

RADIO INTERFERENCE AS A TORT

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You are sitting quietly before the fire at your week-end place in the country. The radio plays soothingly as you rest from your day's strenuous exercise on the river. You have it tuned to a distant station and the announcer states the next number. You settle yourself with pleasurable anticipation as Lucrezia Bori takes the air. She begins an aria from Puccini—ah, the exquisite sweetness of her voice. Suddenly there is a loud swish followed by the strident voice of some other announcer. Bori's lovely notes fade and above the din you hear instead some raucous explanation of the merits of Goo-Goo as a bath soap. High powered Station BLAH, operating under license just two miles down the river, has opened up with its Saturday night "Cleanliness Hour." Nothing you can do with the dial will rectify matters. Goo-Goo drowns out everything. And yet you have the finest and most modern set on the market. The next day you see your lawyer. "It is invariably that way" you exclaim to him. "What good is a golden voice when all you get from it is soap? It's the same with all the neighbors. I've protested to Station BLAH to no avail. What can be done about it?" That is the question I intend to consider in this article as I take the place of that lawyer.

At the outset it must be realized that Station BLAH operates under a grant of license by the Federal Radio Commission. And that means that this station has passed the test of public interest. Section 9 of the Radio Act of 1927 provides that a broadcasting license will be granted "if public convenience, interest or necessity will be served thereby." But the Act contains no definition of these words, and their meaning, while certainly open to the criticism of indefiniteness and uncertainty, must be sought elsewhere. It has been stated that exact definition is a legislative impossibility,¹ but whether this is so or not, the experience gained in regard to such phrases as "interstate commerce," "unfair competition" and "due process of law" justifies leaving that definition for the judiciary to determine under particular com-

¹ State v. Darazzo (1922) 97 Conn. 728, 734, 118 Atl. 81, 83.

binations of fact. However, we do know that the convenience, interest and necessity of the listener and not the broadcaster is the basis of the privilege,² and that the service rendered to the public as distinguished from that to any individual or group of individuals is the test.³

While the authorizing body cannot be said to approve of the objectionable feature herein complained of, the interest of the public is considered by that body to be served by the operation of this offending station. The objectionable feature is not the subject matter of the program but the effect of its dissemination. Whatever our client's aversion to discourses on soap and preference for mezzo sopranos, his complaint lies not in the violation of his tastes but in the subjugation of his freedom to exercise them. Were the public as a whole subjugated to this control over its radio reception, its interest would most certainly be outraged and the remedy would lie in license revocation. But the public as a whole is not so subjugated. Other and more distant members of it tune their sets at will to receive to the exclusion of all else, whatever is their preference on the air. The convenience, interest and perhaps even necessities of those members are served in that an additional program is placed at their disposal while their power of selection is not thereby impaired.

But our client is not absolutely alone in his despair. He states that all his neighbors suffer similarly. Perhaps before proceeding further in the determination of the wrong done and the remedy to be sought in its rectification it might be well to list the evidence. Sifted from its narrative form we have as follows:

(1) A group of people living on their own property located within the immediate vicinity of a broadcasting station and having installed there their various types of receiving sets, including the most modern and best on the market.

(2) The licensed high power broadcasting by that nearby station in conformity with its designated power, time, wave length, etc.

(3) The complete and invariable interruption and inter-

² In the statement made by the Federal Radio Commission August 23, 1928, relative to public convenience, interest or necessity, it was stated that "the Commission is convinced that the interest of the broadcast listener is of superior importance to that of the broadcaster."

³ *Utilities Commission v. Toledo, St. L. & W. R. R.* (1919) 286 Ill. 582, 122 N. E. 158.

ference with that group's reception of radio programs from other stations, which operate on adjacent, or nearly adjacent wave lengths, with protest against the ensuing noise and involuntary and undesired reception of the near-by station's program.

These facts may seem sufficient to outline the tort and place the blame, but further scrutiny of the law whereunder and the means wherewith to present the case and gain the remedy may well leave the legal adviser in considerable doubt as to their adequacy.

That scrutiny must be directed to the scientific features of radio interference. The bachelor lawyer is not necessarily handicapped by reason of his bachelordom in advising as to grounds for divorce. The lawyer of integrity is perhaps better qualified to advise in criminal matters than is his less scrupulous brother. But the lawyer who is not versed in the science and theories of radio had best call in the technician and the engineer before he attempts to give advice on radio matters. We are concerned with interference, with proximate cause and with available remedies. We must consider the types and kinds of interference, choose that which is applicable to the facts and link it with the suspected source of trouble before we can advise with any conviction as to the likelihood of remedy.

As is now pretty generally understood, radio communication is based on the transmission and reception of what are known as "electromagnetic waves" through the ether.⁴ The ether is an hypothetical medium simply representing a conception which scientists find convenient in order to explain certain electrical phenomena. If it does exist, it is apparently existent everywhere, in the earth as well as in the air. In a radio communication system, as in a telephone system, there are three component parts, a sending apparatus, a medium through which the message is sent, and a receiving apparatus. The receiving apparatus is in a general way a miniature duplicate of the sending apparatus, with its parts in the reverse order. The hypothetical ether serves as the wire connecting the two. But while tele-

⁴ See the excellent summary of the principles of radio science contained in the report of the Standing Committee on Radio Law of the American Bar Association (1929) 54 A. B. A. REP. 404.

phone wires can be increased without limit, there is only one medium through which radio communication can take place and all radio communications occurring at any given time are being transmitted through that one medium. Thus the successful transmission of radio communications by two or more stations at any one time is possible only when the electromagnetic waves used by the several stations differ so in character that a receiving set can, by tuning, select the desired communication and exclude the others, or when the several stations are so far apart and their powers so low that the waves sent by one do not cause trouble in the regions served by the others. The respect in which waves differ in character, so that a receiving set can distinguish between them is either in the number of individual waves per second, called frequency, or in the length from crest to crest of each wave, called wave length. These two terms are convertible and refer in the last analysis to the rate of oscillation of the electrical current running back and forth between the antenna and the counterpoise of the transmitting station.⁵

When broadcasting is done, sound vibrations of the air, by a process similar to that of the telephone, are converted into electrical vibrations of exactly the same frequencies as those of the original sounds. These electrical vibrations are impressed on the carrier wave and cause variations in it corresponding with mathematical exactness to the original sound vibrations in the air. At the receiving end they are converted back. An orchestra playing into the microphone of a broadcasting station causes a very complex series of impressed waves above and below the carrier wave, corresponding to all the notes played and to all the overtones and harmonics, as well as to the noises peculiar to the particular instruments. All these will be accurately

⁵ When we speak of a station having a certain wave length we are referring to its carrier wave. Intelligible communication can be transmitted by interrupting the carrier wave but broadcasting is accomplished by using the uninterrupted and continuous carrier wave as the vehicle of transmission. If nothing but the continuous carrier wave were transmitted there would be nothing which a receiving set could reproduce, but when the carrier wave is made the vehicle of transmission a complex phenomenon occurs which results in the creation of a small band of waves on both sides of the carrier wave. The "space" in the ether occupied by these side bands is called the station's "communication band."

reproduced by the receiving set, but only insofar as interference is avoided.⁶

The various types of interference springing from radio sources are usually referred to as heterodyne, cross talk, blanketing and harmonics. Heterodyne interference manifests itself in the form of a steady, or nearly steady, note varying from a low growl to a high whistle. It generally results from reception by the receiving set of two or more carrier waves having frequencies which are too close together. Such waves will produce a note having a pitch corresponding exactly to the amount of separation between them.⁷ But the interaction in the receiver of the carrier waves from two broadcasting stations operating in the same broadcasting band or channel is not the sole source of heterodyne interference. A long-recognized source is the so-called oscillating, or radiating, receiver.⁸

⁶ In radio parlance the term "interference" is commonly used to define any electrical disturbance causing unwelcome sound in the receiving set which prevents or impairs the reception of desired sound. Its source is always electrical but it may have varying causes which may be classified as atmospheric, non-radio and radio. The disturbing noise produced by interference caused by atmospheric conditions is called static, which, though often cursed, constitutes but a small portion of all disturbances to radio reception. Non-radio interference comes from non-radio electrical devices such as lighting systems, trolley lines, X-ray machines, elevator switches, power plants and lines and the like. Interference springing from radio sources, while generally thought of as caused by the transmitting apparatus, may also be caused by the receiving apparatus in use or even by some other outside receiving apparatus.

⁷ A receiving set receiving simultaneously carrier waves of 1,000 kilocycles and 999 kilocycles will produce a 1 kilocycle, or 1,000 cycle note (approximately high "C"). The farther apart in the broadcast band the two waves are, the higher in scale is the note produced. Sound vibrations which can be detected by the human ear vary from about 16 cycles a second to 15,000 cycles a second. To translate this to sound terminology, it may be stated that a piano keyboard has a range from 27 cycles a second to about 4,100 cycles a second. Where the waves simultaneously received are 10 kilocycles or more apart, *i. e.*, in separate though adjoining communication bands, the manifestations of heterodyne interference consequently become inaudible and cease to be of concern.

⁸ Radio-frequency impulses which are received in a radio set are at a pitch far beyond the range of the human ear. The speech, music or other signal is taken from a carrier wave and "detected" to make it audible. While a radio-frequency impulse cannot be heard, the beat note, *i. e.* the difference between two such impulses, may well be of audible range, and is often heard as the growling or whistling noise of heterodyne interference. Beat notes may be produced on a receiving set by the joint operation of (1)

Cross talk interference is also due to the reception of two or more carrier waves at the same time. As its name implies, it manifests itself in the dual reception of programs. It may be produced by the operation of two stations in the same channel, particularly in large portions of the intervening area between the two stations. This becomes an increasingly serious matter with a decreasing geographical separation. But with cross talk the responsibility more often lies with the receiver than with the transmitter.⁹

Blanketing is to some extent due to the limitations of receiving sets. But it is also due to the location and power of transmitters. An undesired station on a near-by channel may be received with so strong a signal as to drown out a desired station on the channel to which the listener has tuned his set. Because of this, stations located in thickly inhabited communities cannot safely be permitted to have high or even substantial power. Even a low power station creates a strong signal strength over an area within a radius of two or three miles. In that area the station's wave is unduly "broad" and under certain circumstances may even cover the entire dial.

Harmonic interference is caused by the simultaneous transmission of radio communication by stations whose frequencies are multiples. For example, a station on 600 kilocycles may cause harmonic interference with stations simultaneously operating on 1200 kilocycles, 1800 kilocycles, 2400 kilocycles, etc.

two broadcasting stations, (2) one broadcasting station and an outside radiating receiving set, (3) one broadcasting station and the oscillations of your own receiving set, (4) your own and an outside receiving set, (5) two outside radiating receiving sets.

The types of receiving apparatus which oscillate and produce radio-frequency impulses. These include regenerative sets, sets containing oscillating tubes such as superheterodyne sets, and radio-frequency amplifier sets when out of adjustment. Thus almost every receiving set is potentially a source of this type of beat note or heterodyne interference. With modern receiving sets, this source of interference is not as serious as it once was.

⁹ Radio receivers, in the present state of the art, cannot be constructed so as to receive the programs of one broadcasting station on a given channel and exclude the programs of a broadcasting station on a closely adjacent channel, even with the 10 kilocycle separation between channels now in force, if the signal coming from the latter station is substantial in proportion to that of the former. An ideal receiving set would receive and reproduce all frequencies within a band of 10 kilocycles with equal strength and exclude all other frequencies. But no such receiver exists.

Contrary to the implication of its name, harmonic interference is not harmonious. It manifests itself in somewhat the same manner as does heterodyne interference, though its discordant noise is often much more unpleasant. Sometimes, because broadcasting stations do not always maintain the exact frequency of their assigned carrier wave, and the multiples of their actual frequencies vary accordingly, harmonic interference is intermittent.

From what has been said of these principles of radio science and causes of interference it is apparent that in the determination of the probable cause of the interruption of our client's reception of Lucrezia Bori's aria, much must rest upon opinion evidence. The invariable character of the interference, in all kinds of weather, would allow us to rule out static. The coincidences of the time of the interference with the beginnings of Station BLAH's actual broadcasts would allow us to discountenance non-radio sources. Our knowledge of the power used by Station BLAH, the frequency upon which it and the stations with which it interferes operate, together with the character of the noise produced by that interference would justify us in assuming that the type of interference received was blanketing. All the evidence points towards blanketing—caused by Station BLAH's broadcast within too great proximity to our client's week-end retreat and by the limitations of his receiving set. The opinion evidence of expert technicians would support our assumption.

Of these two causes of the blanketing it would seem that the former is the proximate cause.¹⁰ The blanketing is there to a certain extent no matter what receiving set is used, though, of course, it is more pronounced with some sets than with others. Furthermore, though the noise reaches the listener only when by the use of his receiving set he deliberately puts himself in a position to hear it, his receiving set may be thought of as merely an artificial extension of his natural sense of hearing.¹¹ It bears a relation to his ears similar to that which a telescope bears to his eyes.¹² His receiving set may be imperfect, just as his tele-

¹⁰ Beale, *The Proximate Consequences of an Act* (1920) 33 HARV. L. REV. 633.

¹¹ See note (1928) 26 MICH. L. REV. 919.

¹² Davis, LAW OF RADIO 116.

scope may not enable him to see in the dark, but the action of Station BLAH deprives him of his program selection power just as an eclipse prevents him from seeing at all. The imperfection of his set may contribute to his predicament, but the omission of electrical energy by the broadcasting station would seem to constitute its proximate cause.

The blanketing interference not only causes annoyance, inconvenience and exasperation—it renders useless in that vicinity his receiving set, perfect though that set may be. He has the finest and best receiving set on the market; the best that money can buy. But even if he could better it and protect himself against the blanketing by purchasing a better and more expensive set, it is difficult to see how a court could well require him to do so before intervening in his behalf.¹³

In *Cooke v. Forbes*,¹⁴ a manufacturer of cocoa matting used a delicate chemical to bleach his matting, which was then hung out on his own land to dry. Another manufacturer made sulphate ammonia, and the vapors escaping in the air combined with the bleacher's chemicals and blacked his mats. It was shown that if the cocoa mat maker had used another chemical just as good, or better, his mats would not have been affected. But it was held that he had the right to use any chemical he pleased which would not hurt anybody else, and that he had the right to have the air come to his lands pure and untainted. The case may be old but the principle still seems sound.

Certainly the doctrine of contributory negligence would not apply to prevent recovery, even though the blanketing interference is shown to be occasioned in part by reason of the imperfections of our client's receiving set. That doctrine has no application in an action seeking recovery for injury caused by a nuisance though other and additional damages of the same character are sustained through separate acts or omissions of the plaintiff.¹⁵

The characteristic feature of the situation with which we are confronted presents a conflict between individuals each of whom

¹³ *Cumberland Tel. & Tel. Co. v. United Electric Ry. Co.* (1894) 93 Tenn. 492, 524, 29 S. W. 104, 111.

¹⁴ (1867) L. R. 5 Eq. Cas. 166.

¹⁵ *Philadelphia & Reading R. R. v. Smith* (C. C. A. 3, 1894) 64 F. 679, 27 L. R. A. 131, 132.

is carrying on a legitimate activity. It is not a case of an obvious wrongdoer performing an act denounced by law, or custom, or good morals, to the injury of his neighbor. Station BLAH is in a lawful business within its own inherent rights. It is using its property for its own lawful purposes. Our client, in the peaceful enjoyment of his week-end retreat, is lawfully engaged in a proper and even popular occupation. There is lawful action on each side, and the question for determination is the relationship between them and whether one must yield if they cannot both stand together.

The situation is not novel in principle. It has arisen before and has given rise to the maxim "*sic utere tuo ut alienum non laedis.*" This maxim lies at the bottom of much of the common law of nuisances, one branch of which covers disturbing noises and has caused much judicial discussion.

The basic concept of nuisance embraces an interference with some specific right.¹⁶ The adverse act in itself is not necessarily wrongful, but the consequence is prejudicial to the person or property of another.¹⁷ It is an abuse or curtailment or annoyance in the enjoyment of legal rights.¹⁸ Since the interference which affects the radio listener comes to him as sound, the decisions dealing with noise annoyances become of interest. The cases dealing with noise nuisances are almost as numerous as the instrumentalities capable of producing sound. The barking and howling of dogs,¹⁹ the braying of a jack,²⁰ the ringing of bells,²¹ the loud playing of a phonograph,²² and the blowing of whistles²³ have all been held noise nuisances under the particular facts of each case.

"Nuisance by noise is emphatically a question of degree."²⁴ In our case the degree is of the highest—the soap program of

¹⁶ Note (1921) 23 A. L. R. 1081, 1098.

¹⁷ 10 Enc. Laws of Eng. p. 80.

¹⁸ Cooley, TORTS (3rd ed. 1906) 1174. Wood, NUISANCES (3rd ed. 1893) sec. 1.

¹⁹ Herring v. Wilton (1906) 106 Va. 171, 55 S. E. 546.

²⁰ *Ex parte Foote* (1901) 70 Ark. 12, 65 S. W. 706.

²¹ Soltau v. de Held (1851) 61 Eng. Rep. 281, 9 Eng. L. & Eq. 104; Davis v. Sawyer (1882) 133 Mass. 289.

²² Stodder v. Rosen Talking Machine Company (1922) 241 Mass. 245, 135 N. E. 251, 22 A. L. R. 1197.

²³ Omaha & N. Platte R. R. v. Janeczek (1890) 30 Neb. 276, 46 N. W. 478.

²⁴ Pope v. Peate (1904) 7 Ont. L. R. 207, 208.

Station BLAH drowns out all other sound. The fact that by turning off his receiving set the listener can dispense with the unwelcome program should not vary the application of the rule. The fiendish whistle tooter might just as well contend that objecting listeners should stop up their ears. The loud needle phonograph player might just as well contend that complaining neighbors should close their windows. Yet in *Stodder v. Rosen Talking Machine Co.*,²⁵ where a bill in equity was brought praying for an injunction against such playing and asking damages, the court granted the prayer, the master finding that the discomfort caused complainants was

out of proportion to the advantage accruing to the respondent in the playing of the machine as it is played over what would accrue to it if it were played in such a way that it could not be heard or appreciably heard in the petitioner's place of business.

The above quoted language, and indeed the holdings in most of the noise nuisance cases to be found, show that it is the unnecessary noise that is restrained. Dogs must be made to bark more softly, whistles to toot less shrilly and bells to be rung only when in the judgment of the court they are required. But Station BLAH cannot operate more softly. Until beam transmission reaches greater perfection it cannot direct the course of the electromagnetic waves which emanate from its broadcasting apparatus so that they will skip over our client's receiving set. But it can perhaps operate more efficiently. Its Goo-Goo program may blanket and drown out Lucrezia Bori, on the air over a wave length fairly close to BLAH's, by reason of existing broadcasting limitations, but through greater care and the installation of additional equipment, it might allow our client to pick up Lowell Thomas or at least Morton Downey, broadcasting on some wave length many channels away. If it is to abate entirely the nuisance of blanketing interference in receiving sets lying in the shadow of its transmitter, it may have to cease operation altogether.

Cases of vibration disturbances²⁶ might be considered as bear-

²⁵ N. 22 above.

²⁶ *Brede v. Minnesota Crushed Stone Co.* (1919) 143 Minn. 274, 173 N. W. 805, 6 A. L. R. 1092; *Lake Street Elevated Ry. Co. v. Brooks* (1899) 90 Ill.

ing on the matter. The operation of machinery so as to jar and shake the adjoining buildings to their injury and to the annoyance of their occupants is held to constitute a nuisance. But here again a distinction can readily be seen. Where the vibration attending the operation of the machinery is excessive, or where the operation of the machinery is contrary to the best interests of the public, an injunction will issue. But our blanket broadcasting is not excessive except within the receiving sets placed closely adjoining it, and it is not contrary to the best interests of the public, and in any case the blanketing attending the broadcasting well-nigh overhead cannot, in the present state of the broadcasting art, be entirely alleviated.

Were ours a case of out and out negligent operation the situation could be approached differently. In *Fields v. Skamania Light and Power Co.*,²⁷ the plaintiff alleged among other things that the plant and equipment of defendant company was of faulty construction and resulted in interference to plaintiff's radio reception. There was considerable testimony regarding this allegation, but the Commission stated that

the question is one which is difficult to definitely determine, and in view of this fact we would hesitate to issue an order of the nature prayed for, based merely upon the possibility that a modification of the electrical construction might improve radio reception.

In *Yamhill Telephone v. Electric Co.*,²⁸ the court near the end of its opinion says:

Plaintiff says that the defendant will connect its new power line at Amity with an old dilapidated line with a grounded system, which allows the electricity to escape through the ground, and turn 11,000 volts of electricity into the Amity Line, and electricity will escape into the earth and be transmitted to plaintiff's telephone system, causing a loud buzzing sound over the telephone wires and in the telephones to such an extent as to make it impossible to hear or understand a human voice over the telephone line, and

App. 173; *Hutchison v. International & G. N. R. R. Co.* (1909) 102 Tex. 471, 119 S. W. 85; *Cremidas v. Fenton* (1916) 223 Mass. 249, 111 N. E. 855; *Forty-Second Corporation, etc. v. Oregon Short Line R. R. Co.* (1909) 36 Utah 238, 103 Pac. 243.

²⁷ P. U. R. 1926 B. 721.

²⁸ (1924) 111 Ore. 57, 224 Pac. 1081, 33 A. L. R. 373.

wrongfully injure the plaintiff's telephone system. We can find no authority or excuse for defendant to turn such a quantity of electricity into a line in poor condition with a ground contact, where it will be conducted to plaintiff's telephone system to the injury of plaintiff's property. The defendant ought in equity and good conscience to bring the old Amity Line down to date, as it were, and metallicize it, or construct some mechanical device to prevent, as far as possible, the "conduction" of a electricity to plaintiff's telephone system.

With a knowledge of the present-day imperfections in radio broadcasting apparatus, it is unlikely that a court would demand, as in the *Yamhill* case, *supra*, that Station BLAH "construct some mechanical device" to prevent the blanketing interference. The imperfection exists to some degree in even the most carefully guarded broadcasting, and hence, the blanketing cannot be prevented. It is simply a condition that exists in the immediate vicinity of all powerful broadcasting stations; a condition which cannot by any known means be wholly eradicated.

But though a nuisance may result from negligence, negligence is really not involved in nuisance actions, either as essential to the cause of action or as a ground of defense. If a nuisance exists, the fact that due care was exercised and due precautions were taken against the annoyance or injury complained of is no excuse.²⁹ Station BLAH may be the most efficient broadcasting station in the country, and may be doing everything possible to prevent the blanketing, but its efforts having failed, the making of them is of no avail. The adoption of the most approved appliances and methods does not justify the continuance of that which, in spite of them, remains a nuisance.³⁰ And if one carries on a lawful trade or business in such a manner as to prove a nuisance, he must answer therefore.³¹ In *American Bond and Mortgage Company v. United States*,³² the court states:

²⁹ 46 C. J. 663. The fact that the business is in itself a lawful one and that the owner of it operates it carefully, will not exempt him from liability where substantial injury is occasioned. *Helms v. Eastern Kansas Oil Co.* (1917) 102 Kan. 164, 169 Pac. 208, L. R. A. 1918 C. 227.

³⁰ *Judson v. Los Angeles Suburban Gas Co.* (1910) 157 Cal. 168, 106 Pac. 581; *Evans v. Fertilizing Co. Ltd.* (1894) 160 Pa. St. 209, 223, 28 Atl. 702, 708.

³¹ *Hodges v. Pine Product Co.* (1910) 135 Ga. 134, 33 L. R. A. (N. S.) 74.

³² (D. C. N. D. Ill. 1929) 31 F. (2d) 448, 456.

When we speak of wave lengths or frequencies, we are dealing with intangible things, about which we really know nothing at all, except as we perceive the effect produced in an electrical device. The waves, it seems, are in some kind of medium which permeates every particle of matter. Their effect is produced in and upon the property of others. There is no real analogy between this unknown medium and the air or the water. *In one respect, the waves may be treated as intruders.* Whatever rights may exist among these intruders in their relations with each other, there certainly is no property right which can be asserted against *the right of those upon whom the intrusion is made to have the intruders come "by cold gradation and well-balanced form,"* and not in a mob.

While this case concerns the regulatory power of the United States over broadcasting stations, the decision shows a recognition by the court of the listener's free reception rights. Our client's reception rights have been interfered with. Heterodyne interference, when occasioned by the unlicensed operation of broadcasting stations, is recognized as a nuisance in the *American Bond and Mortgage Company* case. The court therein states:³³

The interference complained of amounts to a public nuisance and is within the jurisdiction of equity because of the irreparable damage to individuals and the great public injury which are likely to ensue.

Though the case concerns the injury to the public, it should be noted that the court upholds individual injury as a basis for abatement of the nuisance.

If heterodyne interference is considered a nuisance, surely blanketing, which differs only in character and cause, and not in effect, may be likewise so considered. The question remains whether a grant of license by the Federal Radio Commission, not present in the *American Bond and Mortgage Company* case, will legalize that nuisance.

That legislative authority may legalize a nuisance is not denied. But the legislative authority which will shelter an actual nuisance must be express, or, if not express, there must be at least a clear and unquestionable implication from the pow-

³³ *Ibid.* l. c. 450.

ers conferred, certain and unambiguous, such as will show that the legislature must have contemplated the doing of the very act in question.³⁴ The Radio Act of 1927 does not contain any sanction, express or implied, for the issuance of a license authorizing the commission of a nuisance by broadcasting. If, though while using the frequency designated, and otherwise conforming to its license, a broadcasting station so charges the surrounding atmosphere with electricity that fever and illness result to all those in the immediate vicinity,³⁵ surely no question of authority and sanction could be urged. The difference is but one of degree of harm done and the same principle applies. The Act no more authorizes the nuisance of blanketing than it authorizes a nuisance of fever. Individuals must sometimes suffer that benefit may accrue to the public at large, but the Radio Act is far from socialistic in character and no implication of such sacrifice is therein contained.

Were the subject matter not of a different era, an analogy might be drawn to the licensed operation of an old-time saloon, found to constitute a private nuisance to the adjacent property owner. The saloon keeper's license for the sale of intoxicating liquor is no defense against liability to those to whom his saloon may constitute a nuisance.³⁶ No more should Station BLAH's license to broadcast be a defense against liability to persons to whom the blanketing interference, resulting from that broadcasting, constitutes a nuisance.

To justify a nuisance by legislative authority it must be the natural and probable result of the act authorized, so that it may fairly be said to be covered by the legislation, or license granted in pursuance thereof. If the authorized act does not necessarily or naturally create a nuisance, but the nuisance flows from the manner in which the act is done, the legislative license is no defense.³⁷ From what has been stated concerning the cause of blanketing interference, it is apparent that to some extent the

³⁴ *Bohan v. Port Jervis Gas Light Co.* (1890) 122 N. Y. 18, 9 L. R. A. 711; *Morton v. New York* (1893) 140 N. Y. 207, 22 L. R. A. 241.

³⁵ It is a fact that at frequencies beginning with about 30,000 kc., an artificial fever is caused in persons in the immediate vicinity of the transmitter. At 50,000 kc., the fever becomes very substantial.

³⁶ *Haggart v. Stehlin* (1892) 137 Ind. 43, 35 N. E. 997.

³⁷ *Pine City v. Munch* (1890) 42 Minn. 342, 44 N. W. 197.

blanketing is the necessary, natural and probable result within the area adjacent the broadcasting. At least it is the actual result, by reason of existing limitations. But to the additional extent, occasioning a complete blanketing over the entire dial, the interference cannot be said to be the necessary, natural and probable result of the broadcasting. The legislative license is no defense.

The *American Bond and Mortgage Company* case also shows the futility of any plea on the part of the offending station based on priority. In *White v. Johnson*,³⁸ as well, the defeated parties argued that the one who first establishes a broadcasting station and serves a given area thereby appropriates that portion of the ether which he employs, or through which the station's radio activity operates, in analogy to the doctrine of acquisition of property rights through the appropriation of waters. But the argument was deemed unsound and the analogy held not well taken. Priority would seem to have nothing to do with the question, either between competing broadcasters or between broadcasters and listeners.

It may be that our client must sacrifice a good portion of his week-end radio entertainment in the interest of the less unfortunately situated public. But that is no reason why he should not at least be compensated in damages. In other words of Baron Bramwell, in the noise and vibration case of *Brand v. Hammersmith R. R. Co.*,³⁹

It is said that the railway and the working of it are for the benefit of the public, and that, therefore, the damage must be done and be *uncompensated*. Admitting that damage must be done for the public benefit, that is no reason why no compensation should be given.

Damages, as well as injunctive relief, are granted in nuisance cases. Either one or the other or both may be awarded. Where a nuisance is such that it should not be abated, in the interest of the public good, or where it cannot be abated, by reason of impossibility, the injury done thereby is none the less compensated. Damages are quite often granted in noise nuisance cases.⁴⁰

³⁸ (D. C. N. D. Ill. 1928) 29 F. (2d) 113.

³⁹ (1867) L. R. 2 Q. B. 223.

⁴⁰ *Stodder v. Rosen Talking Machine Co.*, *supra*; Wood, NUISANCES (3rd ed. 1893) sec. 611.

The damages are compensation for the injury or loss sustained by the damaged party. All the elements of damages resulting from the nuisance should be taken into consideration. Depreciation of property value, discomfort and annoyance, injury to health, loss of time, expense incurred by reason of the injury from the nuisance—all are elements of damage.

The monetary damage our client suffers does not simply concern the receiving set he has installed upon his property. The value of that set is not depleted—only its value to him when installed on the particular premises. The damage lies in the violation of his real property rights.⁴¹ It is the value of his weekend retreat that is affected.⁴² The extent of value depreciation, and the consequent amount of damages to be awarded will undoubtedly be difficult of determination. One award would not compensate for recurrent interferences, and continuous future interferences can hardly be judicially assumed. Perhaps justice would best be served by an award determined under principles of rent.

The exasperation and annoyance of the blanketing of Lucrezia Bori's aria may not of itself constitute a recoverable damage. The court might hold that deprivation, "a mere annoyance to a person of fastidious tastes and habits" and consequently insufficient to give rise to a measurable award.⁴³ But the exasperation and annoyance of the deprivation of program selection power is a more potent infringement. True, the court might liken the enjoyment of selected radio reception to the pleasure derived from

⁴¹ When the injury is to the comfortable enjoyment of property, it must be so extensive as to produce actual pecuniary loss or to produce such a condition of things as in the judgment of the jury would be productive of actual physical discomfort to persons of ordinary sensibilities and of ordinary tastes and habits, and, as, in view of the circumstances of the case, is unreasonable and in derogation of the plaintiff's rights. *Duncan v. Hayes* (1871) 22 N. J. Eq. 25.

⁴² Where land is injured by the act of another the measure of damages does not depend upon the effect on the land, if it is used for any purpose other than that for which it was used, or was intended to be used, but by the extent of the injury to the land used for any lawful purpose to which the owner had appropriated or desired to appropriate it or to which it is adopted. *F. W. & N. O. Ry. Co. v. Wallace* (1889) 74 Tex. 581.

Nor does the fact that the plaintiff could sell his land for as much as he could have sold it before the nuisance show that he has not been substantially damaged. *Penn v. Taylor* (1887) 24 Ill. App. 292.

⁴³ *Beckley v. Skroh* (1885) 19 Mo. App. 75.

the sight and smell of trees and flowers, and refuse to consider its deprivation an element of damage.⁴⁴ That is not improbable. But in cases involving personal inconvenience and interference with enjoyment, the right to relief depends largely upon the circumstances of the place where the thing complained of occurs. We have here a country place, a week-end retreat. It is reasonable and necessary that persons living in a community should subject their personal comforts to the consequences of those operations and businesses carried on in the immediate vicinity which are necessary for trade and commerce and for the benefit of the inhabitants and of the public at large. But when an occupation is carried on by one person in the neighborhood of another, and the result of that occupation is a material injury to property, then the submission which is required from persons living in society to that amount of discomfort which may be necessary for the free exercise of business does not apply.⁴⁵ Personal inconvenience and property depreciation are two entirely different things. And deprivation of radio program selection seriously affects the value of property the use of which is confined to the pleasures of loafing. There may be no arithmetical rule for the estimate of damages. There is, however, an injury to our client the extent of which the jury might well be allowed to measure.

⁴⁴ *Hargrove v. Fort Worth Elevator Co.* (Tex. Civ. App. 1924) 262 S. W. 868.

⁴⁵ *Smelting Co. v. Tipping* (1865) 11 H. L. Cas. 642.