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REGULATION OF DEVICES CAPABLE OF CAUSING RADIO INTERFERENCE

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HEARING BEFORE THE SUBCOMMITTEE ON COMMUNICATIONS AND POWER OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE HOUSE OF REPRESENTATIVES

NINETIETH CONGRESS

SECOND SESSION

ON

H.R. 14910, H.R. 9665

BILLS TO AMEND THE COMMUNICATIONS ACT OF 1934, AS
AMENDED, TO GIVE THE FEDERAL COMMUNICATIONS
COMMISSION AUTHORITY TO PRESCRIBE REGULATIONS
FOR THE MANUFACTURE, IMPORT, SALE, SHIPMENT, OR
USE OF DEVICES WHICH CAUSE HARMFUL INTERFERENCE
TO RADIO RECEPTION

FEBRUARY 6, 1968

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REGULATION OF DEVICES CAPABLE OF CAUSING RADIO INTERFERENCE

TUESDAY, FEBRUARY 6, 1968

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMUNICATIONS AND POWER,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to notice, in room 2123, Rayburn House Office Building, Hon. Torbert H. Macdonald (chairman of the subcommittee) presiding.

Mr. MACDONALD. The hearing will come to order.

We have before us for hearing today H.R. 14910, introduced by Mr. Staggers, chairman of the Interstate and Foreign Commerce Committee, and a related bill.

These bills would give the Federal Communications Commission authority to prescribe regulations with respect to devices capable of emitting radio energy which would interfere with radio communications; included would be such devices as diathermy machines, electronic garage-door openers, electronic heaters, and certain welding machines.

The regulations would apply to the manufacture, importation, sale, shipment, or use of these devices. Specific exemptions from the legislation are made for devices intended solely for export, for devices constructed by electric utilities for their own use, and for devices for the use of the Federal Government.

(The bill, H.R. 14910, and departmental reports follow:)

[H.R. 14910, 90th Cong., second sess.]

A BILL To amend the Communications Act of 1934, as amended, to give the Federal Communications Commission authority to prescribe regulations for the manufacture, import, sale, shipment, or use of devices which cause harmful interference to radio reception

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Communications Act of 1934, as amended, is further amended by adding thereto a new section 302 to read as follows:

"DEVICES WHICH INTERFERE WITH RADIO RECEPTION

"SEC. 302. (a) The Commission may, consistent with the public interest, convenience, and necessity, make reasonable regulations governing the interference potential of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in sufficient degree to cause harmful interference to radio communications. Such regulations shall be applicable to the manufacture, import, sale, offer for sale, shipment or use of such devices.

"(b) No person shall manufacture, import, sell, offer for sale, ship, or use devices which fail to comply with regulations promulgated pursuant to this section.

"(c) The provisions of this section shall not be applicable to carriers transporting such devices without trading in them, to devices manufactured solely for export, to the manufacture, assembly, or installation of devices for its own use by a public utility engaged in providing electric service, or to devices for use by the Government of the United States or any agency thereof. Devices for use by the

Government of the United States or any agency thereof shall be developed, procured, or otherwise acquired, including offshore procurement, under United States Government criteria, standards, or specifications designed to achieve the common objective of reducing interference to radio reception, taking into account the unique needs of national defense and security."

THE GENERAL COUNSEL OF THE TREASURY,
Washington, D.C., February 6, 1968.

HON. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: Reference is made to your request for the views of this Department on H.R. 14910, "To amend the Communications Act of 1934, as amended, to give the Federal Communications Commission authority to prescribe regulations for the manufacture, import, sale, shipment, or use of devices which cause harmful interference to radio reception."

The proposed legislation would give the Federal Communications Commission authority to make regulations governing the interference potential of any devices capable of emitting radio frequency energy. It would prohibit the manufacture, import, sale, offer for sale, shipment, or use of devices which fail to comply with the proposed regulations. These prohibitions and any regulations promulgated under the authority of the bill, however, would not apply to devices to be used by any agency of the Government of the United States.

The Department supports the enactment of the proposed legislation. We believe that all users of the radio frequency spectrum would benefit from the establishment of minimum standards for the manufacture of equipment capable of causing interference to radio reception. The several operating bureaus of the Treasury Department, which make extensive use of radio equipment, have experienced an increasing number of cases of radio interference caused by environmental conditions. Enforcement of standards for equipment manufacture should reduce this interference from electrical and electronic devices and assist in the overall national program of electromagnetic compatibility.

Since the Treasury Department would be responsible for administering the ban on imports, it is assumed that the regulations would be proposed with the concurrence of the Secretary of the Treasury; that procedures designed under such regulations would limit the customs function to making a determination whether a particular importation described on an invoice had been certified by the Federal Communications Commission to conform with its regulatory standards; and that no responsibility would be imposed on customs personnel to make an actual determination on such conformity. Under these circumstances the Department anticipates no unusual administrative difficulty in carrying out its responsibility under the proposed legislation.

The Department was advised by the Bureau of the Budget that there was no objection from the standpoint of the Administration's program to the submission of an identical report to your Committee on H.R. 9665, an identical bill.

Sincerely yours,

FRED B. SMITH,
General Counsel.

GENERAL COUNSEL OF THE DEPARTMENT OF COMMERCE,
Washington, D.C., February 9, 1968.

HON. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in further reply to your request for the views of this Department concerning H.R. 14910, a bill to amend the Communications Act of 1934, as amended, to give the Federal Communications Commission authority to prescribe regulations for the manufacture, import, sale, shipment, or use of devices which cause harmful interference to radio reception.

This Department by letter dated November 16, 1967, submitted to your Committee its report on H.R. 9665 (copy enclosed (see p. 9)), a bill identical to H.R. 14910. Please consider the views expressed therein as also representing the views of this Department concerning H.R. 14910.

Sincerely,

PEDRO R. VAZQUEZ
(For General Counsel.)

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D.C., July 10, 1967.

HON. HARLEY O. STAGGERS,
*Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: This is in response to the request for the views of the Bureau of the Budget on H.R. 9665, a bill to amend the Communications Act of 1934, as amended, to give the Federal Communications Commission authority to prescribe regulations for the manufacture, import, sale, shipment, or use of devices which cause harmful interference to radio reception.

This bill would give the Federal Communications Commission additional authority to deal with radio communications interference problems caused by electrical and electronic devices. Under present law, the Commission may only control interference from such devices after they are installed. H.R. 9665 would give it authority to ensure that equipment capable of causing radio interference is properly designed before it reaches the market.

The Bureau of the Budget recommends enactment of H.R. 9665.

Sincerely yours,

WILFRED H. ROMMEL,
Assistant Director for Legislative Reference.

FEDERAL COMMUNICATIONS COMMISSION,
Washington, D.C., May 26, 1967.

HON. HARLEY O. STAGGERS,
*Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: This will acknowledge your recent letter requesting the Commission's comments on H.R. 9665, a bill to amend the Communications Act of 1934, as amended, to give the Federal Communications Commission authority to prescribe regulations for the manufacture, import, sale, shipment, or use of devices which cause harmful interference to radio reception.

This bill was part of the Commission's legislative program for the 90th Congress, 1st session, and as such was sent to the Bureau of the Budget on March 23, 1967. Enclosed is a copy of the justification the Commission adopted on March 22, 1967 in connection with our proposal. Inasmuch as there are no differences between H.R. 9665 and our proposal, we recommend its adoption. While we have not as yet received advice from the Bureau of the Budget that enactment of our proposal for the 90th Congress will be in accord with the President's program, we anticipate such advice will be received very shortly.

A bill similar to the one introduced by Mr. Dingell was passed by the Senate in the 89th Congress (S. 1015) but due to the pressure of other business, the House Commerce Committee was unable to reach it for consideration before adjournment of that Congress.

We thoroughly support the favorable consideration of this bill by your committee and urge its early enactment. You will note from the attached copy of the Senate Hearings and Senate Report that other government agencies are also interested in this bill and supported enactment of S. 1015, 89th Congress.

Sincerely yours,

ROSEL H. HYDE,
Chairman.

EXPLANATION OF PROPOSED AMENDMENT TO PRESCRIBE REGULATIONS FOR
THE MANUFACTURE, IMPORT, SALE, AND SHIPMENT OF DEVICES WHICH CAUSE
HARMFUL INTERFERENCE TO RADIO RECEPTION

The Federal Communications Commission recommends that Congress enact legislation amending the Communications Act of 1934, as amended, by adding a new section thereto, proposed Section 302. Under this new section the Commission would obtain authority to prescribe regulations for the manufacture, sale, shipment, and import of devices which cause harmful interference to radio communications and thus interfere with radio reception.

The chief purpose of this legislation is to give the Commission adequate authority to deal with increasingly acute interference problems arising from expanded usage of electrical and electronic devices which cause, or are capable of causing, harmful interference to radio reception. This would be accomplished by empowering the Commission to deal with the interference problem at its root source—the sale by some manufacturers of equipment and apparatus which do not comply with the Commission's rules. This new authority to require that equipment be properly designed to reduce radiation to specified and acceptable limits, and, where necessary, to specify operating frequencies before it is sold to the customer, is not only necessary and in the public interest, but also, will provide a more reasonable basis for dealing with interference problems than is now possible under the present scheme of regulation provided for in the Communications Act.

Presently, the Communications Act of 1934, as amended, particularly Section 301 thereof, prohibits the use of equipment or apparatus which causes interference to radio communications, while Section 303(f) empowers the Commission to prescribe regulations “. . . to prevent interference between stations.” However, the Commission has no specific rulemaking authority under the Act to require that before equipment or apparatus which radiates electromagnetic energy is put on the market, it must be properly designed to prevent harmful interference to radio reception. The defects of this scheme of regulation become more obvious with each passing year. Since the prohibition falls on the use of offending equipment, it means that the Commission, in trying to control interference, is confined in large measure to apprehending the users of equipment which interferes with radio communications, even though in most instances such users have purchased equipment on the assumption its operation would be legal without further suppression of spurious radiation. It also means that the Commission is reduced to an “after-the-fact” approach to preventing interference, for obviously, until the Commission has discovered interference (either through its Field Engineering Bureau or on the complaint of some user of radio equipment), there is no basis for proceeding against the offender.

When the Communications Act was adopted, interference problems were relatively small, both in number and complexity. But especially since World War II, with the explosively rapid growth experienced in the communications industry, there has been a corresponding increase both in the development of new uses for radio and in the number and type of devices capable of causing harmful interference. In many instances, those radiating devices lie outside the area conventionally associated with radio transmission and reception. They include such devices as electronic garage door openers and certain electronic toys, which, because of poor design or for other reasons, radiate radio frequency energy beyond that needed for their functions. They also include other devices, such as high-powered electronic heaters, diathermy machines, welders, and radio and television receivers, which radiate energy, either purposely or incidental to carrying out their primary functions.

The cumulative effect of all this excessive radiation (or “spectrum pollution,” as one writer has put it) is most apparent in large metropolitan areas. Especially in peak periods of operation of radiating devices, such areas are blanketed by a “radiation smog” which makes it increasingly difficult for many users of radio communications to obtain interference-free reception. To radio listeners and television viewers, this means the reception of distorted and garbled signals, or fluttering images, of a technical quality less than that possible when interference is under effective control. To those who use radio for industrial communications purposes, the cumulative effect of excessive radiation means increased disruption of communications services. In the really vital areas where radio is used for safety purposes, such as in air navigation control, this radiation problem becomes most acute. Here, it poses a genuine threat to safety of life. An important example of interference to radio communications occurred in December 1965 at the time of the Gemini 7 space flight. The U.S. Government went into court and obtained a temporary restraining order against a manufacturing company in Corpus Christi, Texas, on the grounds that certain equipment at the plant, including the ignition system of a winch truck used for lifting steel, was interfering with communications between a tracking station at Corpus Christi and the Gemini spacecraft. And finally to those users of radio whose operations must be conducted under conditions of relatively low background interference (such as the Commission's radio monitoring activities, the operation of military communications systems, or radio astronomy observations), high levels of excessive radiation constantly force such users to seek out new areas of low interference or to require that all devices used in a given area (such as a military post) be properly suppressed against radiation before use. Both of these latter-mentioned alternatives impose additional costs of operation on the Government itself.

In our view, the only lasting solution to these interference problems is to require that before a device capable of causing interference leaves the manufacturer, it be properly designed so as to limit its radiation to acceptable values. Under the present scheme of the Communications Act, compliance by manufacturers with our rules and regulations is on a purely voluntary basis. Of course, many manufacturers have voluntarily complied with our radiation requirements and are to be commended for their cooperation. But at the same time, many others have refused to do so, citing in justification of such refusal our lack of legal authority to control the manufacture of such devices under the present provisions of the Communications Act. Quite often, this refusal stems from the fact that compliance would entail additional manufacturing costs.

Nevertheless, the effects of this refusal to comply with our radiation requirements are clear. In terms of fair competition between manufacturers, it penalizes the responsible manufacturer who wishes to hold down excessive radiation by placing him at a competitive disadvantage vis-a-vis the marginal manufacturer who prefers to ignore our rules. In terms of the consumer, who generally is unaware that an inadequately suppressed device will cause interference and who purchases the device in good faith, it forces on him the cost of bringing his equipment into compliance. Obviously, it is unfair that the buying public should bear the brunt and embarrassment of our enforcement procedure, but under the present terms of the Act, the Commission has no alternative. Our proposed legislation has been drafted with a view to these problems.

The proposal consists of three subsections. Basically, subsection 302(a) describes the radiating devices which would be subject to our authority as those "... which in their operation are capable of emitting radio frequency energy by radiation, conduction or other means in sufficient degree to produce harmful interference to radio communications." In the case of such devices, the Commission would have authority to prescribe rules applicable to the "manufacture, import, sale, offer for sale, shipment or use of such devices" and would prescribe the permissible degree of emission of radio frequency energy of such devices. Subsection 302(b) prohibits the use, import, shipment, manufacture, sale or offering for sale of devices which fail to comply with radiation limits duly promulgated by the Commission under the authority of Section 302. Subsection 302(c) sets out four exceptions. The proposed legislation would not apply to (a) carriers transporting interfering devices without trading in them, (b) the manufacture of devices which are intended solely for export, (c) the manufacture, assembly, or installation of devices for its own use by a public utility engaged in providing electric service, or (d) devices which are used by the United States Government or any agency thereof.

Several observations regarding this proposal are in order. Perhaps most important of these is that while this legislation may at first seem novel, the United States is perhaps the only major industrial nation in the world which does not approach the interference problem by prescribing permissible radiation limits at the manufacturing level. Over the years there has been a progressive abandonment by other countries of the "user regulation" approach still followed under the Communications Act, in favor of controlling interference by requiring that radiation be held to acceptable limits *before* equipment is put in the hands of consumers.

This latter approach, which is reflected in our proposed legislation, has much to recommend it. It constitutes a direct approach to interference control, thus meeting the problem at its source by the application of preventive techniques. Further, it recognizes that from every viewpoint, the ideal time to prevent excessive radiation is before radiating equipment is sold. By so doing, it will bring substantial benefits to both the Government and the public.

From the standpoint of the Commission, rulemaking authority to prescribe permissible radiation limits at the time of manufacture will go far toward reducing the enforcement problems the Commission presently faces. It will avoid the piecemeal, "after-the-fact" approach the Commission must now follow in order to apprehend the users of equipment which causes harmful interference. Of course, this enforcement problem varies with the type of equipment involved. Where relatively few units of a large piece of equipment, such as multi-kilowatt industrial heaters, have been sold, tracing the owners of this equipment is not too difficult. But where a large number of radiation devices, such as garage door openers, toys, or improperly designed radio or television receivers, have been placed in the hands of the public, the enforcement problem becomes exceedingly difficult, if not indeed impossible. In the fiscal year 1966, for example, in excess of 150,000 man hours were devoted to tracing and eliminating interference of all types. This figure does not take into account the large number of interference problems

which are never brought to the Commission's attention. Thus, granting the Commission authority to approve radiating equipment before it is sold would, by reducing our enforcement problem, permit more effective utilization of our manpower resources than is now possible.

A further benefit to the Government from a general reduction of levels of excessive radiation (the "radiation smog" over metropolitan areas earlier referred to) is that Government radio services whose operations must be conducted in areas of relatively low radiation limits would, to a great extent, be relieved of the need for relocating to escape high radiation areas. The need for the Commission to relocate its monitoring installations as increasing urbanization brings about higher levels of radiation has already been mentioned. It is also our understanding that the interference problem has become so acute in areas of military installations that military purchase specifications for radiating devices now are written to require that such devices be suppressed or otherwise designed to prevent interference. Finally, from the Government's viewpoint, the Government, as well as the public, would be benefited by enactment of this legislation through the additional protection against interference which would be afforded to those services, such as air navigation control, where the safety of life depends on purity of reception.

The public would also benefit from this legislation because a reduction in the present levels of excessive radiation would permit reception of a better quality than is now possible. Here it might be noted that the public has become so accustomed to a degraded quality of service under present conditions that unless radio reception is seriously interfered with, the public will not complain. The public would also gain reassurance that, except perhaps under extraordinary circumstances, equipment it bought would not need further modification as a condition to its legal operation.

There remains to be considered the problem of additional costs to manufacturers which might be necessary under this legislation. We recognize, of course, that properly designed equipment may cost more than improperly designed equipment. But, generally speaking, in most instances, the additional costs to manufacturers stemming from this legislation would be small. Even now, when the Commission orders a user to shield or otherwise adjust his equipment to prevent excessive radiation, this can be accomplished generally at a relatively low cost. If this were done at the time of manufacture, costs could further be minimized by the economies possible under proper design and mass production techniques.

But, in any event, the consumer must now pay the cost of eliminating excessive radiation, as well as the cost of administrative proceedings brought against him. In light of this, we think it preferable that members of the public who buy devices that may radiate should have assurance that such devices are properly designed at the time of manufacture, rather than having purchasers discover non-compliance with our radiation requirements after the sale. By requiring that *all* manufacturers hold radiation down to acceptable limits, not only does the public gain this "warranty" that equipment purchased is fit for legal operation, but those manufacturers who now voluntarily comply with our radiation rules would be relieved of the competitive disadvantages under which they now operate.

Several remaining aspects of our proposal deserve mention. First, it should be noted that this new section is not intended to supplant our authority under Section 301, but rather, to supplement it. While the new section will go far to reducing levels of excessive radiation, there will be instances where properly designed equipment becomes faulty or is improperly used, thus calling for application of Section 301.

Further, implementation of our authority would necessarily be on a gradual basis. Before promulgating new standards, the Commission would give public notice of rulemaking proceedings, and any person or segment of the industry affected by a particular set of regulations would have ample opportunity in subsequent rulemaking proceedings to comment on the proposed regulations. Thus, the Commission would be in a position to assess the impact of its proposed regulations on those affected, and where appropriate, could minimize the effect of new standards on the industry. In short, if the Commission obtains this legislation, it would proceed to implement it gradually, and only after a thorough study of all the problems involved.

Finally, there are the four exceptions to this proposed legislation contained in proposed subsection 302(c). The first exception is designed to exempt carriers which merely transport interfering devices without trading in them. The second exception relates to the manufacture, sale, etc., of devices which are intended solely for export. Even though a device might interfere with radio reception, under the standards to be promulgated pursuant to this legislation, its use in some other country may still be lawful. By permitting the export of devices to such foreign countries, American manufacturers will not be placed under any competitive disadvantage. The third exception assures that the provisions of the bill are not applicable to the electric utility industry insofar as an electric utility undertakes to assemble a power system from component parts or to assemble any of the component parts for its own use. This exception does not, however, alter any existing authority of the Commission under section 301 of the Communications Act, or the authority granted under this proposal to proceed against the user of equipment causing interference to radio communications. The final exception involves the use of electronic devices by agencies of the Government. Under Section 305 of the Communications Act, the Commission does not have regulatory jurisdiction over stations owned and operated by the United States. This same theory is carried forward into the final exception of proposed subsection 302(c), in order to avoid any jurisdictional confusion which might arise under the new legislation. In many respects, the needs of the Government, in terms of procurement, the development of new electronic devices, security considerations, etc., are unique. Beyond this, the Government agencies are fully aware of the need for suppressing objectionable interference, and in many cases the standards adopted by individual agencies are more stringent than those which the Commission would impose. In light of these considerations, it is considered desirable to except from the operation of this legislation devices used by the United States Government or its agencies, leaving it to the agencies to cooperate through the Office of the Director of Telecommunications Management to achieve acceptable limitations of radiation.

In conclusion, the direct approach to control of interference inherent in our proposal is, we think, the most logical solution to the problems of excessive radiation, problems which become increasingly acute with the ever-expanding use of radio. What the Commission seeks here is a more rational scheme of regulation which will be possible by shifting the emphasis from the present cumbersome technique of "user regulation" to the preventive techniques of dealing with interference control at the source of the apparatus. The benefits to be derived from reducing spectrum pollution far outweigh any inconvenience to those manufacturers who now place inadequately designed devices on the market, on the assumption that if such devices cause harmful interference to radio reception, the buyer can undertake the necessary equipment modifications.

Adopted March 22, 1967, Commissioner Wadsworth absent.

DEPARTMENT OF STATE,
Washington, D.C., July 17, 1967.

HON. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: I have your communication of May 5, 1967 requesting a report on H.R. 9665 a bill to amend the Communications Act of 1934, as amended, to give the Federal Communications Commission authority to prescribe regulations for the manufacture, import, sale, shipment, or use of devices which cause harmful interference to radio reception.

I am pleased to inform you that the Department foresees no difficulty with the proposed legislation from the standpoint of foreign policy interests and, therefore, offers no objection to its passage.

The Bureau of the Budget advises that from the standpoint of the Administration's program, there is no objection to the submission of this report.

Sincerely yours,

WILLIAM B. MACOMBER, Jr.,
Assistant Secretary for Congressional Relations.

DEPARTMENT OF JUSTICE,
OFFICE OF THE DEPUTY ATTORNEY GENERAL,
Washington, D.C., September 25, 1967.

HON. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your request for the views of the Department of Justice on H.R. 9665, a bill "To amend the Communications Act of 1934, as amended, to give the Federal Communications Commission authority to prescribe regulations for the manufacture, import, sale, shipment, or use of devices which cause harmful interference to radio reception."

Section 301 of the Federal Communications Act (47 U.S.C. 301) states the intention to maintain control by the United States over interstate and foreign radio transmission. Section 301 authorizes the Commission to prohibit the use of equipment or apparatus which causes interference to radio communications, and under Section 303(f) regulations may be promulgated to prevent interference between stations. Pursuant to this authority, the Commission has established technical standards with respect to the use of various radio-emitting devices. However, the Commission presently has no authority to control the manufacture or sale of such devices.

The proposed bill would authorize the Commission to issue regulations covering devices which are capable of emitting sufficient radio frequency energy to cause harmful interference to radio communications. The bill goes beyond the present Act, which deals only with the use of interfering devices, by making the Commission's regulations applicable to the manufacture, import, sale, offer for sale, shipment, or use of devices which fail to comply with such regulations. The proposed authority would not extend to devices solely for export, devices for use by an agency of the Government of the United States, or to carriers merely transporting devices covered by the measure.

Whether this legislation should be enacted involves questions as to which the Department of Justice defers to the Federal Communications Commission.

The Bureau of the Budget has advised that there is no objection to the submission of this report from the standpoint of the Administration's program.

Sincerely,

WARREN CHRISTOPHER,
Deputy Attorney General.

THE GENERAL COUNSEL OF THE TREASURY,
Washington, D.C., October 26, 1967.

HON. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: Reference is made to your request for the views of this Department on H.R. 9665, "To amend the Communications Act of 1934, as amended, to give the Federal Communications Commission authority to prescribe regulations for the manufacture, import, sale, shipment, or use of devices which cause harmful interference to radio reception."

The proposed legislation would give the Federal Communications Commission authority to make regulations governing the interference potential of any devices capable of emitting radio frequency energy. It would prohibit the manufacture, import, sale, offer for sale, shipment, or use of devices which fail to comply with the proposed regulations. These prohibitions and any regulations promulgated under the authority of the bill, however, would not apply to devices to be used by any agency of the Government of the United States.

The Department supports the enactment of the proposed legislation. We believe that all users of the radio frequency spectrum would benefit from the establishment of minimum standards for the manufacture of equipment capable of causing interference to radio reception. The several operating bureaus of the Treasury Department, which make extensive use of radio equipment, have experienced an increasing number of cases of radio interference caused by environmental conditions. Enforcement of standards for equipment manufacture should reduce this interference from electrical and electronic devices and assist in the overall national program of electromagnetic compatibility.

Since the Treasury Department would be responsible for administering the ban on imports, it is assumed that the regulations would be proposed with the concurrence of the Secretary of the Treasury; that procedures designed under such regulations would limit the customs function to making a determination whether

a particular importation described on an invoice had been certified by the Federal Communications Commission to conform with its regulatory standards; and that no responsibility would be imposed on customs personnel to make an actual determination on such conformity. Under these circumstances, the Department anticipates no unusual administrative difficulty in carrying out its responsibility under the proposed legislation.

The Department has been advised by the Bureau of the Budget that there is no objection from the standpoint of the Administration's program to the submission of this report to your Committee.

Sincerely yours,

FRED B. SMITH,
General Counsel.

GENERAL COUNSEL OF THE DEPARTMENT OF COMMERCE,
Washington, D.C., November 16, 1967.

Hon. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is in further reply to your request for the views of this Department with respect to H.R. 9665, a bill to amend the Communications Act of 1934, as amended, to give the Federal Communications Commission authority to prescribe regulations for the manufacture, import, sale, shipment, or use of devices which cause harmful interference to radio reception.

This bill would authorize the Federal Communications Commission to make reasonable regulations governing the interference potential to radio communications of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction or other means. The regulations would apply to the manufacture, import, sale, shipment, or use of the devices. The bill would exempt carriers which are not trading in the devices; devices manufactured solely for export; the manufacture, assembly, or installation of devices for its own use by a public utility engaged in providing electric service; and devices for use by a Federal agency. However, the bill would require Federal agencies procuring such devices to utilize criteria, standards, or specifications designed to reduce interference to radio reception, while taking into account national defense and security needs.

This Department recommends the enactment of H.R. 9665.

Numerous electronic and electrical devices, because of improper design, radiate radio frequency energy beyond that needed for their proper functioning. This radiation may seriously interfere with radio reception. Some examples of such devices are garage door openers, electronic keys, high-powered industrial heaters, improperly designed radio and television receivers, diathermy machines, and certain kinds of household appliances.

Radiation from such devices not only interferes with television and radio programs but also results in disrupting industrial communication services. A business which depends on clear radio reception often finds interference harmful and costly. For example, the radio dispatched taxicab which does not receive clear reception of instructions may offer less efficient and convenient service to passengers. High levels of excessive radiation may force users of radios whose operations must be conducted under conditions of relatively low background interference to move from large metropolitan areas to new locations in areas of low interference. When radio is used for safety purposes, such as air traffic control, radio frequency interference may jeopardize the lives of airline passengers.

At present, the Communications Act of 1934, particularly Section 301, prohibits use of equipment which causes interference with radio communications, and empowers the Commission to prescribe regulations to prevent interference between stations. The Commission cannot proceed against an offender until the interference has been discovered. Tracing the location and the owner of the interference device after it is purchased is usually difficult even with modern detection equipment. If the offending equipment is located, the Commission must institute proceedings against the user of the devices which cause the radio frequency interference, and then require him to eliminate the excessive radiation from a device which he may have purchased under the belief that its use was legal. Moreover, the user must bear the cost of administrative proceedings brought against him.

The proposed new Section 302 would afford an additional and more satisfactory basis for dealing with interference to radio communications by approaching the problem directly at the source and apply preventive measures before radiation

equipment is sold to the user. The United States is perhaps the only major industrial country which under existing law still can not approach the interference problem in this way. Moreover, manufacturers who now voluntarily comply with Commission regulations are placed at a competitive disadvantage by the small number of firms which manufacture their products without proper controls to limit harmful radiation. From this point of view, the bill would also be advantageous to responsible manufacturers.

The Commission has assured the industry that it would implement this legislation gradually and only after public hearings and thorough study of all the problems involved. One of such potential problems, to which we specifically invite attention, relates to the limitations on the ability of presently available instruments to measure radio frequency interference with reasonable assurance of accuracy. Commercially available instruments for measuring radiation give widely varying results and even the measurement capability of the National Bureau of Standards in this respect is quite limited in accuracy. The National Bureau of Standards and the Institute for Telecommunication Science and Aeronomy of the Environmental Science Services Administration have under way the principal and most advanced technical programs in the United States to improve the significance, methods, and accuracy of measurement of electrical noise, to determine the sources, level and extent of man-made electrical interference, and to determine its effects on telecommunication services. These organizations are uniquely capable and stand ready to provide the needed technical assistance to the Commission in the establishment of criteria and standards. The International Radio Consultative Committee (CCIR) of the International Telecommunication Union has adopted a relevant Question, No. 227, on Limitation of Radiation from Industrial, Scientific, and Medical Installations and other kinds of Electrical Equipment, and Study Program No. 227A, on Limitation of Unwanted Radiation from Industrial Installations. These provide an international framework for studies of the technical questions underlying standards. Notwithstanding this measurement problem, which may limit somewhat the ultimate effectiveness of regulations to reduce radiation interference by electronic and electrical devices at the source, we feel that under authority of the bill the Commission, with the assistance of the National Bureau of Standards and the Institute of Telecommunication Science and Aeronomy, in cooperation with industry and affected agencies of the Government, should be able to devise regulations which will result in increased usefulness of the radio spectrum to all users: private industry, scientific research organizations, Government agencies, and the general public.

We have been advised by the Bureau of the Budget that there would be no objection to the submission of our report from the standpoint of the Administration's program.

Sincerely,

JOSEPH W. BARTLETT,
General Counsel.

DEPARTMENT OF THE AIR FORCE,
Washington, D.C., October 27, 1967.

HON. HARLEY O. STAGGERS,
*Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives.*

DEAR MR. CHAIRMAN: Reference is made to your request to the Secretary of Defense for the views of the Department of Defense with respect to H.R. 9665, 90th Congress, a bill to amend the Communications Act of 1934, as amended, to give the Federal Communications Commission authority to prescribe regulations for the manufacture, import, sale, shipment, or use of devices which cause harmful interference to radio reception. The Department of the Air Force has been designated to express the views of the Department of Defense.

The purpose of the proposed legislation is as indicated in the above stated title. Under existing provisions of the Communications Act of 1934, as amended, the authority of the Federal Communications Commission is limited to prohibiting the use of offending equipment. The Federal Communications Commission, therefore, in attempting to control interference, is confined to apprehending the users of equipment which interferes with radio communications. In most cases, these users have purchased equipment on the assumption that it could be legally operated without further modification to suppress spurious radiation. The proposed legislation would give the Federal Communications Commission the authority to control the interference potential of such equipment by requiring that it be designed by the manufacturer to limit its radiation to what the Federal Communications Com-

mission considers to be acceptable values. The proposed legislation would reduce the present enforcement problems faced by the Federal Communications Commission and assure the public of a better quality of reception than is now possible. The legislation would further insure that such radiating equipment is developed to operate in what the Federal Communications Commission considers to be appropriate portions of the radio frequency spectrum.

The Department of Defense would benefit from the legislation inasmuch as there have been many instances of harmful interference to essential air traffic control services caused by commercially developed equipment and devices which radiate energy in unauthorized portions of the radio frequency spectrum. The Department of Defense would also benefit from the exclusion clause contained in Section 302(c) of the legislation. The clause protects the interests of the U.S. Government and in particular all the military departments which have active programs for the research, development and use of electronic countermeasure equipment. Such equipment is specifically designed to interfere with the use of the radio frequency spectrum. In the case of contracts with manufacturers for equipment not intended for deliberate interference, the military departments incorporate military standards which are considered to be adequately stringent to prevent interference.

In view of the above, the Department of Defense supports enactment of H.R. 9665.

This report has been coordinated within the Department of Defense in accordance with procedures prescribed by the Secretary of Defense.

The Bureau of the Budget advises that, from the standpoint of the Administration's program, there is no objection to the presentation of this report for the consideration of the Committee.

Sincerely,

ROBERT H. CHARLES,
Assistant Secretary.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,
Washington, D.C., May 17, 1967.

HON. HARLEY O. STAGGERS,
*Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: Administrator Webb has asked me to reply to your letter of May 5, 1967, in which you request comments from the National Aeronautics and Space Administration on H.R. 9665, a bill to amend the Communications Act of 1934, as amended, to give the Federal Communications Commission authority to prescribe regulations for the manufacture, import, sale, shipment, or use of devices which cause harmful interference to radio reception.

The legislation would authorize the Federal Communications Commission to promulgate regulations with respect to the manufacture, import, sale and shipment of devices capable of interfering with radio communications and would prohibit the manufacture, sale or shipment of devices which did not comply with regulations so promulgated. The statute would not be applicable to carriers simply for transporting the devices without trading in them to the manufacture, assembly or installation of devices for its own use by a public utility providing electric service, or to the devices for the use of the Government of the United States or to devices manufactured solely for export purposes.

In its essence, the legislation is designed to permit the control, at the source, of devices such as electronic toys, electric garage door mechanisms, etc., which through faulty design interfere with communications activities. Attempts to control such devices at the user level have been extremely difficult.

There have been numerous discussions in the Interdepartment Radio Advisory Committee meetings as to a means which might be used to control interfering emissions. The National Aeronautics and Space Administration appreciates the need for such regulations. As an agency which requires high level of reliability in its communications devices, it would benefit substantially from enactment and enforcement of the proposed legislation.

The National Aeronautics and Space Administration recommends its enactment by the Congress.

This report has been submitted to the Bureau of the Budget which has advised that, from the standpoint of the Administration's program, there is no objection to its submission to the Congress.

Sincerely yours,

RICHARD L. CALLAGHAN,
Assistant Administrator for Legislative Affairs.

Mr. MACDONALD. We are happy to have as our first witness today Mr. Robert E. Lee, member of the Federal Communications Commission.

STATEMENT OF HON. ROBERT E. LEE, COMMISSIONER, FEDERAL COMMUNICATIONS COMMISSION; ACCOMPANIED BY JULIAN T. DIXON, ASSISTANT CHIEF ENGINEER, OFFICE OF CHIEF ENGINEER

Mr. LEE. Thank you very much, Mr. Chairman. I have about a 15-minute statement. If you don't mind, I will read it or shorten it, as you wish.

Mr. MACDONALD. All right.

Mr. LEE. I am Robert E. Lee, a member of the Federal Communications Commission. Mr. Chairman, the Commission appreciates very much your kindness in holding hearings this morning on these bills and I appreciate this opportunity to present the Commission's views.

H.R. 14910 was introduced by the chairman of your parent committee at the Commission's request, and H.R. 9665 was introduced by Mr. Dingell, a member of the full committee. These bills, which are identical to S. 1015, 89th Congress, as passed by the Senate on June 2, 1966, represent the most important proposal on the Commission's legislative program for the 90th Congress. Their enactment would contribute most significantly to our efforts to deal with a substantial element of "spectrum pollution."

These bills, with a few exceptions which I will mention later, would give the Commission authority to prescribe regulations for the manufacture, import, sale, offer for sale, shipment, or use of devices which cause harmful interference to radio communications or are capable of causing harmful interference to radio communications, or are capable of causing harmful interference to radio reception. The bills also prohibit the manufacture and other specified dealings in devices which fail to comply with the regulations promulgated by the Commission.

The purpose of this legislation is to give the Commission adequate authority to deal with increasingly acute interference problems arising from the expanding usage of electrical and electronic devices which cause, or are capable of causing, harmful interference to radio reception. This would be accomplished by authorizing the Commission to deal with the interference problem at its root source—the sale by some manufacturers of equipment and apparatus which do not comply with the Commission's rules. It would require that equipment be properly designed to reduce radiation to specified and acceptable limits and, where necessary, permit the Commission to specify to the manufacturer operating frequencies before the equipment is sold to the consumer.

In recent years there has been a marked increase in the number and type of devices capable of causing harmful interference to radio reception. In many instances, radiating devices lie outside the area conventionally associated with radio transmission and reception. They include such devices as high-powered electronic heaters, diathermy machines, and welding devices which radiate energy either purposely or incidentally to carrying out their primary functions.

They also include low-power devices such as electronic garage-door openers, some of which, because of poor design or otherwise, emit radiofrequency energy beyond that needed for their functions.

The cumulative effect of all this undesired radiation is most apparent in large metropolitan areas. Especially in peak periods of operation of radiating devices, such areas are blanketed by a "radiation smog" which makes it increasingly difficult for many users of radio communications to obtain interference-free reception.

This radiation problem is most serious in vital areas where radio is used for safety purposes, such as in air navigation control. In a number of instances, the Federal Aviation Agency has issued notices informing pilots that certain radio navigation devices are not usable in particular quadrants because the interference caused by industrial equipment makes these navigation aids unreliable. Problems in this areas can pose a genuine threat to safety of life and, as the volume of air traffic increases, this threat becomes more acute.

This legislation will help police and fire departments and others using radio for public safety purposes, where interference would cause errors or delays affecting the preservation of life and property.

It will help radio listeners and television viewers, because such excessive radiation also means the reception of distorted and garbled signals, or fluttering images, or pictures of a technical quality less than that possible when interference is under effective control.

It will help those who use radio for industrial communications services, where the cumulative effect of undesired radiation means increased disruption of communications services.

And, finally, it will help those users of radio whose operations must be conducted under conditions of relatively low background interference. Examples of this are the Commission's monitoring activities, the operation of military communications systems, and radio astronomy observations. High levels of undesired radiation in some of these activities have forced the abandonment of geographic areas of high interference, or required special efforts to detect radiating devices which are causing harmful interference, both of which solutions import additional costs of operation on the Government.

The Commission presently has authority under section 301 of the Communications Act to prohibit the use of equipment or apparatus which causes interference to radio communications and, under section 303(f), to prescribe regulations to prevent interference between stations. However, it has no specific rulemaking authority under the act to require that, before equipment or apparatus having an interference potential be put on the market, it meet the Commission's required technical standards which are designed to assure that the electromagnetic energy emitted by these devices does not cause harmful interference to radio reception.

This hiatus in the Commission's authority has undesirable results. Since the prohibition presently falls only on the use of offending equipment, the Commission, in trying to eliminate interference, is confined largely to measures applying to the use of equipment which interferes with radio communications. In most instances the users have purchased the equipment on the assumption that its operation would be legal. Thus, the Commission is frequently confronted by the question: "If I can't use this equipment, why was he permitted to sell it to me?" The Commission is also reduced to an after-the-fact approach

to controlling interference. There is no basis for proceeding against an offender until the Commission has discovered the interference, either through its Field Engineering Bureau or on the complaint of some user of radio equipment.

We received approximately 40,000 interferences complaints during fiscal year 1967. Several thousand of these complaints were attributable to the types of radiation devices we have been discussing; that is, high-powered electronic heaters, diathermy machines, welders, electronic garage-door openers, and low-powered walkie-talkies. Investigation, detection, and suppression of these devices has been accomplished at the expense of other important enforcement duties, and, if recent trends continue, the cost of detection and enforcement in this area is expected to exceed that of last year. Passage of the legislation will enable us to utilize our personnel more efficiently and will tend to minimize what would otherwise be an urgent need for increased manpower for their purposes.

New kinds of radio devices are continually being invented and we are presently requested to make special provisions in our rules to permit the use of such new devices. We are concerned about the widespread distribution of these devices, which may number in the thousands or millions, to the general public. In the absence of authority to make the manufacturer responsible for compliance with our interference specifications, we are reluctant to sanction the use of such devices due to the difficulty of tracking down individual users of noncomplying devices. Given the authority under this legislation, we would be able to provide for greater use of radio with assurance as to adequate control of interference potential.

Many manufacturers have cooperated generously in assuming responsibility to minimize interference problems. This cooperation is purely voluntary and has been most helpful. However, the responsible manufacturer who cooperates in holding down excessive radiation is at a competitive disadvantage vis-a-vis the marginal manufacturer who cuts corners to save a few dollars in this vital area. Legislation such as that before us today appears necessary to solve the problem effectively.

We recognize, of course, that equipment designed to prevent radiation costs more than improperly designed equipment. But in most instances, we believe that the additional costs to manufacturers stemming from this legislation would be small, in view of mass production techniques. Moreover, the proposed legislation would avoid subsequent and far greater additional expense to users in those instances where it is even possible to modify the device to bring it into compliance with the rules.

Let me now turn to a brief analysis of the details of these bills. Each consists of three subsections in a new section 302. Subsection 302(a) describes the radiating devices which would be subject to our authority as those " * * * which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in sufficient degree to produce harmful interference to radio communications."

The Commission would have authority under this subsection to prescribe rules for such devices applicable to their "manufacture, import, sale, offer for sale, shipment, or use." Subsection 302(b) prohibits the use, import, shipment, manufacture, sale, or offering for

sale of devices which fail to comply with the regulations duly promulgated by the Commission under the authority of section 302.

Subsection 302(c) provides three exceptions. The first is for carriers which merely transport interfering devices without trading in them. The second exception relates to the manufacture, sale, and so forth, of devices which are intended solely for export.

The final exception involves the use of devices by agencies of the Government. Under section 305 of the Communications Act, the Commission has no regulatory jurisdiction over stations owned and operated by the United States. The proposed subsection 302(c) recognizes this exemption from the Commission's jurisdiction. It provides, however, that such devices shall be developed or procured by the Government under standards or specifications designed to achieve the common objective of reducing interference to radio reception, taking into account the unique needs of national defense and security.

The various Government agencies are fully aware of the need for suppressing objectionable interference and, in many cases, the standards adopted by individual agencies are more stringent than those which the Commission would impose. In light of these considerations, it was considered appropriate to except from the operation of this legislation devices used by the U.S. Government or its agencies, leaving it to the agencies to cooperate in achieving acceptable levels of radiation. The Director of Telecommunications Management has assured us of his cooperation in this respect.

In addition, there is language to clarify that the provisions are not applicable to the electric utility industry insofar as an electric utility undertakes to assemble a power system from component parts or to assemble any of the component parts for its own use. This does not, however, alter any existing authority of the Commission under section 301 of the Communications Act, or the authority granted under the legislation to proceed against the user of equipment causing interference to radio communications.

The Commission has established technical standards applicable to the use of various radiation devices. This legislation is not designed to result in the promulgation of stricter technical standards. We have adequate authority at present to adopt stricter technical standards whenever we find that the public interest requires such action with respect to the use of radiation devices. In many cases, our existing technical standards would simply be made applicable at the manufacturing level. In those few cases where we would implement this authority with new or additional technical standards, the Commission would be dealing with devices recognized to be serious sources of interference; and the standards to be specified would be developed with the same close cooperation that we have heretofore received from industry.

As an example of the way we would proceed under any new authority given the Commission under this legislation, I would cite our method of implementing the all-channel TV receiver law (Public Law 87-259, 87th Cong., 76 Stat. 150). As in that case, we would contemplate holding a series of industry meetings, in order to discuss informally such matters as appropriate new standards and change-over periods. As in the case of the all-channel receiver regulations, our efforts would be to achieve a satisfactory consensus consistent with the aims of the proposed legislation.

Further, before promulgating any new standards, the Commission would give public notice of rulemaking proceedings, and interested persons, including all segments of the industry affected by a particular set of regulations, would have ample opportunity to comment on the proposed regulations. In short, if the Commission obtains this authority, it would proceed to implement it only after a thorough study of all the problems involved, and in such a way as to take appropriate account of the effect of new standards on the industry.

Moreover, we do not envision prescribing technical standards for all radiation devices. Rather, we contemplate prescribing standards for those devices which, in fact, cause harmful interference to radio reception. We would begin with those presenting the most serious problems. Thus, it is expected that equipment, the use of which is now regulated by the Commission, such as industrial heaters, low-power walkie-talkies, wireless microphones, and receivers for garage-door-opener controls, would be the first to receive our attention.

In summary, we expect that if H.R. 14910 or H.R. 9665 is enacted the technical quality of radio and television reception will improve, especially in those metropolitan areas where there is now excessive radiation. The efficiency of communications service in the industrial radio band will be enhanced. And, most important, some potentially serious threats to safe air navigation and control will be alleviated. Finally, the Commission's efforts in detecting and eliminating harmful interference will be made more efficient.

All this will benefit the public, the users of devices which radiate electromagnetic energy, the great majority of manufacturers who presently attempt to avoid harmful interference problems, and the users of radio communications in general.

That completes my statement, Mr. Chairman.

Mr. MACDONALD. Thank you very much, Commissioner Lee.

Are there any questions?

Mr. ROONEY. How did the Commission isolate this problem?

Mr. LEE. Well, I think primarily from complaints of interference to air navigation. In the last 16 months we have investigated some 600 complaints. This requires the use of men and equipment to find the device that is causing the problem.

Mr. ROONEY. How about the existing devices; would they be covered under this act?

Mr. LEE. Existing devices, in effect, Congressman Rooney; all devices are already covered in that we do have the authority to proceed against the user, the guy who bought it, and what this legislation does it moves that authority. It does not remove it, but it adds authority to the fellow who makes it. If you had a garage-door opener and there was interference we would have authority to stop you from using it, but instead of bothering you and finding you in the first instance, we want to go to the fellow who makes them and say: "These are the standards you have to use."

So, in effect, this takes a burden off of the consumer as well as the Government.

Mr. ROONEY. No further questions.

Mr. MACDONALD. Mr. Brown, any questions?

Mr. BROWN. Yes.

Mr. Commissioner, I am interested in this area because I would like to find out what our future technology is going to present to us

in the way of problems or what this legislation may be doing to hold back the development of future technology in other areas besides private broadcast radio-television communications.

It seems to me that this measure is just another patch in the Communications Act of 1934 and that we ought to be looking more broadly into this whole problem.

What specific attention is going to be given or has been given to, for instance, the problem of citizen-band radio, or does this include the little \$15 walkie-talkie that my wife bought my son for Christmas?

Mr. LEE. It could. With respect to furthering the development of the art, we think that this legislation will help.

Mr. BROWN. Which part?

Mr. LEE. Insofar as we have to approve, for example, the use of new devices, some chap may come in with a proposal to manufacture a new device. We do have to approve that, and we think that if we can prescribe the right kind of radiation limits on the manufacturers we perhaps can be a little more tolerant in approving these new uses, knowing that we will be able to control the radiation at the source.

Mr. BROWN. Let me ask specifically about the garage-door opener. Is this to be included in that?

Mr. LEE. Yes, sir; the garage-door opener has been really a prime offender on aviation interference.

Mr. BROWN. I don't think any of us want to have a DC-9 landing in our garage, especially if we have a one-car garage. How do you determine the order of precedence of priority as to whether the development of a new electronic device which could have vast ramifications in consumer and public usage or even Government usage is less important than something that we are now doing in the communications field?

Mr. LEE. With respect to the relative merits of the devices I am not so sure we could make that determination if they interfered with an existing device. As a practical matter, what happens with the garage-door opener is that we will receive a complaint from the FAA on an active route from spot A to B. They warn the pilots there is something interfering and that this affects navigational aids. Our people then have to find the source of that interference. This very often requires putting a man on the plane for a few days, working in conjunction with mobile units, and then we find Mr. Citizen.

We will still have that authority under this bill; we still may occasionally have to do it, but then we can go to the manufacturer and say, "You have a bad line; something went wrong; you better fix it."

Mr. BROWN. In other words, it isn't your ambition to terminate the development of the technology, but rather to see that it develops without interference with existing technology.

Mr. LEE. Right.

Mr. BROWN. Does that mean that the guy that got there first necessarily has priority?

Mr. LEE. No. They will all operate under the same standards and you will find in industries various degrees of compliance. You see, we have rules now. This I have to make clear. We do not intend to tighten these technical standards; these rules apply to this device. The only difference is that we cannot move against the chap who makes it. We must move against the guy who buys it, and actually we think it will help, much as the all-channel television receiver.

The industry, of course, was most concerned about this. They were talking about what comes next—the ice box and so on? I have this type of concern, too, and I have sponsored this legislation at the Commission, only because I could see no other way out of it, but we can work with the manufacturers and we have, and they are now, as I understand it, supporting this.

Mr. BROWN. Again, my basic question is: Are we assured by technical people, the people who are on the fringe of these scientific developments in the area of communications, that this bill will not give the FCC authority to hold back technical progress in some areas because of the state of the art in technical progress in existing areas?

Mr. LEE. You are getting a little technical for me. Let me field that to Mr. Dixon of our chief engineer's office.

Mr. DIXON. My work at the Commission puts me on the fringe of technical developments and it is our purpose to encourage technical developments and our concern about the present situation is that technical developments which result in a multitude of new devices, at least by the thousands or millions for the public use, those are people who have no idea of their interference potential, and yet our present rules apply to each individual and not to the producer of the devices.

So, if we were assured of adequate control at the source of manufacture, then we could, with greater assurance, give permission for new devices. It would make this possible. As it stands, our control over these mass-produced interfering devices is not very good because of the individual approach we have to make.

Mr. LEE. I would think, Congressman Brown, under these standards that we have, that the sale, for example, of garage-door openers, I would expect it to greatly increase. There must be numbers of people who do not want to have them because they have heard about these problems that they have, and whenever one is under the same set of ground rules, knowing that they can buy a piece of equipment that will work and will not interfere, I think it should help.

Mr. BROWN. Well, with the chairman's permission, just one other question. And I want you to understand that I am still not sure you have zeroed in on my concern. When you talk about garage-door openers, you talk about perhaps an unnecessary, luxury item that doesn't have much public sympathy, versus transportation or communication in the air transportation field, but let's think for a minute about the possibility of reducing this walkie-talkie down to the Dick Tracy type, which is a radio that would allow all of us to have our individual telephone numbers and be able to be contacted any place in the world at any time from any other place, or about some of the other fringe areas of scientific developments.

I don't mind controlling garage-door openers so that they don't cause airplanes to crash, but I am a little concerned about the possibility that we might be holding back some technical development in the field of communications or health or something else, because of a rather parochial interest of a radio or television broadcaster or some other existing type of communications. And that's why I'm concerned that this may be just a piece of patchwork on the 1934 Communications Act, because I for one do not feel competent in the field of technical development and would like to hear a lot more testimony on where technical development might be taking us in the future with reference to all kinds of communications.

Now, do you understand my area of concern, the discomfort I have with this piece of legislation?

Mr. LEE. Yes, I think perhaps you might have a feeling that in order to protect one piece of equipment we might inhibit the development of some other piece of equipment.

Mr. BROWN. Simply because piece of equipment A is on the market first?

Mr. LEE. Well, I can certainly say that is not our intention and I don't see that this legislation would have that inhibition.

If, for example, we found a new development that was, we will use the term mutually exclusive, with an existing development or in compatible with it, I suppose we would have to make a choice.

Mr. BROWN. Do you have the technical competence to make that choice within the FCC? Do you have the staff and the people who can determine what the scientific possibilities are in one area versus another area and make a value judgment on which is preferable in the public interest?

Mr. LEE. I think it is generally conceded that in this area the FCC has the real expertise. That does not include me. We have the finest engineers in the Government in the electronic field.

Mr. BROWN. It seems to me that there are social ramifications here as well as economic and technical ramifications, and I don't know whether I should argue the point that you have the staff and people available to make decisions in the communications field or not, but I would like maybe to get into some further testimony with regard to this point.

Mr. LEE. I believe the electronics industry people—I don't know whether they are testifying, but they are writing letters supporting this. They originally opposed it until they looked into it very carefully.

Mr. BROWN. Just one question on that——

Mr. MACDONALD. Your time has expired.

I just have two questions.

How does the Commission define "radiation"? It's sort of a word that has a bit of——

Mr. LEE. Well, I think that, No. 1, we have to make sure we are talking about electromagnetic radiation. We do not have before us this problem of X-ray radiation; that is, physiological harm that we are hearing about from some other committee. What we are concerned about here is really electromagnetic radiation, and we receive, generally, a complaint from a source that in an area something is interfering with something important.

We have to send out these trucks, mobile equipment. We put fixes; you find where the lines intersect and you have to get into that neighborhood and area until you fix precisely at a site. It is a very laborious thing, and this legislation will remove a great deal of this burden.

Mr. MACDONALD. I am not sure that is a direct answer to my question.

Mr. LEE. How do you find——

Mr. MACDONALD. Yes; how does the Commission officially define "radiation"?

Mr. LEE. I would turn that over to Mr. Dixon. I thought you said "find" rather than "define"?

Mr. DIXON. Radiation is a generic term and we have, I believe, no explicit definition. We have a definition of harmful interference caused by emission of radiofrequency energy and it is this type of radiation that we are concerned with, only radio radiation which causes interference to communications, or broadcasting.

Mr. LEE. I think the Congressman is concerned about—I suppose everything interferes to a degree with everything else—I think he is concerned about at what point are we concerned.

Mr. DIXON. That is exactly correct.

Mr. LEE. Did you have a figure in decibels or whatever you have?

Mr. DIXON. The level of radiation is specified in various terms depending on the kind of device to which it refers.

Mr. MACDONALD. For example, my watch gives off radiation, is that correct?

Mr. DIXON. I understand if it has radioactive substance, yes. But this type of radiation—

Mr. MACDONALD. In your statement, is all I'm getting at. In your statement I was trying to find out what you were talking about when you keep talking about radiation.

Mr. DIXON. Oh, we mean—

Mr. MACDONALD. How it is going to be affected in this bill?

Mr. DIXON. We mean radiation in the radio frequency spectrum used for communications and broadcast. We do not mean "light radiation," radiation or atomic radiation or anything of that type. I can give you specific frequencies.

Mr. MACDONALD. For example, if you live in a neighborhood that I do, that has a ham operator, he certainly interferes. You have to make some adjustment on your TV. He was driving everyone in my house nuts with it. Every time he went on the air, the signal got fouled up.

Now, that, of course, do you define that as radiation?

Mr. DIXON. Yes, that would be interference caused by radio frequency.

Mr. MACDONALD. That is already in under whatever section you say in the present act.

Mr. DIXON. Yes.

Mr. MACDONALD. So when you are talking about radiation that this new bill, if passed, would regulate, what are you talking about? That is my simple question.

Mr. DIXON. Yes, sir; we are talking about radiation of the same kind, but perhaps a nonlicensed station, for instance, or a nonlicensed device such as a garage-door opener, the person operating it has no license. The amateur station does have a license and he is subject to some very specific rules and we know exactly where he is. But we have no license with regard to many devices.

Mr. LEE. In the example you gave, Mr. Chairman, as I understand it, we would find this amateur. He is causing interference. We have the authority now that he must do something about it, and in this particular field they have a voluntary organization and they do co-operate and they do something about it, as you have probably found out. If we found that that transmitter that he had was not within our specifications, we could go to the fellow who manufactured it under this bill. Now we go no further than the man who owns it.

“We could tell the manufacturer: ‘Maybe you have made a mistake here, maybe you have hundreds of others. You better cooperate and find them or stop your line and fix it.’ It’s a transfer of responsibility.”

Mr. MACDONALD. In other words, shifting the burden to the manufacturer?

Mr. LEE. Right.

Mr. MACDONALD. But isn’t it quite true, and I have no strong feelings about this. I don’t know why I got into it actually, but isn’t it a fact that the manufacturer can put out a perfectly fine piece of equipment and then have it misused in such a way that radiation, the definition that you have just given, results?

Mr. LEE. If he would misuse it technically, he would have to make some modification of it. This he could do if he was qualified. The misuse that we generally find is in the broadcasting on the transmitter rather than in the technical ability of the transmitter to cause interference. He could fool with it and make some adjustments; that’s right.

We still have authority to go to him, but this would be a very minuscule.

Mr. MACDONALD. Thank you.

Mr. Brown?

Mr. BROWN. It occurs to me that you now have authority to get into the citizen-band radio field in order to control faulty equipment in the citizen-band radio area or the misuse of it, and the FCC has been relatively powerless to straighten out this situation, because it is growing so fast because the technology and ability to produce this inexpensive equipment which anybody can buy and operate has gone past FCC’s power to control. Not the authority to control but the power to control because of the economics of the situation.

Mr. LEE. If we find technical problems with the citizens-band transmission, we can go to the manufacturer under this bill and say: “Fix it.” Now we have to find——

Mr. BROWN. Even after he has fiddled with it?

Mr. LEE. If he fiddled with it, we cannot control it. We would still have authority over this kid, whoever he might be. I am the first to say this is a real major problem for us and we have been really unable to cope with it.

Mr. BROWN. I would submit this has become a major problem in just this one field in citizen-band radio, walkie-talkie, and so forth, when you get into the technical development of type acceptance. I gather this is really what you have in mind is a type acceptance of a product.

Mr. LEE. There would be more of that than there is now; yes, sir.

Mr. BROWN. When it is manufactured, but when the guy takes it home and installs it and tightens bolt A or adjusts Y or C, you may have a product as a result of this that isn’t really beneficial in its operation.

Mr. LEE. Our major problem in the citizen-band field is not a technical one. It is that these kids are using it for purposes other than their license calls for.

Mr. BROWN. I would submit they are not all kids. I think a lot of them are adults and they are licensed and you do have the right to go in and lift a license or correct this problem, but in fact you are not able to do this because of the economics of the operation of the FCC.

If I may, on a point that you raised, Mr. Chairman, there are all kinds of radiation as I understand it. You have maser and laser radiation and ultrasonic radiation and so forth. To me the term here is a little vague as to just what you have in mind. Are you going to control lasers as a result of this legislation?

Mr. LEE. Under the bill there is a section 302 that defines devices and says, "The Commission may, consistent with the public interest, convenience, and necessity, make reasonable regulations governing the interference potential of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in such degree to cause harmful interference to radio communications."

Now, under that definition I say, "Yes" we would have the authority to go to the manufacturer of a laser device. In the development of the laser, presumably at a point in time, we will control them by other means in that area because we will assign them frequencies and perhaps license them, but this bill would let us go to the fellow who makes a device that utilizes the laser.

Mr. BROWN. In effect, this is any device which could interfere with communications, can be controlled on a type-acceptance basis by the Federal Communications Commission; is that correct?

Mr. LEE. That's right.

This bill does not contemplate that we would change our technical standards. We already have technical standards for a number of devices, such as the garage-door opener and industrial heater that we have approved for manufacture.

The same standards would apply, as far as we know at the moment, to these devices; again, the only change would be that instead of going to the consumer, we would go to the manufacturer.

Mr. BROWN. If I am a manufacturer in a field in which you are holding back a matter of technical progress because you feel that it interferes with some type of existing, historically prior communications, what recourse do I have?

Mr. LEE. Of course, you could always petition the Commission. As far as we have gone so far in the development of new technology, we have always worked cooperatively with the industry. They come to you and say, "Look, we would like to do this." We say, "Well, go ahead and try it, with these standards."

Mr. BROWN. Again, with the chairman's patience. You are talking about people already in the field. I am talking about another field. Maybe ultrasonics, maybe they are getting a development automatically or, by the way they have developed it that interferes with existing radio communications, does my only recourse lie in asking for a hearing before the Communications Commission which takes—how long? How far are we behind in hearings?

Mr. LEE. Any hearing will take a considerable period of time; that's right. We have not had that experience in these new fields.

Mr. DIXON. We have usually two or three people visit our office each month with proposals for new-type devices, usually on a non-licensed basis so they can be mass produced and sold over the counter, and so forth, for which there are no provisions in our present rules. It is possible now for us to make additional provisions for new devices, but as Commissioner Lee pointed out in his prepared statement just read, the degree of control we can exercise is very limited since we have to go out and locate each one if it's causing trouble.

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.

The ILS is used for landing in adverse weather conditions. One of the components of the ILS is the localizer. The localizer emits a signal that is used by the pilot for precise azimuth or centerline guidance to the runway. Radiofrequency interference can cause the localizer to be rendered useless altogether or it can cause to be displayed to the pilot erroneous centerline guidance information.

Incidentally, there are approximately 240 instrument landing systems in the United States operated by the FAA. The FAA operates numerous other types of air navigation facilities which are susceptible to radiofrequency interference. They include short-range and long-range radar, distance-measuring equipment, TACAN bearing and distance equipment, and direction-finding equipment.

Radiofrequency interference can also create problems in communication between air traffic controllers and pilots. There is a considerable amount of air-ground voice communication in providing separation between aircraft during departure, en route to destination, and landing.

When frequencies used in these voice communications are cluttered or made unusable by interference, difficulties are created that add to the burden of the controller and the pilot. When interference on an air traffic control frequency becomes so great as to make the frequency unusable, the controller must find and switch to another frequency. This involves calling each aircraft under his control to inform the aircraft of his new frequency. This process diverts the controller's attention from his main task of controlling the aircraft.

Radiofrequency interference, besides causing delay and inconvenience, can create situations which could result in disaster. Where voice communications between controller and aircraft pilot are distorted or blanked out, vital communications at a critical stage in the flight may be lost, perhaps even a warning of impending collision with another aircraft. Interference may prevent the pilot from identifying the station he may be attempting to navigate by. Or interference from a garage-door opener, an example we have been hearing considerably of today, could cause a pilot to deviate from his intended course and thus fly into an area where he should not be. Any of these situations could cause or contribute to an aircraft accident.

Let me describe how one segment of the aviation radio spectrum is affected by an unregulated radio device, such as the garage-door opener.

Each authorized user in this band needs only a small portion of the spectrum to operate on. The garage-door opener radiates energy over a large portion of the band, thus, in a sense, contaminates the spectrum.

At present, where radiofrequency interference affects navaid performance or voice communications, the source of the interference must be located through aerial inspection and use of radio vans on the ground. When the source is located, action must be taken against the operator of the interfering device to shut down the device or have it modified to eliminate the interference.

Some time ago, in the Los Alamitos area of California, a serious amount of interference was noted on 243 megacycles, the frequency used for emergency communications, and on 282 megacycles, the homer frequency for the Los Alamitos Naval Air Station.

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?

Mr. VAN DEERLIN. Interestingly enough, this works both ways, doesn't it? In Minneapolis a few years back, I recall that garage doors were flying up as planes were coming in to Wold-Chamberlain Field.

Mr. WINICK. Very often, as an aircraft does land, a lot of garage doors do open, unwantedly.

Mr. VAN DEERLIN. Has the FCC no regulation over this garage door opening device?

Mr. WINICK. I would leave it to them to answer that, sir. I am not an expert on the provisions of their current regulations under the 1934 act. I believe they do, under their part 15 as explained earlier. They have set a standard and have the right, but it is a question again, as we have heard over and over, of the ability to take an action which can only come after the user has the device on the air.

Now, just one point if I may, Mr. Chairman, on that. When I speak of the need for higher integrity of air navigation signals, we are talking about the fact that we don't like to feel that there could be even a transient occurrence of interference at any time because we do have lots of examples, recorded examples in an aircraft, of perturbations to the desired guidance signal on an instrument landing system which have essentially been unexplained.

Mr. VAN DEERLIN. Do you have any evidence of instances in which this interference, as you have described it, has actually contributed to a plane crash?

Mr. WINICK. No, sir; I don't believe that I can definitely say that we have proof of that. We have unexplained incidences that have caused missed approaches and we feel that some of them, without having the capability of pinning it down exactly, could have been caused by what are sometimes called "rogue" transmissions from unidentified sources. These can cause a deflection of an indicator, a flag to show in the aircraft, and the pilot may then execute a missed approach.

Mr. VAN DEERLIN. This would come under FAA's supervision, of course, but is it possible that similar devices used in war areas might put a pilot off course so that a bomb load that is to be dropped 10 miles miles short of the Chinese border might be dropped 10 miles on the other side of the border?

Mr. WINICK. Of course, those rules are much more stringent than anything the FCC has in mind.

Mr. MACDONALD. Thank you, any other questions?

Mr. BROWN. I have one question.

I seem to recall that at one time there was a problem of aircraft homing in on the tailpipes of some kind of an automobile or truck. Is there radiation interference from automobile or truck engines?

Mr. WINICK. There is ignition interference, sir. I haven't heard of anyone homing in on such signals. I know that infrared devices may home in on the exhaust of engines.

Mr. BROWN. Maybe that's what I was thinking of.

Mr. WINICK. These would be military infrared homing devices that work on the heat output of the engine exhaust.

Mr. BROWN. These are not aircraft; these are missiles so that you might have a missile home in on our automobile tailpipe?

Mr. WINICK. If it was up in the air, but, Mr. Brown—

Mr. BROWN. I'm glad that isn't an airplane.

Mr. WINICK. But Mr. Brown, there are interference sources in ignition systems of large industrial engines. This is true, this is one of the known sources of radiofrequency interference.

Mr. BROWN. But this is a communications problem under this legislation. Then if you had an automobile engine that might get a missile system fouled it would be up to the Federal Communications to control I think it is a valid question.

Mr. WINICK. I think it is a valid question. We don't have anything to do with missiles nor does the FCC that they know of. They have enough problems. I never heard of any missile homing in on any automobile. I think that would be a headline.

Mr. BROWN. If the chairman will let me finish the nature of my question. It is a communications system, is it not, the missile control system?

Mr. WINICK. Mr. Brown, I can go into this at length if you like. There are different kinds of guidance systems used in missiles, some of them are inertial which do not radiate any sort of electromagnetic energy. Of course, there are a lot of advantages to that kind of system and that's the way military developments are going, but some do use radio control, that's right, for the guidance systems.

Mr. BROWN. Let me ask the question. Is this also covered by this legislation, the possibility that you windup controlling the manufacture of automobile engines through this?

Mr. WINICK. I personally doubt it, Mr. Brown, because I think that the limitations, and I am perhaps out of my area, and this is an FCC matter, over which they intend to exercise their authority are limited to the known and assigned bands for radio communication and navigation.

These are assigned frequency bands and I don't assume that they would go out of these, whether it be atomic radiation or any other area.

Mr. BROWN. I don't feel that this legislation says that. I may be wrong, but I don't think that "known and assigned bands" for communications is clarified in the legislation. Maybe that is a point that ought to be considered with reference to drawing of this legislation.

That's the reason for the question; even though it may seem facetious, it is perfectly serious. Would you care to comment on that?

Mr. WINICK. May I, Mr. Chairman? I have been reminded that one of the phrases in the bill does talk of reducing interference to radio reception and I think that term, it perhaps is not limiting enough to use here, but I think it is meant to indicate the limiting type of authority that I was referring to.

Mr. BROWN. Certainly I don't want to prolong the question. I'm not going to, but in your statement I think either I misheard it or it ought to be cleared up on the record. You said that the landing system methods only put out 10—

Mr. WINICK. Microvolts?

Mr. Chairman, I was referring to the fact that in the use of an instrument landing system the airplane receiver is designed to work in some cases on very low signal strengths put out by—

Mr. MACDONALD. The way I am trying to clear up the record, then, you then said that the garage-door opener used up to a thousand?

Mr. WINICK. May radiate as much as a thousand microvolts per meter is the term used, much greater signal strength.

Mr. MACDONALD. Why is this? Why is that necessary?

Mr. WINICK. Well, Mr. Chairman, I don't believe it is necessary. In a way the more that is radiated, I presume, the less expensive you can make the device in the automobile itself to operate these things.

Mr. MACDONALD. Any further questions?

Thank you very much, sir.

Is there a witness here for the Edison Electric Institute or is a statement going to be included in the record?

Mr. WILLIAMSON (clerk of the committee). Yes, sir; we have the statement for the record.

Mr. MACDONALD. With that we have exhausted the list of witnesses and I declare the hearings closed.

Thank you all very much.

(The following material was submitted for the record:)

EDISON ELECTRIC INSTITUTE,
New York, N.Y., February 5, 1968.

HON. HARLEY O. STAGGERS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. STAGGERS: It has been reported to us that hearings have been called before your Subcommittee on Communications and Power on Tuesday morning, February 6, on the bills H.R. 14910, which was introduced by yourself, and H.R. 9665, which was introduced by Mr. Dingell of Michigan. We understand that the bills are identical and that their stated purpose is: "To amend the Communications Act of 1934, as amended, to give the Federal Communications Commission authority to prescribe regulations for the manufacture, import, sale, shipment, or use of devices which cause harmful interference to radio reception."

We believe you are generally familiar with the concern of the Edison Electric Institute in matters affecting electric power systems. The Institute includes among its members 180 operating electric power companies serving over 51 million customers. This is over 97 percent of all the customers of the investor-owned electric power supply industry and some 76 percent of our nation's users of electricity.

The operating companies regularly cooperate on a voluntary basis with the Commission in the investigation and elimination of sources of radio frequency noise that result in interference to radio reception. The Edison Electric Institute through its technical committees has provided for exchange of information, among its members on this as well as other subjects important to their operations.

We appreciate the regulatory problems of the FCC in controlling radio frequency noise that originates outside the family of radio equipment and we share its desire to correct and avoid interference to radio reception.

Perhaps it will assist your full consideration of the proposed legislation if we now restate the objection to it which we expressed in our letter to you dated July 15, 1966.

We believe that the broad language of the proposed legislation could be construed to give the Commission power over manufacturing not only to stop the production of offending devices but to specify the details of design and production of such devices insofar as radio interference might be involved.

The Commission has given repeated assurances that it would not interpret the bill so broadly and that its intention is to permit the manufacturers of equipment as much flexibility for exercise of ingenuity in equipment design as possible while achieving the performance objective.

It therefore seems to us that it would be appropriate to make a simple amendment to the bill to provide more specifically the authority the Commission has said it needs without also conveying authority which it has indicated it will not use.

To this end it is suggested that the wording of proposed Section 302(a) be amended by insertion of the phrase "establishing performance criteria" to make the first sentence of that section read as follows: "The Commission may, consistent with the public interest, convenience, and necessity, make reasonable regulations establishing performance criteria governing the interference potential of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in sufficient degree to cause harmful interference to radio communications."

We can readily understand why in July 1966 after the Senate had passed its bill, the Commission would oppose the idea of any further change in the bill. This situation does not exist now.

It is requested that this letter be made a part of the record of the February 6 hearing on H.R. 14910 and H.R. 9665.

Respectfully submitted.

EDWIN VENNARD,
Managing Director.

CLEVELAND TELEVISION INTERFERENCE COMMITTEE,
Cleveland, Ohio, February 1, 1968.

Mr. W. E. WILLIAMSON,
Clerk, Committee on Interstate and Foreign Commerce.

DEAR MR. WILLIAMSON: First allow me to introduce myself, I am the present chairman of a group of radio amateurs, who have banded together to help rectify television and radio interference caused by the amateurs and on many occasions, helped out with problems not of our making. The roster of this group now numbers forty-one.

We, of this committee strongly urge the passage of the new bills, H.R. 14910 and H.R. 9665 amending the Communications Act. We believe this both helps us and relieves the listening public. We have repeatedly asked the F.C.C. for some ruling or information on the subjects these bills pertain to, and have been told that until these bills pass, they have no jurisdiction on these rulings.

Thanking You,

SANFORD DAVIS, *Chairman.*

CUYAHOGA COUNTY TELEVISION INTERFERENCE COMMITTEE,
Cleveland Heights, Ohio, February 1, 1968.

Re H.R. 14910, H.R. 9665.

W. E. WILLIAMSON,
Clerk, Committee on Interstate and Foreign Commerce,
Washington, D.C.

DEAR SIR: I am Public Relations Officer for Cuyahoga County's Television Interference Committee. Newspaper, Radio, and Television personnel advise all complainants to reach me with their "interference" problems. My daily such complaints have reached mountainous proportions!

It is with fervent plea I voice the responses of greater Clevelanders—when I express the best interests of citizens who have their innocent rights to "listen"—without the frustrating and nerve-racking accompaniment of interference. Because of manufacturers—who don't care.

I would beseech all gentlemen attending the public hearings, on February 6th, to unanimously pass these bills, to amend the Communications Act of 1934—as amended, to give the FCC authority—etc., etc.

Would that I could appear, to have my voice heard! Were everyone in that Room 2123 to hear the pleas of 2,000,000 plus unhappy consumers in our area—they would assuredly hurry such passages! Please allow this letter to be read by our honorable Representatives Staggers and Dingell!

I thank you for fulfilling the pledge of notifying me each time word of these vital bills comes to life. May I depend upon a continuation of this practice, please!

Very truly yours,

EUNICE G. BERNON,
Public Relations Officer.

(Whereupon, at 11:15 a.m., the subcommittee adjourned.)

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