

ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

RECEIVED

SEP 27 1993

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)

Amendment of Part 87 of the)
Commission's Rules To Implement)
Technical Requirements Applicable)
to Instrument Landing System)
Receivers Adopted by the International)
Civil Aviation Organization)

PR Docket No. 93-199

RM-7610

**COMMENTS OF THE
NATIONAL ASSOCIATION OF BROADCASTERS**

NATIONAL ASSOCIATION OF BROADCASTERS
1717 N Street, N.W.
Washington, DC 20036

Henry L. Baumann
Executive Vice President &
General Counsel

Barry D. Umansky
Deputy General Counsel

John Marino
Manager, Technical Regulatory Affairs
NAB Science & Technology

September 27, 1993

No. of Copies rec'd
List ABCDE

0771

TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	i
I. INTRODUCTION AND SUMMARY	1
II. REGULATORY BACKGROUND	2
A. The FAA Was Conferred Expanded Jurisdiction To Consider Aviation Interference	3
B. FAA Prediction of Interference to Instrument Landing Systems	4
C. The FAA Has Proposed To Exacerbate These Documented Problems by Expansion of Its Regulatory Program	7
D. NAB Strongly Supported the Petition Leading to the Instant Rule Making	8
III. THE COMMISSION SHOULD ADOPT ITS PROPOSALS	9
IV. ADDITIONAL REGULATORY AND NEGOTIATION STEPS MUST BE TAKEN BY THE COMMISSION TO ENSURE RATIONAL DECISIONMAKING IN THE ASSESSMENT OF COMMUNICATIONS INTERFERENCE TO AVIATION RADIO	9
A. Filters Should Be Required on Existing and New Aviation Receivers	9
B. The Commission Should Continue Its Dialogue with the FAA but also Initiate a New Proceeding To Ensure Prompt Remedial Action	10
C. An Improved Airspace Computer Model Should Be Crafted Around Aircraft Receivers That Comply with the ICAO Standards	12
V. CONCLUSION	13

EXECUTIVE SUMMARY

In these comments the National Association of Broadcasters urges the Commission to adopt the kind of regulatory initiatives outlined in its Notice of Proposed Rule Making ("Notice"). Specifically, NAB supports the adoption, in the Commission's Rules, of the technical standards for Instrument Landing System ("ILS") and VHF Omnirange Radio ("VOR") aviation receivers promulgated by the International Civil Aviation Organization ("ICAO")

There is strong and growing justification for the Commission taking this action. Indeed, NAB believes the adoption of aviation radio receiver standards is but one critical component in a larger process of achieving an overall regulatory environment where FM radio and other communications operations can operate and expand free of irrational restrictions imposed by the Federal Aviation Administration ("FAA"). Even greater concern is attached to these issues in light of the FAA plan to extend its regulatory program to other communications services.

That is, the Commission actively should consider now its ultimately going beyond the adoption of its proposals in the Notice and taking related rulemaking and negotiation actions that will establish a regulatory regime where facility siting is based on substantiated engineering principles, rather than on the illusory results of the interference prediction model and assumptions employed by the FAA.

NAB urges the FCC to continue its ongoing dialogue with the FAA. However, at the same time -- and due to the long-term

failure of the FAA to recognize the irrationality of its restrictions on the siting of new or improved communications facilities -- NAB urges the Commission to consider the institution of FCC proceedings that would: (1) propose the required use of filters on all existing and new aviation radios; and (2) lead to the FCC's development of its own computer model/assumptions for regulating any potential interference to aviation radio by communications services.

SEP 27 1993

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)	
)	
Amendment of Part 87 of the)	PR Docket No. 93-199
Commission's Rules To Implement)	
Technical Requirements Applicable)	RM-7610
to Instrument Landing System)	
Receivers Adopted by the International)	
Civil Aviation Organization)	

**COMMENTS OF THE
NATIONAL ASSOCIATION OF BROADCASTERS**

I. INTRODUCTION AND SUMMARY

In these comments the National Association of Broadcasters ("NAB")¹ urges the Commission to adopt regulatory initiatives related to and including those outlined in its Notice of Proposed Rule Making ("Notice").² Specifically, NAB supports the adoption, in the Commission's Rules, of the technical standards for Instrument Landing System ("ILS") and VHF Omnidirectional Radio ("VOR") aviation receivers promulgated by the International Civil Aviation Organization ("ICAO")³

¹NAB is a nonprofit, incorporated association of radio and television broadcast stations and networks. NAB serves and represents America's radio and television stations and broadcast networks.

²Notice of Proposed Rule Making in PR Docket No. 93-119, 8 FCC Rcd 4763 (1993).

³ICAO Convention, 61 Stat. 1180, T.I.A.S. No. 1591, Annex 10, v. I ¶¶ 3.1.4, 3.3.8 (1985) (ICAO).

As noted below, there is strong and growing justification for the Commission taking this domestic action now. Indeed, NAB believes that adoption of aviation radio receiver standards is but one critical component in a larger process of achieving an overall regulatory environment where FM radio and other communications operations can operate and expand free of irrational restrictions imposed by the Federal Aviation Administration ("FAA"). That is, the Commission actively should consider now its ultimately going beyond the adoption of its proposals here and taking related rulemaking and negotiation actions that will establish a regulatory regime where facility siting is based on substantiated engineering principles rather than on the phantom-based interference prediction model and assumptions employed by the FAA.

II. REGULATORY BACKGROUND

Over the past several years, the Federal Aviation Administration (FAA) has increasingly issued "Determinations of Hazard" for proposed FM and TV broadcast towers. The objections have been based not only upon the traditional standards for physical obstruction to navigable airspace but upon the FAA's analysis of potential broadcast interference to aeronautical frequencies. This policy has adversely affected hundreds of FM and TV applicants (and potential applicants), delaying their approvals and resulting in extraordinary expenses in their attempts to reverse these FAA actions.

In 1985, the FCC issued a Notice of Proposed Rule Making in MM Docket No. 85-108,⁴ seeking to establish FM broadcast station siting standards to protect aeronautical services operating on frequencies above 108 MHz. However, this proceeding was terminated without action, ostensibly in order to facilitate government/industry information exchange, in preparation for international CCIR meetings on these matters, by avoiding ex parte restrictions. But, the termination of this proceeding surely has not terminated the problem.

A. The FAA Was Conferred Expanded Jurisdiction To Consider Aviation Interference

In December, 1987, the Federal Aviation Act was amended to authorize the FAA to consider "interference" in its obstruction evaluations. Public Law 100-223 amended the Federal Aviation Act⁵ to read:

SEC. 1101. HAZARDS TO SAFE AND EFFICIENT AIR COMMERCE AND THE PRESERVATION OF NAVIGABLE AIRSPACE AND AIRPORT TRAFFIC CAPACITY" [previously, "HAZARDS TO AIR COMMERCE"]

(b) Aeronautical Studies --

(1) Requirement.--Where the Secretary determines, according to rules and regulations, that the construction or alteration of any structure may constitute an obstruction of navigable airspace or an interference with air navigation facilities and equipment or navigable airspace, the Secretary shall

⁴50 Fed. Reg. 19,392 (May 8, 1985).

⁵Pub. L. No. 85-726, 85th Cong. 2d Sess., 72 Stat. 731 (1958), as amended, Pub. L. No. 100-223, 100th Cong., 1st sess., § 206, 101 Stat. 1521 (1987), codified at 49 U.S.C.A. § 1501(c) (West Supp. 1990).

conduct an aeronautical study to determine the extent of the adverse impact, if any, on the safe and efficient use of such airspace, facilities, or equipment. (Emphasis added).⁶

The Conference Report noted that this language was modified "to clarify that requirements cover structures which create electro-magnetic interference."⁷

Further, FCC/FAA coordination requirements were added to the Act:

(c) Coordination.--In the administration of laws relating to broadcast applications and the conduct of aeronautical studies relating to broadcast towers, the Federal Communications Commission and the Federal Aviation Administration shall take such action as may be necessary to efficiently coordinate the receipt, consideration of, and action upon such applications⁸ and the completion of associated aeronautical studies.

B. FAA Prediction of Interference to Instrument Landing Systems

The FAA and its staff in recent years has tended to claim that the FAA is the only agency with jurisdiction over obstacles and avionics interference in the national airspace. Moreover, it developed its own internal interference "protection" standards for use by the regional FAA offices. When these standards indicated that a proposed broadcast facility would "potentially" interfere with aeronautical services, the regional FAA office either issued a "Determination of Hazard" to the

⁶49 U.S.C. § 1101(b)(1)

⁷House Report 100-487 (December 15, 1987)

⁸49 U.S.C. § 1501(c)

broadcast applicant or sent an advisory letter expressing its concerns and suggesting corrective amendments (usually power reduction, change in location, or selective filtering at the transmitter -- depending on the type of interference under study). The FAA subsequently developed a computer program to expedite these interference studies.

NAB, most broadcasters, their engineering consultants, their counsel and the FCC itself have questioned the validity of this computer program, and the assumptions used in its application, to accurately predict where, when and under what conditions, interference occurs. In 1985, NAB commissioned a study of the FAA interference standards (in use at that time).⁹ The study showed that the FAA standards indicated that existing FM broadcast stations were creating extensive theoretical interference at nine major U.S. airports. However, because these were existing situations with no documented reports of interference from them, it was concluded that the engineering assumptions used to develop these interference standards were in error. The FAA computer program generally has employed technical standards and assumptions that are not significantly different from those used in 1985 -- thus continuing the exaggeration of the likelihood of interference.

⁹"Application of FAA Interference Prediction Methodology to Selected FM Broadcast Facilities," prepared by John F.X. Browne & Associates, April, 1995, submitted as an attachment to the Advance Comments of NAB, filed June 28, 1985.

Since the Fall of 1989, the FCC and FAA have met regularly to try to develop a compromise position on broadcast interference to air navigation. These generally two-day meetings largely have been staff-to-staff efforts; but on occasion there have been some industry representatives attending the meetings. Also, there has been frequent contact among FCC staff members and NAB staff -- all of whom appear to share the same concerns and goals.

These FCC/FAA staff meetings have led to a slightly modified computer approach to predicting interference to air navigation. The modifications involve revised assumptions employed in the computer model developed by Ohio State University. But, despite these changes, the model still acts to predict interference where reality shows there is none. Thus, the invalidity of the FAA computer model's application continues to impose irrational restrictions on broadcasters' and others' efforts to inaugurate new or improved service.¹⁰

¹⁰The invariable, "knee-jerk" reflex of the FAA staff is to impose -- or attempt to impose -- the most stringent restrictions possible on communications facilities. This stance is taken uniformly, seemingly without regard to relevant science, data, or research, and often with little foundation or understanding of the matter at issue.

One lucid example is the two paragraph comments submitted by the FAA's Gerald J. Markey, FAA Manager, Spectrum Engineering and Policy Division, on September 3, 1993, in the FCC's RF radiation rule making (ET Docket No. 93-62). In these comments, the FAA has urged that the FCC adopt a set of policies on human exposure to RF radiation that would ignore the decades of work in the development of the 1992 American National Standards Institute ("ANSI") RF radiation protection guide (which the FCC presently has proposed for adoption).

(continued...)

C. The FAA Has Proposed To Exacerbate These Documented Problems by Expansion of Its Regulatory Program

In the meantime, the FAA is in the process of revising its own Part 77 rules to take full advantage of the authority granted it by Congress in 1987.¹¹ Although it is difficult to predict the FAA timetable, if these rules are adopted they likely would require that FAA clearance be obtained for any change in height, frequency, power or number of antennas on a tower. Also, it is likely that the FAA will attempt to extend its regulatory activity beyond ILS facilities and require interference assessments for other forms of air navigation. Moreover, it appears that this assessment, if the FAA were to follow through on its proposals, would reach beyond FM and TV and likely go to potential intermodulation and other interference from land mobile radio, certain common carrier facilities and even AM broadcasting. In joint comments filed December 31, 1990, NAB and

¹⁰(...continued)

These FAA comments, stating that the FAA "will 'continue' to use the more conservative 'uncontrolled environment' criteria for all areas within the FAA's responsibility," are troublesome. Nowhere in the two paragraph FAA comments is there any foundation expressed for the position taken -- a position at odds with the conclusions of myriad scientists, and others with relevant expertise, who developed the ANSI standard. There also is an absence, in these comments, of any indication that the author is conversant with the scientific, biological or regulatory aspects of the ANSI standard. Indeed, as in the matter of avionics radio interference protection, the FAA staff here too has sought irrational and insupportable restrictions on communications operations.

¹¹Notice of Proposed Rule Making ("FAA Notice") in Docket No. 26305, 55 Fed. Reg. 31,722 (Aug. 3, 1990), subsequently corrected at 55 Fed. Reg. 32,999 (Aug. 13, 1990), 55 Fed. Reg. 35,152 (Aug. 28, 1990) and 55 Fed. Reg. 37,287 (Sept. 10, 1990).

the Association for Maximum Service Television strongly opposed, as did many other parties, the adoption of the proposed Part 77 modifications to its rules.¹²

D. NAB Strongly Supported the Petition Leading to the Instant Rule Making

On December 21, 1990, John Furr & Associates, Inc. ("petitioner" or "Furr"), filed the above-referenced Petition for Rule Making (RM-7610) urging the Commission to initiate proceedings aimed at establishing standards for aviation receivers.¹³ In comments filed March 11, 1991, NAB supported petitioner's request that the agency initiate such proceedings. Moreover, we urged the Commission, in addressing the matter of establishing aviation receiver standards, to also address a variety of related issues that go to the very heart of the air navigation interference controversy. NAB pointed out that FCC establishment of such a valid and reliable record would better enable the government to resolve these matters and, specifically, better equip the FCC to negotiate directly with the FAA.

¹²See Joint Comments of NAB and the Association for Maximum Service Television ("MSTV"), filed Dec. 31, 1990; see also Comments of the Federal Communications Commission, filed Dec. 31, 1990; see also Letter dated January 4, 1991, from FCC Chairman Alfred C. Sikes to Department of Transportation ("DOT") Secretary Samuel Skinner, urging the DOT, FCC and FAA to work more closely to resolve matters involving air navigation interference from over-the-air communications services.

¹³FCC Public Notice "Office of the Secretary: Petitions for Rule Making Filed," Report No. 1836, released Feb. 7, 1991.

III. THE COMMISSION SHOULD ADOPT ITS PROPOSALS.

We feel the instant Commission Notice is a step in the right direction toward a realistic resolution of the FAA-based obstacles to FM and TV broadcasters desiring to establish, move or improve their transmission facilities. Adoption of the ICAO technical standards within Part 87 of the Commission's rules will ensure that all U.S. aircraft receivers, as a minimum, ultimately comply with international standards for receiver performance. However, it appears that the Commission, based on the degree of progress achieved in resolving this overall problem through other means, should even consider adopting a more expedited timetable for receiver compliance by the aviation community.

Moreover, it is very clear that the adoption of these standards must not be viewed in isolation. Rather, the Commission should begin now to take corollary steps that will better achieve the desired goal of a communications regulatory scheme free of voodoo and based on sound engineering practice.

IV. ADDITIONAL REGULATORY AND NEGOTIATION STEPS MUST BE TAKEN BY THE COMMISSION TO ENSURE RATIONAL DECISIONMAKING IN THE ASSESSMENT OF COMMUNICATIONS INTERFERENCE TO AVIATION RADIO.**A. Filters Should Be Required on Existing and New Aviation Receivers.**

Most observers believe that the intermodulation interference phenomenon could be cured -- at least in most cases -- either by the use of "add-on" filters, which could screen out potentially interfering broadcast signals before they enter the air navigation receiver, or by requiring avionics

radios to be more interference immune. The latter is the goal of the instant proceeding. On the matter of filters, while the FAA has accepted the use of filters as an ad hoc way of curing specific problems, it has taken the position that it does not have the authority to require filter use.

We believe the FAA's conclusion as to its jurisdiction to require filter use is flawed. Moreover, and based on past behavior of the FAA, it is far less than likely that the FAA, even if it did conclude that it had the authority to do so, would require such filter use. Instead, we urge the FCC to take the lead and to initiate proceedings that would require such filter use on aviation receivers.

B. The Commission Should Continue Its Dialogue with the FAA but also Initiate a New Proceeding To Ensure Prompt Remedial Action.

Furthermore, NAB urges the Commission to continue to engage in a dialogue with the FAA, especially now that -- by virtue of the Commission initiating the instant proceeding -- the FCC has demonstrated a willingness to do things that the FAA has refused to take on. Through its liaison with the FAA and by related means, we recommend that the FCC also encourage the near-term manufacture and installation of receivers containing proper filtering designed to reduce the effects of intermodulation products, desensitization and overload.

In its comments on the Furr petition, the Association of Federal Communications Consulting Engineers ("AFCCE")

recommended the institution of a Commission inquiry to seek avionics industry and broadcaster input on several topics. They include (1) documentation of actual interference problems caused by FM and TV broadcast services and other services to aeronautical facilities; (2) evaluation of receiver performance relative to normal or typical input signals levels; and (3) determining the practicality of retrofitting simple external in-line filtering devices to improve the performance of older or poorer equipment.¹⁴

We feel such a broad inquiry is still warranted. But, in light of the instant Notice, it is possible that the above-mentioned AFCCE concerns may be first investigated efficiently within the context of FCC/FAA liaison. Again, it is widely recognized that most of the potential problems associated with poor quality receivers can be eliminated by the use of proper RF filtering. Improved filtering should be the goal of avionics manufacturers; but as an interim measure the feasibility of utilizing filters external to the receiver should be investigated. But, if the FCC/FAA dialogue fails to achieve desired results, then unilateral FCC action may be warranted.

¹⁴See Comments of AFCCE in RM 7610, filed March 11, 1991, at 2-3.

C. An Improved Airspace Computer Model Should Be Crafted Around Aircraft Receivers That Comply with the ICAO Standards.

Avionics manufacturers are now undoubtedly designing new ILS and VOR receivers containing improved RF filtering circuits. In fact, since the Furr petition was filed, there have been certain improvements to avionics receiver designs. A Commission inquiry would provide an opportunity to determine the scope of avionics receiver development with respect to interference reduction and possibly provide an opportunity for an improved airspace computer model based upon new ILS and VOR receivers with improved interference rejection capability.

The Commission should, again through its liaison efforts with the FAA, encourage the development, speedy approval and use of an airspace computer model crafted around sound, realistic technical data. Instead of basing its interference analysis around worst case receivers, which as Furr suggests are likely not even still in service, the FAA should seek the assistance of FCC engineering staff to develop a new computer model that more accurately predicts interference potential. Similarly, the FCC should proactively seek to work jointly with FAA staff to finally resolve this long-standing technical controversy. Moreover, should the FAA fail to take appropriate action in the near term, in conjunction with the FCC or on its own, then we urge the FCC to develop, with its own resources and with the aid of the broadcast industry and other communications

industries, its own "FCC" computer model for aviation interference.

V. CONCLUSION

NAB urges the Commission to adopt the ICAO standards swiftly for all ILS and VOR receivers as a first step in the resolution of interference problems encountered by inferior avionics receivers in close proximity to FM and TV broadcast transmission sites. Additionally, NAB urges the Commission to continue its liaison meetings with FAA staff in order to provide further opportunities to cooperate on present and future technical issues affecting both agencies.

Finally, and based on whether or not the FCC obtains necessary progress is achieved with the FAA, NAB urges the Commission to initiate an expanded proceeding that would garner useful information on avionics receiver performance, the documentation of any genuine, "real world" interference problems and the merit of requiring the near-term use of filters on new avionics receivers and prompt retrofitting of existing receivers. Such information would be used, if necessary, to enable the FCC

to adopt not only additional avionics radio rules but also to establish its own air navigation interference computer model.

Respectfully submitted,

NATIONAL ASSOCIATION OF BROADCASTERS
1717 N Street, N.W.
Washington, DC 20036



Henry L. Baumann
Executive Vice President &
General Counsel



Barry D. Umansky
Deputy General Counsel

John Marino
Manager, Technical Regulatory Affairs
NAB Science & Technology

September 27, 1993

CERTIFICATE OF SERVICE

I, Judith L. Gerber, do hereby certify that a true and correct copy of the foregoing "Comments of the National Association of Broadcasters" in PR Docket No. 92-199 was sent, via first class mail, on this date, September 27, 1993, to the following:

Roy J. Stewart, Chief
Mass Media Bureau
Federal Communications Commission
1919 M Street, NW
Room 314
Washington, DC 20554

Thomas P. Stanley, Chief Engineer
Office of Engineering and Technology
Federal Communications Commission
2025 M Street, NW
Room 7002
Washington, DC 20554

Larry D. Eads, Chief
Audio Services Division
Mass Media Bureau
Federal Communications Commission
1919 M Street, NW
Room 302
Washington, DC 20554

William H. Hassinger
Assistant Chief (Engr.)
Mass Media Bureau
Federal Communications Commission
1919 M Street, NW
Room 314
Washington, DC 20554

Jonathan Cohen, Esq.
Special Assistant to the Chairman
Federal Communications Commission
1919 M Street, NW
Room 814
Washington, DC 20554

Michael J. Marcus
Assistant Bureau Chief for Technology
Field Operations Bureau
Federal Communications Commission
1919 M Street, NW
Room 734
Washington, DC 20554

Kathryn Hosford
Private Radio Bureau
Federal Communications Commission
2025 M Street, NW
Room 5114
Washington, DC 20554

Mark S. Martin
Private Radio Bureau
Federal Communications Commission
2025 M Street, NW
Room 5327
Washington, DC 20554

John R. Furr, President
John Furr & Associates
2700 NE Loop 410
Suite 325
San Antonio, TX 78217



Judith L. Gerber