

A task force consisting of Navy, FAA, and FCC personnel, undertook to locate the offending devices and take action to eliminate their effects. This team, using ground vans, automobiles, and a helicopter, located 58 garage-door openers emitting interfering signals.

Those 58 devices were only a small percentage of the total offenders and it took a week to locate that number. The cost of this operation to the Government was about \$100 per garage-door opener closed down.

This example illustrates the cumbersome, costly, and only partially effective measures that must be utilized to get at and to eliminate interfering devices under current law. If either H.R. 14910 or H.R. 9665 were enacted, however, a much more effective and much less expensive means of eliminating interference would be available; namely, regulation of the manufacture of such devices. We therefore strongly urge enactment of this legislation.

Thank you, Mr. Chairman.

Mr. MACDONALD. Thank you, sir.

As you see the measure then, the bill as introduced is merely a safety measure to help airlines and private aircraft, and so forth; is that correct?

Mr. WINICK. Yes, sir; Mr. Chairman, from the point of view of the FAA we are interested in the integrity of the navigation signals which we radiate and are responsible for. Our experience has been that the interference that we have been hearing about has caused the degradation of these signals in space.

Fortunately we were able to find these through, in many cases, routine periodic flight inspection. However, as the number of devices increases and the level of integrity which we wish to place on our navigation system, particularly instrument landing systems, as we permit lower minimums operation leading toward the goal of all-weather operations, we must, we feel, achieve a higher level of integrity of these signals than we are currently getting.

Mr. MACDONALD. My last question, do you think if the people who manufacture automobile automatic garage-door openers, change the manufacture, that will eliminate the signals?

Mr. WINICK. Yes, sir; Mr. Chairman, I think I know the cause of the problem. I think that—

Mr. MACDONALD. I don't think anyone on the committee does. It might be helpful if you told us.

Mr. WINICK. Well, the receiver used in garage-door openers, the example we have been hearing about all morning, is called a super-regenerative receiver. It is an oscillator, transmitter, in fact, and it is attached to an antenna which is attached to the outside of the garage door.

This radiates a signal of sometimes many thousand microvolts which you must compare to the fact that systems used in air navigation are designed to operate on as low a signal as 10 or 15 microvolts. We have a condition here where these devices are putting out strong signals compared to the desired signals that are used in air navigation.

Now, by proper design of the devices, that radiation can be controlled considerably, and I personally feel with not very much of an economic penalty.

Mr. MACDONALD. Are there any questions?