

## REGULATION OF DEVICES CAPABLE OF CAUSING RADIO INTERFERENCE

FEBRUARY 27, 1968.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. STAGGERS, from the Committee on Interstate and Foreign Commerce, submitted the following

### REPORT

[To accompany H.R. 14910]

The Committee on Interstate and Foreign Commerce, to whom was referred the bill (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, having considered the same, report favorably thereon without amendment and recommend that the bill do pass.

### PURPOSE

The purpose of the bill is to authorize the Federal Communications Commission to prescribe reasonable regulations governing the interference potential of certain devices capable of interfering with radio communication.<sup>1</sup>

### SUMMARY OF BILL

The bill would add a new section 302 to the Communication Act of 1934. Under the new section, the Federal Communications Commission is empowered, consistent with the public interest, convenience, and necessity, to prescribe reasonable regulations governing the interference potential of devices capable of emitting radio energy which could cause harmful interference to radio communications. These regulations would be applicable to the manufacture, importation, sale or offering for sale, shipment, or use of such devices.

However, such regulations would not be applicable to (1) carriers transporting such devices without trading in them; (2) devices in-

<sup>1</sup> Under the Communications Act of 1934 the term "radio communication" is defined to include television signals. The terms "radio communication" and "radio" are used in this sense throughout this report.

tended solely for export; (3) devices constructed by electric utilities for their own use; or (4) devices for the use of the Federal Government. The legislation also provides that such devices for the use of the Federal Government be designed so as to reduce radio interference, taking into account the needs of the national defense and security.

#### EXISTING LAW

Sections 301(d) and 303(f) of the Communications Act of 1934 authorize the Federal Communications Commission to, respectively, (1) prohibit the use of devices which cause interference to radio communications, and (2) prevent interference between radio stations. However, the Communications Act does not presently authorize the FCC to prescribe regulations to require that devices capable of emitting radio frequency energy must be designed to avoid interference with radio communications. Thus, the FCC must now proceed on a case-by-case basis to locate devices which cause radio interference and stop such interference.

#### INTERFERING DEVICES

The complexity of the FCC task can be seen when the devices capable of causing radio interference are listed. Such devices include among others, electronic garage door openers, certain electronic toys, high-powered electronic heaters, diathermy machines, welders, radio and television receivers, ultrasonic cleaners, and remote control devices for such equipment as industrial cranes. Other devices are constantly being added to this list as modern technology develops and expands.

#### TIME CONSUMED IN TRACING INTERFERING DEVICES

Another perspective on the problem is gained from the fact that in fiscal year 1966 over 150,000 man-hours of time were devoted to tracing and eliminating interference of all types. In fiscal year 1967, about 40,000 complaints involving radio interference were received by the FCC. Furthermore, many cases of interference are never brought to the attention of the FCC and are therefore not reflected in this number. An actual case related by the representative of the Federal Aviation Administration in the hearings on this legislation aptly shows how tracing devices causing radio interference can be so time consuming.

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 radio frequency 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.

#### COMMUNICATIONS AFFECTED

The communications which are interfered with by poorly designed devices which emit undesired radio frequency energy are almost as diverse and numerous as the devices causing the interference.

*Space communications.*—A vitally important field which must remain free of radio interference is that involving radio communications with satellites and vehicles in outer space. There has already been at least one instance of serious interference with space communication. This occurred in December 1965 when Gemini 7 was in orbit. The Corpus Christi, Tex., tracking station lost contact with Astronauts Bowman and Lovell because of interference caused by a winch truck in a nearby steelyard. The Federal Government had to go to court to get a temporary restraining order in order to halt this interference.

Radio astronomy requires freedom from radio interference in order to be effective. For this purpose a "radio quiet zone," where the use of electronic devices is carefully regulated, has been established in the State of West Virginia.

*Air traffic control.*—The representative of the Federal Aviation Administration also detailed how undesired radio interference creates a hazard to air traffic. Thus, radio interference has from time to time caused the abandonment of air navigational aids in certain sectors. There is also a continuing threat that radio interference could cause a fatal error to a pilot relying on an instrument landing system (ILS) during a landing in bad weather. Numerous other types of air navigational facilities are operated by the FAA which are susceptible to radio interference. Included are short- and long-range radar, distance-measuring equipment, TACAN bearing and distance equipment, and direction-finding equipment.

Radio interference also creates problems in radio voice communications between air traffic controllers and pilots which can easily result in disaster. For example, radio interference could prevent a warning of an impending collision.

*Land mobile radio service.*—One of the most congested portions of the electromagnetic spectrum is that devoted to the land mobile radio service. Relief for this service is under continuing active consideration by both the communications industry and the Federal Government. Both police and fire department use of radio falls within this service. While it will not solve the problem of congestion, the diminution of radio interference would contribute significantly to making radio communications which have a direct impact on the preservation of life and property more effective.

*Radio and television reception.*—The diminution of radio interference which would result from enactment of this legislation would also have a direct benefit for numerous radio listeners and television viewers who are the victims of static, garbled signals, and fluttering images caused by radio interference.

#### BENEFIT FOR CONSUMERS

Another victim of the present system for preventing radio interference is the innocent purchaser of a device which emits radiofrequency interference. Quite reasonably, he assumes that because the device is available for purchase it can legally be operated for its intended use. Such, unfortunately, is not the case if the device interferes with radio communications. At best he may be required to modify the device to prevent the emissions. On the other hand, the device may not be susceptible of modification and in addition to losing use of the device he may have to bear the expense of defending administrative proceedings brought against him.

It should be noted that many manufacturers have cooperated with the FCC in designing devices to prevent emissions of radiofrequency energy which would cause harmful interference. In many instances, this places the cooperating manufacturer under a disadvantage in competing with less scrupulous manufacturers of similar devices.

#### REGULATIONS

Commissioner Robert E. Lee, in testifying at the hearing on this legislation on behalf of the FCC, stated that regulations would be prescribed first with respect to those devices creating the most serious interference problems. In many instances, these proposed regulations will be existing technical standards which the FCC has formulated for radiation devices. In formulating proposed new regulations, the FCC would consult with the affected industry on the standards and on such other matters as changeover periods. Before promulgating any regulations the FCC would give public notice of the rulemaking proceedings and interested persons, including all segments of the industry affected by the regulations, would be afforded an ample opportunity to comment on them. The regulations prescribed under this authority would, of course, be concerned only with the performance of the devices to which they are applicable in terms of their potential for interfering with radio communications. They would not be applicable to the design or manner of production of such devices.

## HEARING

Hearings were held on the bill on February 6, 1968, before the Subcommittee on Communications and Power. Commissioner Robert E. Lee appeared on behalf of the Federal Communications Commission. A representative of the Federal Aviation Administration appeared in its behalf. Both witnesses urged enactment of this legislation. No one appeared in opposition to the legislation.

## COST

The committee is informed that this legislation will not result in any increase in costs to the Federal Government. Through reducing the volume of cases of radio interference which would otherwise have to be investigated, it should in the years ahead result in savings to the Federal Government.

## CONCLUSION

This legislation has been unanimously reported to the House by the committee. The committee strongly recommends its enactment.

## AGENCY REPORTS

EXECUTIVE OFFICE OF THE PRESIDENT,  
BUREAU OF THE BUDGET,  
*Washington, D.C., February 15, 1968.*

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

Like H.R. 9665, whose enactment the Bureau recommended in a July 10, 1967, letter to your committee, H.R. 14910 would give the Federal Communications Commission authority to deal with radio communication interference problems caused by electronic and electrical devices. Under present law, the Commission may only control interference from such devices after they are installed. H.R. 14910 would give it authority to insure that equipment capable of causing harmful radio interference is properly designed before it reaches the market.

The Bureau of the Budget recommends enactment of H.R. 14910.

Sincerely yours,

WILFRED H. ROMMEL,  
*Assistant Director for Legislative Reference.*

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.15)), a bill identical to H.R. 14910 Please consider the views expressed herein as also representing views of this Department concerning H.R. 14910.

Sincerely,

PEDRO R. VAZQUEZ  
(For General Counsel.)

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, first 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, Tex., 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 U.S. 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 noncompliance 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 U.S. 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.

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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.*

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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 Commissioner 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.*

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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 manmade 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.*

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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 Commission 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.

#### CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 2 of Article XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (new matter is printed in italics, existing law in which no change is proposed is shown in roman):

### COMMUNICATIONS ACT OF 1934, AS AMENDED

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#### TITLE III—PROVISIONS RELATING TO RADIO

##### PART I—GENERAL PROVISIONS

\* \* \* \* \*

##### 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.*

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