



## AIRCRAFT OWNERS AND PILOTS ASSOCIATION

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September 27, 1993

Federal Communications Commission  
 Office of the Secretary  
 1919 M Street NW  
 Washington, DC 20554

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FCC-MAIL ROOM

Re: PR Docket No. ~~93-199~~; FCC 93-331:  
 Implementing Technical Requirements  
 Applicable to ILS and VOR Receivers  
 Adopted by the ICAO

To the Commission:

The Aircraft Owners and Pilots Association (AOPA) represents over 310,000 aircraft owners and pilots who operate most of the 198,000 general aviation aircraft in the United States. AOPA believes the rule proposed by the Federal Communications Commission is myopic, biased towards commercial interests, and ignores the economic realities of the aviation marketplace.

This applies primarily to domestic operators, but international operators may be unfairly impacted as well. The proposal as written would require the premature replacement of a large number of receivers during their useful life and impose a heavy and unacceptable financial burden on the general aviation industry without providing substantial benefits in return. It appears the rule benefits the FCC regulated, commercial FM broadcasters by permitting them to increase their power output and to obtain more frequency allocations in the vicinity of airports. The aviation users community adamantly objects to paying for this benefit which has no relationship to the aviation system. Furthermore, the FAA has raised the issue of regulatory authority concerning aviation navigation receivers. AOPA feels this issue needs to be addressed before proceeding with any part of this proposed rule.

The FCC justifies the proposed rule by claiming it will improve safety and standardize VOR/ILS receiver tolerances with the standards developed by the International Civil Aviation Organization (ICAO) for aircraft operating across international borders. The FCC uses similar justifications to extend those standards to aircraft operating domestically within the U.S. which was not the intent of ICAO. For purposes of this response, domestic operator means U.S. or foreign registered aircraft being operated within the borders of the U.S. and its territories using VOR/ILS navigation aids maintained directly or indirectly by the FAA. International operator means U.S. or

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foreign registered aircraft being operated from points within the borders of the U.S. and its territories to points outside its borders.

Rules and procedures already exist which maintain the desired level of safety. The FAA currently protects domestic VOR and ILS frequencies from FM interference by computer modeling, strategic frequency allocation, and by performing regular flight checks of VOR and ILS navigation facilities. Therefore, tightening receiver tolerances will not provide any significant improvement in safety for aircraft operating within the U.S. and its territories.

The Commission also alleges that safety would be degraded if an aircraft operating domestically along an international border were to experience an emergency. VOR/ILS receiver tolerances would only become an issue in this situation if adjacent countries adopt these standards and permit FM broadcasters to increase power output and to utilize frequencies which cause interference. If this occurs, aircraft utilizing older VOR/ILS receivers may or may not experience reception problems. However, the potential for such an occurrence would be very remote since a number of conditions would need to exist. First, the emergency would have to occur along a border area. Second, the emergency would have to be of a type that would permit the aircraft to continue to an airport and fly an instrument approach, but prevent it from deviating to a U.S. airport or an airport without an Airport Surveillance Radar (ASR) approach. And last, the frequency used at the airport of intended landing would have to fall within a range affected by a local FM broadcast station. The likelihood of all these conditions existing simultaneously is very remote and, therefore, not a valid concern. If this is perceived as a concern for operators routinely flying along border areas, they could voluntarily upgrade their equipment.

The other justification provided by the FCC concerns a perceived obligation of the U.S. to comply with the ICAO standards and implementation schedule. The International Civil Aviation Organization developed these standards for VOR/ILS receivers in 1985. Although AOPA does not question the standards themselves, we believe the schedule adopted by ICAO was developed without knowledge of the current state of transition taking place in the navigation system arena. It is possible that the existing VOR and ILS navigation facilities will be replaced by the Global Positioning System (GPS) with augmentation of differential GPS (DGPS). Category II and III ILS approaches may be achievable with DGPS as well.

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The Loran C system may also play a part in this transition. There are currently 126 Loran instrument approaches being designed by FAA to overlay existing VOR approaches. Similar but more expansive plans are being made for GPS approaches. The FAA is already contemplating disassembly of the VOR and ILS systems should GPS, DGPS, or Loran C provide the needed accuracy and integrity. This situation may be true in other countries as well. Forcing the aviation industry to equip to new VOR/ILS standards prior to this transition will unfairly penalize many aircraft owners by requiring them to buy new equipment which may be obsolete and of little use in five years. New equipment would again have to be purchased easily doubling the costs associated with the implementation of this rule.

The cost to modify existing VOR/ILS receivers is estimated to exceed the complete replacement cost of these receivers themselves by a significant margin. This effectively requires current receivers to be discarded and new ones purchased. FAA statistics at the end of 1991 indicated that 123,473 general aviation aircraft were equipped with 200 channel VOR receivers, 52,128 with 100 channel VOR receivers, and 30,601 with VOR/RNAV receivers. Many aircraft have two receivers. Based on our experience, AOPA estimates at least 170,000 U.S. registered, general aviation aircraft have VOR receivers. Most of them also have integral ILS receivers in one or more of these receivers.

FAA statistics also indicate that one third of all flights that utilized air traffic control tower services in the U.S. during 1992 were operating under instrument flight rules (IFR). Lacking more precise statistics, we feel it is safe to assume that approximately 33% of the 170,000 VOR equipped aircraft (approx. 56,000 aircraft) operate in the IFR environment. Based on our experience, AOPA estimates that at least 90% of these aircraft (approx. 50,500 aircraft) are equipped with either two VOR receivers or one VOR/RNAV and one VOR receiver of which at least one contains an integral ILS receiver.

The list price of the least expensive VOR/ILS receiver currently on the market which meets the ICAO standards is \$2,350. With installation, the replacement cost for the typical general aviation aircraft with two receivers would be at least \$6,000. The owners of the remaining IFR aircraft would have to spend almost \$4,000 to replace their single VOR receiver. Based on current dollars, these statistics and the proposed implementation schedule mean that the general aviation community operating under IFR will have to spend about \$325 million by 1998 to continue those operations. This does not

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even account for those aircraft which are equipped with VOR/RNAV which costs two to three times as much as a standard VOR/ILS receiver. Furthermore, the rest of the general aviation fleet (114,000 aircraft) will have to spend almost \$456 million by the year 2005, for a total of \$781 million. It is clear the actual cost of adopting this rule will be much too high for the general aviation community to bear.

From the international perspective, FAR §91.703(a)(2) already requires U.S. aircraft operating into and within the airspace of other countries to comply with the rules of those countries. Adding a rule requiring all international flights to meet the proposed VOR/ILS receiver standards would force aircraft owners operating within the airspace of other countries not adopting these standards, to purchase new equipment needlessly. Countries which implement ICAO standards will require aircraft operating in their airspace to be appropriately equipped which will effectively relieve the U.S. of the need to duplicate that requirement. This is clearly within the guidelines of ICAO policy since compliance with ICAO standards and implementation schedules is encouraged, but not required.

Finally, the FCC authority to mandate standards for VOR/ILS receivers and the standards themselves are being questioned by the FAA. AOPA believes these issues need to be resolved before the implementation of any VOR/ILS receiver standards are considered.

In conclusion, the Commission's proposal appears to primarily benefit the FM broadcasters while forcing the aviation users to pay for it without any substantial benefit. For this reason and in light of the enormous cost, rapidly advancing technology, and current state of transition in the aviation navigation arena, we believe the FCC would be remiss if it implemented this proposed rule at this time. Therefore, AOPA must adamantly oppose the proposed rule and strongly urges the Commission to withdraw it until further review can be accomplished.

Sincerely,



Douglas S. Helton  
Vice President  
Regulatory Policy