

# APCO REPORTS

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## ASSOCIATED PUBLIC-SAFETY COMMUNICATIONS OFFICERS INCORPORATED

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This issue of the APCO REPORTS marks a birthday, in that it is the first issue of Volume 2. The National Office of the Association wishes to thank each of the readers of this publication for making it possible for us to provide this additional service without a cost burden on the membership. The subscription renewal cycle will begin this month. You will be billed for renewal eleven months from the time you entered your initial subscription, and your subscription will terminate after you have received twelve issues. We solicit your prompt renewal payment, of course, so service is not interrupted.

**PUBLIC SAFETY ALLOCATIONS:** The best radio frequency allocation news for the Public Safety Community in some time broke in July as the Federal Communications Commission informed the Canadian Department of Communications that the Commission cannot go along with Canada's proposed use of the 821-825 and 866-870 megahertz bands for a Mobile Satellite Service communications system.

The Commission informed Canada that the United States "has plans for the possible use of bands 821-825 and 866-870 megahertz for land mobile operations in keeping with international and domestic tables of frequency allocations, which would lead to harmful interference to or from your MSAT satellite network. This Administration," the FCC said, "is required by United States law to consider the need for a nationwide contiguous frequency allocation for Public Safety services," and "The Public Safety Community within United States has identified the same frequencies that you have proposed as being of most utility for land mobile usage."

The Commission sent a similar transmittal to the International Frequency Registration Board in Geneva, Switzerland, which is to consider Canada's request.

Earlier this year, in General Docket No. 84-1234, the FCC had proposed to allocate the 821-825 and 866-870 MHz bands for a Mobile Satellite Service, along with frequencies higher in the spectrum. In its recent transmittal to the Canadian Department of Communications, the FCC pointed out that Canada has not responded to questions the Commission had raised with respect to potential interference between Canada's proposed MSAT system and US non-geostationary satellite networks involving the higher frequencies (in the 2 gigahertz band). Until the questions are answered, the Commission said, it cannot endorse Canada's 2 GHz plans either.

APCO had joined with the International Association of Chiefs of Police and the Association of Major Cities Chiefs of Police in urging the Commission to allocate the 821-825 and 866-870 MHz bands to Public Safety communications before the agency proposed its use for a Mobile Satellite Service. The FCC proposal received strong backing from the National Aeronautics & Space Administration, and from companies seeking to provide the Mobile Satellite Service on a commercial

basis.

Executive sessions of the International Association of Chiefs of Police and the Association of Major Cities Chiefs of Police, meeting in New Orleans when they got the news of the FCC's transmittal to Canada, immediately adopted resolutions commending the Commission's step, as being in "recognition of the need of Public Safety entities, particularly those in metropolitan areas, for the aforementioned spectrum."

The organizations asked that the FCC "issue promptly a Notice of Proposed Rulemaking to enable the Public Safety services to utilize the 821-825 and 866-870 MHz bands."

FUTURE REQUIREMENTS: One of the biggest challenges APCO has faced in its history of more than a half-century of service will be its response by October 30, 1985 to the FCC Private Radio Bureau's report in PR Docket No. 84-232, which is concerned with "Future Public Safety Telecommunications Requirements". As the caption of the proceeding indicates, this is the case which APCO has been looking forward to since it has been in existence.

The Notice of Inquiry in 84-232 was initiated by the Commission in response to changes in the law which directed the Commission to give Public Safety "a top priority when frequency allocation decisions are made," to consider the need for a nationwide, contiguous frequency allocation for the Public Safety services, and to establish a plan to bring this about.

The full text of the FCC Order and Private Radio Bureau report is more than 140 pages in length. Full copies are being sent by the APCO National Office to Chapter Presidents, Executive Committeemen, and Frequency Coordinators. It is destined for full review at the APCO/FCCA Joint Annual Conference August 26-29 in San Diego.

The "Executive Summary" of the Report follows:

#### EXECUTIVE SUMMARY

This Report is the second phase of a three part project to develop a plan to assure that the Commission considers the current and future communications requirements of public safety entities in making spectrum allocations. Phase one consisted of a Notice of Inquiry (Inquiry) which was adopted by the Commission on March 1, 1984. The Inquiry was designed to solicit comments from the public safety community and other interested parties regarding future public safety telecommunications requirements. This Report was prepared to consolidate the available information regarding future public safety telecommunications requirements, as well as information regarding possible alternative means for meeting the future requirements which are identified. It is expected that the public safety community and other interested parties will review this Report and provide comments which will assist the Commission in the third and final phase of this project, development of a Public Safety Plan. While we seek comments on all aspects of the Report, we are especially interested in reactions to the options discussed in Chapter 7.

Chapter 1 serves as an introduction to the study, and outlines its purpose and objectives, as well as some background information regarding the Public Safety Radio Services. Chapter 2 reviews existing public safety spectrum allocations and examines the current occupancy levels in each frequency band for selected geographic areas. The data included in this chapter illustrate that public safety entities in many major urban areas are suffering from congestion on current spectrum allocations.

Chapter 3 contains a discussion of the comments to the Inquiry which will affect the demand for public safety communications. This chapter also reviews the past growth in public safety communications and trends which are likely to affect the demand for public safety communications in the future. It highlights a broad array of new types of communication services which public safety entities expect will require substantial quantities of additional spectrum. In addition to new services, commenters anticipate that the demand for public safety communications will continue to grow due to population increases, increased population mobility, and budget constraints which will require public safety entities to use existing resources more intensively by employing more extensive and efficient communications systems.

Chapter 4 presents a set of demand projections which were developed by the staff, as well as projections submitted as comments to this Inquiry or the Inquiry in Docket No. 82-10. National projections are included for the public safety radio services as a group, as well as for each of the component radio services. Projections are also provided for each of the public safety radio services for 21 geographic areas. While there are variations in the projected number of public safety radio stations from area to area and from one public safety service to another, the projections show a uniformly significant increase over the next fifteen years. Given the existing congestion discussed in Chapter 2, together with the projected demand for 1990 and 2000, it is apparent that public safety entities require significant amounts of additional mobile communications capacity. The projected spectrum shortages included in Chapter 4, which do not include any effects of new technology, range from a high of 89.2 MHz in Los Angeles, to a low of 24.9 MHz in Pittsburgh.

Chapter 5 contains a discussion of several proposals pending before the Commission which could have an effect on future public safety communications requirements. Specifically, the following proposals are discussed in some detail: (1) the proposed new 900 MHz allocation for the Private Land Mobile Radio Services which includes 3.6 MHz reserved specifically for the public safety radio services; (2) an alternative marketplace proposal for allocating the 900 MHz reserve spectrum which would reserve 3 MHz for the public safety radio services; (3) a proposed radiodetermination satellite service which could provide valuable safety of life and property related communications, while also placing increased demands on terrestrial public safety communications systems; (4) a proposal regarding further sharing of UHF broadcast spectrum by the Private Land Mobile Radio Services in selected geographic areas; and (5) a proposed allocation of one UHF-TV channel for use by the public safety services in the Los Angeles area. It is anticipated that while most of these proposals could provide some additional communications capacity for public safety entities, a critical shortage will still remain in the major geographic areas.

Chapter 6 contains a discussion of the impact of new technology on the projections in Chapter 4. Technologies such as cellular, trunking, digital and narrowband are analyzed and conclusions drawn as to the likely impact they may have on the projected requirements of public safety during the approximately

fifteen-year time period of this study. The chapter concludes with a listing of the projected spectrum shortfall for each of the 21 geographic areas, after adjustments for new technology. As illustrated by the following table, the projected shortfalls range from a high of 44.6 MHz in Los Angeles, to a low of 12.5 MHz in Pittsburgh.

SPECTRUM REQUIREMENTS FOR THE YEAR 2000\*  
(in MHz)

	<u>Without Effects of New Technology</u>	<u>With Effects of New Technology</u>
Los Angeles/San Diego	89.2	44.6
Baltimore/Washington	54.8	27.4
Philadelphia	53.1	26.6
New York	51.5	25.8
Chicago	45.3	22.7
Dallas	39.3	19.7
Houston	39.3	19.7
San Francisco	37.7	18.9
St. Louis	37.2	18.6
Minneapolis/St. Paul	34.5	17.3
Atlanta	33.4	16.7
Tampa/St. Petersburg	30.8	15.4
Phoenix	30.3	15.2
Seattle	29.9	15.0
Denver	29.8	14.9
Boston	29.4	14.7
Kansas City	28.8	14.4
Miami	27.8	13.9
Cleveland/Detroit **	27.1	13.6
New Orleans	26.4	13.2
Pittsburgh	24.9	12.5

\*The figures included in this table assume that at least 7 stations will occupy each 50 kHz communications link. If the spectrum requirements for those areas which are experiencing channel loading levels higher than 7 stations per link were computed using 7 stations per link for future loading, the projected spectrum shortfall would be increased to 97.6 MHz in the New York area, 110.7 MHz in the Los Angeles/San Diego area, 66.3 MHz in the Chicago area, 66.2 MHz in the Cleveland/Detroit area, 42.1 MHz in the Boston area, 43.1 MHz in the San Francisco area, and 33.5 MHz in the Pittsburgh area.

\*\*The shortfall is for each city in the Cleveland/Detroit area. The shortfall for the area as a whole is twice as large.

Clearly, the area facing the most critical problem in meeting future public safety communications requirements is Los Angeles.

Chapter 7 contains a discussion of the following group of seven options for meeting the public safety spectrum shortfall identified: (1) an option which would review the proposed allocation of the 900 MHz reserve spectrum to determine if more spectrum should be made available for use by public safety entities; (2) an option which would reallocate spectrum currently allocated to the Domestic Public Land Mobile Radio Service to the public safety radio

services; (3) an option which would reallocate all spectrum below 470 MHz currently allocated to the Private Land Mobile Radio Services exclusively to the public safety radio services; (4) an option which would reallocate or share current federal government land mobile spectrum with the public safety radio services; (5) an option which would make at least 2 UHF-TV channels available for land mobile sharing in major markets for use by all private radio users, including public safety; (6) an option which would mandate the implementation of narrowband technology in the private radio services and phase out existing equipment; and (7) an option which encompasses substantial use by public safety entities of existing mobile communications systems such as cellular and SMR systems. Comments are solicited on all the options presented, as well as any additional options commenters may wish to propose. These comments will be used by the staff in the development of the Public Safety Plan which will assure that the future telecommunications requirements of public safety entities are met.

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After APCO files its initial comments on the Private Radio Bureau Report on October 30, the association plans to explain its views to the Commission as to how the overall Public Safety Plan should be approached. "Reply" comments on the PRB Report are due at the Commission on November 29. The Commission has pointed out that "All relevant and timely comments will be considered by the Commission before final action is taken in adopting a Public Safety Plan."

One of the "new technology" points of emphasis in the PRB report is the trunking concept designed to meet the needs of Public Safety agencies which was developed by APCO in its Project 16. The report pointed out that APCO has published a step-by-step procedural guide for the implementation of such a system, and that industry has developed such a system at 800 MHz which meets the mandatory and desirable features for Public Safety's enhanced trunked needs, and has already shipped a number of systems to Public Safety entities.

The report recognizes the spectrum requirement of Public Safety entities and states an intent to accommodate them. "We also recognize," it says, that Public Safety use of mobile radio is different from use by commercial entities," and "Equipment which is appropriate to meet the communications requirements of commercial entities may not be appropriate for Public Safety entities because of special reliability, performance or cost considerations." The Public Safety Community, however, it says, "must be prepared to employ new technological approaches, such as trunking, digital systems and narrowband, when these technologies demonstrate their reliability and are offered in suitable and commercially available equipment. Further, to the extent it is possible, use of these technologies should be factored into the long and short range planning cycles for the implementation of new systems and the expansion of existing ones, particularly in the largest urban centers."

The "Options for Meeting Public Safety Spectrum Requirements" contained in the PRB Report, which will be a principal subject of APCO's comments, of course, will be discussed in the next issue of APCO REPORTS.

APCO has put the PRB Report in its APCO-IS Library of available reports. Copies are available from the National Office at \$17.50 each, for prepaid orders, or \$20 each if billing is involved.

APCO FDR PROGRAM: On July 15, 1985, the total billings in APCO's Frequency Data Research program topped the \$100,000 mark, as the number of frequency coordination requests subject to the billing procedures hit the 2257 mark. At that point, \$75,000 had been collected, and almost \$14,000 had been sent to the APCO Chapters.

APCO MEMBERSHIP: Near the end of July, APCO's membership totalled 5870, an increase of about 800 members in the past year. Memberships were in the following classifications: Active, 2962; Operator, 1702; Commercial, 628; Associate, 118; Engineer/Technician, 223; Retired, 111; Chapter Honorary, 57; Life, 49; and Sustaining, 20. The total circulation of the APCO BULLETIN, counting non-member subscribers, rose to 6228.

SAN DIEGO CONFERENCE: Near the end of July, there remained only ten more booths to be contracted for to make the Joint APCO/FCCA Annual Conference a complete sell-out as far as exhibit space is concerned. The Conference is to be held August 26-29, 1985 at the Town & Country Conference Center in San Diego, California. Advance registrations were pouring in and the Conference continued to shape up as probably the most successful in APCO's history.

FCCA/APCO MEETING: Representatives of the Forestry, Conservation Communications Association and APCO -- organizations which have worked together closely over the years in their mutual approaches to improved Public Safety communications -- met in Atlanta, Georgia, July 23 to discuss matters of mutual concern with respect to frequency coordination and other activities, preparatory to further sessions during the Joint Annual National Conference of the two associations in San Diego.

MEETINGS WITH APCO BOARD: The full Conference schedule August 26-29 in San Diego will not be deterring the APCO National Board of Officers from special meetings with groups of individuals or organizations which may be interested in such sessions. The Board will be meeting, apart from the general business sessions of the Conference, with the APCO Standing Committees or other components of the APCO organization, to the extent time permits. Organizations wishing to schedule such meetings are asked to contact Executive Director Bob Tall -- at 800-824-1850 -- for a time slot.

GIUFFRIDA RESIGNS: Federal Emergency Management Agency Louis O. Giuffrida, who has been a leading force in integrating emergency response planning, has resigned his FEMA position to enter the private sector. Among other actions, Mr. Giuffrida on May 23 signed a "Memorandum of Understanding" between APCO and FEMA, which calls for close cooperation in future planning efforts. Samuel Speck, FEMA Associate Director, will be keynote speaker at the Conference in San Diego, and is expected to announce a significant step forward in the APCO/FEMA relationship.

CONDITIONAL COORDINATIONS: The FCC Private Radio Bureau Licensing Division's Land Mobile Branch has called to APCO's attention that "a number of conditional recommendations" from the association's Frequency Coordinators are being received at the Commission and has asked APCO's cooperation in the matter. "Such recommendations which are made contingent upon an existing licensee not being operational or interference not being caused," the Commission said, "cannot be honored as they do not constitute an unequivocal approval of the proposed frequency usage. In instances where it is believed that a licensee is not constructed and/or operational," it said, "the information should be provided to our Compliance Branch for action."