However, under the bill this would be the additional legal responsibility by the manufacturer who is the one who comes in and asks us or petitions us to make additional provisions in the rules for some new device, and this would give him legal responsibility for the device which he is asking us to provide for.

Mr. MACDONALD. Thank you very much.

Mr. LEE. Thank you very much, Mr. Chairman.

Mr. MACDONALD. The next witness will be Mr. A. B. Winick, Chief, Navigation Development Division, FAA, now part of the Department of Transportation.

STATEMENT OF ALEXANDER B. WINICK, CHIEF, NAVIGATION DEVELOPMENT DIVISION, FEDERAL AVIATION ADMINISTRATION

Mr. WINICK. Mr. Chairman, members of the committee, I am Alexander B. Winick, Chief, Navigation Development Division, Federal Aviation Administration. On behalf of the Administrator and myself I want to thank you for inviting us to discuss with you the important legislation you are considering today, H.R. 14910 and H.R. 9665.

These bills, as you have heard, authorize the Federal Communications Commission to prescribe regulations for the manufacture, sale, and shipment of devices which cause harmful interference to radio communications and thus interfere with the reception of aids used in the air traffic control and navigation system.

I would like to describe how radiofrequency interference can affect aircraft navigation and communications, and the resultant unfavorable impact on air safety.

There are different types of electronic devices located all over the United States emitting signals which, when received in an aircraft, provide vital information to the pilot. These are known as radio aids to air navigation, or more commonly, "navaids." The pilot relies on these aids to navigate his aircraft safely from one point to another, and to land his aircraft when weather conditions are such that he could not land without the help of such signals.

An example of a "navaid" that is affected by interference is a device known as a VOR, the VHF omnidirectional range. Each VOR emits signals outward in all directions. The transmitted radio beams are detected by the airborne receiver and direction from the station is indicated by degrees from or to the station and shown on a cockpit instrument.

These degree lines are called radials. Radials project precise pathways through the sky. A pilot can find any radial by tuning his receiver to the published frequency of the VOR, determining the radial he is on, then navigate to and then along any preselected radial. In the continental United States alone there are 841 VOR facilities operated by FAA. Together they form a vast and intricate network of simulated highways vital to the safe navigation of aircraft.

It sometimes happens that radiofrequency interference near a VOR will require us to discontinue the use of the radials in the sector where the interference is located. This means that some of our aerial highways are rendered useless, including some intersections important in the efficient movement of air traffic.

Another area of air navigation where radiofrequency interference becomes most critical is in the instrument landing system, or ILS.