

Travelers Information Station

New class of radio station called Travelers Information Station established, to operate on frequencies 530 and 1610 kHz. Stations will be non-commercial, localized near air, train and bus terminals, public parks, highway interchanges, bridges, tunnels, etc. They will use low power transmitters feeding "leaky" cable or conventional vertical antenna systems. Signal coverage confined to 3 km.

F.C.C. 77-414

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D.C. 20554

In the Matter of

Amendment of Parts 2 and 89 of the Rules to Provide for the Use of Frequencies 530, 1606, and 1612 kHz by Stations in the Local Government Radio Services for the Transmission of Certain Kinds of Information to the Traveling Public

Docket No. 20509

Amendment of Parts 2 and 73 of the Rules to provide for Use of Frequencies 530, 1606, 1612 kHz by Community Access Non-commercial Stations for Locally Produced Public Affairs, Musical, Dramatic and Cultural Programming

RM 2704

REPORT AND ORDER
(Proceeding Terminated)

(Adopted: June 10, 1977; Released: June 20, 1977)

BY THE COMMISSION: COMMISSIONER HOOKS DISSENTING; COMMISSIONER QUELLO DISSENTING AND ISSUING A STATEMENT; COMMISSIONERS WASHBURN, FOGARTY AND WHITE CONCURRING IN THE RESULT.

1. A Notice of Proposed Rulemaking in Docket No. 20509 was adopted by the Commission June 4, 1975.¹ In that Notice, the Commission proposed regulations which would establish a new category of station to be called a "Travelers Information Station" (TIS) to operate on 530 kHz, 1606 kHz and 1612 kHz. For reasons given herein, the two frequencies 1606 kHz and 1612 kHz are being deleted and replaced with a single frequency 1610 kHz. Accordingly, the frequencies 530 and 1610 kHz are being allocated in this proceeding for the proposed use. The rules adopted herein will establish an efficient means of communicating certain kinds of information to travelers over low power radio transmitters licensed to Local Government entities. No commercial operation of these stations is intended or permitted.

¹40 FR 25601, June 17, 1975.

2. Interested persons were invited to file comments by August 18, 1975, and reply comments by September 5, 1975. Pursuant to motions filed by Halstead Communications, the National Association of Broadcasters and the United States Department of Transportation, the period for filing comments was subsequently extended to October 17, 1975, and for filing reply comments to November 18, 1975. In response to a motion by Halstead Communications, Inc., the periods for filing comments and replies were further extended to October 31, 1975, and December 1, 1975, respectively. Parties filing comments in this proceeding are listed in Appendix A. For convenience, they are arranged into the following six groups: (1) broadcasting industry, (2) local/state government agencies, (3) business associations, (4) equipment manufacturers, (5) travel/recreation industry, and (6) individuals.

3. Of approximately 140 comments received, about 50 percent oppose and 50 percent support the proposed rules. Supporting the proposal were local/state governments, various business associations, equipment manufacturers, travel/recreation industry, and various private individuals. Opposition was primarily from the broadcasting industry.

BROADCAST INDUSTRY COMMENTS

4. Strong opposition to the proposal was expressed through comments received from individual radio stations and associations representing broadcast interests. Their principal arguments are that the proposed radio service (a) would duplicate information carried over existing broadcast stations, (b) would have an adverse economic impact upon broadcasters, (c) would be a waste of tax revenues, (d) has no established need, and (e) is legally questionable.

Duplication of broadcasting service

5. It is asserted by broadcasters that Travelers Information Stations will only duplicate information now carried on all broadcast radio stations; that comprehensive weather reports, reports of traffic conditions, names of gasoline stations, restaurants, and lodging conveyed through advertising, and other pertinent traveler's information are presently being broadcast to the public by commercial radio stations; that, in exchange for the placement of their call signs on state highway signs, certain radio stations broadcast all pertinent information to travelers on a periodic schedule; that information in the form of road maps, road signs, billboards, yellow pages, directories for lodging, service stations, etc. is available to any traveler; and that there is no need for the proposed service which would be duplicative of presently available sources of traveler's information.

6. It is noted that commercial AM broadcast stations are intended to serve the communities to which they are assigned and, depending on the class of station, outlying areas as well. For example,

Class I stations operating with powers not less than 10 kw and not greater than 50 kw on clear channels are designed to render primary and secondary service over extended areas and at relatively long distances. Programming on commercial stations for the most part consists of music, news, weather forecasts, traffic bulletins generally during peak commuting time periods, and other announcements of interest to listeners anywhere within the station's coverage area. In contrast, in-

tended programming on Travelers Information Stations would normally consist of a continuously repetitive voice message of short duration containing specific information pertinent only to travelers within a very limited reception area. Experimental stations such as presently operating at the Los Angeles International Airport, exemplify the service a TIS station would provide. Tape-recorded advisories, interspersed with "live" bulletins, concerning specific airline terminal locations and their nearest parking lots; alerts when traffic is congested; estimated time of delay; etc., are transmitted continuously from 7 A.M. to 11 P.M. on 530 kHz to motorists. The station utilizes a terminated "leaky" cable antenna positioned in the center median of the approach road and along major roads within the terminal area. Due to the cable's non-propagating characteristic, the signal is confined to a distance of approximately 40 meters radial to the cable.

7. Consequently, because commercial broadcast stations serve not only travelers, but the public in general over a large geographical area, it is not realistically expected or even feasible that broadcast stations provide continuous local information of interest only to travelers at specific locations (e.g., a highway intersection, an airport entrance and parking facility, a county park, etc.) within their general area of coverage. As the broadcasters allege, it is conceivable that a TIS might duplicate some information commercially broadcast. Likewise, a broadcast station might duplicate some information a TIS might transmit. This point is illustrated in separate comments submitted by the California Public-Safety Radio Association, Inc., RTV management, and Locrad, Inc. In a traffic alert system, they contend, both services, broadcast and TIS, should complement each other for greater effectiveness. Using the Los Angeles airport experimental station again as an example of this proposed radio service, information regarding unusual traffic jams leading to the airport is broadcast periodically by commercial broadcasters over the entire Los Angeles area and specific directions to expedite the movement of traffic in the immediate vicinity of the airport is transmitted by the airport's experimental station.

8. It therefore would appear to be beneficial to the traveling public if, at times, related information, even though occasionally duplicative, were to be transmitted locally via TIS and area-wide by commercial broadcasters. However, it should be clearly understood that it is *not* the intent that TIS facilities duplicate information now available on area-wide, commercial broadcast stations. In fact, we feel the amount of duplication will be insignificant.

Economic injury to broadcasting

9. In comments representing broadcast interests it is alleged that the proposed Travelers Information Stations would adversely impact the economic standing of all broadcast stations. It is contended that a loss of listenership from broadcast to TIS would compel every broadcaster to reduce his advertising rate structure. Further to this point, certain advertisers now using commercial radio (i.e., motel/hotel owners, gasoline stations, restaurants, and others) will switch to TIS further contributing to a decline in revenue for each broadcast station. This loss of revenue, they claim, will lead to irreparable financial injury. As a consequence, each broadcaster would, of necessity, have to

curtail unprofitable public service programming (i.e., announcements, traffic conditions, weather reports, etc.), thus impairing his ability to serve the public. Since economic injury is probable, any broadcast licensee, it is claimed, may invoke Section 309(d) and have standing based on economic injury and file petitions to deny applications.

10. Due to the distinct nature and limited coverage of TIS transmissions, several parties filing reply comments believe the broadcasters' principal concern that TIS would have an adverse economic impact upon their operations is misplaced. Because proposed programming is non-entertainment, extended listening under normal circumstances would not occur. Further, for motorists, listening time is restricted to the time in which the vehicle remains within the limited coverage area provided by low-powered TIS transmitters.

11. The carriage of names of commercial establishments as permitted under proposed Section 89.102(c)(2) is construed by broadcasters to be a form of advertising. It is alleged that particular gasoline stations, motels, restaurants, etc. might drop their present purchase of time on commercial stations in favor of "free" carriage on a highway Travelers Information Station. Consequently, the recommendation, suggested by the Booth American Company, to not specifically identify by name a commercial business offering food, lodging, gasoline, etc. is being adopted in response to the allegation that TIS would be competitive to commercial broadcast stations. However, a message specifying the location of such establishments will be permitted. An example of such a message might be— "At exit 10 you will find lodging, gasoline and food services available."

Waste of tax revenues

12. Several parties allege the proposal would necessitate the expenditure of scarce tax revenues contributing to increasing deficit spending. Frank McLavrin, Vice-President and General Manager of KSRO, Santa Rosa, California claims it would cost about 300 million dollars to provide TIS service in the Los Angeles county along 550 miles of freeway. The Maryland-District of Columbia-Delaware Broadcasters Association additionally argues that the cost of TIS would be prohibitive. It claims a cost of \$60 million to equip the 30,000 miles of interstate highway.

13. Responding to the argument that the implementation of TIS will consume many tax revenues, Locard, Inc. claims the "cost of any TIS system would be subject to budget review based on the need. Unless there is a need in the public interest it is safe to assume that a TIS system will not be installed." In reply comments submitted by the Associated Public Safety Communications Officers, Inc. (APCO) it is pointed out that the rules governing the Public Safety Radio Services provide for many communications techniques which are not generally cost effective. The controlling factor is whether the technique in question can be a useful tool in improving public safety. Further to this point, APCO states that the Commission has previously authorized various communications technologies (e.g., automatic vehicle location systems) realizing that they may not be widely used. However, such communications devices were authorized because the Commission recognized that they could make a significant public safety contribution in

certain cases. Therefore, we are not swayed by the comments that TIS will take too large a slice out of governmental budgets. Such judgments are best left to local jurisdictions.

Need for TIS

14. Various parties representing broadcast interests contend there has been no demonstrated need for the proposed stations. Several broadcasters indicate that no request to expand present broadcasts for information pertinent to travelers has been made through their ascertainment surveys and interviews. The California Broadcasters Association contends that the FCC must establish that a need exists for the radio service because of the economic impact it would have on the present broadcast system. Continuing this argument, it states, "absent findings and evidence to sustain a need for the new service, the Commission is precluded as a matter of law from alleging that this new service is in the public interest." The Indiana Broadcasters Association echoes this sentiment, stating "the Commission has not cited any unfulfilled public need for the proposed service nor any need which outweighs the serious and detrimental effect which the Commission's proposal would have on the nation."

15. The allegation by broadcasting interests is not compelling. The Commission is of the opinion that an established need for this service has been demonstrated through the submitted comments in this proceeding and by experience with existing experimental stations. In operation since 1972 for control of automobile traffic, the experimental station at the Los Angeles International Airport has successfully expanded arterial capacity by reducing the traffic congestion through the transmission of traffic advisories, according to the airport's General Manager. Constantly updated, these radio transmissions provide immediate information to incoming automobile traffic. Several users of the airport's TIS confirmed the station's utility. Another experimental TIS, licensed to the Delaware Valley Regional Planning Commission in Philadelphia, Pa., is being used on a bridge leading to an expressway to convey traffic advisory and emergency information concerning conditions on the expressway to approaching motorists on the westbound lanes of the bridge. As this system just recently became operational, no information regarding its performance is available. In Wyoming, the state highway department is presently installing in the vicinity of an interstate exchange a radio advisory system to be operated under Part 15 of the FCC's rules. This system will transmit road conditions, travel restrictions, and weather forecasts to motorists. From the many potential applications of travelers information stations discussed in other comments, it is apparent that a definite desire and need exist for this service.

16. In supporting the proposed rules, various parties indicated that stations of this nature will serve the public interest and convenience. Individual local police and transportation departments stated that TIS will provide a more viable alternative for controlling traffic, as road signs are necessarily restrictive in message length and usually not visible during inclement weather. About fifty comments submitted from various local government civil defense, disaster planning and control, highway, conservation, and park agencies indicate a definite desire and need for a traveler's information radio service to augment

their present means of conveying information to the traveling public. It is apparent that many of those commenting would use this service to transmit travel related emergency messages concerning natural disasters (e.g., forest fires, floods, etc.), traffic accidents and hazards, and related bulletins affecting the immediate welfare of citizens. Therefore, we believe that a definite need and public interest for TIS has been documented in this proceeding.

17. Several parties stated that the rules applicable to TIS contain no provision for giving notice of the filing of applications and that therefore they are violative of Section 309 of the Communications Act.² That section, however, requires public notice and a thirty-day waiting period only in the case of applications in certain services, listed in § 309(b). TIS's do not fall into any of those categories. Although § 309(b)(2)(g) permits the Commission to impose these requirements on other, nonlisted services, we see no need for doing so in this case since TIS's will be licensed only on a secondary, non-interference basis and they will be permitted to provide only a very limited and specialized range of services.

Permitted message content

18. Many comments emphasize that the proposal is unclear regarding what message content would be permitted for transmission over TIS facilities. Comments representing broadcasting interests fear that the content of "official notices and related communications" might conceivably be used as a platform by civil officials and/or politicians. NBC predicts that news would eventually be transmitted under this clause, providing further competition to commercial broadcasting.

19. The Maryland-District of Columbia-Delaware Broadcasters Association states that the "proposal to permit the transmission of 'official notices and related communications' is the most disturbing of all suggested functions," and say "the proposal is fraught with the danger of abuse by local incumbent politicians, who would be attracted by the potential of using such a medium for unrestrained propaganda." NAB asks "what will limit this service to not being an outlet for political interests and disguised commercials," and argues that "stricter guidelines are needed on the programming service." Further to this point, Mid America Media raises the following questions—

"Is such information to be limited to the name, address, and type of facility, or may the message include information such as the number of beds, recreational facilities, and prices of motels and hotels? Also, it is apparent that local authorities will be required to pick and choose among potential services to be mentioned. Will disgruntled businesses not included in the station's message have some right to raise the question of fairness and discrimination before the Commission? What is to prevent this proposed service from being used to reward political and economic friends of local administrations and to punish their adversaries? These questions strongly suggest that the Commission is creating for itself the same regulatory quagmire it found itself in when confronted with the "public access" theory of the Fairness Doctrine."

20. From the majority of submitted comments it is apparent that there is a lack of understanding regarding what information may or may not be transmitted over TIS's. Consequently we have revised the

²NAB and the Iowa Broadcasters Association apparently assume that the notice provisions of Section 1.962 of the Rules, which implements § 309 with respect to applications in the Safety and Special Radio Services, will apply, but feel that they are inadequate.

definition of a *Travelers Information Station* in Section 89.3(a) by deleting the phrase "official notices and related communications" to preclude the possible transmission of an unwarranted message. Moreover, in Section 89.102(c)(2), a restriction prohibiting the identification of the commercial name of any business establishment is included in response to broadcasters' comments to insure that *Travelers Information Stations* not be competitive to commercial broadcast operations. However, we are permitting the trade name identification of carriers at air, train, and bus terminals to facilitate announcements concerning particular departures and/or arrivals and parking areas. For other locations, general announcements of the availability and location of services for the traveling public will be permitted.

Eligibility requirements

21. As proposed, Section 89.251 of the Commission's Rules would restrict the eligibility of applicants for *Travelers Information Stations* to territories, possessions, states, other governmental subdivisions including counties, cities, towns and similar governmental entities including districts and authorities. This rule specifically excludes park authorities from obtaining a license. Consequently, several park authorities commented that it would be more expedient and logical if they, who would be responsible for the TIS, were to apply for and hold the license. Others who view the proposal as a means by which to establish a new business would have the eligibility rule expanded to include private entrepreneurs, chambers of commerce, non-tax supported institutions and agencies, and non-profit regional or area tourist promotion and development agencies. E. F. Johnson Company argues that "this broadening of eligibility would give manufacturers more of an incentive to commit the necessary large amounts of capital required for the research, development and production of equipment."

22. The Commission is of the opinion that this radio service, as proposed, should be non-commercial and restricted to local governments so that it does not evolve into a "quasi broadcasting" service. As intended, TIS is to be a source of localized information pertinent only to the traveler in the immediate proximity of the station. An expansion of Section 89.251 to include local and state government park authorities as licensees seems appropriate. However, further expansion of eligibility is being denied.

Permissible locations

23. As discussed in the Notice of Proposed Rulemaking, in providing for the establishment of these stations, it is the Commission's purpose to provide for the communication of certain kinds of information that will principally serve the traveling public. Moreover, as previously discussed, these stations are intended to serve the traveler in the immediate vicinity of the station. To accomplish these objectives, we are restricting the transmitting sites of each station to a location within an area that would be mainly frequented by travelers. These areas, as specified in Section 89.102(c)(1)(iv), shall be air, train, and bus terminals, public parks and historical sites, interstate highway interchanges, bridges, and tunnels. Furthermore, in instituting this rule we are specifically precluding an applicant from setting up a "network," or "rib-

bon" of transmitting stations along a highway for the purpose of continuously attracting a motorist with what could be superfluous information.

Electromagnetic interference

24. Several parties state that TIS's would cause electromagnetic interference to broadcast stations within their service areas and that permitting such interference would be a modification of the licenses of the broadcast stations. They further state that Section 316 of the Communications Act requires a hearing before any such modification can be made. The new rules provide, however, that TIS's will be licensed only on a secondary basis, that is, they can operate only so long as they do not cause harmful interference to primary stations (which include AM broadcast stations). See § 2.106(g)(3) of the Rules. The new subsection 89.102(l)(iii) emphasizes the secondary status that TIS's will have and the fact that the station authorizations can be suspended, modified, or withdrawn at any time to resolve interference conflicts. To prevent interference conflicts from arising, the proposed 1606 kHz allocation has been deleted because of the harmful sideband interference that may have resulted from such stations to broadcast stations operating on 1600 kHz. Also, a number of restrictions are being imposed (in § 89.102(c)(3)) on TIS applicants. The applicant must certify that the transmitting site will be at least 15 kilometers from the daytime protected contour of any broadcast station operating on an adjacent channel (i.e., 540 kHz or 1600 kHz). Since the range of TIS is expected to be considerably less than 15 kilometers, no harmful interference should result to the broadcast station within its protected contour. With regard to the second and third adjacent frequencies (i.e., 550 kHz, 560 kHz, 1580 kHz, and 1590 kHz) no specific separations are being required since any harmful interference is *de minimis*. However, § 89.102(c)(3) does require that an applicant for a TIS license certify that he has considered possible interference effects on broadcast stations operating on these frequencies and that, to the best of his knowledge, he does not foresee any harmful interference.

25. To further limit the potential to cause interference, each Travelers Information Station will be limited to a coverage zone, as further discussed in paragraphs 30-32, not to exceed 3 km (i.e., for cable, maximum length: 3 km; for vertical monopole: 1.5 km radius, or 3 km diameter) by restricting the field strength. We are of the opinion that, considering the likelihood of interference to broadcast stations, these steps should prevent interference situations from developing without unduly burdening TIS applicants. If interference does nevertheless arise, the secondary status of the TIS means that it will be required to go off the air at once. Therefore, no broadcast licensee will be required to suffer harmful interference, and no modification of a broadcast license will occur. Consequently the application for a TIS license will not give rise to a right of a hearing under Section 316, before it can be granted.

Frequency assignment

26. Recommendations to use frequencies other than those proposed were submitted by several parties. These are—

- use of SCA subcarrier on commercial FM broadcast stations
- allocation of one or two receive-only channels in the Citizens Radio Service
- shared use of 162.40 and 162.55 MHz, channels now used by the National Oceanic and Atmospheric Administration (N.O.A.A.) to transmit weather advisories.

In addition, Motorola urges a reconsideration of proposed assignments 1606 and 1612 kHz. It states that "future automobile radio designs will incorporate frequency synthesizers. Because the AM table of frequency assignments is predicated on 10 kHz spacing, the proposed frequencies 1606 and 1612 kHz will be incompatible with the emerging frequency synthesizer technology." Consequently, Motorola recommends the adoption of 530, 1610, and 1620 kHz.

27. As previously stated, this proposed radio service is intended to serve a 3 km zone with generally repetitive information pertinent to travelers. Consequently, the use of the SCA subcarrier³ would not be a practical alternative as the coverage area served by most FM stations normally exceeds 3 km. Because FM stations provide wide area coverage, it would not be feasible to transmit simultaneous travelers information repetitively for several local areas. The proposal to use frequencies allocated to the Citizens Radio Service cannot be considered since the basis and purpose of that service, pursuant to Section 95.1 of the Commission's Rules, makes no provision for the type of proposed communications to be carried on TIS. To take a frequency away from the Citizens' Band (CB) would go against our finding that CB needs more channels. To share frequencies 162.40 and 162.55 MHz would again not be practical as these stations provide wide area coverage. Furthermore, such a frequency usage would necessitate the traveler to acquire a special receiver for reception of such transmissions; also, disruption to N.O.A.A. weather advisories would result from such sharing. Consequently, these suggestions are dismissed.

28. The proposed frequency 1612 kHz is being shifted to 1610 kHz principally for two reasons:

First, it is intended that this service be received primarily by motorists using automobile AM broadcast receivers. Based on a study⁴ of Highway Advisory Information Radio prepared for the Federal Highway Administration, it was found that using a representative sample of existing receivers approximately 10% more could tune the 1610 kHz frequency compared to 1612 kHz. Since a greater number of travelers with existing AM automobile receivers would be able to receive such transmissions at the lower frequency, 1610 kHz is chosen for TIS allocation.

Second, the 1610 kHz frequency is aligned with the 10 kHz spacing maintained between stations in the broadcast band permitting the us-

³ Because of constraints imposed on the reception of SCA subcarrier transmissions by Section 605 of the Communications Act, the use of such transmission for Travelers Information Station presents legal as well as practical problems. See *KMLA Broadcasting Corporation v. 20th Century Cigarette Vendors et al.*, 264 F Supp 35. (C.D. Cal. 1967).

⁴ Study and Development of Highway Advisory Information Radio, Report No. FHWA-RD-74-73, December 1974, Federal Highway Administration, Washington, D.C. 20590.

age of synthesizer technology in future receiver designs as recommended in comments submitted from Motorola, Inc.

29. The 1620 kHz frequency suggested by Motorola cannot be considered, as transmissions on this frequency would cause harmful interference to survey operations conducted by the National Ocean Survey (NOS) on frequencies 1618.5 and 1619.64 kHz.

TIS's coverage zone

30. Under Section 89.102(c)(4) of the proposed rules, a limit on TIS's transmitter output power was set at ten watts. There was no restriction placed on antenna type or height. It was stated that an effective coverage radius of 1.5 km could be expected. However, further analysis reveals that larger radii of coverage may be achieved. The radius served by a transmitting facility at these frequencies is dependent not only on transmitter output power, but also antenna geometry and ground conductivity. For an omnidirectional monopole antenna, higher gains are obtainable by extending the physical length of the radiating element. This means that a higher value of field would be measured at a certain location from an antenna, for example, of length $3/2\lambda$ compared to one of length $\lambda/2$, all other factors being equal. Then, under the proposed rules, taking into account variations in antenna length and ground conductivity, a radius of coverage up to 40 km could be expected from a station operating with a ten watt transmitter on 530 kHz located in an area of high ground conductivity with a $1/4$ wavelength radiator.

31. Because a radius of coverage not greatly exceeding 1.5 km is desired, it is apparent in view of the foregoing, that a restriction to limit the value of field strength measured at 1.5 km is necessary. Accordingly, the adopted rules set limits on the measured field strength at 1.5 km from the transmitting site and also the maximum antenna height, in addition to the proposed transmitter output power limit of 10 watts, for a conventional radiating antenna system.

"Leaky" cable antenna

32. Although not specifically mentioned in the proposed rules, a "leaky" cable antenna system constitutes another means of radiating a particular area with a usable radio signal. Compared to a conventional antenna system whose radiated field is primarily space propagated, the generated field surrounding a "leaky" terminated cable antenna, being inductive in nature, is not propagated, but restricted to the proximity of the cable. Within the distance of one wavelength, its cylindrically shaped field attenuates inversely proportional to higher orders of distance resulting in a much more rapid rate of field strength decline than is found in conventional antenna systems. However, at a given distance from the cable, variations in field strength traversing the length of the cable are relatively minor in magnitude. Consequently, based on recommendations in received comments, a field strength limit is also being adopted for this type of radiator. Furthermore, to ensure against the possible use of an oversized transmitter with a cable antenna, an output power limit is herein adopted. Moreover, since it is our intention that each TIS provide a coverage zone of not more than 3 km, a

limit of 3 km is adopted as the maximum length for a "leaky" cable antenna.

Systems

33. For the majority of applications that are anticipated, we expect that a single Travelers Information Station, employing either a "leaky" cable or a conventional vertical monopole antenna, will adequately cover the intended area of service. However, in certain instances, we envision that an applicant may seek authorization for a system of stations for a specified area to meet a particular requirement. As an example, the experimental station at the Los Angeles International Airport, which operates under a single authorization, is presently using two individual "leaky" cable antennas in tandem, each being supplied R. F. power from a separate transmitter. The first station (i.e., transmitter plus "leaky" cable antenna) of this two station system is located along an approach road to the airport and transmits flight arrival and departure information, as well as information to orient the motorist regarding traffic conditions within the complex. The second station in tandem, using a separate "leaky" cable antenna and transmitter, is located along several major roads within the terminal area and transmits information concerning availability of parking. Accordingly then, we may issue a single authorization under this service that would include the licensing of a system of stations (i.e., each station in the system would be limited to using one transmitter) for a specified area if the applicant can demonstrate a sufficient justification for such a need. This statement is set out in Section 89.102 (c)(1)(v) of the Rules.

34. To further qualify this concept, another example follows. If an applicant desires to install two stations, one to be located within the area of highway interchange "A" and the second within the area of highway interchange "B," then we would not consider this as an application for the licensing of a system of stations under a single authorization, since *two* distinct and separate *areas* are specified. In this case, we would issue a separate authorization for each station.

Emission designator

35. Several comments were received regarding the proposed emission designator 6A3 (Section 89.102(c)(5)). Halstead recommends the inclusion of A θ emission in the rules to allow for the transmission of an unmodulated carrier on a separate "leaky" cable system in the gap between two separate "leaky" cable systems providing different messages. Halstead argues that "from the standpoint of receiver operation, maintenance of the same signal level would, in effect, mute the automobile receiver while it is between the two highway cable antenna systems." Mr. Robertson of Jansky and Bailey requests that 2.2A2 be permitted "to provide for the use of tone-coded pulsing to automatically unselect specially designed receivers that could eventually be developed for use with TIS stations." He claims that the "implementation of such an automatic system would enhance the effectiveness of some stations and would further help to promote public interest in the use of TIS." Another party, Richard N. Burden Associates, recom-

mends that "no restriction in bandwidth be required, in the interest of higher intelligibility and lower costs."

36. For a TIS system employing a cable system, the Commission concurs with Halstead that the carriage of a unmodulated carrier on a third, relatively short piece of cable, interspaced between two message carrying cables providing continuity of signal level for purposes of muting the receiver would serve a useful function. Accordingly, the emission designator, A θ , shall be permitted, but only for receiver muting purposes in tandem "leaky" cable TIS installations. At this time, other emission designators shall not be considered pending further development and implementation of receivers specially designed to receive TIS frequencies. Because only voice messages are to be carried over TIS facilities, the proposed emission designator 6A3 is maintained in the attached rules.

Co-ordination of co-channel TIS's

37. In highly populated urban areas we recognize that the demand for TIS assignments may well exceed the number permissible due to the constraints imposed by these rules. Additionally, we acknowledge that there will probably be cases in which several jurisdictions, each with a specific need for TIS, are confined within a relatively small geographic area. In these instances, to more effectively share the limited radio frequency spectrum allocated for this service with all jurisdictions having such requirements, we strongly urge that the coverage area to be served by each TIS be confined to the licensee's area of jurisdiction and that stations utilizing "leaky" coaxial cable antenna systems be given primary consideration. Co-channel stations utilizing cable antennas may be located much closer due to cable's unique technical characteristic in which the radiation is confined within a distance of generally 30 to 90 meters of the cable.

38. We envision, in some cases, that it may be desirable for several area jurisdictions to time share a single TIS using a monopole antenna system operating with maximum allowable field strength which provides coverage in a manner agreed upon by those jurisdictions. Nonetheless, among neighboring jurisdictions, coordination (see Section 89.102(c)(4)(v)) for co-channel assignments shall be used when physical separation requirements cannot be met so that the public may derive maximum benefit from this service. Furthermore, since TIS's will be secondary to Federal Government as well as non-Government services on these frequencies, as set out in the Table of Frequency Allocations, all TIS applications will be further co-ordinated with the Interdepartment Radio Advisory Committee.

Alternative recommendations

39. Rather than establish TIS's to transmit travelers information, various parties suggest that alternative mechanisms be employed to disseminate such information. KLAD-AM/FM of Klamath Falls, Oregon, suggests that funding be used instead to upgrade existing government facilities to provide better information to commercial radio stations for broadcast use. It urges that a better alternative to TIS would be the development and use of the present commercial broadcasting system. The National Radio Broadcasters Association also proposes, in

place of TIS, further development and expansion of commercial broadcast services. Specifically, it suggests that governmental information gathering agencies (ex., Police Dept., Highway Dept., Fire Dept.) provide special receivers to broadcast stations that would receive motorist related messages originated from each participating agency. Depending on the urgency of the message, it could either be "aired" live or taped for delayed broadcast. Participating broadcast stations would have to agree to broadcast all messages within a given time period. It was pointed out that such a system now is used in the Los Angeles area (known as Sigalert). Two other parties submitted a description of a traffic information and warning system developed for the West Germany highway system by Blaupunkt, a German electronics firm. Under this system, designated broadcast stations agree to transmit motorist related information at specific times. To aid in tuning in such stations a tone transmitted on a subcarrier of the particular "traffic" station will be captured by a special decoder built into the auto receiver to activate an indicating lamp for alerting the driver as to the presence of a traffic information signal. This feature simplifies identifying stations transmitting traffic information.

40. While each of these approaches may have some beneficial application where broad area coverage is appropriate, none represents a viable alternative to the proposed use of low power systems to provide highly localized information of immediate interest to motorists, which is the use contemplated of TIS systems. Consequently, these suggestions are not being adopted in this proceeding.

41. Two parties suggest significantly different uses for these frequencies. One, the National Black Media Coalition (NBMC) appears to have interpreted the TIS proposal to be a plan to create three additional broadcast frequencies. In its statement of opposition, it contends that the proposal "envisions the allocation, albeit on a secondary basis, of the first new AM spectrum space for the broadcast of material to the public at large which the Commission has made since the 1920's . . ." (NBMC's comments, p. 4.) It states that the Commission has failed to consider the needs of the Black minority by opting to assign these frequencies to local governments. Accordingly NBMC requests the Commission to issue a further notice of proposed rulemaking that would result in the most widespread minority ownership of broadcast stations on 530, 1606, and 1612 kHz.

42. In a separate petition for rulemaking (RM-2704), V. Tobi Kanter, a student at the University of Denver, suggests a similar type of broadcasting operation on these frequencies.⁵ She requests the Commission to initiate rulemaking proceedings to provide for the use of 530, 1606, and 1612 kHz by a Community Access Non-commercial Service. Kanter believes the public interest would be better served if 250 watt broadcast stations licensed to non-profit community organizations (with special attention to minority representation) utilized these frequencies. Programming would "emphasize the public affairs, music, drama, and culture of the community being serviced." A limited amount of time during the broadcast day would be set aside for indi-

⁵ Kanter's proposal is compatible with that put forward in the Notice of Proposed Rulemaking. We are therefore considering the two proposals together, a possibility mentioned in the Kanter petition.