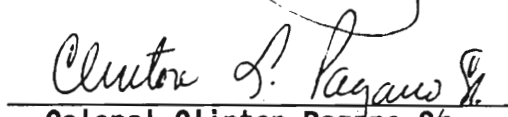
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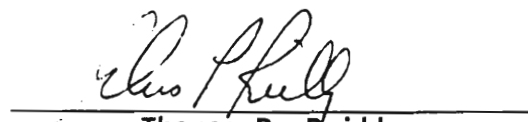

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EMERGENCY RESPONSE SYSTEM STUDY COMMISSION

STATE HOUSE ANNEX, CN-068
TRENTON, NEW JERSEY 08625
TELEPHONE: (609) 984-0231

March 1, 1988

Governor Thomas H. Kean
President of the Senate John F. Russo
Speaker of the General Assembly Chuck Hardwick
Members of the Legislature

Ladies and Gentlemen:

I am very pleased to transmit with this letter the second phase report and recommended legislation of the New Jersey Emergency Response System Study Commission.

The Emergency Response System Study Commission was formed to study and make recommendations concerning the emergency response system in New Jersey. It was created following the tragic fire in the City of Passaic in September 1985 which destroyed 25 percent of the industrial base of the city.

In January 1986, the commission completed the first phase of its work and released a report recommending the implementation of a statewide enhanced 9-1-1 emergency telephone service. The second phase of the commission's work involved gathering information on the problems involved in coordinating the various emergency radio communications systems in use throughout the State.

Most of the emergency response organizations in New Jersey, including State and local police, fire, and rescue squads use highly sophisticated communications equipment. The problem is that many of these systems are not compatible. The Passaic fire was one of the most recent examples of this situation. A large number of police, fire and emergency companies responded to that blaze, but because their communications systems weren't compatible, personnel working blocks apart could not speak to each other. The Passaic County grand jury complained in a presentment that police and fire departments from the City of Passaic and nearby towns were prevented from doing their best to fight the 40 acre blaze because they could not communicate with each other.

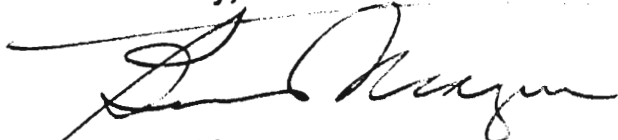
This report is based on 13 months of study by the commission. It represents a comprehensive study of public safety communications problems in the State. After conducting a thorough investigation of these problems, the commission has proposed as one of its recommendations the formation of an office and a commission in the Division of State police to coordinate communications for all public service and public safety agencies in the State.

I would like to thank the talented members who gave substantial time and effort to the work of the commission. Their contributions prove the value of the commission form of legislative inquiry.

Recognition should also be given to the many police officers, firefighters, local officials, private citizens, members of rescue squads and interest groups who testified. Their contributions helped the commission to better examine the problems in public safety radio communications and to propose solutions to these problems.

The New Jersey Emergency Response System Study Commission was created in reaction to the communications problems faced by the City of Passaic and other municipalities in fighting the tragic Labor Day fire. I hope that this report and recommended legislation will help to prevent similar tragedies from occurring in other cities in this State, while contributing to an effective Statewide emergency response system.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Mazur", written over a horizontal line.

Assemblyman D. Bennett Mazur
Chairman

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I. BACKGROUND AND CREATION OF THE COMMISSION

The Emergency Response System Study Commission was created in January 1986 when Governor Thomas Kean signed into law Assembly Bill No. 4225 of 1985 (P.L. 1985, c. 542), sponsored by Assemblyman D. Bennett Mazur and Assemblyman John O. Bennett (Appendix A). The 17-member Commission was charged to study and make recommendations concerning the emergency response system in New Jersey, including the provision of a Statewide enhanced 9-1-1 emergency telephone service.

The work of the Commission was divided into two phases. The legislation instructed the Commission to study and make recommendations concerning:

1. appropriate legislation to create a Statewide enhanced 9-1-1 emergency telephone system; and
2. the emergency response system in the State, with a view to remedying defects in the present system.

The first phase was to be completed in 90 days from the organization of the Commission. The second phase, scheduled to begin after the Commission reported its first-phase legislation and recommendations to the Governor and the Legislature, was to be completed in nine months. The legislation instructed the Commission, during the first phase, to hold at least one public hearing in the northern, central, and southern areas of the State to receive the views of interested individuals and organizations on an enhanced 9-1-1 emergency telephone system.

The Commission was further instructed to consider in its deliberations Assembly Bill No. 3741 of 1985 and Senate Bill No. 3139 of 1985, identical bills which provided for planning and implementation of a Statewide enhanced 9-1-1 system.

On September 12, 1987 Governor Kean signed legislation (P.L. 1987, c.277) which extended the term of the Commission by four months to allow additional time for the completion of the second phase of its work. (Appendix B)

This report presents the Commission's second-phase findings and proposed legislation.

II. FIRST PHASE WORK OF THE COMMISSION

The Commission held its organizational meeting on August 12, 1986. Assemblyman Mazur was elected chairman of the Commission and S. Robert Miller was elected vice-chairman. The Commission held a number of meetings and public hearings throughout the State in order to obtain the views of interested parties concerning a Statewide enhanced 9-1-1 system. The Commission released its first phase report in December 1986. The report recommended the implementation of a Statewide enhanced 9-1-1 emergency telephone system funded by a sales tax on certain telecommunications equipment.

In January 1987, legislators introduced a two bill package drafted by the Commission. Assembly Bill No. 3641 of 1986 sponsored by Assemblymen Bennett and Mazur, and Senate Bill No. 3009 of 1986, sponsored by Senator Dalton, were identical bills that provided for the establishment and implementation of a Statewide enhanced 9-1-1 emergency telephone system. Assembly Concurrent Resolution 132 of 1986, sponsored by Assemblywoman Donovan and Assemblyman Mazur, would have amended the constitution to dedicate the revenue derived from the sales tax on telecommunications equipment to the network portion of the enhanced 9-1-1 system.

Assembly Bill No. 3641 and Assembly Concurrent Resolution 132 were released from the Assembly Transportation and Communications Committee.

On November 30, 1987, the Assembly Appropriations Committee released Assembly Bill No. 3641 with amendments.

The bills subsequently were prefiled for introduction in the 1988-1989 session. Assembly Bill No. 1576 of 1988, establishing the Statewide 9-1-1 emergency telephone system, and Assembly Concurrent Resolution No. 30 of 1988, dedicating the telecommunications sales tax revenue, were released by the Assembly Transportation and Communications Committee and the Taxation and Governmental Operations Subcommittee of the Assembly Appropriations Committee. Both bills are now before the full Assembly Appropriations Committee. Senate Bill No. 1511, establishing the Statewide 9-1-1 emergency telephone system, was released by the Senate Transportation and Communications Committee and is now before the Senate Revenue, Finance and Appropriations Committee.

III. BACKGROUND ON PUBLIC SAFETY COMMUNICATIONS

In beginning the second phase of its work, the Emergency Response System Study Commission examined the status and problems of public safety communications in New Jersey. This section describes the State's public safety communications services and their problems as exemplified by the 1985 Passaic fire.

A. Public Safety Communications in New Jersey

Public safety communications is divided by the Federal Communications Commission (FCC) into the following categories: police, fire, highway maintenance, forestry conservation and local government.

Emergency medical services are not classified as public safety. They are grouped with other functions under the Special Emergency Radio Service, which covers the licensing of the radio communications of the following categories of activities: medical services, rescue organizations, veterinarians,

handicapped persons, disaster relief organizations, school buses, beach patrols, establishments in isolated areas, communications standby facilities, and emergency repair of public communications facilities.

Generally, the basic daily public safety services that involve the protection of life and property are limited to fire, police and emergency medical. Each of these services is allocated a specific radio channel assignment in the various frequency bands by the FCC. The use of five major bands in assigning radio channels has resulted in the lack of commonality and the inability to coordinate emergency response services. In New Jersey, the lack of sufficient, clear radio channels has resulted in communications problems for many of the emergency response services. There are no channels within the State that are clear from some form of interference. While some agencies are able to tolerate this annoyance, others must contend daily with potentially harmful disruption caused by interference.

The police services in New Jersey are usually operated on channels assigned by the FCC to the Police Radio Service. Due to the lack of sufficient channels some police agencies are utilizing channels assigned to the Local Government Service. The channels are generally located in the 150 and 460 MHz bands, although some operation still exists in the 40 MHz band and a few agencies have moved into the newly created 800 MHz band. An emergency communications plan, the Statewide Police Emergency Network (SPEN), was established to permit the interchange of communications between those agencies that do not have any other form of communication. Through a grant, the SPEN network was implemented at a base station level. Many agencies have further implemented SPEN on a mobile basis. Cooperation in the development of SPEN with the emergency medical community has resulted in a

meshing of the SPEN and the Jersey Emergency Medical Services (JEMS) plan through the utilization of a common channel for intercommunication between all public safety services.

The emergency medical services are especially handicapped in the availability of operational channels. Channels in the Special Emergency Radio Service in the 150 MHz range are assigned on a non-exclusive basis between all eligible users. The users include school bus operators, veterinarians, beach patrols, search and rescue organizations, private physicians, and others. The availability of interference free communications channels does not exist in the area of basic life support operations.

The advanced life support activities have been allocated a group of 10 semi-exclusive frequencies in the 460 MHz range to conduct their paramedic activities. These frequencies are shared in the New York City and Philadelphia areas with these metropolitan areas. The New Jersey users, while presently enjoying an adequate channel configuration, are expecting channel congestion to render these channels useless within the next few years. The State emergency medical communications plan, Jersey Emergency Medical Service (JEMS), has assigned a single radio channel for each of the counties to be used by basic life support units. This method requires that each channel be duplicated at least three times throughout the State. There is no requirement that licensees abide by the plan within the State or in surrounding states.

The Fire Radio Service in the State is not as structured as the police and emergency medical services. There is no formalized plan to cover emergency or intercommunications capabilities on a Statewide basis. The FCC has allocated a specific radio channel in the 150 MHz range for interdepartment communications. Some departments in the State participate in this channel

operation. Fire communications are spread over all public safety radio frequency bands.

The FCC has recently been directed by Congress to develop a comprehensive communications plan for the Public Safety Service through the year 2000. The National Public Safety Planning Advisory Committee (NPSPAC), a special advisory committee of public safety communications representatives from throughout the country, met to assist the FCC in the formulation of this plan. The NPSPAC plan for allocating the 800 MHz was published by the FCC in Notice of Proposed Rulemaking No. 87-112. The plan addresses interoperability and the possibility of obtaining a nationwide contiguous assignment of channels for all public safety uses. The report of NPSPAC was adopted by the FCC with only minor revisions by Order FCC 87-359 on January 15, 1988. The National Public Safety Communications Plan will govern the assignment of the identified new frequencies in the 800 MHz band and any future new allocations. A provision of the National Plan requires that regional plans be developed to complement and enhance the local aspects of frequency allocation. The State has been divided into two planning areas: the New York Metropolitan Area and the Delaware Valley Planning Area. These planning groups are now being formed by public safety and special emergency eligible users. Licensing on these new channels is not limited to police, fire and EMS, but is available to all eligibles in the Public Safety Radio Service and the Special Emergency Radio Service.

Additional channels may be available to public safety users sometime in the future. The FCC is presently reserving over 210 channels at 800 MHz, pending the development of the National Plan. These channels would be available Statewide and would be compatible with those already allocated to public safety at the 800 MHz range. In addition, two new

frequency bands hold the potential for additional channels. These new bands would be part of the UHF TV band, but would not be available on a Statewide basis. Specific channels would be available within a 30 mile radius of Philadelphia and New York City. These channels would not be compatible between the regions or with any other public safety channels. Those agencies outside of the 30 mile radius would be denied these channels although they suffer from the frequency congestion which is a direct result of the major cities.

The following graphs illustrate which frequencies the various public safety groups have been allocated in the radio spectrum.

SPECIFIC PUBLIC SAFETY CHANNELS

POLICE—20 CHS
FIRE—5 CHS
SPECIAL EMERGENCY—14 CHS
LOCAL GOVERNMENT—39 CHS

TOTAL PUBLIC SAFETY = 78 OF 400 CHS (20%)

PER FCC RULES

PUBLIC SAFETY—NEW YORK AREA 88 OF 214 CHS (41%)

UHF TV UHF SHARING—PUBLIC SAFETY—PHILADELPHIA AREA 50 OF 214 CHS (23%)

328.6
335.4
399.9
400.05
400.15
401.0
402.0
403.0
406.0
406.1
410.0
420.0
450.0
460.0
470.0
512.0
608.0
614.0

AERONAUTICAL RADIONAVIGATION									
MOBILE			MOBILE SATELLITE			FIXED			
RADIONAVIGATION SATELLITE									
STD. FREQ. & TIME SIGNAL SAT. (400.1 MHz)									
MET. AIDS		MET. SAT.		SR		Space Opn.			
MET. AIDS		SPACE OPN.		Met. Sat.		Earth Expl. Satellite			
MET. AIDS			Met. Sat.			Earth Expl. Satellite			
METEOROLOGICAL AIDS (RADIOSONDE)									
MOBILE SATELLITE (E-S)									
FIXED			MOBILE			RADIO ASTRONOMY			
FIXED				MOBILE					
RADIOLOCATION				Amateur					
LAND MOBILE									
LAND MOBILE				Meteorological Satellite (S-E)					
LAND MOBILE				BROADCASTING (TV CHANNELS 14-20)					
BROADCASTING (TV CHANNELS 21-36)									
RADIO ASTRONOMY									
BROADCASTING (TV CHANNELS 38-69)									

SR = SPACE RESEARCH

800 MHZ—ALL PUBLIC SAFETY

TOTAL PUBLIC SAFETY = 451 OF 1800 CHS (25%)
(INCLUDES "OLD" 170 CHS NOT USED DUE TO GIVEAWAY)
(INCLUDES "NEW" 210 CHS HELD IN RESERVE FOR NATIONAL PLAN)

				806		
LAND MOBILE				890		
				LAND MOBILE		902
				RADIOLOCATION		928
				FIXED		935
				LAND MOBILE		941
				FIXED		942
				FIXED		BROADCAST
FIXED				960.0		
AERONAUTICAL RADIONAVIGATION						
RADIONAVIGATION SATELLITE (S-E)		RADIOLOCATION		1215		
RADIOLOCATION		Amateur		1240		
AERONAUTICAL RADIONAVIGATION		Radiolocation		1300		
RADIO-LOCATION		Fixed	Mobile	1350		
RADIO ASTRONOMY		EARTH EXPLORATION SATELLITE		1400		
		SPACE RESEARCH		1427		
FIXED	MOBILE	SPACE OPN.	Land Mob. (TLM & TLC)	Fixed (TLM)	1429	
FIXED		MOBILE	Land Mob. (TLM & TLC)	Fixed (TLM)	1435	
MOBILE (AERONAUTICAL TELEMETERING)						
MARITIME MOBILE SAT.		Mobile (Aero. TLM)		1530		
MARITIME MOBILE SATELLITE (S-E)				1544		
MOBILE SATELLITE (S-E)				1545		
AERONAUTICAL MOBILE SATELLITE (S-E)				1559		
RADIONAVIGATION SATELLITE		AERONAUTICAL RADIONAVIGATION		1610		

SPECIFIC PUBLIC SAFETY CHANNELS
PER FCC RULES

LOW BAND
POLICE—163 CHS; FIRE—83 CHS; SPECIAL EMERGENCY—24 CHS; LOCAL GOVERNMENT—24 CHS;
TOTAL PUBLIC SAFETY = 254 OF 356 CHS (72%)

LAND MOBILE			33.0
			34.0
FIXED		MOBILE	35.0
LAND MOBILE			36.0
FIXED		MOBILE	37.0
LAND MOBILE			37.5
Radio Astronomy		LAND MOBILE	38.0
RADIO ASTRONOMY	FIXED	MOBILE	38.25
FIXED		MOBILE	39.0
LAND MOBILE			40.0
FIXED		MOBILE	42.0
LAND MOBILE AND SUBGROUPS AS SHOWN ON ATTACHED		INCLUDES PUBLIC SAFETY SPECIAL EMERG INDUSTRIAL RADIO LAND TRANSPORTATION	46.6
FIXED		MOBILE	47.0
LAND MOBILE			49.6
FIXED		MOBILE	50.0
AMATEUR			54.0
BROADCASTING (TV CHANNELS 2-4)			

TOTAL PUBLIC SAFETY = 166 OF 638 CHS (26%); POLICE—66 CHS; FIRE—28 CHS; SPECIAL
EMERGENCY—17 CHS; LOCAL GOVERNMENT—58 CHS

HIGH BAND

				72.0
FIXED		MOBILE		73.0
RADIO ASTRONOMY				
FIXED		MOBILE		74.6
AERONAUTICAL RADIONAVIGATION				74.8
FIXED		MOBILE		75.2
FIXED		MOBILE		75.4
FIXED		MOBILE		76.0
BROADCASTING (TV CHANNELS 5-6)				
BROADCASTING (FM RADIO)				88.0
AERONAUTICAL RADIONAVIGATION				108.0
AERONAUTICAL MOBILE (R)				117.975
AERONAUTICAL MOBILE				121.9375
AERONAUTICAL MOBILE				123.0875
AERONAUTICAL MOBILE				123.5875
AERONAUTICAL MOBILE (R)				
AERONAUTICAL MOBILE (R)				128.8125
AERONAUTICAL MOBILE (R)				132.0125
AERONAUTICAL MOBILE (R)				136.0
SPACE RES. (S-E)	MET. SAT. (S-E)	SPACE OPN. (S-E)	AERONAUTICAL MOBILE (R)	137.0
MET. SAT.		SPACE OPN.	SPACE RESEARCH	138.0
FIXED		MOBILE		144.0
AMATEUR		AMATEUR SATELLITE		146.0
AMATEUR				148.0
FIXED		MOBILE		149.9
RADIONAVIGATION SATELLITE				150.05
FIXED		MOBILE		150.8
LAND MOBILE				156.2475
MARITIME MOBILE				157.0375
MARITIME MOBILE				157.1875
MARITIME MOBILE				157.45
LAND MOBILE				161.575

B. The Passaic Fire

The frequency congestion problem besetting New Jersey public safety communications services was tragically illustrated in September 1985 during a fire in the city of Passaic. During the Labor Day weekend, an inferno-like blaze erupted in that city, destroying numerous multi-story factory buildings. Several residences also were seriously damaged or destroyed by the fire. Twenty five percent of the industrial base of the city was destroyed, according to newspaper accounts. Testimony presented to the Passaic County Grand Jury indicated that as of May 21, 1986, claims approximating \$60 million had been filed, with the great majority of claims yet to be filed.

The fire, started by a group of juveniles playing with matches, burned uncontrolled for more than nine hours and was fought by firefighting representatives of the City of Passaic and 25 other fire departments.

A special grand jury was convened to investigate the circumstances and causes of the fire. The grand jury found that police and fire departments from nearby towns were prevented from doing their best to fight the 40 acre blaze because they could not communicate with each other. During the fire, radio communication with other fire departments was severely limited as Passaic shared a common radio frequency with few of the other departments. The grand jury stated:

The issue of greatest concern to this Grand Jury, however, was the apparent absence of a central (staging) reporting area and the lack of radio communication among the various departments. The Grand Jury is of the opinion that these shortcomings hindered the maximum utilization of fire personnel present at the scene.

The Grand Jury stated that "a definite lack of communication existed and thus efficient and effective coordination of the various elements composing the firefighting force was affected." Recognizing that the radio communication difficulties were largely responsible for the lack of a central staging area, the Grand Jury recommended that the City of Passaic "establish a system of radio communication so that at a minimum, a Passaic command post will be able to communicate with those municipalities most often called upon to assist in the suppression of large fires."

IV. SECOND PHASE WORK OF THE COMMISSION

A. Business Meetings

The Commission held business meetings on January 28, February 25, July 1, and November 18, 1987 and January 6 and February 17, 1988. The New Jersey congressional representatives were invited to attend the July 1 meeting and several sent aides on their behalf. Plans were made to travel to Washington to meet with the Federal Communications Commission.

B. Public Hearings

The Commission held four public hearings, one each in the northern and southern areas of the State, and two in the central area, in order to provide a forum for public discussion of all the issues concerning public safety communications and the availability of radio frequencies. The public hearings took place on April 1, 1987 at the Monmouth County Courthouse in Freehold; on April 22, 1987 at Morris County College in Randolph; on May 20, 1987 at Camden County College in Blackwood; and on June 3, 1987 at the State House Annex in Trenton. Transcripts were made of each public hearing. Representatives of a wide variety of groups testified before the Commission. State agencies, police and fire departments, rescue squads,

local officials, sheriff's offices, interest groups and private citizens were represented. The consensus of public hearing witnesses was that two major problems face public safety communications in the State today: (1) insufficient frequencies and (2) interference.

Several witnesses spoke about problems in emergency medical services (EMS) communications. Speakers from rescue squads said one of their biggest problems is interference from school buses. Their radio transmissions are interrupted by drivers discussing which children to pick up and also non-essential transmissions, such as exchanging recipes. They contended that this situation has interfered with patient care and impeded their services. Communications with paramedics are also interrupted. School bus drivers were said to lack training as radio operators. According to one witness, the problem is that the FCC permits school buses and ambulances to operate on the same frequencies when they are not compatible.

But a representative of the New Jersey School Bus Owners Association testified that ambulances drown out communications between school buses and their base. These vehicles may be transporting children with different types of handicaps which may require constant monitoring and, possibly, emergency attention. Moreover, buses occasionally break down. He stated that pending legislation would require two-way radios on all school buses and urged the Commission to consider recommending frequencies for use by the pupil transportation industry. He also stated that a short course for school bus drivers in the use of two-way radios could alleviate the problem. Another suggestion was to install cellular telephones on school buses so that the driver could call for help in the event of an emergency.

An official of the Department of Health described other problems in emergency medical communications. He said New Jersey needs a coordinated network of emergency medical services communications (EMS) that is free of interference. He added that the State needs a coordinated EMS dispatch and communications system, instead of permitting many EMS organizations to be dispatched by police on frequencies intended for law enforcement use.

In the area of basic life support (BLS) he said that communications are so bad that some emergency medical technicians (EMT) do not bother to contact a hospital for medical advice before bringing in a patient. He noted that the hospital emergency and administrative system (HEAR) affords only a single radio channel for all ambulances in the State to communicate with all hospitals in the State. This involves about 3500 ambulances and 130 acute care hospitals. Because hospital staffs are barraged with radio chatter, the Health Department official said, they frequently turn down the HEAR base radio volume control. He also said that some personnel are not trained in the proper use of the radio. Testimony from members of rescue squads supported these observations.

He stated that the Jersey Emergency Medical Services (JEMS) communication plan promulgated by the Department of Health attempted to address the problems with EMS dispatch and with BLS medical communications through the design of an organized network of ambulances and hospitals, utilizing the available Special Emergency Radio Service Channels (SERS) in such a manner as to minimize interference. But he stated that the optional nature of the plan for certain users has led to less than optimal performance, because many hospitals have failed to procure the required decoding devices and some basic life support provider organizations have not purchased JEMS capable radios.

Providers of advanced life support services also face problems, he said. While participation in the JEMS plan is mandatory for mobile intensive care units (MICUs), these units still receive interference from out of State and SERS users. He stated that it is extremely important that communications on these channels be free from interference when complex therapeutic interventions are being performed by paramedics under instructions from emergency department physicians.

Another witness said that the State should mandate compliance with the JEMS plan. He noted that this could cause problems though because many ambulances in the State are not equipped with radios that meet all of the specifications of the JEMS plan. Equipping these ambulances with new radios could be expensive, he stated.

Several witnesses testified that much of the problem in communications in New Jersey can be attributed to the State's location between the high volume areas of New York City and Philadelphia. Witnesses said that they hear transmissions from the states of New York and Pennsylvania and as far away as Washington, D.C.

Witnesses stated that attenuation has been used in some instances to solve such interference problems. Attenuation involves the reduction of power by lowering or moving the location of a public safety user's antenna. One witness said that in some cases the police frequency coordinators can require a user to lower his antenna. Other witnesses said that they had lowered their antennae but still receive interference.

A representative of a major radio vendor testified that the major problem with public safety communications in the northeast is that there just are not enough frequencies. He stated that a survey shows that the

frequencies that are to be released shortly in the 800 MHz band will be gone in two years. He urged the Commission to petition Congress for more frequencies. The high population in New Jersey necessitates a greater number of frequencies than what might be required in a larger area with the same population, he said.

Other witnesses also expressed concern that the portion of the 800 MHz spectrum which will be released by the Federal Communications Commission will not be sufficient for the State's needs. Several suggested the FCC release some television channels in the UHF spectrum for the use of public safety organizations. They felt that television repacking would help by allowing public safety organizations to build a network of channels for communications.

A frequency coordinator for the State Police pointed out that coordination is not the cure for New Jersey's problem because the coordinators are trying to manage a very limited resource. He stated that they cannot guarantee exclusive frequencies because it is the prerogative of the FCC to allocate frequencies. Furthermore, there is no guarantee that a frequency will be forever guarded or free of interference; the radio spectrum gets more congested every day because the number of applicants exceeds the number of radio frequencies.

Other witnesses described equipment limitations in solving the frequency shortage problem. For example, if a police department uses a VHF high band radio and becomes overcrowded on its one dispatch channel, it is limited as to which additional frequencies it may get because the coordinator can only recommend additional frequencies in that band. That department would have to change every piece of its radio equipment to use available frequencies in another band.

This same equipment problem also limits "interoperability," i.e., the ability of various types of emergency services organizations to communicate with each other. For example, a police and a fire agency on different radio bands cannot communicate at the scene of an emergency on their existing radios. In such a situation, the State Police may have to bring in common frequency portable radios so the departments can communicate. With diverse frequency bands, a witness noted, the common link and compatibility, which are so vitally needed, are lost.

The Commission also heard testimony from several witnesses on "trunking." This new technology makes more efficient use of the number of radio frequencies that are assigned by putting them into a bank. A computer manages the frequencies and finds an open channel when one is needed. If no channels are available, the user gets a busy signal. Thus the problem of system interference is eliminated; however outside interference is still possible. One problem with trunking, however, is that it is very expensive to install. One witness noted that the FCC is considering requiring the use of trunking for at least a portion of the new 800 MHz frequencies that will be allocated. Witnesses stated that trunking would solve the problem of an insufficient number of frequencies and provide the interoperability that would allow different units to communicate with each other. But trunking only will provide this interoperability over conventional channels and only to users of compatible systems.

Witnesses stressed the need for a comprehensive public safety communications plan. One suggested that the State should be responsible for developing such a plan. Another witness said that such a plan could provide for better utilization of available frequencies.

Several speakers also addressed the issue of the use of codes in public safety communications. Speakers stated that codes cause confusion because they are not standardized. One witness said that the Commission should draft legislation requiring all public safety communications to be conducted in plain language, eliminating alpha numeric codes and signals. A standardized vocabulary should be developed by the Department of Law and Public Safety, he said. Differing points of view about codes were expressed by different members of the Commission and witnesses. One Commission member said that codes are needed to keep some transmissions confidential and to expedite conversations. He stated that standardization of codes already exists to some extent; he said that codes could be standardized further but not replaced totally by plain language. Another member of the Commission stated all communications, except for police communications, should be in plain language. Yet another Commission member stated that the Army's experiences have shown that codes offer no security and are broken easily in wartime.

Some witnesses asked the Commission to delve into the area of dispatcher training and recommend that training be standardized throughout the State. Another witness stated that there should be a uniform level of training for all public safety communicators in accordance with the Associated Public Safety Communications Officers (APCO) standards. The training should include instructions in the provision of emergency instructions, such as those for CPR, via the telephone.

C. Meeting with the Federal Communications Commission

On July 16, 1987 members of the Commission and staff met with representatives of the Federal Communications Commission (FCC) in Washington D.C. The Emergency Response System Study Commission was

represented by Chairman Mazur and Vice-chairman Miller, William C. Faust, Jr. and Capt. Joseph Saiia and Lt. Stanley Dutkus (representing Col. Clinton Pagano). Also represented were U.S. Senators Lautenberg and Bradley; and Congressmen Florio, Gallo, Torricelli, and Saxton.

The purpose of the meeting was to discuss the New Jersey public safety community's communications systems problems and to ask for the assistance of the FCC in resolving them.

Chairman Mazur described testimony presented to the Commission concerning the State's overcrowded radio frequencies and the inability of emergency services to respond in emergency situations. He attributed these problems, in large part, to the inadequate number of public safety radio frequencies available in the State. Commission members also told the FCC that its proposed allocation in the 800 MHz band is not sufficient for the public safety services of the State of New Jersey. They asked the FCC to consider television repacking so that the public safety agencies can have a contiguous spectrum of frequencies, common throughout the State of New Jersey and throughout the nation.

FCC officials contended that television repacking is not a feasible solution because the interests of the broadcast industry are strong and other users also want a portion of that spectrum. They also stated that school buses, dog catchers and local government cannot be eliminated totally from the public safety spectrum because some states consider these groups to be public safety entities. The FCC officials said that public safety may not need more frequencies than the present allocation if the incompatible users were moved to another portion of the available spectrum.

They said they would investigate this alternative as a possible solution to New Jersey's communications problems.

V. SURVEY ON PUBLIC SAFETY COMMUNICATIONS IN NEW JERSEY

The Emergency Response System Study Commission conducted a survey of public safety agencies throughout the State to investigate their experiences and problems with their communications systems. A copy of the survey results is included as Appendix C. Three different questionnaires were developed for police, fire and emergency medical services (EMS). A questionnaire was sent to every agency for which a mailing address was available.

Police communications: 355 questionnaires mailed, 264 responses received; response rate, 74%.

Fire communications: 1311 questionnaires mailed, 300 responses received; response rate 23%.

EMS communications: 417 questionnaires mailed, 150 responses received; response rate, 36%. The responses were divided into two categories, separating Special Emergency Radio Service (SERS) users (64 questionnaires) from all other EMS users (86 questionnaires). Separate results were calculated for each category.

While the response rate for fire departments and EMS squads was lower than the police response rate, it should be noted that many of these groups are composed of volunteers and do not employ full time staff.

The following sections provide a summary of survey results for each group.

A. Police Communications

Most police departments in New Jersey (60%) operate in the UHF frequency band. Some departments operate in all sections of the radio band,

however, and others operate in more than one band. Sixty percent stated that they can communicate with 76 to 100 percent of the police departments in their immediate area. A large majority of police departments (82%) state that they have a countywide common police frequency.

Fifty percent of the departments routinely utilize only one or two radio channels. But 15 percent state that they routinely utilize over five channels.

About 70 percent of the responding departments state that communications are interrupted or interfered with between their police units and their dispatcher. Fourteen percent of these indicate that they experience interference 50 to 100 percent of the time. Sixty-two percent of those experiencing interference report that it is caused by other police departments in their immediate area. Thirty-nine percent experience interference from other police units in New Jersey. Almost half of the responding departments (44%) report interference from police departments outside New Jersey. Sixty three percent say that interference is detrimental to their police activities.

Nearly all of the responding police departments (96%) are familiar with the Statewide Police Emergency Network System (SPEN) plan. But while SPEN is operational at 91% of the dispatcher's locations, only half (49%) report that SPEN is operational in their police vehicles.

B. Fire Communications

The responses show that fire departments operate in all the available frequency bands. But 95 percent are concentrated in the low band (45%) and the VHF high band (50%). More than half of the fire departments (62%) utilize a fire ground channel different than their dispatch frequency.

Most of the responding departments have between one and four frequencies installed in their fire vehicles. Four percent, however, state that they have over nine frequencies installed in their vehicles.

Eighty percent of the responding fire companies say that they can communicate with 76 to 100 of the fire companies in their mutual aid service area. Seventy-one percent have a countywide mutual aid frequency.

But 88 percent of the responding companies report that communications are interrupted or interfered with between their fire units and their dispatcher. Sixty percent of the respondents report that they receive interference from fire units within their immediate area; about half (47%) report that they also experience interference from fire units outside New Jersey. Seventy-five percent say that this interference is detrimental to proper firefighting.

Ninety-two percent of the respondents can communicate either directly by radio or indirectly through a communications center with EMS and police units and also say that the ability to communicate with EMS and police agencies is desirable.

Only 13 percent of the fire companies are self dispatched. Almost half (43%) are dispatched by local police. One third utilize county dispatch. Almost two-thirds say that regional dispatch is an advantage.

C. EMS Communications (SERS-Special Emergency Radio Service Users)

Almost all of the SERS respondents (90%) state that they operate in the VHF high band. A small group also operate in the low band, UHF band, and the UHF up band. Most SERS respondents (87%) indicate that they can communicate with at least 75 percent of the squads in their mutual aid area.

Over three quarters of the SERS users (78%) report that communications are interrupted or interfered with between their ambulances or between their ambulances and their dispatcher. Over two thirds (65%) consider this interference to be severe enough to be detrimental to proper dispatching. Almost half of the respondents (46%) report that this interference is caused by other ambulances, while half (51%) report that the interference is caused by school buses. Almost one-third report interference caused by hospital security systems, while one-quarter report interference caused by invalid coaches.

Over two-thirds of the squads (68%) report that communications are interrupted or interfered with between their squad's ambulances and hospitals. Over half consider this interference to be severe enough to be detrimental to good patient care. Eighty percent report interference caused by other ambulances. Over one third (35%) report interference caused by hospital security systems. Interference also is caused by invalid coaches (20%), school buses (10%), and veterinarians (2%).

Three quarters of the squads say they were familiar with the Jersey Emergency Medical Services plan. Eighty-six percent say that at least 75 percent of their vehicles are equipped with a JEMS radio.

Nearly all of the responding squads (99%) can communicate with police and fire services either directly by radio or indirectly through a dispatch center. Almost all (96%) were in agreement that the ability to communicate with other public safety agencies is desirable. Ninety-three percent also stated that they can communicate with the paramedics in their service area.

More than half of the squads are county dispatched, while 28 percent are dispatched by local police. Only a small minority (7%) are self dispatched. Almost two thirds say that regional dispatch is an advantage, while one third say that it is a disadvantage. Six percent feel that regional dispatch has both advantages and disadvantages.

D. EMS Communications Other Than SERS

Like the SERS users, most of the other EMS respondents operate in the VHF high band and the low band. A small group also operate in the UHF Band, the UHF up band, and 800 MHz. Over three quarters of the respondents indicated that they can communicate with at least 75 percent of the squads in their mutual aid area.

EMS respondents don't seem to be experiencing as much interference in communications as the EMS users on the SERS frequencies. Fifty-six percent report that communications are interrupted or interfered with between their ambulances or their ambulances and their dispatcher. Less than half (45%) said that the interference is severe enough to be detrimental to proper dispatching, compared to 65 percent of the SERS users. Most listed "other" as the cause of the interference, often citing police departments and fire departments in both New Jersey and New York. One-third also said that they experience interference from other ambulances. These users do not seem to experience as much interference from school buses and hospital security systems as the SERS users.

Almost half (46%) of the respondents say that they find radio communications between ambulances and hospitals to be extremely helpful. One third say they are helpful.

Over half (57%) state that hospitals answer their squads first attempt to establish communications at least 75 percent of the time. But over half of the squads say that communications are interrupted or interfered with between their squad's ambulances and hospitals. Less than one third state that the interference is severe enough to be detrimental to patient care. Eighty percent report that the interference is caused by other ambulances.

Less than half of the EMS users (48%) state they are familiar with the JEMS plan. But 75 percent say that at least 75 percent of their vehicles are equipped with a JEMS radio.

All of the EMS respondents are able to communicate with other public safety agencies. Almost all (98%) say that such communication is desirable. Ninety four percent can communicate with the paramedics in their area.

Seventy percent of the EMS respondents are county dispatched. The remainder are self dispatched (6%), dispatched by local police (15%), or multi-municipal dispatched (10%). Slightly more than half (52%) of the EMS respondents feel that regional dispatch is an advantage.

VI. DISCUSSION OF RECOMMENDED LEGISLATION

The recommendations of the Emergency Response System Study Commission are embodied in the Commission's proposed legislation following this section. The major features of the legislation are as follows.

A. Office of Public Service Communications Policy and Planning

An Office of Public Service Communications Policy and Planning should be established in the Division of State Police under the supervision of the Superintendent of State Police. A Public Service Communications Policy

and Planning Commission should be established to advise the office in all aspects of public safety and public service communications.

This office would be responsible for the overall planning, development and implementation of a Statewide communications plan for the public safety and public service agencies, subject to the recommendations of the Commission. After the approval and adoption of the Statewide communications plan, any new communications system to be used by a public safety or public service agency would have to be approved by the office for compliance and conformance with the overall State plan.

While the responsibility for allocating frequencies rests with the FCC, the office would provide liaison with interstate radio spectrum planning committees to maximize utilization of finite radio spectrum resources. The office also would make specific recommendations for frequency usage, tone squelch assignments where applicable, transmitter power, antenna height and design, and effective radiated power (ERP) through liaison between the FCC appointed frequency coordinators.

The Commission would consist of 16 members who are planners and users of public safety and public service. The chairperson of the Commission would be the Superintendent of the State Police. The Commission would submit recommendations to the office on all aspects of public safety and public service communications and the Statewide communications plan. The Commission would also review and submit recommendations concerning any subsequent modifications to the Statewide plan that are proposed by the office. Moreover, the Commission would encourage cooperation between public safety and public service communications users.

B. Assembly Joint Resolution No. 14 of 1988

The Emergency Response System Study Commission recommends prompt passage of Assembly Joint Resolution No. 14 of 1988. This resolution memorializes Congress and the President to instruct the Federal Communications Commission to dedicate additional radio frequencies for the use of public safety agencies. The purpose of the resolution is to ensure that the FCC adequately responds to the 1983 Congressional mandate to develop a comprehensive communications plan for public safety organizations through the year 2000.

C. Radio Training for School Bus Drivers

The Emergency Response System Study Commission recommends that two hours of training in the operation and use of two way radios be mandated for all school bus drivers in the State. This training would be provided by the Department of Education.

Police, fire and emergency medical services must share radio frequencies with school bus drivers and other providers of public service. Emergency medical service users report they frequently suffer radio interference from school buses drivers' transmissions, which often appears to be due to the drivers' lack of training in proper two-way radio procedures

Legislation to require the installation of two-way radios on all school buses is pending before the Legislature. Therefore, the Emergency Response System Study Commission recommends that this legislation be adopted to ensure that school bus drivers will be familiar with the basic operations of the radio, the priorities governing transmission, and procedures for effective use of the radio during emergencies.

D. JEMS Radio Requirement for Hospital Emergency Departments

The Emergency Response System Study Commission recommends that the Commissioner of Health require by regulation that all hospital emergency departments be equipped with a radio in compliance with the JEMS plan. The Governor's Council on Emergency Medical Services has heard testimony on the communications problems plaguing the emergency health care community. It supports updating and use of the JEMS plan to improve emergency medical communications in the State.

VII. RECOMMENDED LEGISLATION

AN ACT establishing an Office of Public Service Communications Policy and Planning and a Public Service Communications Policy and Planning Commission to plan and coordinate, on a Statewide basis, public service communications systems with special emphasis on public safety, supplementing Title 52 of the Revised Statutes and making an appropriation therefor.

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

1. As used in this act:

"Commission" means the Public Service Communications Policy and Planning Commission created by section 6 of this act;

"Director" means the Director of the Office of Public Service Communications Policy and Planning created by section 2 of this act;

"Office" means the Office of Public Service Communications Policy and Planning created by section 2 of this act;

"Plan" means the Statewide communications plan created pursuant to section 2 of this act;

"Public safety agency" means a functional division of a municipality, a county, or the State which dispatches or provides law enforcement, fire fighting, emergency medical services, or other emergency services;

"Public service agency" mean a functional division of a municipality, a county, or the State which provides services other than the services provided by a public safety agency;

"Superintendent" means the Superintendent of the Division of State Police in the Department of Law and Public Safety.

2. a. There is established in the Division of State Police in the Department of Law and Public Safety an Office of Public Service Communications Policy and Planning under the supervision of the superintendent.

b. The office shall be administered by a director, who shall be qualified by training and experience to direct the work of the office. The director shall be appointed by the superintendent, and the Commission shall advise the superintendent as to the qualifications of the director. The superintendent shall be authorized to employ professional, technical and clerical assistants, and to appoint any available personnel as shall be necessary to effectuate the purposes of this act. Staff shall include at a minimum a planner, an engineer, an administrative analyst, and a secretarial assistant. Data and word processing equipment is to be provided consistent with the requirements of the office.

c. The office shall be responsible for the overall planning, development and implementation of a Statewide communications plan for the public safety and public service agencies of the State subject to the recommendations of the Commission.

(1) The office shall hold public hearings while the plan is being developed to obtain the views of public safety and public service agencies and other interested parties.

(2) Any county or municipal communications plan in effect at the time of adoption of the plan may continue to coexist with the plan, providing that its provisions do not negate, conflict with, or adversely affect the plan.

(3) The coordination of similar services and maximum reuse of frequency spectrum shall be considered during development of the plan. Where spectrum is severely limited, the special needs of public safety shall be given priority.

3. After the approval and adoption of the plan, any new communications systems to be used by a public safety or public service agency shall be approved by the office for compliance and conformance with the plan.

4. The office shall provide liaison with interstate radio spectrum planning committees to maximize utilization of finite radio spectrum resources.

5. The office shall make specific recommendations for frequency usage, tone squelch assignments where applicable, transmitter power, antenna height and design, effective radiated power (ERP), and other topics which it may deem appropriate. These recommendations shall be proffered through liaison between the office and the Federal Communications Commission's appointed Frequency Coordinators for the public safety and special emergency radio services--specifically, the Associated Public Safety Communications Officers (APCO), coordinators of record for police and local government; the International Municipal Signals Association (IMSA), coordinator of record for fire and emergency medical services; the National Association of Business and Educational Radio (NABER), coordinator of record for emergency medical service; the Forestry and Conservation Communications Association (FCCA), coordinator of record for forestry and conservation; American Association of State Highway and Transportation Officials (AASHTO), coordinator of record for highway maintenance; and the International Association of Fire Chiefs (IAFC), coordinator of record for fire services.

6. a. There is established in the Division of State Police in the Department of Law and Public Safety a Public Service Communications Policy and Planning Commission which shall advise the office in all aspects of public safety and public service communications. The Commission shall consist of 16 members who are planners and users of public safety and public service communications.

a. The following six members of the Commission shall serve ex officio: the Commissioner of the Department of Corrections; the Adjutant General of the Department of Defense; the Commissioner of the Department of Environmental Protection; the Superintendent of the Division State Police; the Director of the Office of Emergency Telecommunications Services in the Department of Law and Public Safety created by P.L. ____ c. ____ (C. ____) (now pending

before the Legislature as Assembly Bill No. 1576 of 1988 and Senate Bill No. 1511 of 1988); and the Director of the Office of Public Service Communications Policy and Planning in the Division of State Police created by section 1 of this act.

b. The following 10 members of the Commission shall be appointed by the Governor with the advice and consent of the Senate: two members representing law enforcement, of which at least one member shall be recommended by the New Jersey Police Chief's Association; two members representing the fire services, of which at least one member shall be recommended by the New Jersey Fire Chief's Association; one member representing emergency medical services; one member representing the New Jersey First Aid Council; two members representing the New Jersey League of Municipalities; and two communications directors of large or multi-agency communications centers who are members of the Associated Public Safety Communications Officers Association, Inc. (APCO).

c. The terms of the initial appointments by the Governor shall be as follows: four members shall be appointed for terms of three years, three members shall be appointed for terms of two years, and three members shall be appointed for terms of one year. Thereafter, the members of the Commission shall be appointed by the Governor for terms of three years. Vacancies on the Commission shall be filled in the same manner as the original appointments. All appointed members shall continue to serve after the expiration of their terms until their successors are appointed and qualified. Members appointed by the Governor may be removed for cause. Members of the Commission shall receive no compensation for services but shall be reimbursed for actual necessary and reasonable expenditures incurred in the performance of their duties within the limits of any funds appropriated or otherwise made available for that purpose.

d. The chairperson of the Commission shall be the superintendent and the members shall annually elect a vice-chairperson from among the membership.

e. Each ex officio member may designate an employee of the member's department, division or office to represent the member at meetings or hearings of the Commission. All designees may lawfully vote and otherwise act on behalf of the members by whom they were designated.

7. The Commission shall:

a. Submit recommendations to the office on all aspects of public safety and public service communications.

b. Review and submit recommendations concerning the Statewide communications plan to be developed pursuant to section 2 of this act;

c. Review and submit recommendations concerning any subsequent modifications to the plan that are proposed by the office;

d. Encourage cooperation between public safety and public service communications users.

8. a. The Attorney General may, at the request of the office or Commission, or on his own initiative, institute civil proceedings against any appropriate party to enforce the provisions of this act.

b. The Attorney General, in consultation with the superintendent, the director and the Commission, shall promulgate such rules and regulations in accordance with the "Administrative Procedure Act," P.L. 1968, c. 410 (C. 52:14B-1 et seq.) as he deems necessary to effectuate the purposes of this act.

9. Any person who violates the provisions of this act shall be subject to a penalty of \$200.00 for the first offense and \$500.00 for each subsequent offense. If the violation of this act is of a continuing nature, each day during which it continues shall constitute a separate offense for the purposes of this section. The penalty shall be collected and enforced by summary proceedings under "the penalty enforcement law," (N.J.S. 2A:58-1 et seq.)

10. There shall be appropriated from the general fund to the Division of State Police \$200,000.00 to effectuate the purposes of this act.

11. This act shall take effect on the 90th day after enactment, except that subsection b. of section 8 shall take effect immediately.

STATEMENT

This bill would establish the Office of Public Service Communications Policy and Planning in the Division of the State Police and a Public Service Communications Policy and Planning Commission to plan and coordinate, on a Statewide basis, public service communications systems.

The office would be responsible for the overall planning, development and implementation of a Statewide communications plan for the public safety and public service agencies of the State subject to the recommendations of the Commission. After the approval and adoption of the plan, any new communications systems to be used by a public or public service agency would have to be approved by the office for compliance and conformance with the overall State plan.

The office would provide liaison with interstate radio spectrum planning committees to maximize the utilization of radio spectrum. The office would also make specific recommendations for frequency usage, tone squelch assignments where applicable, transmitter power, antenna height and design, and effective radiated power (ERP) after consultation with Federal Communications Commission appointed frequency coordinators.

The Commission would advise the office in all aspects of Public Safety and Public Service communications. It would consist of 16 members who are planners and users of public safety and public service radio. The chairperson of the Commission would be the Superintendent of the State Police. The Commission would make recommendations on all aspects of public safety and public service communications, the Statewide communications plan and any subsequent modifications to the plan.

The bill authorizes the attorney general to institute civil proceedings against any appropriate party to enforce the its

provisions. The bill also provides penalties for violations pursuant to "the penalty enforcement law."

Finally, the bill appropriates \$200,000.00 to the Division of State Police.

PUBLIC SAFETY

Communications and Broadcasting

Establishes Office of Public Service Communications Policy and Planning and a Commission in the Division of State Police.

AN ACT requiring school bus drivers to receive training in the use of two-way radios and supplementing Title 18A of the New Jersey Statutes.

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

1. In addition to the requirements of R.S. 39:3-10.1, no person shall drive any bus used to transport children to and from school pursuant to N.J.S. 18A:39-1 et. seq., or any bus being used by a private school to transport children to and from school, unless that person has received two hours of instruction on the use of a two-way radio. This training shall be provided by the Department of Education. The form and content of this training shall be determined by the Commissioner of Education, following consultation with the Superintendent of the State Police, the Director of the Division of Motor Vehicles and local school officials. This training shall include, at a minimum, instruction in the basic operation of the radio, the priorities governing transmissions, and procedures for effective use of the radio during emergencies.

2. The Commissioner of Education and the Director of the Division of Motor Vehicles shall promulgate joint rules and regulations to effectuate the purposes of this act pursuant to the "Administrative Procedure Act," P.L. 1968, c. 410 (C:52:14B-1 et. seq.).

3. This act shall take effect immediately.

STATEMENT

This bill would require school bus drivers to receive training in the operation and use of two-way radios.

The Emergency Response System Study Commission has found that there are an insufficient number of radio frequencies for public safety and public service organizations.

Thus, police, fire and emergency medical services must share radio frequencies with school buses and other public service groups. During public hearings held by the Commission, emergency medical service users testified that they frequently receive interference from school buses drivers' transmissions. These radios are necessary to school bus drivers, however, so that they can communicate with their dispatchers and in case of an emergency involving a child they are transporting.

Legislation to require the installation of two-way radios on all school buses is pending before the Legislature. The purpose of this bill is to ensure that school bus drivers will be familiar with the basic operations of the radio, the priorities governing transmission, and procedures for effective use of the radio during emergencies.

TRANSPORTATION

Communications and Broadcasting

Requires school bus drivers to receive training in the use of two-way radios.

STATE OF NEW JERSEY

ASSEMBLY JOINT RESOLUTION No. 14

Introduced Pending Technical Review by Legislative Counsel

PRE-FILED FOR INTRODUCTION IN THE 1988 SESSION

By Assemblyman MAZUR

A *JOINT RESOLUTION* memorializing the Congress and the President of the United States to instruct the Federal Communications Commission to dedicate radio frequencies to public safety.

WHEREAS, Most of the emergency response organizations in New Jersey, including State and local police, fire departments and emergency medical services use communications systems that are not compatible because of the multiplicity of frequency groups; and

WHEREAS, A Passaic county grand jury found that during the tragic fire that occurred in the city of Passaic in September 1985, police and fire departments from nearby towns were hindered in their attempts to aid that city in fighting the 40-acre blaze because their communications systems were not compatible; and

WHEREAS, The State Emergency Response System Study Commission has found that additional factors contribute to these communications difficulties, including an insufficient number of frequencies for public safety; an increasing number of nonemergency service users whose communications interfere with those of public safety users and who do not observe proper radio etiquette; the density of the State's population; and interference because of the State's location between the high volume radio and television markets of New York City and Philadelphia; and

WHEREAS, On December 8, 1983, the United States Congress directed the Federal Communications Commission to develop a comprehensive communications plan for public safety services through the year 2000 and the Federal Communications Commission, responding to the Congressional mandate through its Notice of Proposed Rulemaking No. 87-112, proposed allocating a section of the 800 MHz radio band to public safety communications; and

WHEREAS, the State Emergency Response System Study Commission has found that these additional frequencies will be insufficient for the State's needs and that public safety organizations will be required to share these frequencies with incompatible nonemergency service users; now, therefor,

BE IT RESOLVED *by the General Assembly of the State of New Jersey:*

1. The government of the State of New Jersey, on behalf of the citizens of this State, for the urgent public policy purposes expressed in the preamble, respectfully memorializes the Congress and the President of the United States to instruct the Federal Communications Commission to dedicate a sufficient number of radio frequencies to the exclusive use of public safety, specifically State and local police, fire departments and emergency medical services, and to consider repacking several contiguous UHF television channels so that public safety organizations can build a Statewide system of communications.

2. Upon approval by the Governor, duly authenticated copies of this joint resolution shall be transmitted to the President and Vice President of the United States, the Speaker of the United States House of Representatives, the majority and minority leaders of both Houses of Congress, and every member of the Congress representing New Jersey.

3. This joint resolution shall take effect immediately.

STATEMENT

The New Jersey Emergency Response System Study Commission has found that insufficient radio frequencies exist for use by police and fire departments and emergency medical services and that public safety communications are hampered by the multiplicity of frequency groups. Moreover, no public safety radio channel in the State is clear from some form of interference. This joint resolution memorializes Congress and the President to instruct the Federal Communications Commission to dedicate radio frequencies for the exclusive use of public safety organizations in New Jersey, specifically police, fire, and emergency medical services, and to consider television repacking so that these groups can build a Statewide system of communications. The purpose of this resolution is to ensure that the Federal Communications Commission adequately responds to the 1983 Congressional mandate to develop a comprehensive communications plan for public safety organizations through the year 2000.

PUBLIC SAFETY

Communications and Broadcasting

Memorializes Congress and the President to instruct the FCC to dedicate adequate radio frequencies to public safety.

APPENDIX A

ASSEMBLY BILL NO. 4225 OF 1985

[OFFICIAL COPY REPRINT]
ASSEMBLY, No. 4225
STATE OF NEW JERSEY

INTRODUCED NOVEMBER 18, 1985

By Assemblymen MAZUR and BENNETT

AN ACT creating a commission to study and make recommendations concerning the emergency response system in the State of New Jersey, including the provision of enhanced 9-1-1 emergency telephone service, and making an appropriation.

1 BE IT ENACTED *by the Senate and General Assembly of the State*
2 *of New Jersey:*

1 1. The Legislature finds and declares that:

2 a. The provision of emergency services, such as police, fire,
3 rescue and medical services, is a subject which merits study by
4 the Legislature in order to improve and facilitate the provision
5 of these services;

6 b. These services should be provided as part of a coordinated
7 emergency response system in which the State, regional, county
8 and municipal components, as well as volunteer and private en-
9 tities, have appropriate roles to play;

10 c. With current highly sophisticated communications systems
11 already in use in other states, it is appropriate to consider the
12 matter of the creation of an enhanced 9-1-1 emergency telephone
13 system for the State of New Jersey in order to provide the most
14 efficient response to requests for emergency services;

15 d. Therefore, it is in the public interest to create an Emer-
16 gency Response System Study Commission to study and make
17 recommendations concerning appropriate legislation to create a
18 Statewide enhanced 9-1-1 emergency telephone system; and to
19 study and make recommendations concerning the emergency re-
20 sponse system in the State with a view to improving and facili-
21 tating the provision of emergency service, to better coordinating
22 the components of such a system, and to remedying defects in the
23 present system.

EXPLANATION—Matter enclosed in bold-faced brackets [thus] in the above bill
is not enacted and is intended to be omitted in the law.

Matter printed in italics thus is new matter.

Matter enclosed in asterisks or stars has been adopted as follows:

1 2. There is created an Emergency Response System Study
2 Commission to consist of "[15]" "17" members to be appointed as
3 follows: a. two shall be members of the Senate appointed by the
4 President thereof, one of whom upon recommendation of the major-
5 ity Leader thereof and one of whom upon recommendation of the
6 Minority Leader thereof; b. two shall be members of the General
7 Assembly appointed by the Speaker thereof, one of whom upon
8 recommendation of the Majority Leader thereof and one of whom
9 upon recommendation of the Minority Leader thereof; and c. "[11]"
10 "13" members appointed by the Governor, with the advice and con-
11 sent of the Senate, as follows: one representative of the Fire
12 Fighters' Association of New Jersey, one representative of the New
13 Jersey First Aid Council, one representative of the American Heart
14 Association, one representative of the New Jersey Chiefs of
15 Police Association, one representative of the State Police, two
16 representatives of the Associated Public-Safety Communications
17 Officers Inc. (APCO), one representative of the New Jersey Bell
18 Telephone Company, one representing the independent telephone
19 companies, one representative of the Board of Public Utilities,
20 "[and]" one representative of the Governor's Office of Policy and
21 Planning, *an elected municipal official, and a member of the Board*
22 *of Chosen Freeholders of a county*". When appointing the "[11]"
23 "13" members, due consideration shall be given by the Governor to
23A the nonpartisan subject matter under consideration by the com-
23B mission.

24 The initial members shall be appointed within 30 days of the
25 effective date of this act. All members shall serve without com-
26 pensation. Vacancies in the membership of the commission shall
27 be filled in the same manner as the original appointments were
28 made.

1 3. It shall be the duty of the commission to study and make recom-
2 mendations concerning: a. appropriate legislation to create a State-
3 wide enhanced 9-1-1 emergency telephone system; and b. the emer-
4 gency response system in the State with a view to improving and
5 facilitating the provision of emergency services, to better coordinat-
6 ing the components of such a system, and to remedying defects in
7 the present system.

8 The work of the commission shall be divided into two phases.
9 The first phase, which shall be completed in not more than "[60]"
10 "90" days from the organization of the commission, shall consist of
11 an examination of the matter of the enhanced 9-1-1 emergency tele-
12 phone system as outlined in the first paragraph of this section. The
13 commission shall hold at least one public hearing in the northern

14 *~~part of this State~~ and one public hearing in the southern part of
15 the State]**, *central and southern parts of this State**, in order to
16 receive the views of interested parties concerning this matter. **The*
17 *central part of the State shall encompass the counties of Mercer,*
18 *Middlesex, Monmouth and Ocean.** The commission shall also con-
19 sider in its deliberations Assembly Bill No. 3741 of 1985 and Senate
20 Bill No. 3139 of 1985, and any amendments thereto or substitute
21 bills therefor proposed by the sponsors. Upon the completion of its
22 deliberations it shall, within the *~~60-day~~* **90-day** period, report
23 its recommendations to the Governor and Legislature with proposed
23A legislation it recommends for adoption by the Legislature to create
23B a Statewide enhanced 9-1-1 emergency telephone system.

24 The second phase, which shall not be commenced until the recom-
25 mendations with proposed legislation under the first phase shall
26 have been reported to the Governor and Legislature, shall consist
27 of an examination of the matter of the emergency response system
28 as outlined in the first paragraph of this section. The commission
29 shall report its findings and recommendations concerning this
30 matter to the Governor and the Legislature with any proposed
31 legislation it may desire to recommend for adoption by the Legisla-
32 ture no later than *~~six~~* **nine** months following the initiation of
33 the second phase.

1 4. The commission shall organize as soon after the appointment
2 of its members as is practicable. The commission shall elect a chair-
3 man from among its members and the chairman shall appoint a
4 secretary who need not be a member of the commission.

1 5. The commission shall be entitled to call to its assistance and
2 avail itself of the services of such employees of any State, county
3 or municipal department, board, bureau, commission or agency as
4 it may require and as may be available to it for its purposes, and
5 to employ such stenographic and clerical assistance and incur
6 traveling and other miscellaneous expenses as it may deem
7 necessary in order to perform its duties, within the limits of funds
8 appropriated or otherwise made available to it for its purposes.

1 6. The commission may meet and hold hearings at a place or
2 places it designates during the sessions or recesses of the Legisla-
3 ture.

1 7. There is appropriated *~~\$45,000.00~~* **\$35,000.00** to the com-
2 mission from the General Fund to effectuate the purposes of this
3 act.

1 8. This act shall take effect immediately and shall expire on the
2 30th day after the submission by the commission of its report and
3 recommendations under the second phase of its work.

APPENDIX B

ASSEMBLY BILL NO. 4366 of 1987

ASSEMBLY, No. 4366

STATE OF NEW JERSEY

INTRODUCED JUNE 18, 1987

By Assemblymen MAZUR, MILLER, Bryant, Penn, Dario and
Assemblywoman Farragher

AN ACT to amend "An Act creating a commission to study and make recommendations concerning the emergency response system in the State of New Jersey, including the provision of enhanced 9-1-1 emergency telephone service, and making an appropriation," approved January 21, 1986 (P. L. 1985, c. 542).

1 BE IT ENACTED *by the Senate and General Assembly of the State*
2 *of New Jersey:*

1 1. Section 3 of P. L. 1985, c. 542 is amended to read as follows:

2 3. It shall be the duty of the commission to study and make recom-
3 mendations concerning: a. appropriate legislation to create a State-
4 wide enhanced 9-1-1 emergency telephone system; and b. the emer-
5 gency response system in the State with a view to improving and
6 facilitating the provision of emergency services, to better coordinat-
7 ing the components of such a system, and to remedying defects in
8 the present system.

9 The work of the commission shall be divided into two phases.
10 The first phase, which shall be completed in not more than 90 days
11 from the organization of the commission, shall consist of an ex-
12 amination of the matter of the enhanced 9-1-1 emergency telephone
13 system as outlined in the first paragraph of this section. The com-
14 mission shall hold at least one public hearing in the northern,

EXPLANATION—Matter enclosed in bold-faced brackets [thus] in the above bill
is not enacted and is intended to be omitted in the law.

Matter printed in italics *thus* is new matter.

15 central and southern parts of this State, in order to receive the
16 views of interested parties concerning this matter. The central
17 part of the State shall encompass the counties of Mercer, Middle-
18 sex, Monmouth and Ocean. The commission shall also consider in
19 its deliberations Assembly Bill No. 3741 of 1985 and Senate Bill
20 No. 3139 of 1985, and any amendments thereto or substitute bills
21 therefor proposed by the sponsors. Upon the completion of its
22 deliberations it shall, within the 90-day period, report its recom-
23 mendations to the Governor and Legislature with proposed legis-
24 lation it recommends for adoption by the Legislature to create a
25 Statewide enhanced 9-1-1 emergency telephone system.

26 The second phase, which shall not be commenced until the recom-
27 mendations with proposed legislation under the first phase shall
28 have been reported to the Governor and Legislature, shall consist
29 of an examination of the matter of the emergency response system
30 as outlined in the first paragraph of this section. The commission
31 shall report its findings and recommendations concerning this
32 matter to the Governor and the Legislature with any proposed
33 legislation it may desire to recommend for adoption by the Legis-
34 lature no later than **[nine]** *thirteen* months following the initia-
35 tion of the second phase.

1 2. This act shall take effect immediately.

STATEMENT

This bill extends the term of the Emergency Response System Study Commission by four months. The commission submitted its first-phase report, recommending the implementation of a Statewide enhanced 9-1-1 emergency telephone system, in January 1987 and is now conducting its second-phase study of the State's emergency response system as required by the enabling legislation. The additional four months provided by this bill is necessary to ensure a comprehensive second-phase study.

COMMUNICATIONS AND BROADCASTING

Extends term of the Emergency Response System Study Commission.

APPENDIX C

SURVEY DATA

ERSSC POLICE COMMUNICATIONS QUESTIONNAIRE

1. What frequency band does your police department use?

	<u>#</u>	<u>%</u>
Low band	2	1
VHF high band	59	22
UHF band	158	60
UHF up band	48	18
800 MHz	11	4
Other	4	2

2. What specific frequency or frequencies does your police department use for dispatch?

Data for this question was not analyzed.

3. What percentage of police departments in your immediate area can you communicate with?

<u>% communicated with</u>	<u>#</u>	<u>%</u>
0 - 25	40	17
26 - 50	29	12
51 - 75	28	12
76 - 100	144	60

4. What frequency or frequencies does your police department use for inter agency communications?

Data for this question was not analyzed.

5. Do you have a countywide common police frequency?

	<u>#</u>	<u>%</u>
yes	189	82
no	42	26

6. Do you use dedicated channels for any of the following?

	<u>#</u>	<u>%</u>
patrol	89	34
traffic	16	3
detectives	35	13
data lookups	26	10
other	19	7

7. How many radio channels are routinely utilized by your department?

<u># of channels</u>	<u>#</u>	<u>%</u>
1	52	20
2	86	33
3	41	16
4	33	13
5	16	6
6	10	4
7	3	1
8	6	2
over 9	4	2

8. Are communications ever interrupted or interfered with between your police units or between your police units and your dispatcher?

	<u>#</u>	<u>%</u>
yes	173	69
no	76	31

9. Please approximate the percentage of times of interference.

<u>% times</u>	<u>#</u>	<u>%</u>
100 - 75	7	4
74 - 50	18	10
49 - 25	34	19
24 - 15	24	14
14 - 10	32	18
Below 10	60	34

10. This interference is caused by:

<u>Cause</u>	<u>#</u>	<u>%</u>
other police units within your immediate area	108	62
Other police units elsewhere in New Jersey	68	39
Other police units outside New Jersey	76	44
Other local government agencies in New Jersey	23	13
Other local governmental agencies outside New Jersey	33	19

11. Do you consider this interference detrimental to your police activities?

	<u>#</u>	<u>%</u>
yes	116	63
no	68	37

12. Is your department part of a countywide or regional communications plan?

	<u>#</u>	<u>%</u>
yes	164	68
no	78	32

13. Can you communicate either directly by radio or indirectly through a communications center with EMS and fire units?

	<u>#</u>	<u>%</u>
yes	231	94
no	16	6

14. Is the ability to communicate with other public safety (EMS and fire) agencies desirable?

	<u>#</u>	<u>%</u>
yes	237	95
no	13	5

15. Which of the following best describes who dispatches you:

	<u>#</u>	<u>%</u>
Self dispatched	185	68
Multi municipal dispatch	50	18
county dispatch	37	14

16. Is your police department familiar with the SPEN plan?

	<u>#</u>	<u>%</u>
yes	244	96
no	9	4

17. Is SPEN operational at your dispatcher's location?

	<u>#</u>	<u>%</u>
yes	225	91
no	23	9

18. Is SPEN operational in police vehicles?

	<u>#</u>	<u>%</u>
yes	118	49
no	124	51

19. Do your vehicles utilize in-car data terminals?

	<u>#</u>	<u>%</u>
yes	3	1
no	249	99

20. Do you feel that regional dispatch is an advantage or a disadvantage?

	<u>#</u>	<u>%</u>
advantage	85	39
disadvantage	121	56
both	12	6

21. What do you consider a region?

	<u>#</u>	<u>%</u>
a municipality	3	2
2 or more municipalities	77	43
a county	83	47
2 or more counties	15	8

ERSSC FIRE COMMUNICATIONS QUESTIONNAIRE

1. What frequency band(s) does your fire company use?

	<u>#</u>	<u>%</u>
Low Band	133	45
VHF High Band	147	50
UHF Band	14	5
UHF UP-Band	1	.003
800 MHz.	1	.003

2. What specific frequency does your fire company use for dispatch?

Data for this question was not analyzed.

3. Does your fire company, region, or county utilize a fire ground channel different than your dispatch frequency?

	<u>#</u>	<u>%</u>
Yes	175	62
No	108	38

4. How many frequencies are installed in most of your fire vehicles?

<u># of frequencies</u>	<u>#</u>	<u>%</u>
1	47	16
2	80	28
3	34	12
4	61	21
5	5	2
6	12	4
7	13	5
8	23	8
9 and over	13	4

5. What percentage of fire companies in your mutual aid service area can you communicate with?

<u>% communicated with</u>	<u>#</u>	<u>%</u>
0 - 25	17	6
26 - 50	22	8
51 - 75	17	6
76 - 100	227	80

6. What frequency or frequencies does your fire company use for mutual aid?

Data for this question was not analyzed.

7. Do you have a countywide mutual aid frequency?

	<u>#</u>	<u>%</u>
Yes	190	71
No	79	29

8. Are communications ever interrupted or interfered with between your fire units or between your fire units and your dispatcher?

	<u>#</u>	<u>%</u>
Yes	243	88
No	34	12

9. Please approximate the percentage of times of interference.

<u>% times interference</u>	<u>#</u>	<u>%</u>
under 10	33	14
10 - 24	106	44
25 - 49	58	24
50 - 75	38	16
76 - 100	8	3

10. This interference is caused by:

	<u>#</u>	<u>%</u>
fire units within your immediate area	145	60
fire units elsewhere in New Jersey	91	37
fire units outside New Jersey	114	47
other radio users outside the fire service	53	22

11. Do you consider this interference detrimental to proper fire fighting?

	<u>#</u>	<u>%</u>
Yes	188	75
No	63	25

12. Is your fire company part of a countywide or regional mutual aid plan?

	<u>#</u>	<u>%</u>
Yes	253	91
No	25	9

If yes, does this plan address communications?

	<u>#</u>	<u>%</u>
Yes	179	80
No	46	20

13. *Can you communicate either directly by radio or indirectly through a communications center with EMS and police units?*

	<u>#</u>	<u>%</u>
Yes	257	92
No	22	8

14. *Is the ability to communicate with other public safety (EMS and police) agencies desirable?*

	<u>#</u>	<u>%</u>
Yes	252	92
No	22	8

15. *Which of the following best describes who dispatches you:*

	<u>#</u>	<u>%</u>
Self-dispatched	37	13
Local Police	129	43
County dispatch	98	33
Multi-municipal dispatched	36	12

16. *Do you feel that regional dispatch is an advantage or a disadvantage?*

	<u>#</u>	<u>%</u>
Advantage	151	61
Disadvantage	95	39

17. *What do you consider a region?*

	<u>#</u>	<u>%</u>
A municipality	12	5
Two or more municipalities	48	19
A county	166	66
Two or more counties	14	6
Other	13	5

ERSSC EMS COMMUNICATIONS QUESTIONNAIRE

(This chart presents data collected from Special Emergency Radio Service users)

1. What frequency band(s) does your ambulance squad use?

	<u>#</u>	<u>%</u>
Low Band	12	16
VHF High Band	66	90
UHF Band	5	7
UHF up Band	1	1
800 MHZ.	0	0
Other	0	0

2. What specific frequency does your squad use for dispatch?

Data for this question was not analyzed.

3. What percentage of squads in your secondary service area (mutual aid) can you communicate with?

<u>% communicated with</u>	<u>#</u>	<u>%</u>
Less than 10	3	4
10 - 24	1	1
25 - 49	1	1
50 - 74	4	6
75 - 100	59	87

4. What frequency or frequencies does your squad use for mutual aid?

Data for this question was not analyzed.

5. Are communications ever interrupted or interfered with between your ambulances or between your ambulances and your dispatcher?

	<u>#</u>	<u>%</u>
Yes	57	78
No	16	22

6. Do you consider this interference to be severe enough to be detrimental to proper dispatching?

	<u>#</u>	<u>%</u>
Yes	36	65
No	19	29

7. Please approximate the percentage of times of interference.

<u>% times interference</u>	<u>#</u>	<u>%</u>
Less than 10	8	15
10 - 24	14	26
25 - 49	12	22
50 - 74	16	30
75 - 100	4	7

8. This interference is caused by:

	<u>#</u>	<u>%</u>
Other Ambulances	26	46
Hospital Security Systems	17	30
Invalid Coaches	14	25
School Buses	29	51
Veterinarians	5	9
Other	25	44

9. Do you consider radio communications between ambulances and hospitals to be:

	<u>#</u>	<u>%</u>
extremely helpful	36	53
helpful	23	34
somewhat helpful	7	10
not very helpful	2	3
not helpful at all	0	0

10. Which of the following tone-encoding methods does your squad utilize to call hospitals by radio:

	<u>#</u>	<u>%</u>
CTCSS (PL)	33	45
Rotary Dial	22	30
DTMF (Touch Tone)	53	73

11. What percentage of time do the hospitals answer your squad's first attempt to establish communications?

<u>% times</u>	<u>#</u>	<u>%</u>
Less than 10	2	3
10 - 24	3	4
25 - 49	10	14
50 - 74	18	26
75 - 100	37	53

12. What percentage of time do the hospitals answer your squad's subsequent attempts?

<u>% times</u>	<u>#</u>	<u>%</u>
Less than 10	3	4
10 - 24	7	9
25 - 49	4	5
50 - 74	10	13
75 - 100	53	69

13. Are communications ever interrupted or interfered with between your squad's ambulances and hospitals?

	<u>#</u>	<u>%</u>
Yes	49	68
No	23	32

14. Do you consider this interference to be severe enough to be detrimental to good patient care?

	<u>#</u>	<u>%</u>
Yes	25	54
No	21	39

15. Please approximate the percentage of times of interference.

<u>% times</u>	<u>#</u>	<u>%</u>
Less than 10	8	17
10 - 24	10	22
25 - 49	12	26
50 - 74	10	22
75 - 100	6	13

16. This interference is caused by:

	<u>#</u>	<u>%</u>
Other Ambulances	39	80
Hospital Security Systems	17	35
Invalid Coaches	10	20
School Buses	5	10
Veterinarians	1	2

17. Is your organization familiar with the JEMS Plan?

	<u>#</u>	<u>%</u>
Yes	50	76
No	16	24

18. What percentage of your vehicles are equipped with a JEMS Radio?

<u>% Equipped</u>	<u>#</u>	<u>%</u>
1 - 9	3	7
10 - 24	0	0
25 - 49	2	5
50 - 74	1	2
75 - 100	38	86

19. Can you communicate either directly by radio or indirectly through a dispatch center with police and fire services.

	<u>#</u>	<u>%</u>
Yes	70	99
No	1	1

20. Is the ability to communicate with other public safety (police and fire) agencies desirable?

	<u>#</u>	<u>%</u>
Yes	67	94
No	4	6

21. Can you communicate directly with the paramedic units in your service area?

	<u>#</u>	<u>%</u>
Yes	67	93
No	5	7

22. Which of the following best describes who dispatches you:

	<u>#</u>	<u>%</u>
Self dispatched	5	7
County dispatch	40	56
Local Police	20	28
Multi-Municipal dispatch	7	10

23. Do you feel that regional dispatch is an advantage or a disadvantage?

	<u>#</u>	<u>%</u>
Advantage	40	60
Disadvantage	23	34
Both	4	6

24. Which of the following do you consider a region?

	<u>#</u>	<u>%</u>
Hospital service area	6	9
Squad service area	38	54
County	13	19
Other	13	19

ERSSC EMS COMMUNICATIONS QUESTIONNAIRE

(This chart presents data collected from all other EMS users)

1. What frequency band(s) does your ambulance squad use?

	<u>#</u>	<u>%</u>
Low Band	37	43
VHF High Band	54	63
UHF Band	9	10
UHF up Band	1	1
800 MHZ.	1	1
Other	1	1

2. What specific frequency does your squad use for dispatch?

Data for this question was not analyzed.

3. What percentage of squads in your secondary service area (mutual aid) can you communicate with?

<u>% communicated with</u>	<u>#</u>	<u>%</u>
Less than 10	3	4
10 - 24	2	3
25 - 49	4	6
50 - 74	10	16
75 - 100	50	78

4. What frequency or frequencies does your squad use for mutual aid?

Data for this question was not analyzed.

5. Are communications ever interrupted or interfered with between your ambulances or between your ambulances and your dispatcher?

	<u>#</u>	<u>%</u>
Yes	45	56
No	36	44

6. Do you consider this interference to be severe enough to be detrimental to proper dispatching?

	<u>#</u>	<u>%</u>
Yes	22	45
No	27	55

7. Please approximate the percentage of times of interference.

<u>% times interference</u>	<u>#</u>	<u>%</u>
Less than 10	13	29
10 - 24	12	27
25 - 49	8	18
50 - 74	9	20
75 - 100	3	7

8. This interference is caused by:

	<u>#</u>	<u>%</u>
Other Ambulances	15	33
Hospital Security Systems	5	11
Invalid Coaches	7	16
School Buses	6	13
Veterinarians	1	2
Other	27	60

9. Do you consider radio communications between ambulances and hospitals to be:

	<u>#</u>	<u>%</u>
extremely helpful	38	46
helpful	27	33
somewhat helpful	15	18
not very helpful	2	2
not helpful at all	0	0

10. Which of the following tone-encoding methods does your squad utilize to call hospitals by radio:

	<u>#</u>	<u>%</u>
CTCSS (PL)	35	41
Rotary Dial	33	48
DTMF (Touch Tone)	53	62

11. What percentage of time do the hospitals answer your squad's first attempt to establish communications?

<u>% times</u>	<u>#</u>	<u>%</u>
Less than 10	7	9
10 - 24	2	3
25 - 49	4	5
50 - 74	24	32
75 - 100	43	57

12. What percentage of time do the hospitals answer your squad's subsequent attempts?

<u>% times</u>	<u>#</u>	<u>%</u>
Less than 10	2	3
10 - 24	3	4
25 - 49	5	7
50 - 74	8	11
75 - 100	57	76

13. Are communications ever interrupted or interfered with between your squad's ambulances and hospitals?

	<u>#</u>	<u>%</u>
Yes	44	54
No	38	46

14. Do you consider this interference to be severe enough to be detrimental to good patient care?

	<u>#</u>	<u>%</u>
Yes	15	31
No	33	69

15. Please approximate the percentage of times of interference.

<u>% times</u>	<u>#</u>	<u>%</u>
Less than 10	15	34
10 - 24	12	27
25 - 49	11	25
50 - 74	4	9
75 - 100	2	5

16. This interference is caused by:

	<u>#</u>	<u>%</u>
Other Ambulances	35	80
Hospital Security Systems	16	36
Invalid Coaches	1	2
School Buses	2	5
Veterinarians	1	2
Other	14	32

17. Is your organization familiar with the JEMS Plan?

	<u>#</u>	<u>%</u>
Yes	38	48
No	41	52

18. What percentage of your vehicles are equipped with a JEMS Radio?

<u>% Equipped</u>	<u>#</u>	<u>%</u>
1 - 9	4	13
10 - 24	1	3
25 - 49	1	3
50 - 74	2	6
75 - 100	24	75

19. Can you communicate either directly by radio or indirectly through a dispatch center with police & fire services?

	<u>#</u>	<u>%</u>
Yes	83	100
No	0	0

20. Is the ability to communicate with other public safety (police and fire) agencies desirable?

	<u>#</u>	<u>%</u>
Yes	79	98
No	2	2

21. Can you communicate directly with the paramedic units in your service area?

	<u>#</u>	<u>%</u>
Yes	74	94
No	5	6

22. Which of the following best describes who dispatches you:

	<u>#</u>	<u>%</u>
Self dispatched	5	6
County dispatch	57	70
Local Police	12	15
Multi-Municipal dispatch	8	10

23. Do you feel that regional dispatch is an advantage or a disadvantage?

	<u>#</u>	<u>%</u>
Advantage	40	52
Disadvantage	37	48

24. Which of the following do you consider a region?

	<u>#</u>	<u>%</u>
Hospital service area	12	15
Squad service area	41	52
County	16	20
Other	10	13