trains and (3) crews servicing wayside equipment. The need for interoperability is also evident in

- terminal railways which act as hubs for many railroads entering a common city;
- the operation of defect detectors which must be heard by trains operating on rights of way owned by other railroads;
- intermodal operators who must be able to communicate with all railroads doing business through a common terminal; and
- security services which involve multiple railroads.

The FRA itself emphasized that the "modern practices in which many locomotives operate over other railroads' lines"[14/] dictate nationwide interoperability. The Commission's consolidation proposal will threaten this dictate as PLMR users make the transition to narrowband technology. A key element of the railroads' transition plan is the migration to new interleaved channels using narrowband technology. As discussed above, the railroads must be guaranteed uniform channel assignments for this transition. Allowing non-railroad users access to railroad channels could preclude uniform channel assignments nationwide and will thereby jeopardize the railroads' migration to narrowband channels. This results from the fact that the transition to narrowband will be a complex phased process which will take some time to accomplish. Because of the scope of railroad operations, the transition to narrowband cannot be made overnight. If a non-railroad user gets preference over a railroad for one of the offset channels that will become available,[15/] it could preclude

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14/ FRA Report at iii.

15/ In the VHF band, for example, these offsets will become available on August 16, 1996. Report and Order at F-87

interoperability if that offset channel would otherwise have been needed by the railroads in their own transition. For example, this could happen where the railroads make the transition to a certain offset channel in several areas but are precluded from doing so in another area because a non-railroad user had already commenced operation on that channel. This outcome directly undercuts the FNPRM's claim that consolidation will lead to more efficient distribution of the newly-created channels.[16/]

In addition, if railroads are not able to preserve a uniform channel plan nationwide, the industry will be seriously constrained in its ability to develop new and innovative safety devices. The railroad industry is continuously remaking itself in order to improve operational safety. Industry practice has shown that in order to facilitate change while at the same time preserving interoperability, it is essential to have a coordinator that is intimately familiar with the needs and functions of railroad communications systems and that has exclusive control over railroad radio frequencies. Only a specialized coordinator can adequately deal with the complexity of such operations and correctly fit new systems into existing communications environments. FRA underscored this point when it stated that having the railroads control their own frequencies

> ensures a high degree of compatibility of railroad radio equipment and prompt adjustments when new service is established or existing railroads merge. Railroads must be given the tools required to service the public interest.[17/]

16/ Refarming Report and Order at ¶ 50.

17/ FRA Letter at 2-3.

The current pilot projects in Positive Train Control (PTC)[18/] being conducted by Burlington Northern Sante Fe (BNSF), Union Pacific (UP), Amtrak, Canadian Pacific and Canadian National are examples of innovation in the use of radio frequencies for safety applications If the railroads had not been able to exercise exclusive control over their frequencies, the potential of getting efforts such as these off the ground would have been minimal. Preservation of the Railroad Radio Service's dedicated block of spectrum is thus essential to facilitate and encourage the continued development and implementation of enhanced safety devices.

In addition, the present complexities of railroad spectrum management are best addressed by a coordinator that has knowledge and expertise in railroad operations. A Department of Commerce study highlighted the complexity of railroad spectrum management: "[b]ecause of the extensive geographic coverage of railroads, the spectrum management problem is significantly aggravated compared to other land mobile services."[19/] Railroad frequency coordination involves overlapping service areas and vast distances in contrast to the majority of PLMR services which are based in fixed geographic areas. Refarming complicates this spectrum landscape on several levels: it will create new interleaved channels; equipment will be operating at different bandwidths; analog and digital systems will be existing side-by-side, and a new set of geographic separation criteria will need to be developed. The interaction of these various systems and the increased energy

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18/ PTC will enforce movement and speed restrictions on trains and, thereby will help to eliminate injuries and deaths caused by train-to-train collisions.

19/ VHF Communications Usage by U.S. Railroads, Final Report of the Institute for Telecommunication Sciences, Department of Commerce. Prepared for the Department of Transportation (Fall 1977) at 2.

density as users move to narrowband means that the potential for interference will be particularly acute. In terms of the railroads, it will be necessary for railroad equipment to be compatible as well as interoperable with all base stations across the nation.

B. The Proposed Rationale for Consolidation as Applied to the Railroads is Flawed and Internally Inconsistent

The use of railroad radio systems for safety purposes highlights a serious flaw in the Commission's own rationale for consolidation. When the concept of consolidation was first broached in the Notice of Inquiry, it was said that consolidation would equalize disparities in channel usage among the various user groups.[20/] This characterization of uneven channel utilization was based on a series of studies completed in the late 1970s to early 1980s which measured occupancy times of channels in various cities.[21/] The Refarming Report and Order cited a more recent study of the licensing database performed in 1992 which looked at the number of licenses and mobiles per channel.[22/]

Such measures of channel utilization are inappropriate indicators of railroad use. Even if a railroad channel is not actively transmitting information at any given time, it still is

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20/ Spectrum Efficiency in the Private Land Mobile Radio Bands in Use Prior to 1968, Notice of Inquiry in PR Docket No. 91-170, 6 FCC Rcd 4126, 4136-37 (July 2, 1991) (hereafter "Refarming NOI")

21/ See Larry D. Reed, Keith A. Larson and William V. Tranavitch, "Land Mobile Spectrum Utilization Chicago, Illinois-Categorization of Long-Term Data," Safety and Special Radio Services Bureau, Report No. SMD 77-01, December 1977; Larry D. Reed, Keith A. Larson and William V. Tranavitch, "Land Mobile Spectrum Utilization Detroit, Michigan," Safety and Special Radio Services Bureau, Report No. SSB/SMD 78-01, August 1978; Larry D. Reed and Keith A. Plourd, "Land Mobile Spectrum Utilization San Francisco, CA. and Chicago, IL.," FCC, Report No. PRB/RDL 80-01; Larry D. Reed, "Land Mobile Spectrum Utilization Washington, D.C.," FCC Report No. PRB/RDL 81-01, January 1981

22/ Refarming Report and Order at ¶ 43, n. 96.

being utilized. For example, radio-based safety devices, such as trackside defect detectors, do not continuously transmit information on the channels assigned for their use, but they must have immediate access to such channels in the event of a defect. The need to relay information that could prevent a derailment requires that frequency availability be virtually 100 percent.

A real-life occurrence which vividly illustrates the importance of clear channels took place in October 1992, when a turbocharger used to increase engine power exploded on a Union Pacific train headed from Stockton to Portola, California. The crew immediately radioed the dispatcher to alert the fire department. This quick action helped prevent what could have been a major forest fire (see attached excerpt).

Moreover, a fixation on measures of channel utilization loses sight of other important values, such as the role played by channel allocations in meeting the safety needs of a particular user. Indeed, the authors of one of the Commission studies mentioned above expressly noted that railroad channels "have aspects of safety of life and property where availability of channels, when needed, is more important than the number of users that can be accommodated on a channel."[23/] This safety factor needs to be considered when evaluating channel distribution, but is ignored in the FNPRM. Constant access to clear channels is not possible without exclusive control over allotted frequencies. Radio discipline is essential when radio systems are used for safety related operations. Grouping railroad channels with other PLMR channels risks that a frequency coordinator other than AAR, relying on traditional channel utilization indicators, would place a non-railroad user on a

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23/ "Land Mobile Spectrum Utilization Chicago, Illinois-Categorization of Long Term Data" at 5 (emphasis added).

railroad channel which must be kept clear for emergency transmissions as CNG attempted to do in the example discussed above at pages 17-18

Consolidation has also been justified on the grounds that the current shared system inhibits spectrum efficiency by making certain wideband spectrum efficient technologies more difficult to implement.[24/] This rationale does not apply to the Railroad Radio Service whose 91 VHF channels are contiguous. Indeed, consolidation of the Railroad Radio Service would threaten the loss of the railroads' contiguous channels by allowing non-railroad users access to the new interleaved channels, thereby severely limiting the railroads' ability to develop and implement more efficient and advanced technologies, such as Time Division Multiple Access (TDMA)[25/] and "bandwidth on demand"[26/]

> [T]here is significant reason to be concerned by the refarming proposal to the extent it would.. interleave non-railroad users. This could prevent railroads from using two or more adjacent channels to transmit large quantities of data needed for train control and other purposes.[27/]

Such a result threatens one of the key objectives that guided the Commission in reaching its decisions on refarming: "to provide technical flexibility which enhances deployment of new technologies and promotes a competitive and robust marketplace for product development."[28/] The Commission also concluded in its Refarming Report and

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24/ Refarming NOI at 4137

25/ TDMA is a spectrum utilization technology which assigns time slots to blocks of data within a set amount of bandwidth.

26/ "Bandwidth on demand" is a technology which involves dynamically grouping channels for broadband communications

27/ FRA Letter at 3.

28/ Refarming Report and Order at ¶ 3

Order "that the best approach is to establish a narrowband channel plan that allows users the flexibility to aggregate channels to allow them to employ wider band equipment when it best suits their communications requirements."[29/] Consolidation of the Railroad Radio Service with other PLMR services directly undercuts this vital operational flexibility. By contrast maintenance of a separate railroad service with a dedicated block of spectrum allows for the combining of channels even if adjacent channels are assigned to a variety of railroad companies because of the mutual cooperation and sharing agreements that exist within the railroad industry.

C. A Separate Railroad Radio Service is Necessary to Facilitate Cross-Border Coordination and Operations

Preservation of the Railroad Radio Service is also necessary to simplify international frequency coordination with Canada, maintain cross-border interoperability and minimize the risk of interference to Canadian railroad radio communications systems. The international scope of railroad operations makes the industry unique among PLMR users. Other PLMR service groups do not have users regularly crossing international borders. By contrast, the Railroad Radio Service is required to share frequencies with Canadian railroads within about 75 miles of the international border. For years the Canadian and American railroads have worked together to coordinate channel usage to ensure safe and efficient transport of rail cars across the border without disruption.

For U.S. and Canadian railroad companies that operate in both countries, consolidation of the Railroad Radio Service would make it necessary to have one set of radio equipment to operate in Canada and one set to operate in the United States in order to

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29/ Id. at ¶ 26.

comply with the different regulatory regime in each country. In the United States, frequencies would be pooled and radio equipment would be correspondingly more complex, as discussed above. In Canada, however, frequencies would not be pooled and radio equipment would continue to operate on the railroad industry's existing allotted frequencies. Multiple radios make for a complex work environment, one that invites mistakes and accidents. Maintaining the Railroad Radio Service as a separate service and hence, the sole point of contact for frequency coordination with Canadian railroad counterparts, facilitates the successful and safe cross-border sharing of frequencies.

In sum, preservation of a separate Railroad Radio Service reflects the ongoing validity of the Commission's original reasons for creating the service The concerns which led the Commission to propose consolidation of the PLMR services are simply not applicable to the Railroad Radio Service. Consolidation of the Railroad Radio Service with other PLMR services would preclude the use of contiguous channels, increase the complexity of licensing, and hamper the smooth transition to narrowband technology Most importantly, consolidation and the consequent elimination of a separate Railroad Radio Service would endanger safety. For all these reasons, consolidation of the Railroad Radio Service with other PLMR services would be contrary to the public interest and could not survive critical scrutiny of the Congress or the courts.

IV. AUCTIONS ARE AN IMPROPER METHOD OF MAKING SPECTRUM AVAILABLE TO THE RAILROADS

As an incentive to convert to narrowband, the Commission has proposed creating "geographic overlay licenses" in the PLMR bands and assigning these licenses via

competitive bidding.[30/] These licenses would be created on a geographic basis and overlaid on existing users. The geographic overlay licensee would supposedly be required to provide full co-channel and adjacent channel interference protection to incumbents. However, incumbents would not be allowed to expand beyond their "existing facilities" without obtaining the overlay license or negotiating directly with the overlay licensee.[31/] As the FNPRM explained, "[t]he overlay licensee would be able to cap the number of users allowed on its channel within its geographic area and could negotiate voluntary mergers, buyouts, frequency swaps, or similar arrangements with incumbents."[32/] Profits would theoretically accrue to the overlay licensees to the extent that they cleared off the band or to the extent they could sell space opened up by a conversion to narrowband. Therefore, the overlay licensee would capture the benefits of the incumbents' conversion to narrowband and the overlay licensee would constrain the incumbents' operational flexibility in the band.

The FNPRM acknowledged that the Commission does not currently have authority to auction PLMR spectrum. Indeed, as will be discussed further below, the omnibus telecommunications bill currently under consideration by Congress creates an exemption from auctions for public safety users, intended specifically to include the railroads. However, because the auction proposals would adversely impact safety, AAR registers its vigorous opposition to the use of auctions for railroad spectrum.

30/ FNPRM at ¶ 141.

31/ Id. at ¶ 142. The FNPRM invited comment on how to define existing facilities. Thus, there is a possibility that an incumbent could lose its protection if it converted to narrowband.

32/ Id.

The current auction proposal unacceptably makes public safety hostage to the highest bid. Although the FNPRM states that existing facilities would be protected, the exact scope and nature of this protection is unclear. Moreover, railroads would be constrained in their attempts to modify or expand facilities by having to deal with the geographic overlay licensee. As Congress has repeatedly recognized, rail safety cannot be jeopardized because a railroad that needed spectrum did not win an auction or was constrained in dealing with a geographic overlay licensee. The requirements for such safety-related communications services cannot be evaluated in terms of price or profit.

Auctions are also particularly unsuited to the railroads' unique coverage requirements. Because the service area of railroad radio communications systems looks more like a ribbon than the standard circular service area, and because this ribbon tracks its way through most parts of the country, the Commission's standard market auction area is inappropriate.

Because of the inherent safety-related nature of their communications networks, the railroads should be treated as "public safety" entities if auctions are instituted in the PLMR bands, and should be exempted on the same basis as other public safety entities. Instead of competitive bidding, the railroad industry should be permitted to gain access to additional frequencies for future use in the same manner as in the past, through the FCC allocation process whereby spectrum allocation and assignment decisions are made on the basis of public interest determinations, including consideration of the safety-related uses of communications systems.

A. Auctions Will Imperil the Safety Role of Railroad Radio Communications Systems

In an auction the railroads could never be assured that they will have access to the radio frequencies they require. This is unacceptable, even as a remote contingency. The essence of an auction is that there are competing bidders where one entity is the winner and all others are the losers. A railroad's need to operate safely, a fact buttressed by statutory and regulatory safety requirements, cannot be so put at risk.

The essential public safety role of railroad communications systems has received congressional recognition. S.652, the omnibus telecommunications legislation adopted by the Senate in June 1995 and currently being considered by a Conference Committee, requires the FCC to use auctions for assigning new spectrum that would be reallocated from federal government use. The legislation contains an exemption from the auction requirement for public safety services; on the Senate floor, Senators Pressler, Stevens and Packwood engaged in a colloquy clearly stating their common view that public safety radio services include the safety-related communications of the railroads. Senator Pressler pointed out:

> [T]he railroad industry uses radio spectrum for voice and data communications that are essential to public safety. Freight and passenger railroads rely upon radio communications to transmit authority for train movements, to broadcast emergency warnings, and to seek emergency response in the event of accidents.[33/]

Senator Packwood concurred with Senator Pressler and highlighted the fact that, "the term 'public safety radio services' includes safety-related communications of railroads and other modes of transportation."[34/]

33/ 98 Cong. Rec. S8469 (daily ed. June 15, 1995) (statement of Sen. Pressler).

34/ Id. (statement of Sen. Packwood).

In addition, the 1995 Budget Reconciliation Bills passed by the House and Senate specifically provided an exemption to the FCC's competitive bidding authority "for any public safety radio services and non-Government uses that protect life, health and property and that are not made commercially available to the public."[35/] Report language accompanying the Senate bill makes clear that the reference to non-Government uses includes railroad use of radio and emphasizes that railroads "use radio spectrum for public safety purposes."[36/] AAR urges the Commission to align its views with those of the Congress and provide that any exemption from auctions for public safety use specifically include the railroad industry.

B. The Federal Government, Including the FCC, Recognizes the Use of Radio for Safety Purposes

As mentioned above, some of the safety-related uses of radio by the railroads are mandated by statute and regulation. For example, Congress has conferred upon the Secretary of Transportation broad authority to prescribe regulations and issue orders "for every area of railroad safety " 49 U.S.C. § 20103(a) This authority has been used by the Department of Transportation, through FRA, for the adoption of broad safety-related operating procedures and requirements governing the use of two-way radio communications systems by the railroads These regulations are found at 49 C.F.R. § 220.

In addition to broad safety-related authority, there are other statutory provisions which are more specific with respect to the use of radio in railroad operations. For example, in

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35/ H.R. 2491 § 4001(a)

36/ Report language forwarded by the Senate Committee on Commerce, Science and Transportation to the Budget Committee on September 29, 1995 at 6 (emphasis added).

1994, Congress directed the Secretary of Transportation to require the railroad industry to deploy two-way radio links for the initiation of emergency braking from the rear of a train 49 U.S.C. § 20141(b). FRA has mandated that these radio braking systems be installed by 1997. In anticipation of this requirement, some railroads have already undertaken to convert their end-of-train devices to two-way mode in order to enhance the emergency braking capability of their trains.

The Commission itself recognized the critical role of railroad radio communications in preventing loss of life and property as long ago as 1944 when it established the Railroad Radio Service as a separate service category. The FCC found:

> [A] properly engineered railroad radio service would contribute to the safety of life and property, both in preventing rail accidents and in reducing the seriousness of injury and damage after accidents, by permitting the prompt summoning of aid.[37/]

Since that time, the public safety aspect of railroad use of radio communications has been a key component of FCC regulation of the Railroad Radio Service. The Commission's rules explicitly state that railroads are eligible to hold licenses "to operate radio stations for transmission of communications and to assure safety of operations essential to such activities of the licensee." 47 C.F.R. § 90.91 (emphasis added). In a 1966 rulemaking proceeding the Commission established a regulatory framework for the licensing of railroad safety inspection devices in order to promote "a wider and more effective use of radio by American railroads."[38/]

37/ General Mobile Radio Service, Report and Order in Docket No. 8658, 13 FCC 1190, 1200 (1949).

38/ Amendment of Part 93, Subpart H, Railroad Radio Service, Report and Order in Docket No. 16780, 5 FCC 2d 842 (1966).

The railroad industry must continue to have access to radio spectrum, not only in the frequencies that the industry uses now, but additional spectrum for future expansion and enhancement of the railroad communications network. Auctions are not practicable or usable in light of the railroad industry's specialized needs. Adoption of an auction regime for spectrum needed by the railroads would be an abrupt reversal of fifty years of policy and practice which has served well the public interest in rail safety.

V. EXCLUSIVITY AND RESALE OF EXCESS CAPACITY ARE INAPPROPRIATE AND UNNECESSARY IN THE PLMR BANDS

As an additional "incentive" to move to narrowband technology, the FNPRM proposed to allow co-channel licensees who convert to narrowband to preclude new co-channel licensees from being licensed.[39/] As opposed to pure exclusivity, which the Commission conceded "would not be suited to this highly shared environment,"[40/] this proposal would entail a form of shared exclusivity.[41] It would be more appropriate, therefore, to label such a plan as a "protected service area" arrangement rather than as exclusivity per se. The Commission also proposed to allow exclusive licensees to resell excess capacity.[42/] While the Commission's specific recommendations concerning exclusivity would have limited applicability in the context of a separate railroad service,

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39/ FNPRM at ¶ 120.

40/ Id. at ¶ 121.

41/ Thus, by definition, "shared exclusivity" involves overlapping service areas, while "pure exclusivity" involves one licensee obtaining exclusive rights in a given area.

42/ FNPRM at ¶ 119.

AAR is concerned that the Commission's statements regarding exclusivity in general, as well as its proposals concerning the right of resale, blur the critical distinction between private and commercial services. While AAR does support the concept of a protected service area, the introduction of "pure exclusivity" in the bands below 512 MHz or the use of resale would not only be unnecessary and inappropriate, but would fail to accommodate the wide diversity of systems at this band.

A. Pure Exclusivity is Unnecessary Because There Exist Sufficient Incentives to Convert to Narrowband

The Commission stated its belief that market-based incentives such as exclusivity are necessary to induce users to convert to narrowband. However, because most PLMR users, including the railroads, encounter extreme congestion, particularly in the major metropolitan areas, most users will convert to narrowband on their own. A study of the current state of use of the PLMR bands concluded that, "[t]he amount of spectrum allocated for [private wireless use] has not kept pace with the need, and existing [private wireless] spectrum is so highly congested as to be unusable for some communications purposes."[43/] The Commission itself stated that

> We believe that as systems wear out, and new radios are bought, users will have a natural inducement, without a Government mandate, to use the narrower bandwidth of the multi-mode radios in order to avoid excessive adjacent channel interference. This will allow a natural transition to more efficient systems as new equipment is bought within each user's normal replacement cycle. We also believe that a natural inducement exists for all users, especially those located in congested areas, to migrate to narrowband equipment as it becomes available. The use of narrowband technology

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43/ Private Wireless Communications Coalition study at 2.

> will ease congestion because more channels may be used in a common geographic area.[44/]

In terms of railroad operations, congestion on the existing bands is so acute as to provide sufficient motivation by itself to migrate to narrowband.

Moreover, although each railroad operates independently, railroad frequency coordination involves overlapping service areas, as discussed in section III. Pure exclusivity would not be appropriate in this context and would not reflect the practical realities of railroad operations.

B. Resale of Excess Capacity Would be Inappropriate and Inefficient in the PLMR Setting

The option of resale of excess capacity is not feasible for private users such as the railroads. By definition, private users do not generate revenue directly from their use of spectrum as do the commercial users. Indeed, there is a serious risk that allowing resale would encourage speculation, just as occurred with the spectrum over 800 MHz. Imposing this type of commercial framework on private users would be inappropriate. Finally, and most importantly, the railroads, along with many other PLMR users, are unlikely to face significant excess capacity because of congestion and pent-up demand.

44/ Refarming Report and Order at ¶ 40 (emphasis added).

VI. SPECTRUM USE FEES ARE NOT NECESSARY TO INDUCE USERS TO CONVERT TO NARROWBAND AND WILL IMPOSE A DOUBLE BURDEN ON THOSE USERS MAKING THE CONVERSION

The FNPRM also proposed implementing user fees as an alternative to, or in conjunction with, competitive bidding and exclusivity.[45/] User fees are not necessary to induce users to convert to narrowband because, as mentioned above, and as the Commission itself has acknowledged, there already exist natural incentives, such as congestion, to convert to narrowband.[46/] Furthermore, the adoption of user fees would impose a double burden on those incumbents, such as the railroads, who would already be bearing the cost of narrowband conversion. The railroads will bear the immense costs of a nationwide conversion. The adoption of user fees would require the incumbents to pay twice -- in effect bearing the massive expense of the conversion to narrowband and then paying to use the spectrum that their investment had just made more efficient.

Notwithstanding these considerations, if user fees must be adopted because of overarching federal budget deficit reduction exigencies, they should be implemented across the board for all spectrum-based services. Any other alternative would be arbitrary and capricious. There exists no rationale that would justify singling out the Part 90 users for the imposition of fees as opposed to other spectrum users. Indeed, there would appear to be less justification for singling out the Part 90 users who do not generate subscriber-based revenues from the spectrum. If the Commission's goal is spectrum efficiency, any imposition of user fees, to accomplish the stated objective, must be universal. For example, in Britain all

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45/ FNPRM at ¶ 136

46/ See, supra, pp. 35-36.

entities, including government agencies, pay fees for the use of the radio frequency spectrum.

In addition, any spectrum user fee formula must adequately reflect the nature of the use. The Private Wireless Communications Council study outlined a variety of factors which should enter into any potential spectrum user fee formula. These factors include the amount of spectrum in a license, the amount of geographic area covered, the type of area (i.e., densely populated urban areas where demand is higher or sparsely populated rural areas where demand is less), and whether the spectrum is shared or is for the exclusive use of the licensee.[47/] Another factor worthy of consideration might distinguish between commercial use, where the spectrum itself will generate a revenue stream, and private use, where the spectrum is used to support the internal operations of the licensee

If user fees are not imposed universally, then the railroads should be exempt because of their public safety role The Commission itself proposed to exempt public safety users from user fees "because they are charged with the protection of human life and property."[48/] This public safety aspect of railroad use of radio communications has been a key component of FCC regulation and dictates exemption of the railroads from the payment of user fees.

47/ Private Wireless Communications Coalition study at 31-34.

48/ FNPRM at ¶ 140

Conclusion

The railroad industry has experienced significant growth and change over the past five decades. Railroads currently carry more freight than any other mode: 72% of new automobile shipments, 60% of coal, 55% of household appliances, 53% of lumber, and 50% of grain and foods.[49/] They carry enormous quantities of chemicals and hazardous materials. Not only are railroads the least polluting and most energy efficient way to move freight and hazardous materials over land, but they do so with remarkable safety.

This development is due in large part to a highly sophisticated system of railroad radio communications which has been critical to safety and operational efficiency. The Commission's proposals concerning consolidation and auctions threaten to compromise this communications network. These two proposals will be affirmatively harmful not only to the future of rail transportation, but also, and most importantly, to public safety.

Safety concerns must enter into and shape any spectrum arrangement for the railroads. These comments have described in detail the safety and operational requirements which dictate preservation of the Railroad Radio Service. These same reasons militate against subjecting railroads to spectrum auctions. User fees would only be acceptable as an alternative to auctions if they were imposed across the board; any form of limited implementation would be arbitrary and capricious.

Many of the Commission's proposals are based on the incorrect assumption that a commercial framework can be easily imposed on private users of spectrum. Private users, however, such as the railroads, rely on radio for unique and specialized communications

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49/ AAR Briefing on Spectrum Refarming, PR Docket No. 92-235.

needs which can not be readily satisfied by commercial systems. The FNPRM's concept of a commercial, market-based environment fails to take into account values, such as safety, which are of great concern to railroad users. Indeed, the Commission's shift toward such market-based incentives is not necessary to induce users to convert to narrowband technology. The Commission's narrowband channelization plan will itself spark innovation and more efficient use of the spectrum below 512 MHz. The overlay of market-based incentives on top of this new channelization plan ends up resembling more an elaborate government mandate rather than the introduction of market forces.

AAR welcomes and applauds the Commission's new channelization plan. At the same time, AAR is deeply concerned by some of the specific proposals in the FNPRM, including consolidation, exclusivity, resale, auctions and users fees. These proposals, if imposed, particularly consolidation and auctions, would present a serious public safety threat.

AAR urges the FCC to review its rule-making consistently with the fact that it, too, is a partner in the effort to ensure national safety.

Respectfully submitted,

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ATTACHMENT A

Railroad Radio is Essential to Preserve Safety Along the Railroad Right-of-Way

The simple fact that railroad operations involve movement of heavy equipment, sometimes carrying passengers and/or dangerous commodities at high speeds highlights the serious nature of railroad safety concerns. The movement of a single locomotive picking up, transporting and delivering freight to various locations along a regional or nationwide route presents potential dangers to the public, as well as railroad employees, that cannot be underestimated.

Railroad radio provides the ability immediately to communicate conditions of peril and to coordinate rescue efforts. There are several reasons why mobile radio is uniquely suited to satisfy this critical communications need:

1. The fastest and surest way to contact the locomotive engineer, the person most able to provide corrective response in most emergency situations, is via the clear channel set in the engine cab. Many accidents can be avoided by an early warning of hazardous conditions. Split second timing in such situations is essential.

2. The ubiquitous use of radio in railroad operations provides a readily available means for communicating hazardous conditions or dangerous operations.

Clear communications are essential to favorable outcomes. The critical safety applications of railroad radio systems demand instantaneous transmissions and clear channels. The risk of interference jamming or blocking an emergency transmission simply cannot be tolerated. As the following occurrences illustrate, a reliable radio communications network is vital to safety:

1) In August 1994 an alert signal supervisor discovered bolts missing from the railroad track. Because of the missing bolts the track was more than an inch out of alignment, a condition that could have caused a derailment. The signal supervisor radioed the train dispatcher who was able to relay a stop train order to an approaching train, thus averting a derailment.

2) In October 1995, a tragedy which received national press attention occurred when sabotage along a railroad track in Arizona caused an Amtrak passenger train to derail in a remote desert area, killing one person and injuring many others. The train engineman radioed an emergency call of the derailment to the dispatcher. The dispatcher had no knowledge of the derailment until the emergency call was received. This immediate relay of information allowed for rescue teams to arrive quickly on the scene of the derailment and to assist the injured.

3) In October 1995, a track maintenance foreman working in Phoenix, Arizona discovered that vandals had removed spikes from the rails. The foreman immediately radioed the yardmaster who was in turn able to relay via radio a stop order to an approaching train, thus narrowly preventing a derailment.

4) During the floods of 1993 in Missouri an eastbound Santa Fe train was warned on the radio that the levee at Orrick had broken. The train was right in the path of the fast approaching wall of water. Coordinating via radio, the dispatcher and the crew were able to move the train out of the path of the oncoming water. Because of this warning the train had time to reach higher ground before the released water hit the railroad right-of-way.

5) On January 11, 1995 a construction crew working on track signals along the Conrail right of way observed a westbound train approaching and noticed one of the train cars was making abnormal vertical and lateral movements. A member of the construction team immediately radioed the engineer that there was a broken wheel on the north side of the train. The engineer stopped the train and with the help of the construction crew was able to identify the defective car and set it out. Upon examination, it turned out that eight to ten inches of the wheel tread was missing. The train was stopped just ten miles short of the Portage Bridge, a 200 foot high structure spanning the Genessee Gorge. If the train car had gone off the tracks over the bridge, the result would have been catastrophic.

6) On October 18, 1995 in Chatham, New York a signal crew member was on duty watching a freight train pass by. He observed that six of the wheels on one of the freight cars were sliding rather than rolling. The crew member quickly radioed the train crew from his portable radio and advised them of the potentially dangerous condition. The engineer immediately stopped the train and upon inspection determined the cause of the problem to be the failure of the brakes to release. The damaged freight car was removed from service and the train continued on in safe condition.

7) In 1983, a signal supervisor, waiting for a freight train to pass by, noticed that the wheel structure of one of the freight cars was out of alignment with and detached from the freight car frame. The signal supervisor radioed the train crew which was able to stop the train, thereby avoiding a collision with trains on an adjacent track.

8) On August 22, 1995, a Conrail freight crew operating in the vicinity of Frankford junction noticed a truck on the railroad track. The crew's prompt radio transmission of this information enabled an approaching Amtrak passenger train to stop short of striking the truck.

9) In Heavener, Oklahoma, a signal inspector performing his routine visual inspection of a passing train observed 1/2 of a wheel missing from one of the freight cars. The inspector immediately radioed a mayday warning to the train crew and was able to have the train stopped before it derailed. Without the ability to transmit this critical information instantaneously, the train would have derailed

10) A deadly head-on collision between two Santa Fe trains occurred at a railroad junction. As the collision happened an Amtrak passenger train was approaching the junction. The crew members of one of the Santa Fe trains that were involved in the collision were able to radio the approaching Amtrak train and notify it of the accident ahead, saving it from colliding with the wreckage of the two Santa Fe trains.

11) On January 18, 1995 a member of a train repair crew noticed blue smoke coming from the fourth car of a passing westbound train. The repairman immediately radioed this information to the train crew which stopped the train. Upon investigation, it turned out that an axle which held the train car to the wheel structure had seized up. This condition could have resulted in a derailment if it had gone undetected.

12) In October 1995, in Del Rio, Texas, a trainman used the radio for an emergency call in to the dispatcher to request emergency medical help for a pedestrian truck by a passing train. The dispatcher was able to contact the local authorities for medical assistance.

13) In June 1995, a bridge operator in Philadelphia became seriously ill while at work. Conrail police dispatched to the scene used their radios to coordinate emergency medical assistance. Time was critical because of the bridge operators' deteriorating condition. The ability to communicate via radio with the train dispatcher and the crew was essential to the rescue effort. The employee survived the incident.

14) In 1984 in Texarkana, Arizona, a track inspector fell out of his inspection vehicle and onto the railbed. The inspector was so badly injured by the fall that he could not move. He was able, however, to push his microphone button and make tapping noises. The dispatcher, after listening to the tapping noise transmission for a period of time, discerned that the inspector might have been in trouble. A person was sent to inspector's last known location and found him bleeding badly and unable to move or talk. This rescue effort saved the inspector's life

15) A train crew was in a locomotive pushing a work train along the track when the rear brakeman who was acting as the "eyes" of the crew slipped and fell

onto the tracks. The crew used the radio to call an ambulance and to relay the exact location so that paramedics could get in and transport the injured worker to the hospital. A considerable amount of time would have been lost with potentially tragic consequences if the crew had had to go to the road and find a telephone.

16) In March 1995, a train conductor noticed a trespasser lying on the railroad tracks leading into the rail yard. The conductor quickly alerted the yard dispatcher who relayed this information to an oncoming train which was able to stop in time. Without the ability to communicate via radio this man's life would have been lost.

17) In March 1991, a Conrail police officer observed a fire on a propane car in a passing train. The officer was able to contact the engineer by radio, have the train stopped and call for further assistance. With the help of the officer the crew fought the fire with fire extinguishers until the fire department arrived.

18) In March 1984, a railroad company police officer observed a broken rail that left a large gap in the tracks. He immediately communicated this information by radio to the dispatcher who was able to stop an approaching train, thus preventing a major derailment.

19) In the early morning hours of September 26, 1995, St. John Parrish police in Garyville, Louisiana observed that the flashing lights placed at the intersection of a local highway rail grade crossing were not functioning. The police notified the railroad dispatcher who was able to radio an approaching train and apprise it of the situation. The train was able to stop in time, thus avoiding a collision with early morning commuters.

20) In July 1995, Conrail police responding to a report of juveniles swimming near a railroad bridge noted two youngsters in the water struggling against a strong current. The officers were able to coordinate a successful rescue effort via the radio and the two youngsters were saved.

21) In July 1995, a Conrail police officer observed a trailer hanging over the side a flatcar on a passing train. The officer was able to contact the train engineer by radio in time to have the train stopped before reaching a tunnel. But for the ability to communicate this information quickly by radio, the trailer would have struck the wall of the tunnel upon entry causing a major derailment.

22) In October 1992 a turbocharger used to increase engine power exploded on a Union Pacific train headed from Stockton to Portola, California. The crew immediately radioed the dispatcher to alert the fire department. This quick action helped prevent what could have been a major forest fire.

ATTACHMENT B

Brakeman Tony Alamillo, left, and Locomotive Engineer Chuck May, second from right, display awards commemorating their actions in preventing a forest fire last October. Also pictured is former Feather River Service Unit Superintendent Steve Barkley, second from left, and Manager of Train Operations Doug Brewer

Heroic Crew Prevents Forest Fire

Crew members of a train headed from Stockton to Portola, California, battled a locomotive fire for two hours October 1, preventing what could have become a major forest fire in the Feather River Canyon.

Locomotive Engineer Chuck May, Conductor Gordon Groombridge and Brakeman Tony Alamillo were between Camp Rogers and Belden when a turbocharger on Unit 2242, trailing in the consist, blew. The explosion sent hot cinders and oil flying, which ignited brush and shrubs along the tracks. May stopped the train, and Groombridge and Alamillo raced back three blocks to find five- to 10-foot flames.

"We started fighting the fire and called the engineer on our portable radio to notify the fire department and dispatcher and report the fire out of control," Alamillo said. Groombridge asked May to throw a couple of fire extinguishers down from the locomotive and ran back to retrieve them. Meanwhile, Alamillo battled the blaze with a tree branch, dirt and rocks.

While Alamillo and Groombridge continued fire-fighting efforts, May received permission from the train dispatcher to back up the working locomotives, bringing additional extinguishers and improved communications closer to the fire.

May then grabbed two fire extinguishers and ran to the fire. The three men managed to contain the fire in a ravine and bring the flames under control. The engineer later retrieved a fifth fire extinguisher and used it to battle hot spots as they arose.

With the fire under control, Groombridge returned to the locomotive to call the dispatcher, while May and Alamillo remained at the site until a firefighter arrived to evaluate the damage.

The crew prevented what could have been a disastrous forest fire, former Superintendent Steve Barkley said in letters of commendation to the three men. "You put your own well-being in jeopardy to put out that fire and prevent tragic consequences."