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In the Supreme Court of Canada

IN THE MATTER OF A REFERENCE AS TO THE JURISDICTION OF
PARLIAMENT TO REGULATE AND CONTROL
RADIO COMMUNICATION

FACTUM

On behalf of the Attorney-General of Canada

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PART I

STATEMENT OF FACTS

This is a reference by the Governor in Council to ascertain the jurisdiction of Parliament to regulate and control radio communication. Two questions are asked, 10 namely:—

1. Has the Parliament of Canada jurisdiction to regulate and control radio communication, including the transmission and reception of signs, signals, pictures and sounds of all kinds by means of Hertzian waves, and including the right to determine the character, use and location of apparatus employed?
2. If not, in what particular or particulars or to what extent is the jurisdiction of Parliament limited?

The Minute of Council (Case, p. 3) recites that the Government of the Province of Quebec has questioned the jurisdiction of Parliament to regulate and control 20 radio communication and recites further certain facts and refers to certain documents relative to the development and use of radio, which were considered to be of importance. The documents so referred to are printed as an Appendix to the Case.

The development of radio is now a matter of common knowledge. About 1873, Clerk Maxwell, an English mathematician, arrived by means of a mathematical analysis at the conclusion that high-frequency, alternating currents flowing

in a circuit would give rise to electro-magnetic waves in the surrounding space, and that these waves would travel at a velocity of 300,000 kilometers per second which is the velocity of light. In 1887, Heinrich Hertz, a German physicist, first detected experimentally the existence of these waves which are now used in radio communication and take their name from his discovery.

About 1895, Marconi demonstrated that intelligible, coded signals could be flashed through space by means of these waves. The invention was first employed for communication with ships at sea and then to the problems of trans-oceanic communication. It was only about 1920 that "broadcasting" commenced. The
 10 term "broadcasting service" is defined by the Regulations to the International Radiotelegraph Convention 1927, as "a service effecting the dissemination of radiotelephonic communications intended to be received by the public, either directly or through the medium of relay stations" (Appendix, p. 89).

In 1906, the first international wireless convention was held at Berlin (See Supplement to Appendix). Thirty countries participated. In 1912, a second international convention was adopted by 43 nations at a conference in London (See Supplement to Appendix). The third conference was to have been held in 1917, but it did not occur until 1927 when it was held at Washington. A fourth conference is planned for Madrid in 1932.

20

International Convention, 1927

This Convention (Appendix, p. 80) which is now in force between practically all of the nations of the world, defines "radio communication" as "the wireless transmission of writing, signs, signals, facsimiles and sounds of all kinds by means of Hertzian waves" (Appendix, p. 80). The principal objects of the Convention and Regulations annexed thereto are:—

- (a) The division of that part of the electro-magnetic spectrum which is capable of use for radio transmission into bands of frequencies which are allocated to particular services, namely, point to point communication, ships and aircraft, navigation, broadcasting, experimentation, etc.;
- 30 (b) The classification of waves according to type and the determination of the type to be used for each purpose;
- (c) The establishment of common rules for international communication;
- (d) The control by means of national licensing systems of all transmitting apparatus;
- (e) The establishment of national standards for the measurement of radio waves and securing adherence to such standards.

Important provisions of the Convention are as follows: International service is defined to mean "a radio communication service between a station in one country and a station in another country, or between a land station and a mobile station which is outside the limits of the country in which the land station is situated, or between two or more mobile stations" (Art. 1; Appendix, p. 81). It is specifically provided that an internal or national radio service which is capable of causing interference with other services outside the limits of the country in which it operates is considered as an international service from the viewpoint of interference (Art. 1; Appendix, p. 81). The Government is obligated to see to it
 10 that such a station is operated according to the provisions of the Convention (Art. 2, sec. 1; Appendix, p. 81). It is provided that "all stations, whatever their object may be, must, so far as possible, be established and operated in such manner as not to interfere with radioelectric communications or services of other contracting governments and of individual persons or private enterprises authorized by those contracting governments to conduct a public radio communication service" (Art. 10, sec. 2; Appendix, p. 84). The International Bureau of the Telegraph Union, having its office at Berne, is charged with the duty to collect, co-ordinate and publish information relative to radio services (Art. 16; Appendix, p. 85).

There is a provision in the Convention that each contracting government agrees
 20 to take necessary measures to connect the international radio service with the general communication system of its country (Art. 7; Appendix, p. 83). Each government is obligated to propose legislation to enforce the Convention (Art. 2, sec. 2; Appendix, p. 82).

In addition to the twenty-four articles of the Convention, there is a set of General Regulations which have the same force and become effective at the same time, as the Convention (Art. 13, sec. 1; Appendix, p. 84). The Regulations provide in the first place that "no radioelectric sending station shall be established or worked by an individual person or by a private enterprise without a special licence issued by the government of the country to which the station in question is subject"
 30 (Reg. 2, sec. 1; Appendix, p. 90). The choice of apparatus is to be unrestricted, provided the waves emitted comply with the Regulations (Reg. 3; Appendix, p. 90), and the Government must assure itself "that the frequency meters (wave meters) used in the adjustment of the sending apparatus are calibrated as accurately as possible by comparison with their national standard instruments" (Reg. 3, sec. 2; Appendix, p. 91). Waves emitted by a station must be maintained upon its authorized frequency as exactly as the state of the art permits (Reg. 4, sec. 2; Appendix, p. 92). The width of a frequency band occupied by the emission must correspond reasonably with technical progress "for the type of communication concerned" (Reg. 4, sec. 4; Appendix, p. 92).

Radio waves are classified in two principal classes, namely, class A, continuous waves, and class B, damped waves. Class A is again divided into types A-1, A-2, A-3 (Reg. 4, sec. 1; Appendix, p. 91). Various provisions are to be found in the Regulations relating to the use of these various types in particular services (Regs. 16, 26, 27, 28, 31; Appendix, pp. 113, 126, 127, 130).

Article 5 of the Regulations provides for the allocation of bands of frequencies to various services. The range of frequencies mentioned therein is from 10 kc/s to 60,000 kc/s (Appendix, pp. 94-95). It will be observed, however, that practically no allocation is made of that part of the spectrum over 30,000 kc/s and one reason 10 is that somewhere in this range, probably about 40,000 kc/s, the electro-magnetic wave acquires certain of the characteristics of light. It is obstructed, for example, by any physical object and it is, therefore, in the present state of the art, of little use in radio communication. The table of allocation and uses applies to all new stations and services and the countries agree that they will adapt all existing stations thereto with the least practicable delay (Reg. 5, sec. 3; Appendix, p. 92).

It will be seen that the spectrum is divided into quite a large number of bands. Each of these bands, however, falls within one of the following classes: fixed services, by which is meant point to point communication by telegraph or telephone; mobile services, which refer to ships and aircraft stations; broadcasting; navigation 20 services, radio beacons, etc.; experimental and amateur stations.

The first column of the table fixes the limits of the various bands in kilocycles per second, and the second column affords merely an alternative method of designation, namely, in wave lengths instead of kilocycles per second. The wave length in meters is the quotient obtained by dividing the number 300,000 (the known speed in kilometers of the electro-magnetic wave) by the frequency expressed in kilocycles per second (Reg. 4, sec. 1; Appendix, p. 92).

It is provided further that in cases where frequency bands are assigned to a specific service, stations engaged in that service must use frequencies sufficiently remote from the limits of these bands so as not to produce serious interference with 30 the working of stations engaged in services to which are allocated immediately neighbouring frequency bands (Reg. 4, sec. 5; Appendix, p. 92).

It is provided that each government "may assign any frequency and any type of wave to any radioelectric station under their authority upon the sole condition that no interference with any service of another country results therefrom" (Reg. 5, sec. 1; Appendix, p. 92).

The Regulations provide further for the certification of operators (Reg. 7; Appendix, p. 97); for a common procedure in effecting communication in certain services, particularly in connection with ships at sea (Regs. 9, 10, 13, 14, 19, 23, 24, 25, 26, 29; Appendix pp. 101 et seq.); prevention of interference with signals (Reg. 40 11; Appendix, p. 105); hours of service (Reg. 20; Appendix, p. 122); wave lengths

or frequencies to be used in particular services (Regs. 5, 16, 17, 27; Appendix, pp. 92, 113, 114-116, 127); special services including time signals, direction-finding stations, radio beacons, etc. (Reg. 31; Appendix, p. 129).

North American Short Wave Agreement, 1929

A treaty between Canada, United States, Cuba and Newfoundland, came into force on the 1st of March, 1929, and related to the assignment of high frequencies or "short waves" to particular services and the division of these frequencies or channels between the several countries (Appendix, p. 141). This treaty relates to the band of frequencies from 1500 kc/s to 6000 kc/s. The range of these waves
 10 does not ordinarily exceed 2,000 miles so that the North American countries alone were interested in this agreement. It was agreed that the channels should be of certain widths in frequencies, ranging from 4 to 15 kc/s, and by this means the band was divided into 704 channels. Certain of these were assigned to mobile services, others to experimental and amateur uses and a large number to general communication services. This assignment was effected by Appendix No. 1 (Appendix, p. 144) to this North American Convention and followed the lines laid down in the International Agreement, 1927, and particular channels were assigned to each of the several countries, this assignment being effected by Appendix No. 2 (Appendix, p. 145). The principle was expressly recognized that higher frequencies have a greater
 20 range than the lower frequencies and it was agreed that in the case of channels below 3,500 kc/s there would not normally be interference between stations a thousand miles apart. In the case of frequencies above 3,500 kc/s, however, it was agreed that a distance greater than 1,000 miles should separate stations operating on the same channel (Appendix, p. 141). This principle also was recognized in the International Convention, 1927 (Appendix, p. 95, Note).

Safety of Life at Sea Convention, 1929

Reference should also be made to the International Treaty relating to the safety of life at sea which provides for the compulsory equipment of ships with radio apparatus (Appendix, p. 155). This Convention was signed by Canada and by
 30 most of the principal countries comprising the British Empire as well as the principal foreign maritime nations, but has not yet been ratified by Canada.

Other International Arrangements

In addition reference should be made to an international arrangement between Canada and the United States for the operation of emergency ship calls on a wave length of 715 meters, and to a certain international arrangement with reference to the exchange of communications between amateur experimental stations (See Supplement to Appendix).

Use of "Broadcasting" Channels in North America

Negotiations have been entered upon between Canada and the United States with the object of dividing between the two countries the total number of channels (96) in that part of the spectrum represented by frequencies of 500 kc/s to 1,500 kc/s appropriated by the International Convention of 1927 to the service of broadcasting. Authority to negotiate, in the case of Canadian representatives, was given by His Majesty the King on the request of the Governor in Council (Appendix, pp. 202, 203). No agreement has as yet been made, but at present Canada is making use of 17 channels, of which six are being used exclusively by Canada and 10 11 by both countries.

Canada-United States Arrangement re Aircraft

In 1930, an informal arrangement was made between Canada and the United States in connection with the use of radio by aircraft (Appendix, p. 152). Each country in substance agrees not to permit the use of certain frequencies so that they may be assigned by the other country for use by and in connection with its aircraft.

Recommendations of Imperial Conference, 1930

A recommendation was adopted at the Imperial Conference of 1930 in favour of the establishment of an Empire broadcasting service (Appendix, p. 176).

20

Royal Commission on "Broadcasting"

In December, 1928, a Royal Commission was appointed to examine into the broadcasting situation in Canada and to make recommendations with reference to the future administration, management, control, etc. After an extensive enquiry carried on in various European countries as well as in Canada and the United States, the Commission reported on September 11, 1929 (Appendix, p. 179). The principal recommendation was that broadcasting should be carried on by one national company by means of a system of high power stations, the nucleus of which should be seven 50,000-watt stations. The Commission referred to the inadequacy of the number of channels available for broadcasting in Canada, namely, six exclusive and 30 eleven shared channels. The Commission enquired into broadcasting in the other principal countries of the world and their report shows that, in practically all countries, broadcasting is carried on as a national undertaking by national enterprise or by private enterprise under a national licensing system or by a combination of the two (Appendix, p. 191).

Radiotelegraph Act and Regulations

The Radiotelegraph Act, R.S.C. 1927, chap. 195, has been in force since 1913. The first Dominion enactment relating to radio was the Wireless Telegraph Act, 1905 (4-5, Ed. VII, ch. 49). The principal purpose of this legislation was to prohibit the use of "wireless" as it was then called, except under licence. This Act was consolidated as part 4 of the Telegraphs Act, R.S.C. 1906, ch. 126. The statute now in force, which is substantially the same as that enacted in 1913 relates to "any wireless system for conveying electric signals or messages including radio-telephones" (Sec. 2 (d); Appendix, p. 3). The statute requires all radio apparatus
 10 to be licensed (Sec. 6; Appendix, p. 5). There is provision for the compulsory equipment with radio apparatus of certain ships (Sec. 7; Appendix, pp. 5-6). There is provision for accession by the Governor in Council to any international convention (Sec. 3 (c); Appendix, p. 4), and for censorship in case of emergency (Sec. 3 (d); Appendix, p. 4). Then there is provision for ministerial regulations. (Sec. 4; Appendix, p. 4). These provide licence fees and the following forms of licences:—

- Limited coast station licence; Appendix, p. 36.
- Public commercial licence; Appendix, p. 41.
- Private commercial licence; Appendix, p. 46.
- 20 Experimental licence; Appendix, p. 51.
- Amateur experimental licence; Appendix, p. 56.
- Ship licence; Appendix, p. 60.
- Training school licence; Appendix, p. 66.
- Private commercial broadcasting licence; Appendix, p. 70.
- Amateur broadcasting licence; Appendix, p. 75.
- Private receiving licence; Appendix, p. 34.

These licences and the regulations relating thereto are concerned with the apparatus employed, its location and the wave length or frequency which is permitted to be used. Then there are regulations for determining ship equipment,
 30 watches to be kept, and for the examination and certification of operators.

Radio Communication in Canada

Communication by means of radio is carried on in Canada on an extensive scale as is shown by the Minute of Council referring the questions for the opinion of the court. Radio, it appears, is being used in Canada as follows:—

(a) Coast stations are established to provide radio facilities whereby any ship within 500 miles of the Canadian coast can establish instant contact with the shore. Constant watch, 24 hours a day and 365 days a year is maintained at practically

all of the stations. The coast stations consist of three chains, one extending from Vancouver to Prince Rupert on the Pacific coast, another from Port Arthur at the head of the Great Lakes to Newfoundland and Labrador, and the third from Port Churchill to the eastern entrance to Hudson Straits. The 60 stations forming this system are owned by the Department of Marine. Of these, 41 are operated by the department itself, while the remaining 19 are operated by the Canadian Marconi Company under contract.

In addition, a long distance station owned and operated by the Canadian Marconi Company is maintained at Louisburg, N.S., for communication with ships at 10 long range. This station can maintain communication with ships at a distance of approximately 2,000 miles.

(b) Direction-finding stations to the number of 12 are owned and operated by the Department of Marine on the Atlantic coast. There are 7 on the Atlantic coast, 4 on Hudson Bay and Strait and one on the West coast. These stations give bearings to any ship upon request.

(c) Radio beacons to the number of 17 are owned and operated by the Department of Marine. There are 9 on the East coast, 5 on the Great Lakes and 3 on the West coast. Any ship fitted with direction-finding apparatus can take her own bearings from stations of this class which transmit signals automatically once every 20 hour, day or night, and continuously during foggy weather.

(d) Radiotelephone stations to the number of 8 are owned and operated by the Department of Marine on the Pacific coast for communication with small craft and for life saving purposes.

(e) Special services including weather forecasts, storm warnings and time signals are also transmitted by the above mentioned stations for the benefit of ships at sea.

(f) Ship stations. There are 319 ships of Canadian registry fitted with radio apparatus. The Radiotelegraph Act calls for the compulsory fitting of certain passenger vessels with such apparatus.

30 (g) Public commercial stations to the number of 46 are licensed, although 9 only are as yet established for operation. These are designed for handling paid traffic between fixed points. The principal ones in operation are those operated by the Canadian Marconi Company for communication with New York, England and Australia.

(h) Private commercial stations to the number of 131 are licensed. These are established for communication with isolated points not reached by telegraph or telephone.

(i) Experimental and amateur experimental stations to the number of 700 are licensed.

(j) The Department of National Defence maintains 104 stations and in addition operates 10 stations in the Northwest Territories on behalf of the Department of the Interior. It also operates 21 stations for airmail and forestry and has 20 aircraft fitted with radio.

(k) Broadcasting stations to the number of 67 physical stations are licensed in Canada having power rating from 50 to 5,000 watts. Owing to the limited number of frequencies or channels available for broadcasting in Canada (6 exclusive and 11 shared with the United States out of a total of 96 as explained above) 2 or 3 stations in the same centre may be required to share time and frequency. In assigning a channel to any station, the matter of geographical separation and power employed have to be considered. It is the practice, for example, not to assign the same frequency or channel to two 50 watt stations which are less than 200 miles apart or to two 5,000 watt stations which are less than 1,800 miles apart.

(l) Receiving sets to the number of 472,531 were licensed by the Dominion in the nine months ending December 31, 1930.

PART II
ARGUMENT

Peace, Order and Good Government

The Attorney-General submits that the regulation and control of radio communication is not a subject which falls within any of the classes enumerated in section 92 of the B.N.A. Act, because of the nature and essential characteristics of the subject matter. Pursuing the well established rule of construction, if the subject matter of legislation cannot find a place in the enumeration of section 92, it becomes a Dominion matter: *Citizens' Insurance Co. v. Parsons* (1881) 7 A.C. 96 at p. 109; 10 *Russell v. the Queen* (1882) 7 A.C. 829 at p. 836; *Great West Saddlery Co. v. The King* (1921) 2 A.C. 91, at pp. 99, 100. The nature and characteristics of the subject matter here are such that its regulation and control cannot be in pith and substance a matter falling within section 92. These may be described as follows:—

(a) The electro-magnetic wave is capable of pervading the entire known terrestrial space. The wave diminishes in force as its circumference increases and as a result of the absorption that takes place as it encounters non-conducting matter, but it is incapable of being restricted in effect within any given territory, either as a means of communication or as a cause of interference with other radio waves of a like frequency. For present purposes a distinction must be made between the 20 service range which is the distance it can usefully carry (and this range of course depends upon the sensitivity of the receiver), and the interference range which is the distance it can carry and interfere with another wave. The latter range is several times greater than the former.

(b) While it is true that the range varies to some extent with the power which is employed to set it in motion, the variation is not constant; a wave propagated by means of a certain power may at one time be perceptible at a distance many times greater than at another time.

(c) Communication depends entirely on the transmitter and receiver being in tune, that is to say, set at the same frequency and the transmitter must have the 30 exclusive use of a frequency throughout the entire range of his wave. Regulation by international agreement is the only method by which the necessary result can be attained. This is effected by the allocation of bands of frequencies or channels to particular services and by the assignment of channels within each of these bands amongst the transmitters.

(d) The "ether" (whether the hypothesis of its physical existence as a medium for the transmission of electro-magnetic waves be accepted or whether the expression be regarded as merely descriptive of the range of electro-magnetic waves as extending throughout known terrestrial space, or whether it be regarded as referring to that band of frequencies which are known to be useful in radio communication) has been definitely appropriated by the action of the nations of the world, including Canada, to purposes which in no sense can be regarded as provincial, as, for example, falling to be regulated under the heads "Local Works and Undertakings" or "Property and Civil Rights in the Province" or "Matters
10 of a Merely Local or Private Nature in the Province". See *United States v. American Bond and Mortgage Co.*, 31 Fed. (2nd) 448, at pp. 450-455; *Station WBT Inc. v. South Carolina Tax Commission*, decided 1931; *General Electric Co. v. Federal Radio Commission*, 31 Fed. (2nd) 630, at p. 631; *Federal Radio Laboratory v. Federal Radio Commission*, 36 Fed. (2nd) 111, at pp. 113-114; *White v. Federal Radio Commission*, 29 Fed. (2nd) 113.

By reason of the nature of radio and the uses to which it has been put in Canada, it falls to be regulated by the federal or national legislature rather than by the provincial: *A.-G. for Ontario v. A.-G. for Canada (Local Prohibition Case)* (1896) A.C. 348, at p. 361; *Lawson v. Interior Tree Fruit Committee of B.C.* decided
20 by Supreme Court, February, 1931.

The Attorney-General submits that the subject matter is of national importance and falls within the legislative powers of the Dominion as relating to the peace, order and good government of Canada. If it should be held that the regulation of radio is a matter which is not specified among the enumerated subjects of legislation, Parliament has power to legislate because the matter concerns the peace, order and good government of the Dominion (*Local Prohibition Case* (1896) A.C. 348, at p. 360).

Section 92, Subsection 10 (a)

The Attorney-General further submits that communication by radio falls within
30 the exclusive jurisdiction of Parliament as a result of the combined effect of subsection 29 of section 91, namely,

"Such Classes of Subjects as are expressly excepted in the Enumeration of Classes of Subjects by this Act assigned exclusively to the Legislatures of the Provinces".

and subsection 10 (a) of section 92:—

"Local Works and Undertakings other than such as are of the following classes:—

(a) Lines of Steam or other Ships, Railways, Canals, Telegraphs, and
40 other Works and Undertakings connecting the Province with any other or others of the Provinces, or extending beyond the Limits of the Province".

Parliament has jurisdiction over these matters as though they were enumerated in section 91. *Montreal v. Montreal Street Railway* 1912 A.C. 333 at p. 342.

Apparatus for transmitting and receiving messages by means of electro-magnetic waves constitutes a "telegraph" connecting the provinces or extending beyond the limits of a province. The history of the word "telegraph" shows that from the first invention of semaphores the word was applied to a variety of contrivances which by signals perceptible, sometimes by the sense of sight and sometimes by the sense of hearing, conveyed intelligence to great distances. See *A.-G. v. Edison Telephone Company*, 6 Q.B.D. 244, at pp. 249, 249-250, 254.

10 It is submitted that paragraph (a) extends to such a systematic method of communication as is employed in the case of radio whereby the transmitter and the receiver operate in tune.

The potential power of this system of communication to reach outside of the province affords jurisdiction to Parliament, notwithstanding an intention on the part of the transmitter in a particular case to reach only receivers within the province: *City of Toronto v. Bell Telephone Co.* (1905) A.C. 52 at pp. 58, 59.

In Canada the "ether" has been appropriated to a general communication system, international and interprovincial in scope. By reason of this appropriation the subject is Dominion and any local use must fall to be regulated as an incident
20 in the Dominion system or scheme, just as a local telephone or rail system which is part of a Dominion-wide system would be so regulated; *Luscar Collieries v. McDonald* (1927) A.C. 925, at p. 932; *City of Toronto v. Bell Telephone Co.* (1905) A.C. 52, at p. 59.

Commerce, Defence and Navigation

The Attorney-General further submits that Parliament has jurisdiction over the subject matter as a result of heads:—

- "2. Regulation of Trade and Commerce";
- "7. Militia, Military and Naval Service and Defence";
- "9. Beacons, Buoys, Lighthouses and Sable Island";
- 30 "10. Navigation and Shipping."

The special adaptability of radio and its actual adaptation in Canada to the purposes of international and interprovincial trade, defence and navigation, brings the entire subject of transmission and reception within the jurisdiction of Parliament. The subject matter is by its very nature indivisible since all communication carried on by means of one "medium."

Treaty Power, Section 132

The Attorney-General further submits that Parliament has full power to regulate and control the subject matter by virtue of section 132 of the British North America Act, which reads as follows:—

“ 132. The Parliament and Government of Canada shall have all Powers necessary or proper for performing the Obligations of Canada or of any Province thereof, as Part of the British Empire, towards Foreign Countries arising under Treaties between the Empire and such Foreign Countries.”

The Washington Convention of 1927 is a treaty between the British Empire
10 and foreign countries, and creates an obligation to regulate and control radio communication throughout Canada in the fullest possible sense. Furthermore, the North American Treaty respecting the distribution of “short wave” channels is a treaty which imposes an obligation on Parliament to implement. *Aeronautics Reference* (1930) S.C.R. 663, at pp. 674-681, 685-693, 696-699, 705-708, 719-720; *Rex v. Stuart* (1925) 1. D.L.R. 12.

Weights and Measures

The Attorney-General further submits that extensive powers can be invoked to support Dominion regulation of radio as a result of the subject head of section 91: “17. Weights and Measures.” The establishment of a national standard for
20 wave or frequency measurement is an obligation under the International Convention of 1927 (Reg. 3, sec. 2; Appendix, p. 91). The success of any radio communication system depends on the establishment of a national standard for the measurement of waves and frequencies and on the adherence of transmitters to such standard. All transmitting stations must be regularly checked by reference to the national standard to secure that the standard is being adhered to.

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