PROPERTY RIGHTS IN AIRSPACE

(LANDOWNERS AND THE RIGHT OF FLIGHT)

by

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A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfilment of the requirements for the degree of Master of Laws.

Institute of Air and Space Law

McGill University

Montreal

April, 1962

"The right of society to use the gift of God is greater than the right of individual owners of the land to interfere therewith." (1)

(1) H.C. Spurr - Let the Air Remain Free (1911) 18 Case & Com. 119

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PREFACE

In submitting this thesis to the Faculty of Graduate Studies and Research, McGill University, Montreal, I wish to pay a tribute of thanks to my dear relatives Mr. and Mrs. M. Shindel and Mr. and Mrs. M. Goldberg, for making it possible for me to study as a resident member of the Institute of Air and Space Law during the academic years 1960-62.

I especially wish to express my gratitude to Professor A.B. Rosevear, Director of the Institute of Air and Space Law, for his understanding, concern and encouragement during my studies at McGill University.

In compliance with the regulation laid down by McGill University, I declare that I have written this thesis entirely on my own, without any advice and help whatsoever.

Y. Abramovitch

April, 1962

PART I

The Import of the Phrase 'Private Property'

In the vast expanse of the law, there is probably no branch or division which can trace its history farther back, or which is more important to the general public, including as it does innumerable elements of everyday life, than that branch of law dealing with Private Property.

The term 'Property' has a bewildering variety of uses. However, basically it is used in two senses: that of ownership or title, and also to designate the 'res' over which ownership is or has been exercised. This one word is used to express both the genus and the species.

The relationship between the individual and the 'res' which is his own property is known as the rights of ownership. The 'res' or property does not, of itself, possess these rights but the individual, by virtue of the circumstances of his association with the 'res', possesses these rights. Thus the rights originate from relationship or liaison between the individual and the 'res'.

Before approaching the concept of right of property, a few words should be said re the general theory of Rights and Duties. Without entering into a discussion on the question of natural rights and their relationship to legal rights, we are confining the discussion solely to what is known as legal rights -- those rights recognized and protected by the legal

system itself.

Paton[2] sets out four basic elements to every legal right: The holder of the right, the act or forebearance to which the right relates, the res concerned (the object of the right) and the person bound by the duty.

> "Every right, therefore, is a relationship between two or more legal persons, and only legal persons can be bound by duties or be the holders of legal rights. Rights and duties are correlative, that is, we cannot have a right without a corresponding duty, or a duty without a corresponding right. When we speak of a right we are really referring to a right-duty relationship between two persons, and to suppose that one can exist without the other is meaningless".[2]

The rights in private property are the total of all those rights which the individual, the owner, has by virtue of the fact of his ownership of a certain or of a group of 'res', or of his patrimony as a whole. From this definition we might be led to conclude that the sum total of rights possessed by virtue of the ownership of any particular 'res', must always and for all time, be consistent with regard to any like 'res'. This may perhaps be termed 'absolute ownership', but as it will be seen, such is not the case.

The difficulty would seem to rest in the confusion of the notion 'absolute ownership' with that of 'complete property'.

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(2) M. Paton - a Text Book of Jurisprudence (1948) p.207

The idea of 'complete property' comes from the Roman Law, and finds its origin in the term 'Dominium'. However, the Romans did not develop the content of the idea. They named it only, and appear to have considered it so original a fact, implicit in the very nature of things, that it was subject to no analysis either as to content, or as to boundaries.

The confusion nowadays rests on the fact that 'Dominium' is commonly translated as ownership, whereas to the Romans 'Dominium' was absolute, subject to no limitations.

> "Dominium is the ultimate right, that which has no right behind it. It may be a mere nudum jus with no practical content, but it is still dominium ex jure quiritium." (3)

Blackstone defines property in what at first would seem to be the terms of 'Dominium', for he calls it "that sole and despotic dominium which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe". (4)

This definition seems today to be extravagant. But the great jurist elsewhere qualifies this by making it subject to "control and diminution" "by the laws of the land". (5)

Sohm defines ownership as: ..."A right, unlimited in respect of its contents, to exercise control over a thing". (6) However, even Sohm must concede that it is subject to legal

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(3) Buckland - Text Book of Roman Law (2nd ed - 1932) p.188

(4) Blackstone - Commentaries (4th ed - 1770) Vol. II p. 2

(5) Blackstone - op cit No. 4 p. 148

(6) R. Sohm - The Institutes of Roman Law (3rd ed - 1907) p. 309

limitations imposed by the rights of others, or by the rules of public law which substract from it.

The notions of rights of ownership, no matter how strict and all embracing be the definition, are always affected by limitations, in contradistinction to 'Dominium' in the Roman Law, which was subject to no limitations whatsoever.

Today, ownership or complete property is the totality of rights with respect to any specific object which are accorded by law to a legal person, at any time and place, after deducting the social reservations.(7)

The term 'Dominium', to the Romans, meant the fullness of all rights inherent in property. Thus, 'Dominium' cannot be used synonymously with ownership or complete property, because 'Dominium' has as its principal characteristic that of qualitative indivisibility, while the characteristic of ownership or complete property is that of divisibility or separability.

Increases in regulations imposed by the State, as well as increases in population and in man's technical knowledge, have brought about a life entirely different from that of the Romans, with these latter factors all operating to restrict the over-all right of property.

Anything in the universe which is capable of affording any sort of satisfaction to a human being will be the subject of a claim by an individual. Often this claim will be merely one of access to the desired object, in common with other claimants. The claim may go farther, however, and the person

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(7) The Restatement of the Law of Property, p. 11

may assert a claim to have the thing reserved for his exclusive use and satisfaction. He thus claims a power to exclude others from the satisfaction which he seeks for himself. To the extent that this claim to exclusive satisfaction is given any recognition or sanction by the legal order, we may speak of a legal right of property.

> "Property then is the aggregate, the 'bundle of rights' of legal devices by which one claimant is enabled to exclude others. Words such as 'Dominium' and control are too broad. We can think better in terms of possession and use."(8)

The case of Spann v. Dalls(9) pointed clearly that

> "Property in a thing consists not merely in its ownership and possession but in unrestricted right of use, enjoyment and disposal. Anything which destroys any of these elements of property to that extent destroys the property itself. The substantial value of property lies in its use. If the right of use be denied the value of the property is annihilated and ownership is rendered a barren right.".

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(8) Arthur L. Harding - Freedom to use Property in: Freeman v. this Government (1958) p. 231. Edited by Arthur Harding

(9) Spann v. Dalls (1921) 111 Tex 350 S.W. 513, 19 A.L.R. 1387

PART II

Theories of Property Rights in Airspace

Real estate is the most corporeal of all corporeal things. Its ownership can be definitely established and its limitations clearly defined. But can such an abstract thing as airspace be similarly owned and/or limited?

Many authors, in asserting the validity to private property rights in airspace, have argued that airspace is capable of being owned and therefore is entitled to the same protection and treatment as is given to the soil.

The advent of aerial navigation brought about numerous theories regarding the nature and extent of private rights in the column of air above the land. These views were predicated on an interpretation of existing law, and by the introduction of alleged maxims of Roman Law to the matter.

Chapter A. The Ad Coelum Theory

Centuries ago, long before mankind even conceived of the flying machine, the Latim maxim "Cujus est solum ejus ad coelum" was first enunciated. Essentially, it states that "Whose is the soil, his it is up to the sky" (10), or in other words, "He who possesses the land possesses also that which is above it" (11). Other versions include

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(10) Black - Law Dictionary (4th ed - 1951) p. 453

(11) Broom - Legal Maxims (8th ed - 1911) p. 395

"He who owns the soil owns everything above (and below) from heaven (to hell)"[12], and "He who owns the land owns up to the sky"[13].

In considering the historial development of the maxim, it is well to bear in mind that "maxims are not law", and are not given the same effect as is given to legal rules in cases to which it is unreasonable to apply them[14]. "A maxim is a signpost which directs the traveller, but does not choose the destination".[15] Lord McNair expresses his view that "the maxim like most maxims and slogans, has merely been used either to darken counsel, or to afford a short-cut and an excuse for not thinking the matter out".[16] Lord Esher pointed out: "I need hardly repeat that I detest the attempt to fetter the law by maxims. They are almost invariably misleading."[17]. In Swetland v. Curtiss Airports Corp.[18], one of the leading cases in the field of aviation, it was stated: "Maxims are but attempted general statements of

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(12) Manion - Law of the Air (1950) p. 1; Brown - Legal Maxims (8th ed - 1882) p. 395

(13) Zollmann - Law of the Air (1927) p. 6

(14) Smith - The use of Maxims in Jurisprudence (1895) 9 Harv. L. Rev. 13

(15) N. H. Moller - The Law of Civil Aviation (1936) p. 176

(16) A.D. McNair - The Law of the Air (2nd ed - 1953) p. 297

(17) Yarmouth v. France [1887] Q.B.D. 647; 17 E.R.C. 217

(18) Swetland v. Curtiss Airports Corp. (1930) 41 Fed (2d) 929; [1930] U.S. Av. R. 21, Modified (1932) 55 Fed (2d) 201; [1932] U.S. Av. R. 1

law. 'A maxim', said Sir Fredrick Pollock, 'is a symbol or vehicle of the law'".

Literally translated, the foregoing maxim leads to the obvious absurdity of claiming private exclusive ownership (Dominium) in space above the land, up to infinity; but this maxim has limitations, and these limitations have manifested themselves from time to time by the decisions of the courts.

In order to explore adequately the conflict of rights between landowners and airmen, and to understand the importance of this maxim, it is necessary to trace the latter to its origin, and then to examine its historial development through the decisions of the courts. The survey will be confined to the impact of this maxim on private law.

Section 1 The Jewish History of the maxim

There are some passages in Roman Law which may be of some relevance to the user of airspace, and therefore could have been used to create the maxim; but the origin of the maxim is not found in Roman Law.(19) Henry Goudy could not find the maxim in Roman Law, "although it is consistent with Roman Law"(20) Edward Sweeney said, in discussing the same matter, that "all attempts to trace the exact language of the maxim to the Corpus Juris have failed".(21)

Lincoln, in his work "The Legal Background to the Starrs",(22) comes to the conclusion that the origin of the maxim may be Jewish Law.

In the ancient Jewish law, known as the Babylonian Talmud, because it is the product of the Babylonian schools that flourished from the third to the fifth century B.C., there is a tractate, or Mishna(23) (Baba Bathra IV 2) which

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(19) McNair op cit No. 16, p. 294; J.C. Cooper - Roman Law and the maxim 'Cujus est solum' in International Air Law (1952) p. 28

(20) Henry Goudy - Two Ancient Brocards" in: Essays in Legal History (1913) p. 231, Edited by Paul Vinogradoff

(21) E. Sweeney - Adjusting the conflicting interests of landowner and aviator in Anglo-American Law (1932) 3 J. Air L. & Com. 363; Cooper op cit No. 19 p. 28

(22) Lincoln - The Legal Background to the Starrs (1932) p. 63

(23) The Mishna is a report of the legal decisions of a line line of analysts and judges

reads as follows:

> "[The vendor of a house does not sell therewith] A well or a cistern, even though he inserts [in the deed the words] including the depth and the height".(24)

The Mishna is not explicit or detailed, and the Commentators in the Gmara explain, analyse and elaborate upon the statement of the law in the Mishna.

Rabbi Dimi of Nahardea remarks, in the Gmara:

> "If one sells a house with the intention of giving title to all its contents, although the bill of sale states the word [I sell you] the depth and the height, title is not acquired in wells etc. unless he writes: 'You shall acquire title from the depth of the earth to the height of the sky'. And it is not sufficient to state 'from depth to the height of this house is sold to you'".(25)

Rabbi Akiva, (who died in the year 132 A.D.) in his dicta, apparently contended that all rights in a well passed by a conveyance from the depth to the height:

> "Title is not given to a well or to the stone wall thereof, although there is mentioned that he sold him the depth and the height, however, the seller must buy a way to the well from the

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(24) The Babylonian Talmud, Seder Nezikin, Baba Bathra (Mishna IV 2) 1936) p. 257, Edited by Rabbi D. Epstein

(25) The Babylonian Talmud, Seder Nezikin, Baba Bathra (Mizhna IV 2) 1902) p. 153, Edited by New Talmud Pub. Com.

new owner of the house."[26]

If the cistern is included, the purchaser has the exclusive right of way to it and when the cistern alone is sold, the right of way to it passed to the purchaser by implication.[27]

Hebrew conveyancers used two phrases to indicate the vertical extent of the land's ownership -- "depth and height" and "from the abyss below to the sky above". As Palestine was very dry land, these phrases were of particular importance in determining whether wells and cisterns passed by a conveyance.[28]

Lord McNair[29] tried to trace the maxim to Deuteronomy XXX 11-14 and Isaiah VII 11, but this does not appear to be of much relevance or significance.[30]

The use of this phrase can be found in some starrs (contracts) from Barcelona, Spain, and also in Cologne, Germany, a flourishing Jewish Community.[31] These contracts were made during the same period that the well-known contract in Norwich was drafted.[32]

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(26) Ibid No. 25 p. 154

(27) The Jewish Encyclopedia, Word: Sale (1901) p. 648, edited by Funk and Wagnalls Com.

(28) E. Sweeney - op cit No. 21, p. 371

(29) McNair - op cit No. 16, p. 297

(30) Notes by F.A.L. "Cujus est solum" (1931) 47 L. Q. Rev 14; Sweeney - op cit No. 21

(31) Gulak - The Principles of Jewish Law (1935)

(32) British Museum - Document No. 1199

Section 2 The Roman History of the maxim

The Roman legal system seems to have known only of a full and absolute right of ownership.(33) Roman Law was essentially practical, and never treated land merely as a flat surface entirely dissociated from the space above. Roman Law protected the needed rights of the land-owner to the use and enjoyment of space above his land, whether occupied by buildings, or used as cultivated fields, implying -- though not stating -- that these space rights constituted 'Dominium' (ownership). But the height in space to which these rights extended was never definitely delineated. The classical 'Dominium' of the Roman Law meant the full and free use of everything above the land, and freedom from interference with the air above.(34)

The Roman Law dealt with interests in the airspace over (a) public lands, (b) non-commercial lands (religious property and tombs) and (c) private lands.

(a) The most important pronouncement was uttered by Paul in Dig. VIII 2.1, and was designed to protect public lands and highways.

> "If public ground or a public road comes in the way, this does not hinder the servitude or a via, [a general right of way] or an actus [a right of way for vehicles] or a right to raise the height of a building, but it hinders a

(33) H.D. Hazeltine - The Law of the Air (1911) p. 74

(34) H.J. Roby - Roman Private Law in Times of Cicero and the Antonines (Cambridge Univ. Press) (1902) Vol. 1 p. 498

> right to insert a beam, or to have an overhanging roof or other projecting structure, also one to the discharge of a flow or drip of rainwater, because the sky over the ground referred to ought to be unobscured." (35)

(b) Venuleius in Dig. XLIII 24.22.4. in discussing airspace above religious property, stipulates:-

> "If a person shall have built a projection, or allowed rainwater to fall from a roof, into a sepulcher, even though he may not have touched the grave monument itself, he can rightly be summoned for action against a sepulcher by violence, or stealth, since not only is the actual place of interment part of the sepulcher, but also all the sky above it, and therefore he can be summoned on the charge of a violation of sepulcher." (36)

(c) There are few sources describing airspace rights over private lands. The oldest are the Twelve Tables, of which the text has not survived, but according to Ulpian, it was established in Dig. XLIII 27.1.8&9,

> "... that tree branches up to fifteen feet should be trimmed; this was done to prevent harm to the neighboring estate by the shade of a tree. This is the difference between the two

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(35) Charles H. Monro - The Digest of Justinian (Cambridge Univ. Press) (1904-1909) Vol II p. 68; See Appendix I(a)

(36) Cooper op cit No. 19, p. 8; See Appendix I(b)

> heads of the interdict; if a tree hangs over buildings it should be cut down; but if it hangs over a field, it should be only trimmed up to fifteen feet of the ground."(37)

In Dig. VIII 5.8.5 there is a decision by Ulpian, wherein he considered smoke coming from a cheese factory, which interfered with a high adjoining house, as a trespass into airspace.(38) But the same author asserts in Dig. IX 2.29.1, that a landowner inconvenienced by a neighboring roof, extending over his house, must not break it off, but may bring an action against his neighbor.(39)

Ulpian also held, in Dig. VIII 2.9, that

> "Where a man, by raising the height of his own house, cuts off the flow of light to that of his neighbor, but is not subject to a servitude in respect of the latter, there is no right of action against him"(40),

although under certain circumstances the injured landowner could ask for the appointment of an arbiter.(41)

There is an opinion of Paul -- in Dig. VIII 2.24 -- which led Cooper to conclude that there was no legal limit to the height to which a building could be built, so long as such building did not interfere with buildings underneath.(42)

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(37) Cooper op cit No. 19, p. 10; See Appendix I(c)
(38) Cooper op cit No. 19, p. 10; See Appendix I(d)
(39) Cooper op cit No. 19, p. 11; See Appendix I(e)
(40) Cooper op cit No. 19, p. 12; See Appendix I(f)
(41) Cooper op cit No. 19, p. 13
(42) Cooper op cit No. 19, p. 11; See Appendix (g)

Dig. VIII 2.1 is the basis of the famous gloss, which is in the form of a note attributed to Accursius (1184-1263). Accursius, a glossator or commentator on the Code who resided in Bologna, had the foremost effect on the problem and the creation of the maxim, which became known universally and to this day. Henry Guibe (43) and Eugene Sauze (44) are generally credited with the research work that verified Accursius as the author of the most important gloss leading to the enunciation of the maxim.

Although Accursius is credited with ca. one hundred thousand glosses, and this maxim may very well have been one of them, Lord McNair has pointed out that this is not equivalent to saying that Accursius was the "true and first inventor", of the maxim, because of the fact that the gloss was a composite document. (45)

The original text of Dig. VIII 2.1 stated that the airspace over the highway ought to be free. The gloss to this passage reads as follows: "Nota - Cujus est solum ejus debet esse usque ad coelum".

Denry Goudy (46) inclined to the opinion that in Roman Law "the right of property in the coelum, would have sufficed to prevent airtransit over a man's ground, and interdicts to prevent it would have been granted, had

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(43) Henri Guibe - Essai Sur la Navigation Aerienne en droit interne et en droit international (1912) p. 38

(44) Eugene Sauze - Les Questions de Responsabilite en Matiere d'aviation (1916) p. 24

(45) McNair - op cit, No. 16, p. 295

(46) Henry Goudy - op cit, No. 20

damage been caused or threatened".

Von Jhering[47], the great German jurist, came to the conclusion that the owner of the soil was also owner of the airspace above, but only to the extent required to satisfy his practical needs, and that Roman jurists would not have accepted such an "abuse of logic" as ownership in airspace without limit.

After completing an independent re-examination of the sources in the Corpus Juris, undertaken to determine the Roman Law notion of the landowner's right in airspace, Francisco Lardone[48] concludes that the landowner has rights at low altitudes, because Roman lawyers did not deal at that time directly with the question of occupying high altitudes in airspace. But, he suggests that, in line with the spirit of the sources studied, the landowner would have the right of controlling airspace at any altitude over his land, because it is property in its use. (Jus utendi).

William Buckland[49] was of the opinion that had the Romans been forced to face modern problems, they would probably have held that there was no upper limit of ownership,

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(47) Rudolf Von Jhering - Zur Lehre von den Beschrankungen des Grundeigenthumers in Interesse der Nachbarn (1863) Vol. 6

(48) Francisco Lardone - Airspace Rights in Roman Law (1931) 2 Air L. Rev. 455

(49) W.W. Buckland - The main Institutions of Roman Private Law (Cambridge Univ. Press - 1931) p. 103

and that rules for height of buildings and for overhanging trees were merely limitations of ownership in the general interest.

Twenty years later, in a joint effort, Buckland and McNair[50] considered that "there is little mention of the higher reaches of the air for the reason that for the Romans no question could arise as to these".

After distinguishing between 'coelum' as space, which is subject to private and exclusive rights, and 'aer' which is common to all, John Cooper comes to the following conclusions:

> "(1) The airspace over lands not subject to private ownership, such as public and religious lands, had the same legal status as the surface, and that the state exercised control in such airspace to prevent any encroachment;
>
> (2) The airspace over private lands was either
>
> (a) the exclusive property of the landowner up to an indefinite height, subject to building restrictions or other state-imposed limitations, or
>
> (b) ... vested exclusive right of occupancy or user by the landowner.
>
> (3) Gaseous 'aer' was common to all to sustain life but there were vested rights of the landowner in 'coelum'."[51]

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(50) W.W. Buckland and A.D. McNair - Roman Law & Common Law (1952) p. 101

(51) Cooper - op cit, No. 19, p. 17

We have noted how from a few passages in the Digest, protecting airspace, a general maxim has been woven, which, with some small variation, eventually made its first appearance in England.

Section 3 The Entrance of the maxim into England

The maxim had been recognized in England from the earliest times. Bouve[52] finds evidence that the oldest son of Accursius was taken to England (in 1274) by Edward I (1239-1307), on his return from the Holy Land. Accursius' son lectured on Roman Law, at the University of Oxford and through his influence, the maxim was introduced to English jurisprudence.

The first recorded case in England involving the maxim is Bury v. Pope (1586)[53] to which this phrase was added: "Nota - Cujus est solum ejus est summitas usque ad coelum - Temp Ed I".

The word "summitas" (end, extremity) is not found in Classical Latin[54] and this supports the idea that the language of the maxim was not part of the written Law of Rome. While it may have partly been conceived as one of the principles of Roman Law, it is stated in a non-Roman manner[55]. This lends support to the theory that the maxim has only pseudo-Roman origins[56].

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(52) Bouve - Private ownership of Airspace (1930) 1 Air L. Rev. 242

(53) Bury v. Pope (1586) 1 Cro Eliz 118

(54) Baxter & Johnson - Medieval Latin Word (1934) List 411

(55) Cooper - op cit No. 19, p. 28

(56) Herbert D. Klein - Cujus est solum... Quousque tandem? (1959) 26 J. Air L. & Com. 237

The phrase came into use in English jurisprudence through the influence of Jewish people, who used it for more than a thousand years[57]. When it first appears in English Law it is used to define ownership, and the Jews alone used it in that sense. Moreover, at that time, the Jews were in a position to influence English Law, since they were constantly in touch with it through the Exchequer, and were accustomed to employ their own customs and phraseology.[58] The Jews who came to England in 1066, with the Normans, even had a Jewish Exchequer -- a branch of the main Exchequer Court, -- and thus Christian judges sat in the Jewish Exchequer as "Justices of the Jews" and were naturally and continually exposed to Jewish Law and its application.[59]

Apparently, on December 2, 1280 a 'starr'[60] (a Jewish contract), was entered into between Rabbi Ashaya ben Rabbi Issac, from the City of Norwich, and Gilam the Norman. This contract involved certain property, which the Rabbi had obtained as part of the dowry of his wife Miriam, and which was conveyed to Gilam. In line 14 it defines the rights of the owner as being "from the depth of the earth

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(57) Lincoln - op cit No. 22, p. 64. F.A.L. - op cit No. 30 p. 16

(58) Sweeney - op cit No. 21

(59) Lincoln - op cit No. 22; McNair op cit No. 16 p. 297

(60) The famous Star Chamber at Westminster may have been so named because it contained the starrs of pre-expulsion Jews (Jewish Encyclopedia - op. cit No. 27 Vol. XI p. 287)

to the height of the sky". The document, which has been preserved in the British Museum (61) represents a remarkable mixture of English and Jewish Law, although it was definitely drafted with Jewish Law in mind.

There is a strange coincidence between this contract and the decision in Bury v. Pope (62), in that the contract was drawn up at the time of the reign of Edward I, and used the same maxim cited three hundred years later in the latter case, with the mysterious note 'Temp Ed I' appended thereto. The source of this note is unknown.

In view of the fact that this maxim was rarely used by the Glossators, but was nevertheless constantly employed by the Jews in their definition of ownership, and particularly in view of the fact that the meaning given to it by Jews was identical to that attributed to it by English Law, there is inescapable evidence of the influence of Jewish law on the developing application of the maxim in England. (63)

When the Normans ceased to be strictly 'Normans' and became English in sentiment as well as domicile, -- in 1290, to be precise -- the Jews were driven out; but the influence of their highly developed legal system continued to make itself felt in the years to come. (64)

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(61) Document No. 1199

(62) op cit No. 53

(63) Rabbi I. Herzog - The Main Institutions of Jewish Law (1936) Vol. I; McNair op cit No. 16 p. 297

(64) Klein op cit No. 56

Section 4 The application of the maxim in England

The maxim in itself has no authority in English Law.(65) It concerns us only in so far as it has been adopted by judges whose opinions are considered to be authoritative as well as by text writers of great eminence.

It is proposed, in the first place, to examine some of the principal cases and texts in which the maxim has been cited, for there is no doubt that it has exerted a very considerable influence upon the development of the Common Law.

In 1586, in Bury v. Pope,(66) which was the first recorded case in which the maxim was quoted, it was agreed by all justices that when a landowner erects a house, with a window so close to a window in the adjoining property that the light is cut off from the latter, the injured landowner has no complaint, even though his building and his window were built forty years before the former building was erected. To this case there is added a note: "Nota - cujus est solum ejus est summitas usque ad coelum. Temp Ed I." The maxim as stated here may be translated as: "Who owns the land his is the highest place even to the skies."(67)

Whether the maxim was cited as part of the judgement,

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(65) P. Winfield - On Tort (6th ed - 1954) p. 378; McNair op cit No. 16, p. 31; Cooper op cit No. 19, p. 37

(66) Bury v. Pope op cit No. 53

(67) H.D. Hazeltine op cit No. 33, p. 62

or was added by the reporter, is not clear. Likewise, no one appears to have been able to discover the source of 'Temp Ed I', to which the reporter refers, or to shed any light upon it. Harold Hazeltine's (68) interpretation of this note is that the reporter was asserting that "from Edward Ist's time onward, it had always been a maxim of the English Courts". De Montmorency (69) calls this supplement -- 'Temp Ed I', -- the reporter's daring addition".

The usual source referred to is Coke' comment -- On Littleton (70) -- but the principle does not start with Lord Coke (1552-1634), who in fact based his statements on earlier authorities.

The maxim received its first modern literary formulation in Lord Coke's writing, where, under the heading of 'Terra', we find the following:

> "And lastly the earth hath in law a great extent upwards, not only of water as hath been said, but of aire and all other things even up to the heavens, for cujus est solum ejus est usque ad coelum, as it is holden."

These principles of ownership in airspace made their first appearance in English Law not in the actual language of

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(68) H.D. Hazeltine op cit No. 33, p. 63

(69) J.E.G. De Montmorency - The control of the Airspace in: Grotius Society, Problems of the War (1917) Vol. III p. 67

(70) Coke - On Littleton (1628) Lib 1, sec 1 p. 4

the Corpus Juris, nor even in the original glosses to the Digest, but rather in one of the more arbitrary forms of the maxim.

Lord Coke took the maxim not only from the first decided case, in which it was used, but he tried, furthermore, to trace it back to the Year Books as authority for his expressed view, citing 22 Henry VI 59; 10 Edward IV 14; 14 Henry VIII 12.

The first case supra involved a dispute between a landlord and a tenant under a lease, re the ownership of six young goshawks roosting in the trees on the leased land. The case of the goshawks is quoted in the second decision, which relates to the theft of muniments of title. The third case discusses the right of the Bishop of London to certain herons and shovelers, which built nests in trees on land which the Bishop had leased. The Courts apparently assumed that if a person owned the land which enfolded the roots of the trees, he owned the branches that were in the airspace above and in which the birds had their nests.

None of these cases which Coke cited as authority for his own proposition refer to or quote the maxim.[71] Holdsworth[72] and Goudy[73] state that Coke's references to the Year Books

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(71) Sweeney op cit No. 21; Charles S. Rhyne - Airports and the Courts (1944) p. 94

(72) Holdsworth - History of English Law (1925) Vol. VII, p. 485

(73) Goudy op cit No. 20

are incorrect. Bolland[74] enforces this statement and adds: "I think there has been a growing suspicion of recent years that Coke's knowledge of the Year Books was practically confined to what he found in the Abridgements.".

Coke limits the application of the maxim to its fullest extent, when he says: "A man may have an inheritance in an upper chamber, though the lower buildings and soile be in another and seeing it is an inheritance corporeall it shall pass by livery".[75]

While Coke eliminated the neo-Latin word 'summitas' from the citation as used in Bury v. Pope[76], and made the maxim appear more authentically Roman, at the same time he rendered it more categorical and less Roman, by changing the words 'debet esse' (ought to be) to 'est' (is). With this change, the statement in the glosses -- the landowner ought to have the use or enjoyment of the airspace over his property to an indefinite height -- had become, in the Coke version of the maxim, a statement of the existence of present ownership of space to infinity[77].

Blackstone[78], relying upon Coke, asserts the doctrine in these words:

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(74) Bolland - A Manual of Year Books Studies (Cambridge - 1925) p. 85

(75) Coke - On Littleton (1628) Lib 1 p. 48-b

(76) Op cit No. 53

(77) Cooper - op cit No. 19, p. 28

(78) Blackstone - op cit No. 4, p. 18

> "Land hath also in its legal signification a definite extent upwards as well as downwards. Cujus est solum ejus est usque ad coelum is the maxim of the law upwards.... So that word 'land' includes not only the surface of the earth, but everything under it or over it."

Both Coke and Blackstone state the doctrine in broad and general terms, and this doctrine has subsequently found expression in the opinions of English judges and in writings of English jurists.

One of the earliest cases which dealt with the maxim is Penruddock's Case (79). In this matter, action was brought for nuisance against the defendant who built an overhang over the plaintiff's land and caused rainwater to fall upon the latter. The court upheld the plaintiff's right to abate the nuisance.

The maxim was quoted again in Baten's Case (80), in support of the decision that an overhanging upon the freehold of the plaintiff's house created an actionable nuisance (81).

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(79) Penruddock's Case (1597) 5 Coke's Rep 100 (1e)

(80) Baten's Case (1610) 9 Coke's Rep 53 (1e); 77 Eng. Rep 810

(81) There is a critique by Thurston (Trespass to Airspace (1934) Harv. Legal Essays 20) which involves the early English cases and the assertion is that although these were nuisance cases, there is nothing to indicate that an action for trespass would not also hold. See a recent decision Kelsen v. Imperial Tobacco Co. [1957] Q.B.D. 334 "The invasion of the airspace by a sign amounted to a trespass and not merely to a nuisance".

Two hundred years after Baten's Case there is the first mention of the possible application of the maxim to aviation cases.

The most striking and pertinent observation was made in 1815 by Lord Ellenborough in the case of Pickering v. Rudd[82]. Although his remarks are really obiter, because no cases were cited, it is important to discuss this judgment.

In this case, it was alleged that the defendant -- a barber -- had committed trespass by fixing a signboard to his house, which projected several inches from the wall and overhung the plaintiff's garden, cutting down the plaintiff's virginia creeper. Lord Ellenborough said:

> "I do not think it is a trespass to interfere with the column of air superincumbent on the close.... But I am by no means prepared to say that firing across a field in vacuo, no part of the contents touching it amounts to a clausum fregit. Nay if this board overhanging the plaintiff's garden be a trespass, it would follow that an aeronaut is liable to an action of trespass quare clausum fregit, at the suit of the occupier of every field over which his ballon passes in the course of his voyage."

According to Starkie's report Lord Ellenborough did not express himself quite so affirmatively, but the report

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(82) Pickering v. Rudd (1815) 4 Camp. 219; 1 Starkie 56, 171 E R 400

attributes to him some prescience about aviation, since the suggestion is implicit that trespass may not lie for passing through the air in a ballon over the land of another.(83)

It is evident from an examination of both reports of this case that Lord Ellenborough was holding nothing more than that the technical action of trespass would not hold, and was not saying that the owner of the land had no rights in the airspace affected by defendant's overhanging board. In fact, both reports (Campbell's and Starkie's) make it clear that the learned Judge would have given damages to the plaintiff in an "action on the case" if, as Starkie's report says, "you could prove any inconvenience to have been sustained".

There is a long gap between Baten's Case(84) and the case of Fay v. Prentice(85). Judge Maule cited Penruddock's Case(86) and Baten's Case and held that a cornice projecting over the plaintiff's garden and shooting rainwater therefrom was a nuisance. The Court of Common Pleas held that "the bare existence of the projection" was a nuisance, "whether or not rain had fallen" and that the law would infer damages. In this case, two judges comment, in dicta, on the maxim, and they indicate that this maxim has limitations. Coltman J. regards it as "a mere presumption" and Maule J. remarks that

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(83) Jack E. Richardson - Private Property Rights in Airspace in Common Law (1953) 31 Can. B. Rev. 117

(84) Op cit No. 80

(85) Fay v. Frentice (1845) 1 C.B. 828

(86) Op cit No. 79

"the maxim cujus est colum... is not a presumption of law applicable in all cases and under all circumstances, for example it does not apply to chambers in the inns of courts".

The principles governing the maxim were also stated in Corbett v. Hill (87) The plaintiff owned two contiguous houses in London, of which one was sold to the defendant. One of the first floor rooms in the house, which the plaintiff retained, projected over the site and was supported by the house which the plaintiff had conveyed to the defendant. In the course of the demolition of the house in order to rebuild it, it was discovered that a room of the plaintiff's house protruded into the defendant's house. The defendant proposed to rebuild over the roof of this protruding room, and the plaintiff sought to restrain him by an injunction claiming the column of air usque ad coelum over his projecting room. He failed in his claim, on the ground that the vertical column of air over so much of the room as overhung the defendant's site belonged not to the plaintiff but to the defendant. Sir W.M. James held that the plaintiff's house could not overhang the defendant's site, and by way of an obiter dictum he stated that the defendant had a property right in the column of air above his entire property site, and that the intrusion or overhanging of the plaintiff's house was trespass thereto. Speaking about the maxim, Sir James said:

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(87) Corbett v. Hill [1870] L.R 9 Eq 671

> "... The ordinary rule of law is, that whoever has got the solum -- whoever has got the site -- is the owner of everything up to the sky and down to the centre of the earth. But that ordinary presumption of law, no doubt, is frequently rebutted particularly with regard to property in town..."

In this case, the rebutting fact seems to have been that the plaintiff had conveyed to the defendant the column of air superincumbent upon his protruding room.

The consequences of propelling a bullet through aerial space came before the court in Clifton v. Viscount Bury (88). The plaintiff, who was a tenant on a farm, sought an injunction to restrain the Civil Service Volunteers from shooting over their range so as to affect the ordinary use and enjoyment of his property. Hawkins J. referred to Pickering v. Rudd (89) and held that the bullets which passed entirely over the plaintiff's land did not constitute a trespass "in the strict technical sense of the term", but he did look upon such firing of bullets as "a grievance which under the circumstances afforded a legal cause of action". On the other hand, the use of the range "in such a manner as to cause splashes and fragments of flattened bullets to fall on plaintiff's land constituted a series of trespasses of an actionable character".

The court therefore took the view that the owner of the land does not have a proprietary right in the column of

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(88) Clifton v. Viscount Bury (1887) 4 T.L.R. 8

(89) Op cit No. 82

air at a height of seventy-five feet above the ground.

The development of the telegraph and the telephone brought claims of landowners against companies owning the wires. Although insofar as aviation is concerned, there is no likelihood of any such question arising, -- since the interference of flying is that of a moving object and not a fixed wire -- it is of some interest to note the law with regard to telegraph and telephone wires.

Both the legislation and the relevant decisions are based on the principle that the owner of the solum owns the column of air above it, at any rate, up to a height which includes that at which wires are fixed.

In the case of Wandsworth Board of Works v. United Telephone Com.(90), Lord Fry J. said: "As at present advised I entertain no doubt that an ordinary proprietor of land can cut and remove a wire, placed at any height above his freehold".

Similarly Lord Esher, in the same case accepted Coke's doctrine, and Bowen L. J. inclined to rehabilitate the maxim and said: "The man who has land has everything above it, or at all events is entitled to object to anything else being put over it". This judge shifts his position, however, by maintaining that the landowner's actual ownership of airspace might well be held to extend so high as is necessary for the use of the structures erected on the land, "whilst the owner would be entitled to restrain [as a nuisance] anything amounting

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(90) Wandsworth Board of Works v. United Telephone Co. [1884] L.R. 13, Q.B.D. 904

to an interference with his enjoyment of the upper part of the air".

Salmond[91] states that Lord Fry J. went so far as to hold that the owner of the land has the right to cut and remove a telegraph, or other electric wire stretched through the airspace above his land, at whatever height it may have been placed, and whether or not he can show that he suffers harm or inconvenience.

These cases were followed by several others until in 1920 the Air Navigation Act[92] was passed, in section (9) whereof the landowner's right to sue has been prudently limited.

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(91) Salmond — On the Law of Torts (11th Ed - 1953) p. 233

(92) Air Navigation Act 1920 (10 & 11 Geo 5 C. 80)

Section 5 The first interpretation of the maxim in the U.S.A.

The English immigrants to the American Continent (U.S.A. & Canada) brought with them the principles of the Common Law, which included, inter alia, the juridical concept that ownership of land includes the right in superjacent space.

At the beginning, there was a tendency to give full recognition and effect to the maxim. Chancellor Kent in his "Commentaries on American Law" (93) accepts the statements of Coke and Blackstone re the ownership of the landowner in the space above.

In most of the early cases containing discussions of this maxim, the decisions of the English Courts were accepted. It is now intended, therefore, to consider only a few of the more important subsequent decisions, with a view to finding out their effect upon the doctrine of ownership in airspace.

In a case dealing with overhanging branches, the court followed the Twelve Tables and stated that "land comprehends everything in a direct line above it". (94)

It was also held by the American Courts that rights were invaded in cases of projecting eaves (95), a telephone

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(93) Kent - Commentaries on American Law (1892) Vol. III p. 402

(94) Lyman v. Hall (1836) 11 Conn. 177

(95) Smith v. Smith (1872) 110 Mass. 302; Lawrence v. Houge (1882) 35 N.J. Eq. 371

wire across property,[96] a projecting cornice[97] and other protruding things.

In Butler v. Frontier Telephone Co.[98] the court held that an action of ejectment was a proper remedy in a case where a telephone wire was unlawfully strung across the plaintiff's premises. Chief Judge Cullen said, in discussing the maxim, "that it may not be taken too literally" but "so far as the case before us is concerned, the plaintiff, as the owner of the soil, owned upwards to an indefinite extent".

On the other hand, the court in Grandona v. Lovdal[99] held that overhanging trees did not entitle the plaintiff to relief in the absence of proof of damage, although it did entitle him to cut off the branches by himself.

The most important of these cases is Portsmouth v. U.S.[100] where the Supreme Court held in 1922 that the United States was guilty of 'taking' the plaintiff's property, by repeated firing across the plaintiff's land.

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(96) Butler v. Frontier Telephone Co. (1906) 186 N.Y. 486

(97) Harrington v. McCarthy (1897) 169 Mass 492

(98) Op cit, no. 96

(99) Grandona v. Lovdal (1889) 78 Cal 611

(100) Portsmouth Harbor Land v. U.S. (1922) 260 U.S. 327, 43 Sup Ct 135; Herrin v. Sutherland (1925) 74 Mont. 587, 241 Pac 328

Section 6 The tendency to disregard the maxim in Aviation Cases

The advent of aerial navigation gives a new significance to the maxim and awakens interest in its origin and scope.

The re-examination and clarification of the principles of the maxim began only after aviation became a fact as a new instrument of transport. When landowners, over whose land the planes flew in commercial flights, began to allege trespass against the Airline companies, some definite contruction or interpretation of this ancient maxim became necessary.

Nearly all the writers who have considered the question of Aviation have recoiled from a literal application of the Latin phrase.

Henry G. Hotchkiss (101) opines that a maxim which was established long ago, "should not and must not control aviation, which was unknown and unthought of when the rule received form".

Davis, in his treatise "The Law of Motor Vehicles, (1911) sec 289, argues that the absence of injury is a practical refutation of the extreme view of ownership in airspace.

McNair (102) suggests that we must reject the theory of the ownership of the column of airspace above a parcel of land to an indefinite height. He maintains that there can be only two theories:

> "That prima facie a surface owner has ownership of the fixed contents of the airspace and the

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(101) H.G. Hotchkiss - A Treatise on Aviation Law (2nd Ed. 1938) p. 33

(102) McNair - op cit, No. 16, p. 31

> exclusive right of filling the airspace with contents, and alternatively (II) the same as (I) with the addition of ownership of the airspace within the limits of an area of ordinary user surrounding and attendant upon the surface and any erections upon it."

McNair admits that for practical purposes there is not much difference between these theories, but he prefers the first one because the second involves the ownership of space, the possibility of which he strongly doubts.(103) Sir P. Winfield prefers the second theory, because he found it "hard to share the learned author's doubts".

Conversely, the most extreme view was expressed in 1921 by Major Johnson, Legal Adviser to the Chief of Air Service, U.S.A.(104). He said that property rights of the land-owner in the airspace above land are so absolute that, before aviation can become possible, a constitutional amendment would be necessary to establish a right to fly over property at reasonable altitudes; until this is done, every flight would involve a series of repeated trespasses amounting to a 'taking' of property without due process of law.

It is clear that a strict application of the doctrine of "Cujus est solum..." can lead only to the conclusion that every flight over land regardless of the height of the flight or of the damage done, is a trespass. Nevertheless, the

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(103) P. Winfield - op cit, No. 65, p. 379

(104) Major E.C. Johnson - Air Service Information Bulletin (1921) Vol. II, No. 181, p. 1-14

courts did not hesitate to refuse to hear such cases, when the only complaint was trespass under the 'ad coelum' maxim, and to encourage aviation by asserting the freedom of airspace above certain prescribed altitudes laid down by Federal and State statutes.

In 1921 the American Bar Association's Special Committee on the Law of Aviation repudiated the theory embodied in the maxim, as inapplicable to air rights in the field of Aviation.(105)

The first aviation case dealing with intrusion into airspace is that of Johnson v. Curtiss(106). In this case the plaintiff sought to enforce the maxim and claimed that airplane flights over his land, no matter how high the altitude, constituted actionable trespass. The court, in repudiating the literal application of the maxim, held that:

> "This rule, like many aphorisms of the law, is a generality and does not have its origin in legislation, but was adopted... at a time when any practical use of the upper air was not considered or thought possible... A wholly different situation is now presented... The upper air is a natural heritage common to all of the people and its reasonable use ought not to be hampered by an ancient artificial maxim of the law, such as is here invoked."

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(105) Report of the Special Committee on Law of Aviation [1921] A.B.A. Rep. 498

(106) Johnson v. Curtiss Northwest Airplane Com. [1928] U.S. Av. R. 44

The court discusses the applicability of the maxim in Swetland's Case,(107) saying:

> "The courts have never critically analysed the meaning of the maxim, and there is much doubt whether a strict and careful translation of the maxim would leave it so broad in its signification as to include the higher altitudes of space."

In Rochester's Case,(108) the court held that striking a tower by an aircraft constituted a trespass as a matter of law. So far as the rights in airspace are concerned, the court said, with respect to the maxim:

> "Not to go beyond the necessities of this case, it may be confidently stated that if the maxim ever meant that the owner of land owns the space above the land to a definite height, it is no longer the law."

In the first Hinman Case,(109) in which the plaintiff claimed damages against a commercial airline which flew across the plaintiff's property at altitudes of less than a hundred feet, the court dismissed the claim, saying:

> "If we should accept and literally construe the ad coelum doctrine, it would simplify the

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(107) Op cit, No. 18

(108) Rochester Gas and Electric Corp. v. Dunlop (1933) 148 Misc 849, 266 N.Y. Supp 469; [1933] U.S. Av. R.511

(109) Hinman v. Pacific Air Transport Corp. (1936) 84 Fed (2d) 755; [1936] U.S. Av. R. 1

> solution of this case, however, we reject that doctrine. We think it is not the law and that it never was the law."

The leading case is that of U.S. v. Causby (110) which was decided by the Supreme Court and has finally rejected the theory of property rights in the airspace at all altitudes.

The writer does not feel that he can improve upon the felicitous and apposite language of Judge Douglas, who said:

> "It is ancient doctrine that at common law, ownership of the land extended to the periphery of the universe 'cujus est solum ejus est usque ad coelum'. But that doctrine has no place in the modern world. The air is a public highway... [and] to recognize such private claims to the airspace would clog these highways, seriously interfere with their control and development in the public interest."

Literally translated and applied, this ancient maxim, which was coined when human flight was regarded as a pure dream, would lead to the absurd conclusion that the landowner owns all the airspace above his land. However, from the above cases it certainly must be concluded that the 'ad coelum' theory has never been the law in the field of aviation. The maxim has in practice given the landowner the right of

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(110) U.S. v. Causby (1946) 328 U.S. 56, 66 Supp. C. 1062, 90 L. Ed. 1206; [1946] U.S. Av. R. 235

the effective use of his property without interference by flights which hamper his real enjoyment in the land, but it has never given him an absolute right in airspace above his land.

Chapter B The Theory of Unrestricted Ownership Subject to an 'Easement', or 'Privilege' of Flight.

During the years 1920 through 1926, when the question of lawfulness of flight was receiving its first serious consideration, the prevailing view was the 'compromise easement' theory.(111)

This theory parallels the 'ad coelum' theory, in that it asserts that airspace is owned by the landowner to an unlimited height. But it then holds that this ownership is subject to a public 'easement' for aerial transit. Aerial flight is considered a 'privileged' entry of the airspace at such height, presumably since it does not unreasonably interfere with the landowner's enjoyment of the surface.

This view was advocated by many scholars and was adopted in 1922 by the American Bar Association (A.B.A.) and the Conference of Commissioners on Uniform State Law, in drafting the Uniform State Law for Aeronautics.(112)

This Law has the following provisions with respect to ownership of airspace.

Section 3

> "The ownership of the space above the lands and waters of this state is declared to be vested in the several owners of the surface beneath, subject to the right of flight described in Section 4."

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(111) See Hazeltine op cit, No. 33 p. 77; Sweeney op cit No. 21; Rhyne op cit No. 71; J.M. Hunter Jr. - The Conflicting interests of Airport Owner and the nearby Property Owner (1946) 11 Law & Contemp. Prob. 539

(112) [1922] A.B.A. Rep. 97, 413.

Section 4

> "Flight in aircraft over the lands and waters of this State is lawful, unless at such a low altitude as to interfere with the then existing use, to which the land, or water, or the space over the land or water, is put by the owner, or unless so conducted as to be eminently dangerous to persons, or property lawfully on the land or water beneath."

The two Sections together declared that flight over the land of others is a 'privilege' to be enjoyed under the conditions named, and in derogation of the general rights of the landowner.

In the years following the drafting of the model act, these provisions were included in many of the State Aviation Laws, and finally in 1934 this theory was accepted by the American Law Institute in drafting its Restatement of the Law of Torts.(113)

Section 194 provides that:

> "An entry above the surface of the earth, in the airspace in the possession of another, by a person who is travelling in an aircraft, is privileged if the flight is conducted:
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> (a) for the purpose of travel through the airspace, or for any other legitimate purpose,

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(113) Tentative Draft No. 2 of the Restatement of the Law (2nd) Torts); See also Tentative Draft No. 1 Restatement of the Law (2nd Torts) 1957.

(b) in a reasonable manner

(c) at such a height as not to interfere unreasonably with the possessor's enjoyment of the surface of the earth and the airspace above it, and

(d) in conformity with such regulations of the State and Federal Aeronautical Authorities as are in force in the particular State."

According to these provisions, two considerations determine whether the invasion of the landowner's airspace will be 'privileged'. The flight itself must be reasonable, and it must be at such a height as not to interfere with the enjoyment of the surface by the person in possession.(114)

The reporters for the Restatement explain that the term 'privilege' as used does not mean a consensual 'privilege' granted by the landowner but rather an authority which the law recognizes for a person to do an act with impunity.(115) In other words, the Restatement employs the word 'privilege' in the sense that courts and lawyers have used and still use the terms 'right' and 'power'.(116)

This theory has had few advocates(117) and many

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(114) Anderson v. Souza (1952) 243, P(2d) 497; [1952] U.S. Av. R. 216

(115) Minutes of the American Law Institute Meeting (May 1933)

(116) M. Wherry - Aerial Trespass under the Restatement of the Law of Torts (1935) 6 Air L. Rev. 113

(117) MacChesney - Remarks before A.B.A. (1931) 56 A.B.A. Rep. 86

critics,[118] and has been rejected by almost all of the courts in considering this problem.[119] The Oregon Supreme Court recently held[120] that the Restatement rule which attempts to pour new wine into the old bottle of trespass appears to be losing adherents and does not commend itself to the court as a rule to be cemented into the case law.

Section 194 of the Restatement of the Law of Torts must be read in conjunction with Section 159(e) of the present Restatement, which provides that "an unprivileged intrusion in the space above the surface of the earth, at whatever height above the surface, is a trespass".

The Note to the Institute on page 36 of the Tentative Draft admits that the theory of unlimited ownership "had almost no support in case law, when it was first adopted by the Restatement and... has had little support in the cases since" and it is "obvious that sooner or later the theory of unlimited vertical ownership of the airspace above the possessor's land will have to be discarded".

As a result, four Attorneys representing different Air Carriers came to the conclusion, in a Memorandum to the Institute of American Law on May 20, 1958,[121] that Section 194 "does not accurately reflect the state of the law to-day" and

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(118) Marshall - Some Legal problems of the Aeronaut (1923) 6 Ill L. Quart 50; Logan - Reply to General MacChesney (1931) 56 A.B.A. Rep. 89

(119) Except three cases: 1) Capitol Airways Inc. v. Indianapolis Power & Light Co. (1939) 215 Ind 462 18 N.E. (2d) 776; 2) Guith v. Consumers Power Com. (1940)36 Fed(2d)21(ED Mich) 3) Vanderslice v. Shawn (1942) 26 Del Ch.225,27 A(2d) 87

(120) Atkinson v. Bernard (1960) 355 P(2d) 229; [1960]U.S.Av.R.636

(121) Gates, Stern, Debevoise & Friendly - Memorandum in Support of Revision of Section 194 of the Tentative Draft No. 2 of the Restatement of the Law, Second Torts (1958)

that its Tentative Draft should be withdrawn.

H.D. Klein (122), in a very interesting treatise does not agree with this delay and he argues as follows: "But why sooner or later? Has it not been sufficiently discredited? Quousque tandem?" (how much longer?). How much longer will it act as a legal crutch to landowners eager to support their actions for trespass and nuisance against users of airspace.

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(122) Klein op cit, no. 56

Chapter C — The Zone Theory

The Zone theory divides the airspace into two zones, upper and lower. This view asserts that there is private ownership in the lower zone up to an altitude which may vary according to the particular circumstances, but above this altitude the airspace belongs to no one (res nullins), or is community property (res communis).(123)

The first step towards this theory was taken by Section 10 of the Federal Air Commerce Act 1926:(124)

> "As used in this Act the term 'navigable airspace' means airspace above the minimum safe altitudes of flight, prescribed by the Civil Aeronautics Authority, and such navigable airspace shall be subject to a public right of freedom of interstate and foreign air navigation, in conformity with the requirements of this Act."

This Section appears to go beyond the 'easement' theory. If the minimum safe altitude regulation is determinative of property rights, then a flexible zone theory, or no ownership at all, is implied.

The demise of the Old Uniform State Law 1922 has been discussed by the A.B.A. and the National Conference of Commissioners on Uniform State Law, who met in 1930 to draft a

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(123) See Pollock - The Law of Torts (15th ed.-1951) p. 262; A.K. Kuhn - The Beginnings of an Aerial Law (1910) 4 Am. J. Int. L. 127; Zollmann op.cit No. 13; Sweeney op cit No. 21; Hotchkiss op cit, No. 101

(124) 44 St 568 (1926); Amended 49 U.S.C. sec 180 (1952).

New Uniform Air Code. The proposed new Code omits Section 3 completely, on the ground that its "statement as to ownership of airspace proclaims a legal untruth".(125) The sixth Section of the Code is a substantial restatement of the first part of Section 4 of the Old Uniform State Law 1922.

While this provision is equally consistent with the zone theory, being silent on the question of ownership of airspace, it is clear from the report filed by the two committees that the "no ownership" concept was the one intended.(126) However, with only one exception -- in the case of Hinman v. Pacific Air Transport(127) -- the "no ownership" theory has found no support in the courts and has been severely criticized by many writers.

The New Uniform Air Code finally rejected the 'privilege' theory and recognized either a 'Zone theory' of airspace ownership or a complete denial of ownership.

The two leading cases dealing with the interference of aviation to landowners are Smith v. New England Aircraft(128) and Swetland v. Curtiss Airports Corp.(129). Each of these cases appears to have adopted slightly varying interpretations of the 'zone theory'.

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(125) Report of the Standing Committee on Aeronautical Law (1931) 56 A.B.A. 319

(126) John Hunter op cit, No. 111

(127) Op cit, No. 109

(128) Smith v. New England Aircraft Com.(1930) 270 Mass 511, 170 N.E. 385, 69 A.L.R. 300; [1930] U.S. Av. R. 1

(129) Op cit, No. 18

The 'zone theory' suffers from an uncertainty, in that in each case the court must define the 'effective possession zone', depending upon the facts.(130) The actual location of the dividing line between the upper and the lower strata is indefinite and may fluctuate with the use of the surface. This leaves the right of the aviator in a somewhat nebulous position.

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(130) Antonik v. Chamberlain [1947] U.S. Av.R. 518; Swetland v. Curtiss op cit, No. 18

Chapter D The Trespass and Nuisance Theories

Various views have been held with reference to the nature and extent of private rights in the column of air above the land. There is the view that the landowner has no rights at all in the air column above his land. This is based upon the idea that the air is free to all and that it is incapable of being possessed and owned.(131) Other theories do give the landowner rights in the column of air above his land, but there is a wide divergence as to the nature and extent of such rights. Some grant the landowner full proprietory rights in airspace, while others give him merely rights of user, as needed for the enjoyment of his property. A detailed analysis of the trespass and nuisance theories follows.

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(131) McNair - The Beginning and the Growth of Aeronautical Law (1931) 1 J. Air L. & Com. 383; Logan - Aviation and the maxim 'Cujus est solum'. (1931) 16 St. Louis L. Rev. 303

Section 1 The Concept of Trespass

In the days of the early English Law, remedies for wrongs were dependent upon the issuance of writs in order to bring the defendant to court. The number of such writs was limited, and their forms were strictly prescribed and, unless the plaintiff's cause of action could be fitted into the form of the recognized writs, he was without a remedy. The result was a highly formal and artificial system of procedure, which governed and controlled the substantive law of wrongs to be remedied. The writs which were available for purely tortious claims were those for the action of trespass and those for trespass on the case.

Trespass was the remedy for all forcible direct injuries, whether to person or to property. Trespass on the case or the action on the case, as it came to be called, developed later, as a supplement to the parent action of trespass, and was designed to afford a remedy for obviously wrong conduct resulting in injuries which were not forcible or not direct.

The distinction between the two actions lay in the immediate application of force to the person or property of the plaintiff, as distinguished from injury through some obvious and visible secondary cause.(132) The emphasis of the distinction was upon the causal sequence, rather than the character

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(132) William L. Prosser - Handbook of the Law of Torts (1955) p. 26

of the defendant's wrong. Trespass would lie for all direct injuries even though they were not intended,(133) and the action on the case might be maintained for those which were intended but indirect.(134) Trespass, perhaps because of its criminal origin, required no proof, of actual damage, while in the action of trespass on the case, which developed purely as a tort remedy, there could ordinarily be no liability unless actual damage was proved.

This procedural distinction has long been antiquated. Nowadays, modern law has almost completely abandoned the artificial classification of injuries into direct and indirect categories, and looks instead to the intent of the person or to his negligence.

Trespass may be committed by various kinds of acts, of which the most obvious are entry onto another's land (trespass quare clausum fregit), taking another's goods, and trespass to the person.(135)

The wrong of trespass to land (q.c.f.) consists in the act of entering upon land in the possession of the plaintiff, remaining upon such land or placing, or throwing any material object upon it, in each case without lawful justification.(136)

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(133) Day v. Edwards (1794) 5 Term Rep 649, 101 Eng Rep 361

(134) Reynolds v. Clark (1725) 1 Stran 634, 2 Ld Raym 1399

(135) Pollock - op cit, No. 123, p. 21; 33 Halsbury's Law (2nd Ed.) p 6

(136) Salmond op cit, No. 91, p. 227

The action for trespass q.c.f. is designed to protect the interest in exclusive possession of the land in its full physical conditions. Therefore, any person in the actual and exclusive possession of the property, may maintain the action although he has no legal title.(137) "Every invasion of property, be it ever so minute, is a trespass"(138) and it is immaterial in strictness of law whether there be any actual damage or not.

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(137) Barstow v. Sprague (1859) 40 N.H. 27

(138) Entinck v. Carrington (1765) 19 St. Tr. 1030

Section 2 The Concept of Nuisance

The basis of the law of nuisance is the maxim 'sic utere tuo ut alienum non laeds' which means: a man must not make such use of his property as to unreasonably and unnecessarily cause inconvenience to his neighbor.(139) The essence of nuisance is interference with the enjoyment of land.

> "A person may be said to have committed the tort of nuisance, when he is deemed to be responsible for an act indirectly causing physical injury to land, or substantially interfering with the use or enjoyment of land, or of an interest in land, where, in the light of all the surrounding circumstances, this injury or interference is held to be unreasonable."(140)

There are two categories of nuisance -- Public and Private -- although it is quite possible for the same act to amount to both.

Public nuisance is a crime covering a miscellany of interference with rights of the public at large. A private individual may maintain an action for a public nuisance, only if he suffers special damage distinct from that common to the public.(141)

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(139) Salmond op cit, No. 91 p. 251

(140) Harry Street - The Law of Torts (2nd Ed 1959) p. 215

(141) Street op cit No. 140, p. 214

Private nuisance is a term applied to unreasonable interference with the interest of an individual in the use or enjoyment of land; therefore the only person who can complain is the owner or occupier of the property. (142)

At the present time there is no proof that public and private nuisance are identical. The obvious distinction is that in private nuisance the plaintiff must prove interference with his enjoyment of land, whereas claims based on public nuisance are not necessarily linked with user of land.

The opinion most often quoted respecting the nature of a substantial interference with the enjoyment of property is as follows:

> "Ought this inconvenience to be considered in fact as more than fanciful, more than one of mere delicacy or fastidiousness, as an inconvenience materially interfering with the ordinary comfort physically of human existence, not merely according to elegant or daintly modes and habits of living, but according to plain and sober and simple notions among the people." (143)

The question in every case is not whether the individual suffers what he regards as substantial discomfort or inconvenience, but whether the 'average man' who resides in this locality would take the same view of the matter.

The person who causes the nuisance cannot avail himself of the defence that he is merely making a reasonable use

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(142) Prosser op cit, No. 132, p. 400
(143) Walter v. Selfe (1851) 4 De G & Sm 315

of his own property. "If a man creates a nuisance he cannot say that he is acting reasonably. The two things are self-contradictory."(144) There is no defence that the plaintiff himself came to the nuisance,(145) or that the nuisance is beneficial to the public at large.(146) It is not a defence that all possible care and skill is being used to prevent the nuisance,(147) nor is it any defence that the place from which the nuisance proceeds is a suitable one for the purpose of carrying on the operation complained of and that no other place is available in which less mischief would result.(148)

The only defence is that a statute has authorized the nuisance. The court, of course, will not construe a statute as justifying a nuisance, unless the words are clear and there is no way of carrying out the directions of the statute without commiting a nuisance. An Act which merely authorizes or permits a certain thing to be done, but does not give direct and particular instructions as to how such thing should or may be done, is no defence to an action based on the commission of a nuisance.(149)

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(144) Att. Gen. v. Cole (1901) 2 Ch 207

(145) Elliotson v. Feetham (1835) 2 Bing N.C. 134

(146) Shelfer v. City of London Electric Lighting Co.(1895)1 Ch316

(147) Rapier v. London Tramways Co. (1893) 2 Ch 588

(148) Bamford v. Turnley (1860) 3 B & S 62

(149) Metropolitan Asylum District v. Hill (1881) 6 App. Cases 193

Distinction between Trespass and Nuisance

The distinction between trespass and nuisance was originally that between the old action of trespass and the action on the case. If there was a direct physical invasion of the plaintiff's land it was a trespass, but if the invasion was indirect it was a nuisance.(150)

With the abandonment of the old procedural forms of direct and indirect, the distinction between trespass and nuisance has become blurred and uncertain.(151) However, the most important distinction is that, in the case of trespass, the invasion of the property gives the plaintiff a right of action irrespective of any damage, whereas in the case of nuisance, interference must be such as "materially to interfere with the ordinary comfort of human existence".(152) The view which is now accepted is that trespass is an invasion of the plaintiff's interest in the exclusive possession of his land, while nuisance is an interference with his use and enjoyment of it.(153)

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(150) Reynolds v. Clarke op cit No. 134

(151) Prosser - op cit, No. 132 p. 408

(152) Crump v. Lambert [1867] L.R. 3 Eq 409; Except in the case of nuisance consisting of injuries to servitudes: Nicholls v. Ely Beet Sugar Factory [1936] Ch 343

(153) Restatement of Torts, Scope and Introductory Note to Ch 40, preceding S. 822

Section 3 Trespass and Nuisance by means of Aerial Flights

United Kingdom

At Common Law, forms of actions were developed in order to protect the landowner's interest in airspace.

The Special Committee of Civil Aerial Transport, 1917, made recommendations which it thought would, on the one hand, give reasonable protection or compensation to the landowners and on the other hand would avoid hampering the development of aviation. The main committee in its report of 1918 (C.M.D. 9218) decided that as regards damage done by aircraft, the deprivation of the landowner of what was almost certainly an existing right of property, should be compensated by what would in effect be an insurance of himself and his property against damage of this nature. The committee gave consideration to the possibility of defining some altitude of flight, but came to the conclusion that to attempt to prescribe a limit was impracticable, and that it would be sufficient to protect the landowner by giving him a specific right of action for damages caused by a nuisance and in breach of flying regulations.

The suggestions of the Civil Aerial Transport Committee were before Parliament when it passed the Air Navigation Act 1920.(154) Section 9 of this Act was devoted to the question of determining the legal liability of aircraft for

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(154) 10 & 11 Geo 5 C. 80

actions in relation to trespass and nuisance; in this connection it prudently limited the landowners' rights to sue.

This Act was amended by the Civil Aviation Act 1949 (155) the corresponding Section of which is Section 40, providing in sub-Section (1) that:

> "No action shall lie in respect of trespass or in respect of nuisance, by reason only of the flight of an aircraft over any property, at a height above the ground which having regard to wind, weather and all the circumstances of the case is reasonable, or the ordinary incidents of such flight, so long as the provisions of Part II and this Part of this Act and any order in Council, or order made under Part II, or this Part of this Act are duly complied with."

The effect of this Section may be summarized by saying that a trespass or a nuisance suit shall not lie because of the mere flight of an aircraft over private property, at a reasonable height and in obedience of rules of a statutory origin.

The first point to be observed in Section 40(1) is that the height of the airplane must be 'reasonable', "having regard to wind, weather and all the circumstances of the case". These are broadly general words and it is a question of fact, dependent upon the circumstances of each case. Moreover, the standard of what is a 'reasonable' height will no

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(155) 12 & 13 Geo 6 C 67

doubt vary as the performance of aircraft progresses.(156)

The Section is badly drafted, in that it is not clear whether the flight must be both 'unreasonable' and in violation of the provisions of the specified Parts of the Act, before an action will succeed, or whether it may be unreasonable or in violation of the said Provisions. Another interpretation might be that "wind, weather and all the circumstances are the ordinary incidents of such flight" and that 'reasonable' refers to 'compliance' with the provisions of the specified Parts of the Act. Part II of the Act deals with the Regulation of Civil Aviation, and the only apparent section in Part II which might allow an action for nuisance is Section 11, sub-Section (1) which states:

> "Where an aircraft is flown in such a manner as to cause unnecessary danger to any person, or property on land or water, the pilot or the person in charge of the aircraft, and also the owner thereof, unless he proves to the satisfaction of the Court that the aircraft was so flown without his actual fault or privity, shall be liable on summary conviction to...".

Whether any person involved in dangerous flying would be liable to both a prosecution as stated in Section 11 and a civil action for trespass or nuisance, was decided

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(156) Shawcross & Beaumont - On Air Law (2nd Ed - 1955) sec 468

affirmatively in Hesketh v. Liverpool Corp.[157]. But the more likely view, now supported by Martin v. Queensland Airlines[158], is that in fixing a penalty for breach of a statutory duty not to fly dangerously, Parliament excluded the right to bring a civil action.

What precisely is meant by the phrase "or the ordinary incidents of such flight" is not very clear. Probably the best way to determine what would be 'ordinary incidents' is to imagine what might be extraordinary incidents. Suppose a pilot, in a commercial flight, starts to practice stunting or aerobatics. It is submitted that this would be an extraordinary incident.[159] Generally, it would appear that to avoid liability, the aviator must proceed upon his flight in a perfectly normal manner, not attempting anything out of the ordinary and taking care to observe all statutory requirements.

In addition, it is possible that the expression 'incident of such flight' might be intended to cover noise and emission of smoke.[160]

The nuisance or trespass in the contemplation of the Section is in relation to the land over which the aircraft is flown. Sir A. McNair[161] suggests that the owner of property

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(157) Hesketh v. Liverpool Corp. (1940) 4 A.E.R 429

(158) Martin v. Queensland Airlines [1956] Q.S.R. 362

(159) Shawcross & Beaumont - op cit, No. 156, sec. 468

(160) W.M. Freeman - Air and Aviation Law (1931) p. 89

(161) McNair - op cit, No. 16 p. 98

near or adjoining the land over which the offending aircraft flies may still be able to sue for private nuisance.

It must still be born in mind that, according to Section 61, the Civil Aviation Act does not apply to aircraft belonging to or exclusively employed in the service of Her Majesty, unless there is an order in Council to the contrary. In those special circumstances in which Section 40 does not apply, recourse must be had to Common Law principles.(162)

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(162) 31 Halsbury's Laws of England, p. 843

United States

Two leading cases, differing radically one from the other, especially in the fundamental assumptions, emphasize the two opposing schools of thought, the so called "technical trespass" doctrine and the "nuisance" doctrine.

In Smith v. New England Aircraft Co. (163) the Supreme Court of Massachussetts held that flights across a privately-owned country estate at heights as low as a hundred feet constituted trespasses. The court assumed that "private ownership of airspace extends to all reasonable heights above the underlying land", although it could not be treated "upon the same footing as property which can be seized, touched, occupied...", etc. Nevertheless, the court refused an injunction on the ground that the landowners "have not shown that they have sustained any damage to their property or its use, or have suffered material discomfort".

The other case was Swetland v. Curtiss Airports Corp. (164) where an injunction was granted against a privately owned airport, for low flights below five hundred feet. The court held that the remedy for injuries caused by low flights "is an action for nuisance and not trespass". The court did not assert private ownership in the airspace, but gave a right to the landowner to possess the amount of space he could reasonably expect to use or occupy himself", but "as to the upper stratum

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(163) Op cit No. 128

(164) Op cit No. 18

which he may not reasonably expect to occupy he has no right... except to prevent an unreasonable interference with his complete enjoyment of the surface". The court added, "We cannot fix a definite and unvarying height below which the surface owner may reasonably expect to occupy... That height is to be determined upon the particular facts of each case".

The trespass theory holds that there can be landowner's ownership in the airspace, and the remaining question seeks to determine the extent of that ownership and whether there has been an invasion of it. The nuisance theory denies the right to bring a suit under trespass unless there is contact with a physical object on the land. The action for nuisance would be the only remedy for low and annoying flights, which reasonably interfere with the landowner's use of the surface.

Several distinguished authors have expressed different views in connection with these doctrines.

Salmond (165) expressed the opinion that

> "There can be no trespass without some physical contact with the land, and that a mere entry into the airspace above the land is not an actionable wrong, unless it causes some harm, danger or inconvenience to the occupier of the surface. When any such harm, danger or inconvenience does exist there is a cause of action in the nature of a nuisance."

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(165) Salmond - op cit, No. 91

Pollock, in the first edition of The Law of Torts[166], contradicts Salmond and states that, "At Common Law it would clearly be a trespass to fly over another man's land at a level within the height of ordinary buildings..."

In later editions, there is somewhat of a qualification to this position, when Pollock adds:

> "...unless indeed it can be said, that the scope of possible trespass is limited by that of possible effective possession, which might be the most reasonable rule."[167]

Both Pollock and Salmond concurred in the existence of exclusive private rights held by the landowner in the air-space. They differed only as to the kind of action to be brought, and as to whether harm, danger or inconvenience must be proved.

The Digest of English Law declares that the action for trespass "is limited to so much of the airspace above as the plaintiff can show to have been in his effective control".[168]

On the other hand, the authors of Shawcross & Beaumont[169] apparently take the view that the mere passage of aircraft over land does not, at Common Law, constitute trespass, but that if it takes place at such a height as to interfere with the reasonable enjoyment of the land, such passage may be nuisance.

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(166) Pollock - The Law of Torts (1st Ed - 1886) p. 280

(167) Op cit No. 135, p. 262

(168) Digest of English Law (4th Ed - 1947) Vol. II, Sect 799

(169) Shawcross & Beaumont op cit No. 156, sec 469

These two contradictory cases of Smith v. New England Aircraft[170] and Swetland v. Curtiss Airports[171] open the door to different concepts expressed in subsequent decisions and in vogue even to this day.

In the case of Gay v. Taylor,[172] the plaintiff alleged that the airport should be enjoined from flying over plaintiff's property because of its continuing trespass. The court was unwilling to abandon the use of trespass entirely, i.e. to assert that trespass is never applicable to a mere flight, without contact with the surface --

> "Invasions of the airspace over one's property are trespasses only when they interfere with a proper enjoyment of a reasonable use of the surface of the land by the owner thereof."

The doctrine of trespass was discussed again in Cory v. Physical Culture Hotel,[173] where the court dismissed an action for trespass against an aerial photographer who flew below one thousand feet. The court agreed that:

> "The owner of land has the exclusive right to so much of the space above as may be actually occupied and used by him and necessarily incident to such occupation and use, and any

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(170) Op cit No. 128

(171) Op cit No. 18

(172) Gay v. Taylor (1932) 19 Pa Dis & Co Rep 31;[1934] U.S. Av. R. 146

(173) Cory v. Physical Culture Hotel (1936) 14 Fed Supp 977; [1936] U.S. Av. R 16

> one passing through such space without the owner's consent is a trespasser" [but] "the height at which an airplane operator may pass above the surface without trespassing is a question depending for solution on the facts in each particular case."

As to the upper space, the landowner can sue for nuisance by showing unreasonable interference with his complete enjoyment of the surface.(174)

On the other hand, in the First Hinman Case,(175) flights as low as five feet were not trespasses and the landowner was not able to obtain an injunction restraining such flights, or recover damages in the absence of "actual and substantial damages".

> "We own so much of the space above the ground as we can occupy or make use of in connection with the enjoyment of our land."
> "Traversing the airspace above appellants' land is not of itself a trespass at all, but is a lawful act, unless it is done under circumstances which will cause injury to the appellants' possession."(176)

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(174) See also Brandes v. Mitterling [1948] U.S. Av. R. 488: "Flying low as to interfere with the existing use of land is trespass."

(175) Op cit No. 109

(176) See an early case Commonwealth v. Nevin (1922) 2 Pa Dis Rep 214 where the court rejected a trespass claim, because there was no physical contact with the ground.

Although trespass and nuisance are in some respect analogous, each has important distinguishing characteristics, and the distinction is logical and still technically valid today. While the nuisance school takes the position that there should be no remedy whatever, unless there is actual interference with the landowner's use and enjoyment of his property, the trespass school would presumably allow a trespass action for nominal damages for an isolated flight within a landowner's zone of possible effective possession, which may result in no actual damage.(177)

The courts have often failed to distinguish properly between trespass and nuisance.(178) In virtually every action brough by landowners, the dual allegations have been made and as a result courts have tended toward similar results, regardless of the theory pursued.

In Thrasher v. City of Atlanta(179) one of the questions was an allegation that flight over the plaintiff's property constituted both trespass and nuisance. The court stated that although "the space in the far distance above the earth is in actual possession of no one", the owner of the land has the first claim upon it. If another should capture and possess it, as by erecting a high building with a fixed overhanging structure, the owner may be entitled to ejectment or to an action for trespass. "However, the pilot of an airplane does not

(177) J. Hunter op cit No. 111

(178) Roderick B. Anderson - Some Aspects of Airspace Trespass (1960) 27 J. Air L. & Com. 341

(179) Thrasher v. City of Atlanta (1934) 178 Ga 514, 173 S.E.817, 99 A.L.R. 158; [1934] U.S. Av. R. 166

seize and hold the space or stratum of air through which he navigates..." "So long as the space through which he moves is beyond the reasonable possibility of possession by the occupants below, he is in free territory not as every or any man's land, but rather as a sort of 'no man's land'". Notwithstanding the court observed obiter, that aerial trespass by an airplane is a possibility in some instances although no contact was made with the land. "It might or might not amount to a trespass according to the circumstances, including the degree of altitude and even when the act does not constitute a trespass it would be a nuisance."

The concepts of trespass and nuisance have been summarized in Vanderslice v. Shawn (180)

> "Whether in landing, taking off or otherwise, flights over another's land, so low as to interfere with the then existing use to which the land is put, is expressly outside of the statutory definition of lawful flight, and being an unprivileged intrusion in the space above the land, such flight is a trespass. Extentive flying at low altitudes, accompanied by excessive noise and occasioning unreasonable annoyance to the occupants of the land below, and apprehension of danger on their part, has been held to

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(180) Vanderslice v. Shawn op cit, No. 119; [1942] U.S. Av.R. 11

constitute an element of nuisance in that it interferes substantially with the enjoyment of the property by the occupants."

Section 4 Eminent Domain and the Causby Case.

The logical climax to the earlier trends was the case of U.S. v. Causby (181). It must be clearly noted that the Supreme Court was not concerned with questions of either trespass or nuisance. The case reached the Supreme Court from the U.S. Court of Claims, where the court may not hear actions in tort against the Government. Therefore it was necessary to allege that frequent low flights of Service aircraft from a nearby airfield, amounted to a 'taking' of property within the meaning of the Fifth Amendment (182). The Supreme Court held that although Congress had placed 'navigable airspace' in the public domain and empowered the Civil Aeronautics Administration (C.A.A.) to prescribe minimum altitudes of flight, this had not deprived landowners of their rights in the airspace.

> "The airspace is a public highway... Yet it is obvious that if the landowner is to have full enjoyment of the land, he must have exclusive control of the immediate reaches of the enveloping atmosphere."

The plaintiffs showed, inter alia, that the use of their property as a commercial chicken farm had become impossible. The court held that there was a real interference with the use and enjoyment of the land below, and that the low

(181) Op cit, No. 110

(182) The Fifth Amendment reads: "No person shall... be deprived of life, liberty or property without due process of law; nor shall private property be taken for public use without just compensation."

flights were equivalent to a 'taking' of the property.

Although the Causby Case does not specifically state that the 'taking' was the result of continuing trespasses, this conclusion seems implicit.(183) The significant contribution of this case lies in its extension of the remedies available to the landowner against interference by air activities. In addition to actions in negligence, trespass, or nuisance, he now has at his disposal, against the Government at least, an action to recover for a 'taking' of property.

The Causby case, which enjoys the prestige of acceptance by the highest court in the U.S., has strongly influenced later decisions.

In All American Airway v. Village of Cedarhurst(184) the court cited Causby's Case and held that owners of land "...have a right to be free of the menace of air travel at levels near the ground..." Therefore, repeated trespasses by flying at low levels will constitute a 'taking' of an owner's property, for which the owner must be compensated.(185)

The Causby Case was also cited in the Court of Claims in the Highland Park's Case.(186) The plaintiff sued for

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(183) Roderik Anderson - op cit No. 178; See also Freeman v. U.S. (1958) 167 F Sup 541; [1959] U.S. Av. R.158: Fitch v. U.S. [1957] U.S. Av. R.94. Cheskov v. Port of Seattle (1960) 348 P.2d 673;[1960] U.S. Av. R. 317

(184) All American Airways v. Village of Cederhurst (1953) 201 F. (2d) 273; [1953] U.S. Av. R. 36

(185) See Antonik v. Chamberlain (op cit No. 130) "Causby case is and should be the law"; Yoffe Admr v. Pennsylvania Power and Light Corp. [1956] U.S. Av. R.271

(186) Highland Park v. U.S.(1958)161 F Supp 597;[1958]U.S.Av.R483

compensation for the alleged 'taking' of his property, resulting from flights of heavy airplanes over his land. The court granted him compensation for the decreased value of houses which were built at the time when only propeller-driven planes, as opposed to turbo-jets, were in existence.

> "The airspace over the land... may be used by airplanes with impunity, so long as the flights do not substantially interfere with the use and enjoyment of the surface of the ground."

In Moore v. U.S.A. (187) the court followed the Causby Case and held that where the plaintiff's annoyance is the same as that to which every one living in the vicinity is subjected in varying degrees and the flights over plaintiff's property are only occasional, there is no 'taking' but only a proper exercise of governmental powers.

> "Operation of aircraft does not constitute a 'taking' under the Fifth Amendment, unless flights are at such a low altitude and of such frequency over land, as to be a direct and immediate interference with the enjoyment and use of the land beneath."

Airport owners and air carriers have sought to defend recent cases on the ground that the flights involved, conformed to the Federal statutes and regulations, and therefore the flights did not unreasonably interfere with the enjoyment of

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(187) Moore v. U.S. (1960) 185 F Supp 399;[1960] U.S. Av. R. 504

the land below. This poses a question as to how far the courts will recognize altitude requirements as limitations of ownership in airspace.

The first comprehensive Federal Legislation that sought to solve the right of aircraft to fly over property was the Air Commerce Act 1926.(188) The Civil Aeronautics Act of 1938(189) incorporated in Section 3 the same definition of 'navigable airspace' found in the Air Commerce Act 1926 and stated that "Navigable airspace is defined as 'airspace above the minimum altitudes of flights prescribed by regulations issued under' the Act". The Act established that the airspace above the U.S.A. territory belongs to the United States, and gave any citizen a public right of freedom of transit through the 'navigable airspace', which it defined as the airspace above the minimum safe altitudes of flight prescribed by the Civil Aeronautics Administration (C.A.A.).

By virtue of subsequent executive department recognition, these altitudes are now prescribed by the Civil Aeronautics Board (C.A.B.). Section 6017 of the Civil Air Regulations(190) provides, in part:

> "Except when necessary for take-off or landing, no person shall operate an aircraft below the following altitudes;..."

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(188) Op cit, No. 124

(189) 52 St. 973; 49 U.S.C.403(1952) amended 49 U.S.C. 1301 (24) 77 Stat 739

(190) 14 C.F.R. (1956)

The regulation provides that the minimum safe altitude over a congested area is one thousand (1000) feet and over a non-congested area five hundred (500) feet.(191)

The exception in Section 60.17 ("Except when necessary for take-off or landing") raises a critical problem as to what is 'navigable airspace'. Does an aviator enjoy the right of flight in 'navigable airspace' below the level of 500 feet, in the course of take-off and landing?

The Civil Aeronautics Board stated that:

> "The duty of the Board under the Act is primarily to prescribe safe altitudes of flight, not to proclaim what is navigable airspace. Although navigable airspace has been defined by the Congress in terms of minimum altitudes these must be fixed by the Board solely on the basis of safety."

These exceptional provisions were interpreted "as establishing a minimum altitude rule of specific applicability to aircraft taking off and landing" and "an aircraft pursuing a normal and necessary flight path in climb after take-off or in approaching to land is operating in the 'navigable airspace'".(192)

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(191) In Canada these altitudes are defined in Section 529 of The Air Regulations P.C. 1954. The chief difference between these regulations is in respect of flights below 1000 feet.

(192) Civil Air Regulations Part 60, Interpretation No. 1 adopted July 1954; (1954) 19 Fed Reg 4602; See Ackerman v. Port of Seattle [1958]U.S.Av.R. 540; [1960]U.S.Av.R. 500, where it was stated that this is contrary to the U.S. Supreme Court decision in the Causby Case and that it is contrary to reason.

In Antonik v. Chamberlain[193] the plaintiff claimed that planes taking off and landing from the airport allegedly committed repeated trespass when flying below 500 feet. The court stated:

> "In order that effect may be given to the regulations permitting flight in public domain, the words of the regulation - 'Except when necessary for take-off or landing' - must be construed to mean that a right is given to fly over the lands of others at a height of less than 500' when necessary for take-off or landing."

The decision therefore holds that take-off and landing are lawful if they are not nuisance or trespasses as defined in the Causby Case.

A complaint that flights of fifteen to thirty feet above the plaintiff's house were below the glide angle 'necessary for take-off and landing', was alleged in Gardner v. County of Allegheny[194]. The Pennsylvania court reached the conclusion that

> "Congress has not pre-empted the field of navigable airspace below or outside the minimum safe altitudes of flight" [Nevertheless] "it is clear as crystal under the authority of the U.S. v. Causby that flights over private land which are so low and so frequent as to be a

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(193) Op cit, No. 130

(194) Gardner v. County of Allegheny (1955) 114 A.(2d) P 491; [1955] U.S. Av.R 409

> direct and immediate interference with the enjoyment and use of the land amount to a taking."

It appears that several cases prior to the enactment of the Federal Aviation Act 1958, recognized that airspace designated for take-off and landing is 'navigable airspace'.

The village of Cedarhurst passed an ordinance prohibiting flights over its territory at altitudes under a thousand feet. Ordinarily this would be consistent with the Civil Air Regulations (section 60.17) but the Village in this present case (Allegheney Air Lines v. Village of Cedarhurst)(195) was located immediately beneath a flight path of landing and taking off. There was no claim that those flights interfered with the enjoyment of the land below, the sole question being whether Congress had pre-empted the field of regulation and control of the flight, including the fixing of minimum safe altitudes for take-off and landing. "More particularly, the question is what, if any, airspace below the altitude of one thousand feet Congress has determined to be navigable airspace subject to flight control".

The court held, obiter dicta, that the statute and the regulation contained no suggestion that 'navigable airspace' is restricted to airspace not less that a thousand feet above the ground. The village ordinance was declared

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(195) Allegheney Air Lines v. Village of Cederhurst (1956) 238 F (2d) 812; [1956] U.S. Av.R 327

to be a violation of not only the Air Commerce Act, but an interference with Air Commerce, the regulation of which comes within Federal jurisdiction, and the ordinance therefore unconstitutional and void and a permanent injunction was issued against its enforcement.

Although this case did not involve claims of landowners, because it was called upon only to determine the right of the State to regulate flights, this decision also appears to limit the forms of injunctive relief available to courts acting at the instance of property owners.

The City of Newark, as well as a number of other municipalities in the vicinity and certain individuals, sued the airlines using the Newark Airport. (City of Newark v. Eastern Air Lines (196)) The plaintiffs sought to enjoin the airlines from operation over the congested residential areas, lower than 1200 feet from the ground. The court discussed the Federal Statutes and Regulations and declared that:

> "Navigable airspace... includes not only the space above the minimum altitudes of 1000 feet prescribed by the regulation, but also that space below the fixed altitudes and apart from the immediate reaches above the land."

The court held that it would be an unwarranted interference with the regulatory power vested in the C.A.B. by Congress, to establish flight paths peculiarly applicable to each major

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(196) City of Newark New Jersey v. Eastern Air Lines (1958) 159 F 750; [1958] U.S.Av.R 30

airport by raising the minimum safe altitudes prescribed by the C.A.B. regulations.

In dealing with the second count involving the plaintiffs' claim for damages and injunctive relief against trespass, the court declared that the "rule as we interpret it, is that the landowner owns not only as much of the space above the ground as he occupies but also as much thereof as he may use in connection with the land". In order to sustain an action for trespass, the evidence must do more than show that flights are below the minimum requirements, it must show an invasion of the immediate reaches of the airspace as that may be used in connection with the land.

These decisions, however, specifically state that Congress had not deprived the courts of jurisdiction over questions involving invasions of individual landowners' rights, as defined by the Causby Case.

The Federal Aviation Act 1958[197] defines, in Section 104, the public right of transit:

> "There is hereby recognized and declared to exist on behalf of any citizen of the United States a public right of freedom of transit through the navigable airspace of the United States."[198]

Section 101(24) states clearly that

> "'Navigable airspace' means airspace above the

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(197) 72 Stat. 731

(198) 72 Stat. 740; 49 U.S.C.A. $ 1304

> minimum altitudes of flight prescribed by regulations issued under this Act, and shall include airspace needed to insure safety in take-off and landing of aircraft."(199)

The Courts have refused to give effect to this new proviso.

In Ackerman v. Port of Seattle(200) sixty-seven owners of vacant land near the Seattle Tacoma Airport sought compensation for taking and for damages based on frequent low flights, which prevented promotion and development of the property. The court cited the Causby case that "airspace apart from the immediate reaches above the land is part of the public domain", and stated that the Government cannot arbitrarily declare all airspace above private land to be public domain and avoid property owners' rights to damages:

> "Congress has defined 'navigable airspace' (public domain) only in terms of minimum altitudes of flight, this definition has not been changed since the Causby case. 'Thus it is apparent that the path of glide' used by planes in landing and taking off from airport, 'is not the minimum safe altitude of flight within the meaning of the statute'".

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(199) 72 Stat 739; 49 U.S.C.A. $ 1301 (24)

(200) Op cit, No. 192

Any prescribed safe altitude must be reasonable and the Civil Air Regulation (section 60.17)[201] falls within this category. Therefore "any attempted prescription of a lower altitude is subject to examination for its reasonableness and to a determination as to whether it amounts to a constitutional 'taking' of one's property".

The exception in Section 60.17 of the Civil Air Regulation has a twofold effect. It removes the minimum safe altitude requirement of flight, for landing and taking off, and more importantly, it does not provide the aircraft operator with the right of freedom of transit in the airspace used in such landing and taking off operations.[202] Although some writers[203] have expressed their opinion that various other regulations controlling landing and take-off[204] are in the nature of 'minimum safe altitudes' and thus establish freedom of air transit in such strata of flight, the Supreme Court of the U.S. in the Causby Case has ruled that the path of glide in landing or taking off is not within the minimum safe altitudes and no right of transit exists therein.[205]

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(201) Op cit, No. 190

(202) Kenneth Lucey - Legal Aspects of the Airplane Noise Problem in: Handbook of Noise Control (1957), Edited by Cyril M. Harris

(203) Aviation Law - Fifty years after Kitty Hawk - Evolution of Federal Jurisdiction Over Airspace (1954)29N.Y.U.L.Rev.180

(204) 14 C.F.R.sec 60,16(d) (1952 ed) (Acrobatics); 14 C.F.R. sec 60,17(c) (1952 ed) (Helicopters); 14 C.F.R.sec 609, 5(e) (1952 ed) (Low Clouds).

(205) Op cit, No. 202

In the Matson Case[206] the court refused to give any effect to the Congressional declaration that airspace designated for taking off or landing was in the public domain, and held that the new enactment did not change the law of the Causby Case.

The Pennsylvania Supreme Court in Grigg v. Allegheny County[207] stated that "navigable airspace does not include the path of glide for an airplane's take-off or landing". The plaintiff claimed that low flights from a nearby airport, substantially interfere with the use and enjoyment of his property. The County alleged that 'navigable airspace', which Congress placed within the public domain, includes all airspace needed for take-off or landing. The court, in dealing with this argument, stated that:

> "While the conclusion has the rationale of reality to support it, we are precluded from adopting it, by the Supreme Court's interpretation of similar reguations in U.S. v. Causby."
> "... As we are of course bound by the Supreme Court interpretation of the Federal statutes involved we are, perforce required to reject the County's contention..."

The final decision was that there has been no 'taking' of the plaintiff's property and consequently the County was not liable

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(206) Matson v. U.S. (1959) 171 F Supp 283; [1959] U.S.Av.R 1

(207) Grigg v. County of Allegheny [1961] U.S. Av.R.276

to the plaintiff for any deprivation of his property.

The United States Supreme Court in a decision March 5, 1962 (207A) reversed the Pennsylvania Supreme Court ruling, stating that its decision seems to be in conflict with the U.S. v. Causby Case.

The Supreme Court, with two justices dissenting, held that the County of Allegheny as the owner of the airport, had taken an air easement over the petitioner's property. The court further held that it is the local authority who decided when and where an airport should be built, though it must conform to the Federal Aviation Agency's standards and rules in planning, building and the operation of the airport. "Without the 'approach' areas' an airport is indeed not operable. Respondent in designing it had to acquire some private property. Our conclusion is that by constitutional standards it did not acquire enough."

This Supreme Court decision that owners of property adjoining an airport, whose land loses its value for residential purposes because of noise and low flights, are entitled to compensation from the airport owner, opened the way for thousands of suits by landowners in the proximity of airports.

R. Anderson, in an excellent essay entitled "Some Aspects of Airspace Trespass", (208) points out that

> "If the new Federal Statute were construed literally, it is submitted that it would be

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(207A) Grigg v. County of Allegheny 7 Avi 17866

(208) Op cit, No. 178

> unconstitutional, on the grounds that Congress cannot declare private realty to be in the public domain, without payment of just compensation."

To do so would be a violation of the Fifth Amendment of the Constitution of the United States.(209)

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(209) Op cit, No. 182

Section 5 Conclusions

Legislation in the United States did not attempt to follow strictly the example set by the British Civil Aviation Act of 1949 (210), and especially re the latter's express denial of the right to maintain an action of trespass or nuisance, against aircraft flying over private land under specified circumstances. There are some views in the U.S. to the effect that, since Congress has pre-empted the airspace over its territory and declared a public right of transit in the airspace, no action would lie in trespass or in nuisance. However, the most prevailing view, and certainly the more correct one, is that the landowner can still obtain relief if there is a substantial interference with his use and enjoyment of the property. (211)

The majority of cases relying on or citing the Causby Case, seem to agree that flights below the minimum required altitudes are trespasses, but only if they cause actual damage or real interference with the use and enjoyment of the land below. (212)

There must also be a trespass to the plaintiff's airspace before there can be a taking of his property. (213) By the same token, flights above the minimum altitude requirements could not amount to trespass and could not constitute a

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(210) Op cit, No. 155

(211) A.B. Rosevear - Nuisance in the Vicinity of Airports [1957] C.B.A. Papers presented at the Annual Meeting Banff

(212) Highland Park v. U.S. op cit, No. 186

(213) Freeman v. U.S. op cit, No. 183

'taking'.(214)

On the other hand, the mere presence of an aircraft in the airspace is not a nuisance per se, any more than is the presence of a vehicle on a highway. But that does not mean that under no circumstances can an aircraft become a nuisance, because interference with the reasonable use and enjoyment of the property below can give rise to an action in nuisance.(215) "At the point where 'reasonableness' enters the judicial process, we take leave of trespass and steer into the discretionary by-ways of nuisance."(216) In order to constitute a nuisance the aircraft need not be actually over the land in question, whereas this would be a vital element in an allegation of trespass.(217)

Almost invariably, the court decisions range freely over both trespass and nuisance and overlap each other.(218) Therefore, many have argued that the theory of trespass to airspace should be discarded entirely, because the landowner could get the same remedy by bringing suit in nuisance.(219)

The explicit acceptance of nuisance as the sole theory

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(214) Fitch v. U.S. op cit, No. 183

(215) Vanderslice v. Shawn op cit,No. 180

(216) Ankinson v. Bernard op cit, No. 120

(217) Freeman v. U.S. op cit, No. 183

(218) Roderick Anderson op cit, No. 178; William B. Harvey - Landowners' Rights in the Air Age - The Airport Dilemna (1958) 56 Mich. L. Rev. 1313

(219) Rhyne - op cit, No. 71, p. 141

would provide a more satisfactory framework for determining liability. Attention would be focused on the degree of actual interference, rather than on formalistic factors, such as the relationship of the flight path to the land below.(220) The major objection to nuisance as an exclusive theory is that it appears to be entirely inadequate to protect the landowner from a single harmful flight.(221) This objection is not too strong, in view of the fact that most serious interferences of aviation to landowners are near airports, which are a continuing business and where low flights are frequent. Nevertheless, when actual damage results from a single low flight unrelated to airport operations, a negligence action will probably be maintained.(222)

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(220) Memorandum op cit, No. 121

(221) Benjamin v. Storr [1874] L.R. 9.c. P 400; McNair (op cit, No. 16, p. 44) stated that "to this view it is not easy to subscribe".

(222) Leisy v. U.S. (1952) 102 F Supp 789; [1952] U.S.Av. R 565

PART III

Landowners' Rights in Airspace in Civil Law Countries

The principles of the 'Cujus est solum...' maxim were incorporated into the different legal systems of nearly all nations. A great majority of the Civil Law codes of modern nations are founded on this ancient maxim.

France

The essence of the maxim was translated in France into rules of property. In the Coutume de Paris, in effect at the end of the seventeenth century, Article 187 provided that whoever has the land is able and ought to have all above and below his land, and can build above and below.(223)

Article 187, which reads like a translation of the maxim, was the basis of Article 552 of the French Civil Code (Code Napoleon) of 1804. This Article declares that ownership of the land includes ownership of what is over and under it.(224) While there have been many discussions on the interpretation of Article 552, nothing in the text of the Code affirms that the landowner possesses an indefinite part of the sky.(225)

"The construction assigned to Article 552

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(223) Article 187: "Quiconque a le sol..., il peut et doit avoir le dessus (et le dessous) de son sol, et peut édifier pardessus (et pardessous)."

(224) Article 552 - "La propriété du sol emporte la propriété du dessus (et du dessous)".

(225) Michel Juglart - Traité Elementaire de Droit Aérien (1952) p. 162

> has ranged from an analysis based on the re-statement of the maxim 'Cujus est solum', with its arbitrary construction of ownership of space to infinity, to the theory that the Article creates no ownership rights, except in buildings or other physical additions to the land, but does give the landowner the right to occupy such space over his land as may be used by buildings, trees, crops and other physical improvements, together with the right to be protected from interference by third parties in the use and enjoyment of his land and any improvements thereto."(226)

In a decision rendered by the Tribunal Correctional de Vervins on December 18, 1895 it was held that to shoot from a spot where one has hunting privileges, at game situated above a place where one has not that right, undoubtedly constitutes the misdemeanor of hunting on the property of another "since the right of property extends as well above the soil as along its surface". This decision was affirmed by the Cour d'Amiens on appeal February 19, 1896.

While the Tribunal Civil de Compiègne (Judgement of Dec. 19, 1888) announced that Article 552 seems but to affirm the principle of the maxim, it was decided that the axiom must

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(226) Cooper - op cit, No. 19, p. 31

not be applied too strictly and that the reasonable and practicable way to apply it was "to decide that ownership of the soil necessarily includes ownership of so much of that part (of the airspace) situated above the soil as can be made use of".

In 1914 a landowner brought an action against an aviation school, whose planes had caused damages by flying over his land. The court limited recovery to actual damages sustained, declaring that ownership of the airspace was limited to the height susceptible of utilization for construction or plantations and that beyond this height there was complete freedom of the air.(227)

Article 1 of the French Air Navigation Act of 1924, as codified by the Civil and Commercial Aviation Act of 1955, establishes the rule that an aircraft may fly within French territory without any restrictions, but Article 18 of the same Law limits the right of an aircraft to fly over private property by providing that:

> "The right of an aircraft to fly over private property shall not be exercised in any way which would interfere with the exercise of the rights of the property owner."

If the operator of an aircraft violates this obligation not to interfere with the right of the property owner, the victimized owner can sue the operator for damages, under Article 18 and 36 of the said Act.

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(227) Heurtebise c. Farman Freres, Esnault - Pelterie et Société Borel, (1914) Trib. Civil de la Seine, 10 juin D. 1914.2.193

Article 36 provides that:

> "The operator of an aircraft is liable ipso jure for all damages caused to persons or things on the ground, by the flight of an aircraft or by objects which fall therefrom."

The only defence available to the operator is to prove negligence by the victim. In such a case, damages may by denied or apportioned. Thus, in France, it is not a mutual exclusion -- it is still the property owner who wins in the struggle with modern aircraft.(228)

It is not yet clear if Article 36 applies to noise as well as to accidents caused by aircraft. P. Chauveau, the author of Droit Aérien (1951), holds that this article does not apply to damage caused by noise. His argument is not convincing, because he relies upon the German Law, which in fact does not distinguish torts caused by crash and those caused by noise. M. Lemoine, author of Traité de Droit Aérien (1947), holds that damage caused by overflying is to be treated in the same way as that resulting from a crash, because there is no distinction in the Law between the two.

Germany

The German Law, prior to the enactment of the present Civil Code, was based upon the maxim. The new German Civil Code has somewhat modified this doctrine. The Civil Code,

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(228) Klein - op cit, No. 56

which was enacted in 1896, and came into force in January 1900, states, in Article 905:

> "The right of the owner of a piece of land extends to the space above the surface of the earth and under the surface. However, the owner cannot prohibit interferences which take place at such height, or depth that he has no interest in their exclusion."(229)

This Section mitigates the harsh rule of the maxim. We find here a limitation of the rights of landowner, predicated upon his interest in the height of the space, where the latter is being affected.

In Case V. 79/19 of the Reichsagericht 1919(230) the defendant established an airport near the plaintiff's property. The plaintiff sued successfully for restitution of the depreciation of his land, because of noise from aircraft flying at a low altitude. The Supreme Court, after discussing Article 905, held that the landowner's right extends to the airspace above; however, there can be no encroachment and no undue interference with the use of land, when an aircraft flies through the higher airspace. The Reichsgericht affirmed the right of the owner to prohibit interference on his land, caused by the

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(229) The German text of Section 905 reads: Das Recht des Eigenthumers eines Grundstucks erstreckt rich auf den Raum uber der Oberflache und auf den Erdkorper unter der Oberflache. Der Eigenthumer kann jedoch Einwirkungen nicht verbieten, die in solcher Hohe oder Tiefe vorgenommen werden, dass er an der Ausschliessung kein Interesse hat".

(230) 97 R.G.Z. 25

loud noise, and/or low altitudes, of aircraft flying over his land.

In the case VI.24/20 1920 (231) the court said that although the landowner may be entitled to prevent flights over his property, his right is restricted when such flights are done at a great height. The owner must relinquish his right of prohibition so that "aviation, an economical, valuable means of communication which is to be developed to an absolute necessity, may be used in the limits of due liberty and not hampered in a manner disadvantageous for the community."

Section 1 of the Air Traffic Act 1922, which has been called the 'Magna Charta' of aviation, reads:

> "The use of the airspace by aircraft is free in so far as it is not restricted by this Act and by the Ordinances promulgated to put it into effect."

Under such regulations, the problem arises as to whether or not the owner of the land over which the airplane is flown is entitled to compensation, in so far as his interests are prejudiced. The Air Traffic Act deals only with liability for accidents and Section 28 provides that the Air Traffic Act does not affect other Acts of the Reich.

Article 10 of the Air Navigation Act 1936 provides for absolute but limited liability of the aircraft operator,

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(231) 100 R.G.Z. 69

only in the case of damage caused to persons or things "by an accident" during the operation of an aircraft. The term 'accident' is a special feature of German Law established for the purposes of air transport only.(232) (It is actually equally required in railway and automobile transport.)

In the Silver fox Case of 1939(233) the Supreme Court assumed that noise made by an aircraft, while operating under normal conditions, can be considered as an 'accident'. However, the court denied liability of the Air Company, because there was no 'adequate relationship' between the accident (noise) and the damage to the farmer, the loss being attributable to the extreme but natural nervousness of the foxes and not to the aircraft noise. Authors, however, generally agree with this result on the ground that there was no accident at all.(234) On the other hand, the court admitted the existence of an 'adequate relationship' when a person was killed by a horse which bolted when frightened by the noise of an aircraft.(235)

Damages caused by continuous acts, especially the devaluation of property by overflights, do not give rise to an action against the aircraft operator. In practice, the question has been raised as to whether or not there is an 'accident' when a house loses its commercial value because of aviation noise; the answer has been in the negative. If the house

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(232) O. Riese - Luftrecht, Stuttgart (1949) p. 338
(233) R.G.Z. 158/37
(234) Riese - op cit, No. 232 p. 338
(235) R.H. Mankiewicz - Some Aspects of Civil Law regarding Nuisance and Damage caused by Aircraft (1958) 25 J.Air L. & Com. 44

is located contiguous to an airport, the airport operator may be liable for certain interference such as noise.(236)

A highly controversial question arises as to proof of damage. It is generally agreed that devaluation of real estate in the vicinity of an airport can constitute serious damage for the owner, especially in residential areas.(237) An action could be based on Section 906 & 1004 of the B.G.B., together with Section 26 of the Industrial Enterprises Act, which provides that when the proper administrative authorities have granted an operator the right to establish a certain industry or business at a given place, the court cannot enjoin him from carrying out the activities for which he has been licensed, although his neighbors may be substantially inconvenienced by such activities. The neighbors can, however, obtain a court order prescribing the adoption of measures for the prevention of the nuisance or inconvenience. Moreover, if the adoption of such preventive measures proves impossible or insufficient, the neighbors are entitled to damages. Article 10 of the Air Navigation Act 1936, makes these rules applicable to actions against the operator of an airport. However, no action can be brought against the operator of a flight under Section 26 of the Industrial Enterprises Act, or under the relevant rules of the Civil Code, for it has been held that the liability of the latter towards third parties is governed

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(236) Riese Z.L.R. (1952) 11; Rinck - Z.L.R. (1954) 88

(237) Westermann - Der Grossflughafen im Raum und Nachbarrecht Z.L.R. (1957) 269; Rinck Z.L.R. (1958) 301

exclusively by the rule of absolute but limited liability, established by Article 10 of the Air Navigation Act 1936.

Switzerland

The Swiss Civil Code is based on the same principle of Section 905 of the German Code. Section 667, adopted in 1907, states: "The ownership of real estate extends into the airspace above and into the soil beneath the surface of the land, so far as the owner has an interest in exercising a right of ownership in such airspace or in such soil."(238)

The German and Swiss Codes both raise, in practice, the difficulty of determining the height to which the owner of lands below possesses that quality of interest in the space above, which authorizes him to interfere with or prevent the use of such space by others.

Brazil

In the Brazilian Code Article 526, inspired by Section 905 of the German Code, states that:

> "Property of the ground comprises everything above it and below it, which is useful to the exercise of the right of property. However, the owner cannot oppose activities undertaken at such a height or depth that there is no interest for him to obstruct them."(239)

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(238) For the original text see Hazeltine op cit, No. 33, p. 61

(239) See also Article 773 Civil Code of the Republic of China (Eng. trans. 1931)

Article 61 of the Air Code 1938 follows the same principle and ensures the freedom of air traffic conducted within adequate regulations, stating that:

> "The right to fly over private property must not damage the right of property of the land such as defined by Civil Laws."

Italy

The French version of the 'Cujus est solum' maxim made its way into the Codes of Italy, Belgium, Austria, Japan, the Netherlands, Portugal, Spain, Turkey and the Province of Quebec.(240)

The Italian Civil Code of 1865, in Article 440, provided that:

> "He who has ownership of the land has also ownership of the space above the land and of everything which is found above and below the surface."(241)

This Article does not state the height to which such ownership extends.

The new Italian Code, in force since 1942, does not define the space rights of the landowner. There is a limitation of his exclusionary rights, depending on the height in space to which he might have an interest to exclude the activities of intruders.

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(240) Lycklama A. Nijnolt - Air Sovereignty (1910)p.35; Klein (op cit No.56) pointed out that "this general statement made in 1910 needs considerable softening".

(241) For the original text see Cooper - op cit, No. 19, p.32

Article 823 of the Italian Code of Navigation continues along this line, stating that an aircraft must not damage the interest of owners of land over which such aircraft is being flown.

Article 965 of the Air Navigation Act 1942, provides that:

> "The operator is liable for damage caused by the aircraft to persons or goods on the ground, even in cases of force majeure, from the beginning of the take-off maneuvers to the end of the landing maneuvers."

This provision attaches liability to damage caused 'by the aircraft'. It may be argued that only damage caused by physical contact is governed by this Article. The Italian jurists do not deny the possibility of a constructive interpretation of Article 965, in order to make it applicable to damage caused by noise resulting from the flight or the maneuver of the aircraft.(242)

The Province of Quebec

In 1930 the Supreme Court of Canada was asked certain questions by the Governor General in Council, as to the respective legislative powers of the Parliament and of the legislatures of the provinces in relation to the regulation of control of aeronautics.(243) In an opinion by Newcombe J. the court stated that:

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(242) Mankiewicz - op cit, No. 235

(243) Legislative Powers as to Regulation and Control of Aeronautics in Canada [1930] S.C.R.663

> "The Common Law of England applies in the English provinces of Canada. In the Province of Quebec the law is not materially different, for by Article 414 of the Civil Code it is declared that 'ownership of the soil carries with it ownership of what is above and what is below it'."

The Judgement of the Supreme Court of Canada was reversed in 1932 on appeal to the Privy Council.(244) In the arguments for the Attorney General, it was argued that the "maxim does not apply so as to prevent aerial navigation from being a public right; flying over land is not a trespass to any proprietary right".

In 1954, in a discussion of the maxim, a Canadian Court(245) held that the landowner is not an owner of unlimited airspace over his land, for airspace is 'res omnius communis'. The landowner has only a limited right in airspace over his property, his right being limited by what he can possess or occupy for use and enjoyment of his land.

Conclusion

The legal concept of nuisance is largely unknown in Civil Law countries; its equivalent concept is usually called 'troubles de voisinage' (neighborhood disturbance).(246) Any legal action instituted under the Civil Code for nuisance, is

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(244) In Re the Regulation and Control of Aeronautics in Canada [1932] A.C. 54

(245) Lacroix v. The Queen [1954] U.S. Av.R 259

(246) In the Province of Quebec the expression nuisance is used by the jurisprudence.

an action based on tort, or an offence, or quasi-offence.

Actions against interference by aviation can generally be based on a violation of the absolute right to undisturbed enjoyment of the property, irrespective of negligence on the part of the operator or the airport, on negligence (faute) of the operator or airport, or on absolute liability if specifically provided for by statute.

In no Civil Law country can the ownership of land be invoked as a basis for an action of trespass, against the operator of the aircraft or the airport. Some countries have established, specifically or implicitly, the principle, that the operation of air services does not constitute per se an infringement of property rights.(247) In other countries, where no such rule has been enacted, the courts have constantly adhered to the principle that whatever may be the limit to which ownership extends into the airspace, the landowner must tolerate the overflying of an aircraft.(248)

The violation of regulations and established rules is considered to be negligence, except where force majeure can

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(247) Article 17 of the French Civil and Commercial Aviation Code 1955; Article 1 of the German Air Navigation Act 1936; Article 3 & 4 of the Argentine Aeronautics Act 1954 and most of the South American Aeronautics Acts.

(248) O. Riese and Jean Lacour - Précis de Droit Aérien (1951) p. 152; M. Lemoine - Traité de Droit Aérien (1947) p. 115; M. Litvine - Précis Elémentaire de Droit Aérien (1953) p. 213; Civil Code of Switzerland Section 667; Italy Section 440; Spain Section 650

be pleaded. Consequently, the aircraft operator is liable for all damages caused by an aircraft operated contrary to air navigation regulations in force.(249)

When actions are based on absolute liability, compensation is limited.(250)

While none of the Civil Law countries is believed to allow an action for trespass against the operator of the flight, compensation for noise may be obtained either from the operator of the airport, or from the flight operator, or from both. In some cases, compensation will be awarded only when there is an excessive noise, or where the noise is due to the failure to observe normal flight rules and procedures. This means that negligence of the operator of the airport, or the service, must be proved, while some countries provide for absolute liability, the amount of which is sometimes limited to a maximum for each damaging act. In addition, the operator of the airport may be required to adopt proper measures to prevent disturbance of neighboring landowners.(251)

In accordance with traditional case law, the general consent is that the granting of a license to operate an airport, although given after proper inquiry, does not prejudice

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(249) Mankiewicz - op cit, No. 235

(250) German Law - Section 23 of Air Navigation Act 1936; The Brazilian Aeronautics Act of 1938 establishes absolute liability, but sets limits only in the case of damage to persons.

(251) Mankiewicz - op cit, No. 235

or restrict the exercise of property rights of neighboring landowners. However, they cannot enjoin the industry from operation. They can ask only that appropriate measures should be taken to prevent the interference.

PART IV

The Airport and its Neighbors

Years ago, when airplanes were small in size and few in number, airport sites were selected at a distance beyond the city limits, where ground was cheap and only a few buildings obstructed the natural approaches to the field.

The advent of aerial navigation brought a new significance to the airport, which became a community within a community. Restaurants, hotels, motels, bookstores, gift shops, drug stores, parking lots and other forms of private enterprise are now part of the picture. The airport acted as a magnet drawing first the sightseer, then the business man, and attached to all these enterprises were people. Workers naturally desiring to be relatively close to their jobs tended to build their homes in close proximity to the place at which they were employed. Speculators saw the opportunity to sell cheap land at a profit. Villages emerged complete with shopping centers, schools, hospitals and recreation facilities. As a consequence, what was once wide open space is now heavily populated, and airports have become progressively more and more surrounded by residential and industrial areas. (251A)

(251A) For illustration see appendix II and III.

Chapter A An Airport is Not a Nuisance per se

The dispute between landowners and nearby airports is one of the greatest problems of aviation.

Annex 4 of the Chicago Convention 1944 (252) defines airport as: "An aerodrome at which the facilities have, in the opinion of the State authorities, been sufficiently developed to be of importance to Civil Aviation."

According to the International Civil Air Organization (I.C.A.O.) Lexicon an aerodrome means:

"A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and movement of aircraft." (253)

In the U.S.A., the Federal Aviation Act 1958, Section 101(9) defines an airport as:

.."a landing area used regularly by aircraft for receiving or discharging passengers or cargo." (254)

Under the Civil Aviation Act 1949 (255) the British definition of an aerodrome (256) is

"Any area of land or water designed, equipped,

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(252) Convention on International Civil Aviation Chicago 1944; Annex 4: Aeronautical Charts.

(253) I.C.A.O. Doc 7200 (1952) p. 2 and Annex 14 part I Ch 1, p. 7; See also Shawcross &Beaumont - op cit,No.156, p. 509

(254) 72 Stat 737

(255) 12, 13 & 14 Geo 6 C.67 Section 63(1); Air Navigation Order 1954 Article 73 (1)

(256) British Statutes generally use the word 'aerodrome' and not 'airport' -Shawcross & Beaumont op cit,No. 156, sec 555

> set apart or commonly used for affording facilities for the landing and departure of aircraft."

The operation of an aiport is a lawful business and there is a well-established rule that an airport, whether public or private, is not a nuisance per se, although it may become a nuisance due to the manner of its construction or operation.(257)

> "Aviation is a lawful business and the owner of real estate has a right to establish an airport thereon, if it is properly located and properly operated, notwithstanding for aesthetic and sentimental reasons it may not be agreeable to persons owning fine country homes in the community."(258)

An airport may become a nuisance because of unsuitable location or improper operation,(259) but the plaintiff must prove that he has suffered some material and substantial injury.(260) The question of future operation was dealt with by the Michigan Supreme Court in Warren v. Detroit,(261) wherein the plaintiff

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(257) Smith v. New England Aircraft Com. - op cit No. 128; Swetland v. Curtiss Airports Corp. - op cit, No. 18; Thrasher v. City of Atlanta op cit, No. 179; Delta Air Corps v. Kersey (1942) 193 Ga 862, 20 S.E.(2d) 245; [1946] U.S.Av.R 264; Kuntz v. Werner Flying Service (1950) 275 Wis 405, 43 N.W.(2d) 476; [1950] U.S.Av.R 390

(258) Batcheller v. Commonwealth (1940) 176 Va 109, 10 S.E.(2d) 599;[1940] U.S.Av.R 16

(259) Vanderslice v. Shawn op cit, No. 119; Anderson v. Souza op cit, No. 114

(260) Crew v. Gallagher (1948) 358 Pa St 541; [1948] U.S.Av.R 167

(261) Warren Township v. City of Detroit (1944) 94 N.W.(2d) 134; [1944] U.S.Av.R 35

sought to enjoin the construction of an airport. The court adopted the view that, though the operation of the airport could in the future destroy the purpose for which the plaintiff purchased his property, viz. to construct a school building -- the question of whether or not the noise materializing from such airport amounted to a nuisance could nevertheless only be determined after it came into operation.

An airport is not a nuisance because of a strong public interest in aviation; this rule applies to private as well as to public airports.(262) In some cases, particularly earlier ones, the courts issued injunctions against private airports, on the ground of nuisance;(263) however, where only incidental damage has been shown, courts have refused to enjoin the operation.(264) A more realistic view has been taken vis-a-vis the enjoining of flights from public airports, and proof of great inconvenience and discomfort has been required.(265)

> "People who live in organized communities must of necessity suffer some damage, inconvenience and annoyance from their neighbors. For these annoyances, inconveniences and damages, they are generally compensated by the advantages incident to living in a civilized state."(266)

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(262) Antonik v. Chamberlain op cit, No. 130

(263) Swetland v. Curtiss op cit, No. 18; Gay v. Taylor op cit, No. 172; Anderson v. Souza op cit, No. 114

(264) Kuntz v. Werner Flying Service op cit, No. 257

(265) Delta Air Corps v. Kersey op cit, No. 257

(266) Antonik v. Chamberlain, op cit, No. 130

Recently, it was stated that "... although some hazard and annoyance is involved to the people in a community near an airport, this is not sufficient to corstitute a nuisance either in law or in fact."(267) The question of whether or not an airport is a nuisance will depend only upon the circumstances of each particular case and the main factor to be considered by the courts, lies in the proof of 'unreasonableness', i.e. whether or not the airport is operated so as to interfere unreasonably with the comfort of adjoining property owners.(268) The touchstone is whether an ordinary and reasonable man, that is, a normal person of ordinary habits and sensibilities, who lives in the same neighborhood, would have objected to this kind of operation.(269)

Nuisance actions against operators of airports are confined, in most of the cases, to dust, fear of crash and noise. At a modern airport, the dust problem is negligible, because the air field has a hard solid surface. Noise indeed is related to the problem of fear. The roar of the airplane engine close to the ground, gives rise to thoughts of a crash. These factors seem to be the dominant features causing the nuisance.

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(267) Stevens v. Mueller 7 Avi 17288

(268) People v. Dycer Flying Service [1939] U.S.Av.R 21

(269) Atkinson v. Bernard op cit, No. 120

Chapter B The Anatomy of Noise

One of the most pressing problems confronting the air transport industry today is the problem of noise. Technically defined, noise is a form of energy in the air, invisible vibrations that can enter the person's ear and make him 'hear something'. Actually, noise can be described as any 'unwanted sound'.(270) Although this definition seems very elementary, it is remarkably sensible, because it combines both aspects of noise, the sound outside and the feeling inside the person.(271)

Sounds are caused by disturbances in the air and the weather plays an important part in the way sound travels.

The noise problem may be divided into three important components: (1) a source which radiates the sound, (2) a path along which the sound travels and (3) a receiver (which in this case is the human ear). The ear and, behind it, the delicate mechanism of the human system are our judges. But we are apt to forget that a person is something more than a nervous system; he is sentient, endowed with conscience, emotions and the power of reflection.(272)

Noise effects on mankind may include the following, in descending order of severity: Permanent or temporary damage

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(270) Cyril Harris - Terminology and Introduction in: Handbook of Noise Control (1957); Noise: its Effect on Man and Machine (1960) 86th Congress, 2nd Session H.Res 133 Serial m.

(271) Air Force Pamphlet No. 32

(272) Fifth I.A.T.A. Public Relations Conference at Estoril (1960)- Paper by Pierre - Donatien Cot on the the Emotional Problems of Noise.

to hearing mechanism; other bodily effects detrimental to health or safety; disturbance of sleep or rest; interference with conversation or with the enjoyment of radio or television programs; and general annoyance or irritation.(273)

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(273) Noise: its Effect on Man and Machine op cit, No. 270

Section 1 Aircraft Noise

While airports are vital assets of the nation as a whole and the communities they serve, they can become a factor which interferes with the life of people who live near them.

Aircraft noise has become a problem which has increased tremendously in scope. The sources of objectionable noise in the vicinity of an airport can be classified in two categories: noise associated with ground operations and noise of flight operations. The greatest and most disturbing noise comes from test operations and from landing and, above all, take-offs.

Planes take off and land along an inclined flight path, extending from the end of the runway. The small light planes used in the early days of civil aviation required a short glide angle plane for take-off and landing, which may be described by the ratio 7-1.(274) (Seven feet of horizontal movement for each foot of ascent or descent.) Therefore, reasonable claims of interference were usually confined to those areas in the immediate environs of the airport. Progress in plane design and manufacture has brought larger and more powerful aircraft, which have aggravated the problem by increasing both the general noise level and the number of landowners affected, since take-off and landing now require longer and shallower glide paths (the glide angle plane is about 50-1).

Aircraft noise sources are the piston engine, the propeller, the jet engine, the jet engine with afterburner,

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(274) William Harvey - op cit, No. 218

the helicopter engine, the supersonic propeller and the rocket engine.[275] The noise created by large rockets and missiles has not been of much concern to the citizen. Most of this work has been experimental in nature and conducted at a few relatively remote testing and launching sites.

A great potential source of interference and disturbance is the noise produced by high powered jet engines. In jet planes, which do not have propellers, noise results from two main causes; firstly, from the so-called siren effect of the compressor turbine blast; and secondly and more importantly -- from a community viewpoint -- from the exhaust arising from a large volume of air and gases moving at a high velocity out of the jet's tailpipe. The friction between this blast of air and the still air beside it causes the jet noise.[276]

Some new noise problems have arisen with the advent of the passenger-carrying helicopter. There is every likelihood that the use of helicopters as 'feeders' and airport buses will increase and with fifty seater helicopters, jet engines are likely to be used. By the nature of their operation and because of the fact that they will fly within cities, helicopters may well raise the problem of noise.

The question of noise is not merely academic, and very serious problems are just around the corner. The present

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(275) The Airport and its Neighbors - The Report of the President's Airport Commission, W sh. (1952)

(276) W.A. Wilson - Jet Noise Pest laid to poor Towns Plans. 21 June 1960, Montreal Star

indications are that there will be a strong public resistance to any increase in expected noise level associated with the introduction of supersonic aircraft.(277) It should also be noted that, since the aircraft would probably be larger, the power required to set it in motion would be correspondingly higher and the noise generated at this stage is likely to be higher.(278)

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(277) I.C.A.O. Doc 8087 - C/925 Aug. 1960

(278) I.A.T.A. 14th Technical Conference Symposium on Supersonic Air Transport - Montreal Apr. 1961

Section 2 Noise as a Nuisance

The assumption that noise, under a given set of facts, may be a nuisance has long prevailed. However, "generally noise

> is not ex necessitate a nuisance, even when disagreeable. It has been stated that no one is entitled to absolute quiet in the enjoyment of his property, but is limited to a degree of quietness consistent with the standard of comfort prevailing in the locality in which he dwells... On the other hand, noise may be a nuisance even though such noise may result from the carrying on of a lawful business, industry or trade, in a town or city, but to have this effect the noise must be excessive and unreasonable."(279)

Noise from planes flying over land does not materially interfere with the physical comfort of the landowner.(280)

In the case of Crew v. Gallagher,(281) the court recognized that if the citizens of today are to accept the benefits of modern conveniences and scientific advancement, they must also be willing to accept, as aspects of modern living, the minor irritations which occasionally accompany such development.

"'No one is entitled to absolute quiet in the

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(279) 66 C.J.S. 772; See also Halsbury's Laws of England Vol.24, p. 51; McMiller v. Douglas Aircraft Com. [1950]U.S.Av.R 258

(280) Smith v. New England Aircraft - op cit, No. 128

(281) Crew v. Gallagher - op cit, No. 260

> enjoyment of his property; he may only insist upon a degree of quietness, consistent with the standard of comfort prevailing in the locality in which he dwells.'"

The plaintiffs did not show any actual damage to their property or its use, nor prove any material discomfort. Therefore, the opinion of the lower court, granting an injunction restraining the use of certain property as an airport, was reversed.

In a recent case, that of Atkinson v. Bernard,(282) the court stated clearly that in assessing the merits of a request by landowners adjacent to an airport, for abatement of noise emanating from aircraft taking off and landing over the land-owners' property, the test of 'reasonableness' must be used. But since people's opinions may very as to the 'reasonableness' of noise, "...the proper method of determining whether or not aircraft noise is reasonable, should be by an acoustical study and a decree drawn in terms of decibel reading".(283)

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(282) Op cit, No. 120

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(283) Sound pressure levels are measured and interpreted as decibels. The decibel is simply a logarithmic unit, which expresses the ratio between two sound pressures.

Section 3 Solution to the Problem of Aircraft Noise

Problems created by aircraft noise are incapable of solution by the courts alone. In order to try to solve this acute problem, which is the most serious and aggravating issue with regard to the expansion of aviation, attention should be focused on the three important components of noise: the source, the path and the receiver. However, it must be born in mind that while this problem is composed of three separate factors, all the three parts must be considered as an inseparable system in developing a well balanced overall program to bring about a solution.

The control of noise at its source is an engineering and operational problem. The industry has been aware of this and it has already done a great deal to minimize the noise itself, as well as to reduce its impact on surrounding communities. Manufacturers have exerted considerable efforts in developing efficient sound-suppressing devices, which reduce noise by altering the flow of exhaust gases. The use of noise suppressors results in an average four percent increase in flying time and fuel consumption on short range flights. On long range flights, they account for an average two percent increase of flying time and nine percent increase in fuel consumption.(284) Nevertheless, suppressors are now installed

(284) Noise: its effect on Man and Machine, op cit No. 270 - A memorandum presented by S.G. Tipton, President of Air Transport Association; Fifth I.A.T.A. Public Relations Conference - Estroil (1960) A paper by John Hoving - Aspects of jet aircraft noise.

on all civil jet aircraft, in spite of their high initial cost and their adverse effect on operating performance.

The indifferent success of noise suppressors has forced the aviation industry into a research program to discover better methods of achieving noise reduction, without paying the penalty of reduced performance and increased operating costs. As a result of this research, a new type of jet engine, known as the 'turbo-fan' engine, has been developed. This engine, which gives greater initial power, will allow the aircraft to climb out of hearing range faster than the present jet. Although the 'turbo-fan' engine did achieve lower jet exit velocities and, hence, less noise at the rear of the engine, a new noise was added - the fan whine. Engine manufacturers therefore resorted to acoustically treating the duct or shroud surrounding the fan portion of the engine, in order to have it act as a resonator.

The high rate of climb achievable by the supersonic aircraft will help to minimize the noise heard in areas surrounding airports. But even with the best suppressors likely to be developed, the noise level will probably be higher than in the past. It will be necessary, either by adoption of suitable operation techniques, or by other means, to ensure that noise is reduced to an acceptable degree when it reaches the public.

Noise reduction along the path can be accomplished by increasing the distance between the source and the receiver

and by adopting proper zoning regulations.

The International Air Transport Association (I.A.T.A.) recommendations assert that the most significant reduction of noise on take-off operations can come from climbing at full power, to as high an altitude as possible, before reaching residential areas near the airport, and then reducing engine power sharply while flying over these areas.(285) These recommendations are now in practice at London Airport (England). H. Seagrim Vice, President of operations of T.C.A., comments on this situation that "... it is doubtful whether this actually helps much. As soon as you cut power, you stop climbing so the airplane is closer to the houses, although it is making less noise".(286)

Local airport traffic rules should be changed in order to assure that, whenever possible, approach and departure of traffic patterns should be over water and thinly populated areas.(287) The control tower ought to direct coming and outgoing traffic to runways which offer the least possible sound annoyance to neighbors. There are circumstances, however, in which comfort must give way to safety. When use of a preferential runway involves an excessive cross or tail-wind, another runway must be used. Administrations should provide adequate weather ground facilities to assist pilots to locate

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(285) I.A.T.A. News Bulletin, 20 July 1961

(286) Second article by W. Wilson, op cit, No. 276, 22 June 1960

(287) The Airport and Its Neighbors, op cit, No. 275; Air Safety Recommendations, No. 17

their position when in proximity to critical areas and to assist them in maintaining minimum noise flight paths.

At present, there is no satisfactory answer to noise created by engine run-up just prior to take-off. At the last I.A.T.A. symposium on Supersonic Air Transport, (288) it was suggested that in order to minimize ground noise from taxiing, the aircraft should be parked close to the runway. Use can be made of hangars, but the benefit is small. A better form of obstacle is provided by a running-up pen. The manoeuvering of aircraft into and out of the pen and the effect on the air flow into the intakes of jet engines may present serious difficulties. But the advantage of a running-up pen, being equally effective for all types of aircraft, warrants the exploration of these solutions to operating problems.

Wide bands of trees have also been considered as a means of screening noise. They will certainly help, provided that they can be planted in the right place and to the necessary thickness, but above all, provided that they do not infringe upon the safety clearances required about the approach and departure lanes for aircraft.

In dealing with the noise problem, and in trying to solve it, attention should also be focused on the receiver -- the person who complains of excessive noise. It is very difficult and complicated to control noise at the receiver end,

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(288) Op cit, No. 278

because an individual is subject to all human variables, annoyances and prejudices. Nevertheless, a great deal of the problem could be removed by an intelligent program of community relations. Experts in this field have found that communities which believe that their airport authorities and airlines are doing a competent and sympathetic job, manifest a thirty per cent greater tolerance towards noise, than do those in which the authority has not minded its public.(289) European populations are not so air-minded and they feel quite strongly that air travel is the exclusive province of a privileged minority.(290) Notwithstanding, mutual understanding can ease the tension, when people will understand and accept certain irreducible levels of noise as necessary for the common good of the nation and the community. On the other hand, crews during their 'moment of truth' in the air, must think about the population on the ground and every effort should be made to reduce noise, consistent with safe flying practice.

The term 'solution to the problem' might mean, for instance, that the noise would be reduced to such a low level that it would neither cause any damage, nor annoyance to anybody. It is impossible to foresee such a fortunate outcome. However, there is a strong belief that a research program coupled with cooperative efforts by everybody concerned, can reduce the noise problem to tolerable limits. "This is going to be a hard thing to do, but I do believe that it can be done."(291)

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(289) Sir William P. Hildred Director General of IATA- Plain Talk about Plane Noise, 16th General Meeting of IATA at Copenhagen, 12 Sept. 1960

(290) Pierre - Donatien, op cit, No. 272

(291) Ira Abbott-Director office of Advanced Research Programs N.A.S.A. -Noise: Its effect on Man and Machine, op cit No284

Chapter C Damages caused by Sonic Boom

In this rapidly growing era, the problem of 'sonic boom' is becoming more and more apparent. "Sonic boom is an explosive phenomenon of the air caused by shockwaves generated at supersonic flight speeds."(292) A 'sonic boom' is not an 'explosion' and it can not be said that an insurance policy which covers the risk of 'explosion' could be interpreted to include damage caused by 'sonic boom'.(293)

When the aircraft flies at supersonic speed it normally creates two sonic booms -- one of these emanating from the pressure waves arising at the front of the aircraft and the other at the tail. Close to the aeroplane the shock waves result in a rather complex pressure pattern, each part of the plane producing its own disturbance.

The 'boom' is normally heard as two distinct noises or shocks; however, under some conditions of flight altitude, the separate disturbances merge and only one 'boom' is detectable. The shock waves are generated continuously as long as flight is at supersonic speed. The pressure waves bend backward behind the aircraft and therefore the sound reaches

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(292) Allen J. Roth - Sonic Boom: A new legal problem (1958) 44 A.B.A.J. 216; S. Hammon - An old and a new Legal Problem: Defining 'Explosion' and 'Sonic Boom' (1959) 45 A.B.A.J. 696; See also I.C.A.O. Doc 8087 - C/925 Aug. 1960; Noise: its Effects on Man and Machine - op cit, No. 270

(293) Bear Bros. Inc. v. Fidelity and Guaranty Insurance [1959] U.S.Av.R 146; James A. Fraster - Is a Sonic Boom an Explosion (1960) 12 Air Uni. Q. Rev. 118

the listener after the aircraft has passed. This fact, coupled with the great speed, high altitude and cloud cover, makes visual observation of the aircraft most difficult.

Scientific research has illustrated that the kinds of damage resulting from 'sonic boom' include the following: 1) Window and plate glass may be broken, 2) Light bric-a-brac may be shaken from the shelves and broken, 3) Damage to loosely-latched doors may occur, 4) If there is extensive glass breakage caused by a low level 'sonic boom', then there is possibility of the aggravation of existing plaster cracks and damage to defective plaster. Structural damage such as damage to foundations, floors, load-bearing walls etc. cannot be caused by a 'sonic boom'.(294) A special problem might arise in the operation of supersonic airplanes over the Alps, where even a moderate 'sonic boom' might precipitate dangerous avalances.(295)

When the pressure waves emanating from the object travelling at supersonic speed reach the ear of a person, they are heard as an 'explosion'-like 'boom' sound.(296) The normal human ear is receptive to pressures from about 0.002 pounds per square foot (P.S.F.), up to 2 P.S.F., the latter being very loud. At pressures of 4 to 40 it is advisable to put cotton into the ears. At pressure over 40 P.S.F., puncturing

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(294) Louis D. Apothaker - The Air Force, the Navy, and Sonic Boom (1960) 46 A.B.A.J. 987

(295) Extract of ECAC/4 - WP 51 ECO/10 25 May 1961 (Strasbourg 4 July 1961)

(296) See Appendix IV

of the eardrums takes place.

Physical injury to human hearing apparatus is not likely to occur, as a result of 'sonic boom' created by present-day aircraft. The damage lies in operating at supersonic speeds at altitudes of about 300 feet, when pressure from the 'boom' jumps to around 33 P.S.F.; but there are no supersonic flights at such low levels.(297)

At the present time, there is no way of eliminating the 'sonic boom', but the important point is that enough is known so that it can be controlled.(298) The 'sonic boom' is loudest at points directly beneath the flight path, and the pressure decreases in intensity as the altitude of flight increases, until a point is reached where the 'boom' is suddenly cut off because of refraction effects in the atmosphere. In order to reduce the effects of the 'sonic boom', the aircraft will have to fly at subsonic or low supersonic speed, until it reaches an altitude of at least 40,000 feet (12,200 metres). The pilot will not be able to accelerate to a much higher speed, until the plane reaches an altitude of about 50,000 feet (15,250 meters). Similarly, when approaching the destination, the pilot must reduce the speed to a subsonic level while the aircraft is still above this altitude and then remain subsonic until the plane reaches the ground.(299) Any

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(297) Allen Roth, op cit No. 292

(298) A. Sturm - About the Sonic Boom [1957] The Airman 46

(299) I.C.A.O. Studies - Supersonic Airplanes, News Release, 26 Nov. 1959; I.C.A.O. Doc 8087 - C/925 Aug 1960

radical departure from steady flight level conditions, during any of the supersonic portions of the flight, should also be avoided, since this may lead to an intense 'sonic boom' over areas on the ground.(300)

The last I.A.T.A. Conference on Supersonic Air Transport(301) ended with the basic conclusion that, fairly soon, the world will have airplanes capable of tremendous speeds, if the puzzling problem of 'sonic boom' can be solved.

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(300) Noise: Its effect on Man and Machine - op cit, No. 270

(301) Op cit, No.278

Chapter D Regulations dealing with Noise and Vibration

United Kingdom

Various legislative provisions regulate the question of noise and vibration on airfields and present a most substantial obstacle to the success of what might otherwise constitute an actionable nuisance. Immediately after the war, it became clear that noise on aerodromes was going to be an acute problem and in consequence in 1947 the following provision was enacted:

> "An order in Council... may provide for regulating the conditions under which noise and vibration may be caused by aircraft on aerodromes, and may provide that subsection (2) of this section shall apply to any aerodrome as respect which provision as to noise and vibration caused by such aircraft is so made.
>
> (2) No action shall lie in respect of nuisance by reason only of the noise and vibration caused by aircraft on an aerodrome to which this subsection applies by virtue of an Order in Council under... this act, as long as the provisions of any such Order in Council are duly complied with." (302)

The aerodromes are designated by Order in Council. The Minister of Transport and Civil Aviation is empowered to

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(302) Re-enacted and now Section 41 of the Civil Aviation Act 1949 (12 & 13 Geo 6 C. 67)

"... prescribe the conditions under which noise and vibration may be caused by aircraft (including military aircraft) on Government aerodromes, licensed aerodromes, or aerodromes at which the manufacture, repair or maintenance of aircraft is carried out by persons carrying on business as manufacturers or repairers of aircraft and subsection (2) of Section 41 of the Civil Aviation Act 1949 shall apply to any aerodrome in relation to which the Minister has prescribed conditions..."(303)

The conditions prescribed by the Minister are set out in Regulation 230 of the Air Navigation (General Regulations) (1954).(304) Regulation 230 permits noise and vibration to be caused by any aircraft on the specified aerodromes provided that:

"(a) the aircraft is taking off or landing

(b) the aircraft is moving on the ground, or on water or

(c) the engines are being operated in the aircraft

(I) for the purpose of ensuring their satisfactory performance

(II) for the purpose of bringing them to a proper temperature in preparation for, or at the end of a flight or,

(III) for the purpose of ensuring that the instruments, accessories or other components of the aircraft are in a

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(303) Air Navigation Order 1954, Article 56 (S.I. 1954 No. 829)

(304) S.I. 1954 No. 925

satisfactory condition,

and also such special conditions, if any, as may be prescribed as respects any such aerodrome as aforesaid."

When the noise complained of is caused by an aircraft flying low over adjoining properties, while taking off or landing, it is possible that the aircraft will continue with impunity to create such noise, because the regulation provides for the case when "aircraft is taking off or landing".(305)

It is also to be noted that according to Regulation 230 the engine must be "operated in the aircraft". Thus, any aircraft engine being operated in a 'test bed' other than an aircraft, might constitute a nuisance.(306)

The ordinary law of nuisance applies in relation to any type of aerodrome not listed in Article 56 of the Air Navigation Order 1954, or to any noise originating under a condition not covered by the 'prescribed conditions' set above, i.e. on any aerodrome which is not a government-licensed or manufacture or repair aerodrome as well as specified aerodromes where aircraft engines are not being run for stated purposes.(307)

The effect of the U.K. regulations is that a landowner who has sustained a sensible interference with the use and enjoyment of his property, by noisy aircraft operating out of

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(305) McNair - op cit, No. 16, p. 101; McNair's view is contrary to Shawcross & Beaumont - op cit, No. 156, Section 580

(306) Bosworth Smith v. Gwynnes Ltd. (1920) 89 L.J. Ch 368

(307) D. Mackintosh - Comparative Aspects of Airport Operator's Liability in the U.K. and the U.S. - A Thesis submitted to the Institute of Air and Space Law McGill Uni.(1958)

an authorized aerodrome, has no redress in the courts. The only available remedy for him is to take political action by badgering, worrying, and cajoling the Minister into seeing that something is done about it. In the U.K. this remedy is far more effective than one might think. The Minister, in fact, makes a real effort to keep a fair balance between the public interest and the private owner and to mitigate the nuisance as far as possible.

United States

Under the new Federal Aviation Act 1958[308] the Administrator has the power and the duty to regulate the flight of an aircraft "for the protection of people on the ground and for the efficient utilization of the navigable airspace."[309] The Administrator of the Federal Aviation Agency has been granted police powers and he will have full power to deal with flight patterns, in the interest of property owners, as well as of air commerce.

This new Act does not mention anything about noise and vibration, but it is presumed that the Administrator will be granted authority to deal with this matter.

The Corpus Juris Secundum lays down the following rule:

> "An airport, landing field or flying school is not a nuisance 'per-se'... although it may

(308) Op cit, No. 197

(309) Section 307(c), 72 Stat 750

> become a nuisance from the manner of its construction or operation; in other words, it can be regarded as a nuisance only if located in an unsuitable place, or if operated so as to interfere unreasonably with the comfort of adjoining property owners. Thus an airport which by reason of bright illumination and the noises incident to its operation, will unavoidably interfere with, if not destroy a neighbouring landowner's enjoyment of his property, constitutes a nuisance which may be enjoined."(310)

The rule in the Corpus Juris is somewhat contradictory and misleading. In the first sentence it states that an airport is not a nuisance 'per-se', while the second sentence appears to cast the burden of proof on the airport operator, to justify that no nuisance is created. This statement implies, prima facie, the conclusion that any airport interfering with neighboring property, even to the slightest degree, is a nuisance. Under such a rule the court could enjoin the operation of such airports, if it were satisfied that the airport is in fact a nuisance.(311)

R. Fixel(312) adopts a contrary view accepted as the prevailing view by the courts, to the effect that the onus is on the landowner to prove that the operation of an airport is

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(310) C.J.S. Vol. 2, Aerial Navigation Sect. 29

(311) Rajnikant Pandya - Airport Liability - A Term-paper submitted the Inst. of Air and Space Law McGill Uni(1960)

(312) R.W. Fixel - The Law of Aviation (3rd Ed-1948) p. 201

a nuisance. An airport may become a nuisance because of improper operation. Noise, proximity and the number of aircraft may be taken into account, but where the operation of an aircraft, vertically above lands, is not harmful to the health or comfort of ordinary people, there is no nuisance.

Noise Reduction Committees

In order to cope with the problem of noise incidental to aircraft operations, a number of committees have been formed.

The National Aeronautics and Space Administration (N.A.S.A.) has long been aware of this problem. As far back as 1916, the predecessor of N.A.S.A., the National Advisory Committee for Aeronautics (N.A.C.A.) took official note of the problem. The Nineteen Thirty's saw advancements in the electronics field, which enabled sound engineers to design measuring and analysis equipment to allow the N.A.C.A. to conduct research on noise sources. Practically all of the early work was directed towards studying propeller noises.

After World War II, the introduction of the turbojet-powered airplane and the increase in flight speeds into the supersonic range created a whole new series of noise problems. The aviation industry, deeply aware of its responsibilities in this matter, has formed an independent organization known as the National Aircraft Noise Abatement Council (N.A.N.A.C.). The founding members include the Air Transport Association -- representing the Airlines --the Aerospace Industries Association -- representing the manufacturers -- and the Air Line Pilots Association. As its basic tool, NANAC has developed a National

Aircraft Noise Abatement Program Manual, which contains all of the necessary information required by local aviation industry groups and organizations faced with aircraft noise problems.

The Air Research and Development Command created in 1952 the office of Coordinator of Noise and Vibration Control, which was conducted by the various branches of the Air Force. At the same time, the Armed Forces joined with the National Research Council in sponsoring the Committee on Hearing and Bio-Acoustics, (CHABA).

These committees, which include a great number of local noise reduction committees, are working towards one goal, viz. to reduce the noise generated by aircraft and to lessen their interference with the comfort, health and well-being of humanity.

Chapter E Rome Convention

The Rome Convention of 1952 - The Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface -- was designed ultimately to replace the earlier Rome Convention of 1933 and the additional Brussels Protocol of 1930.

The Legal Committee of I.C.A.O., at the seventh session held in Mexico City in January 1951,(313) completed a final draft of this Convention and transmitted it to the Council with recommendations to circulate it to the Contracting States and to other States and International Organizations.(314) The next step took place in September 1952, when the first Diplomatic Conference on Private International Law was convened in Rome.(315)

The Rome Convention 1952 came into force on February 4, 1958 and has been ratified as of 1 March 1962 by eleven countries: Egypt, Luxembourg, Spain, Australia, Canada, Pakistan, Ecuador, Ceylon, Honduras, Haiti and Mali. (Mali adhered to the Convention on the 28 of December 1961 and its ratification will therefore become effective on the 28 of March 1962.)

A long-standing controversy has arisen in the discussion as to whether damage caused by noise and vibration of an aircraft should come within the terms of the Convention. Article 1 is the backbone of the Rome Convention. Within this

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(313) I.C.A.O. Doc 6031 LC/129

(314) I.C.A.O. Doc 7270 A 6-P/1 p. 71

(315) I.C.A.O. Doc 7379 LC/34 Vol. 1 Minutes and Vol. II Documents

Article are set forth the various conditions and circumstances giving rise to compensation.

Article 1 declares: "Any person who suffers damage on the surface shall upon proof only that the damage was caused by an aircraft in flight, or by any person or thing falling therefrom, be entitled to compensation as provided by this Convention. Nevertheless, there shall be no right to compensation if the damage is not a direct consequence of the incident giving rise thereto, or if the damage results from the mere fact of passage of the aircraft through the airspace in conformity with existing air traffic regulations."

Before a person is entitled to compensation under this Convention, Article 1 indicates that the following chain of events must occur:

Firstly, the person claiming must have suffered damage.(316) For the purpose of this Convention, Article 30 states that 'person' means any natural or legal person, including a State.

Secondly, the damage must have been caused on the 'surface'. Although this term is not defined in the Convention itself, it is quite obvious that it applies to both land and

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(316) The word 'damage' has for a long time been subject to very careful study and much controversy. References will be found in I.C.A.O. Minutes and Documents II p. 59, 133, III p. 243 IV p. 48-54, 241, V p. 11-21, 172, 253, 259, 298, 329, 347, 356,; VII p. 139-145, 222, 269, 347; Doc/7379 Lc/34 p. 19-20

water. However, some difficulties may arise when damage was caused below the surface, such as to oil lands, fish etc.

The plaintiff, in order to be entitled to compensation, must prove merely that the damage is a direct consequence, "caused by an aircraft in flight or by any person or thing falling therefrom". This raises the question of what is an aircraft. The Convention has left the term 'aircraft' undefined. In all probability, its definition will be determined in conjunction with the definition drawn up by I.C.A.O.: "Any machine that can derive support in the atmosphere from the reaction of the air".(317) There are doubts whether this definition would cover rockets, since rockets do not derive any support from the reaction of the air, but rather by the reaction of rocket motors.(318)

The aircraft must have been in flight. Subsection 2 of this Article defines flight for the purpose of the Convention, as follows: "An aircraft is considered to be in flight from the moment when power is applied for the purpose of actual take-off, until the moment when the landing run ends...".

Mere fact of passage

The Draft Convention used the term "normal flight of aircraft through airspace" instead of the "mere fact of passage".(319) Mr. Garnalt (France) was in favour of the

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(317) I.C.A.O. Doc 6180 p. 65

(318) Calkins - Principles and Extent of Liability under the Revision of the Rome Convention proposed by I.C.A.O. Legal Committee [1950] J.A.L. Chicago 151

(319) Doc 7379 LC/34 p. 23

expression 'normal flight', stressing that "In the case of an aircraft flying at too low an altitude, there would be mere passage but not normal flight and such an aircraft would not fall within the system of liability of the Convention, if the Convention included the expression 'mere passage'". (p. 17) Mr. Sal (Argentine) argued that the words 'normal flight' should be retained in the text and that in accordance with the proposal of the Delegation of Spain, the reference to noise which was made in the Mexico City draft ("due to noise or normal flight of aircraft through airspace") should be deleted. (p. 17)

Mr. Wilberforce (U.K.) was of the same opinion, viz. that to have the 'normal flight' of the aircraft, as the only exception, would be the best solution, in view of the fact that it is impossible to indicate only the noise factor, while there also exist other kinds of interference. (p. 16)

Mr. Thiran (Belgium) suggested that the words 'noise or' could be deleted from the text, since 'normal flight' includes a whole series of phenomena inherent to such flight such as noise, disturbance of the air, etc. (p. 17)

In discussing the problem of noise, Mr. Sidenbladh (Sweden) pointed out that the Draft Convention provided that there would be no compensation if the damage was due to noise, and that it would therefore seem that the expression which should have been used was 'the normal noise', of the aircraft. The Swedish delegation supported the proposal made by Mr. Halevi (Israel), to include in the Convention the following words:

"Nevertheless there shall be no right to compensation, if the damage is due to the normal flight of aircraft through the airspace, or the noise occasioned thereby". This would oblige operators to control the noise of their aircraft. (p. 17)

Mr. Wilberforce (U.K.) said that the main purpose of the Rome Convention was to give full protection to the claimant and therefore the words 'normal flight' must be replaced by 'mere passage'. (p. 16) The Conference rejected this proposal and also decided to delete the words 'noise or' from paragraph (1) of Article 1.

In the second reading, when the delegations considered the Draft Convention article by article, Mr. Loaeza (Mexico), the chairman of the Drafting Committee, said that in using the expression 'mere fact of passage' the Drafting Committee was contemplating this act with all its natural and physical consequences. He stated that the expression 'normal flight' raised difficulties of interpretation. (p. 398)

Mr. Nunneley (U.S.) suggested that the problem of noise should be left to the national legislations. The U.S. delegation felt that this question was beyond the scope of the Convention because it was impossible to foresee a case where, because of noise, the damage would reach the limits provided for by the Convention. Such a solution would create a greater possibility of acceptance of the Convention. (p. 398)

On the other hand, Mr. Sidenbladh (Sweden) asserted that the problem of noise was very important for his country and that he could not agree to leave it outside the Convention; this

problem, he continued, had to be solved in the way provided for by the Drafting Committee and the States should be left with the possibility of protecting their nationals against noise by regulations providing, for example, that aircraft could not fly below a certain altitude, or fly above a specified region, etc. (p. 399)

The British delegation was not certain whether or not the expression 'the mere fact of passage of the aircraft' would include the effects of passage including noise. Mr. Loaeza (Mexico) said that the text of the Drafting Committee should not cause Mr. Wilberfore (U.K.) any uneasiness, since the passage of an aircraft included certain inevitable consequences which arose from the nature of the aircraft. One of these consequences was that it made noise. The normal consequences of the passage of an aircraft were covered by the expression 'the mere fact of passage'.

Most representatives thought that the general interest demands that society become accustomed to a certain amount of inconvenience caused by aircraft. As noise and vibration form a part of that inconvenience, a general provision was proposed which excluded reference to these specific items.

The Drafting Committee adopted the point of view that the mere fact of flight could not give rise to compensation. Thus, there could be no liability for damages arising from noise, etc. if the flight was in conformity with existing air traffic regulations.

Presumably, there will have to be a causal connection between the damage and the breach of air traffic regulations, before a court will hold that the landowner is entitled to compensation.

The prime reason for the failure of the Rome Convention 1952 and the refusal of all but a few countries to adhere to it, rests in the fact that too great an attempt was made to compromise. An effort to please everybody ended up by pleasing no one. However, it should be remembered that, even if this Convention would have been ratified by many nations, it would not have solved the problem which it did not even attempt to tackle, that of damage on the surface in domestic flights, as distinguished from foreign flights.

Chapter F Obstructions to Navigable Airspace

Landowners in the vicinity of airports have frequently claimed that flight of aircraft interfere with the use and enjoyment of their property. The reverse side of the coin involves suits by airports against landowners alleging activities which hamper airport operation. Instances of structures on the ground interfering with aviation have been numerous, but have seldom reached the courts. It will thus be seen that many landowners near an airport may seriously impair the airport, merely by making a normal and reasonable use of their property. It is therefore important that steps be taken to limit the height of the structures in the vicinity of the airport. However, if the alleged obstruction is clearly a 'spite' construction, such as tall poles of no value to the landowner, the courts have shown themselves not to be sympathetic, for it appears that the landowner is trying to force the airport to purchase his property.(320) Proof of actual 'spite' and malice must be made before the courts will require the removal of such obstructions, or a limitation of their height.

When the obstruction is a legitimate one(321) such as

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(320) Liles v. Jarigan [1950] U.S.Av.R 90; United Airports of Cal. Ltd. v. Hinman [1940] U.S.Av.R.1; Commonwealth v. Bestecki [1937] U.S.Av.R 1; City of Iowa City v. Tucker [1936] U.S.Av.R 10

(321) Reaver v. Martin (1951) 46 So (2d) 896 (Fla Sup Ct).- Drive-in theatre

power lines,[322] or a water tower[323] the courts have been more sympathetic to the landowner, particularly if the airport involved is a private airport. If the obstruction is a legitimate one, a court order to remove it would be a 'taking' of property which can be accomplished through the use of the power of eminent domain with due compensation to the landowner.[323]

In Strother v. Pacific Gas and Electric Co.,[324] a case where an aircraft struck a power line, the court held that:

> "The use of twenty-six feet of space above the ground for the construction and maintenance of high power wires and poles to be used in its business by a public utility corporation which owns the land, is a reasonable, beneficial and necessary use of the property."

In Canada obstruction to navigable airspace has been of greater consequence over water than over land, due to the relatively lower altitudes at which planes can be flown over water.[325]

The present situation is not satisfactory and aviation companies are looking forward to the day when they will receive adequate protection by enactment of zoning regulations.

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(322) Guith v. Consumers Power Co. (1940) 36 F (2d) 21; Capitol Airways Inc. v. Indianapolis Power & Light Co. (1939) 215 Ind. 462 18 N.E. (2d) 776

(323) Roosevelt Field v. Town of North Hempstead (1950) 88 F Supp 177 (D.C.N.Y.); [1950] U.S.Av.R 107

(324) Strother v. Pacific Gas and Electric Co. [1950] U.S.Av.R 147; (1950) 211 P (2d) 624

(325) Stephens v. MacMillan [1954] U.S.Av.R 37 - Wires over navigable water are public nuisance

Chapter G. Methods of Preventing Airport and Community Disputes

While many airports have been comprehensively planned from the standpoint of air transport and aircraft requirement, insufficient attention has been given to their physical relationship to the urbanized areas of which they are a part.

There are three basic methods by which an airport can be pretected from urban encroachment.

The first solution involves the purchase of sufficient land surrounding the airport so that landing and take-off operations, particularly at a low level, will be over airport-owned property. This method, of course,although the most desirable one, is the most expensive, and it therefore is not too practical. The C.A.A. has instituted a policy whereby the airport must acquire extensive approach areas at the end of runways, as a prerequisite to obtaining federal aid. Many state legislatures have specifically authorized cities to acquire land for the purpose of operating a municipal airport.

A less costly but equally effective method, concerning noise generated near airports, is the purchase of avigation rights over the land surrounding such airports. The title of the land itself remains in the landowner, but he sells a defined right of flight over his property. The sale may be perpetual, or a lease for a term of years.

Airports have become an integral feature of the community with many-faceted relations between the two, such as

the airport's creation of jobs for hundreds of people living in the vicinity. It is also important that travel-time between the airport and the traffic center it serves be accelerated as much as possible, in order to place air flights on a more efficient basis. Integration of airport plans with the total system of metropolitan transportation is therefore essential.

There is a need for county and municipal action to solve the problems involved in the establishment and presence of airports. Increased attention is necessary to the planning and regulation of the location of airports, in order to protect the safety, health, welfare and peace of mind of people living in close proximity to airports, while at the same time not to hamper the progress of aviation. The goal is not only to prevent the erection of obstructions that might be harmful to aircraft, but also to control the erection of public and residential buildings and to protect the landowners from nuisance and hazard. Although some real estate appraisers have gathered statistics tending to show that residential property value is not affected by the proximity of an airport,(326) undoubtedly the true state of affairs is to the contrary.(327)

The power to zone seems to fall within the police power of a state.(328) It is necessary even when its exercise results

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(326) Walther - Property in the Vicinity of Airports (Jan.1954) 22 The Appraisal J. 15

(327) Randal - Appraisal of Property near Airports (Jan.1954) 22 the Appraisal J. 39; See also Hopkins v. U.S.A.[1959] U.S.Av.R.265; Ackerman v. Port of Seattle, op cit,No. 192; Bacon v. U.S.A. 7 Avi 17659

(328) Fred F. Bradley - The Airport and the land surrounding it in the Jet Age (1960) 48 Ky L.J. 273

in the deprivation of some property rights.[329] However, neither the welfare of aviation, nor the traditional respect for the landowner's rights, can be summarily sacrificed; each must be qualified to accommodate the other.

As far as a municipality or other public body is concerned, it must receive specific authority from the state legislation, in order to formulate a valid regulation. In the Newark Case[330] the Supreme Court of New Jersey held that an airport zoning ordinance, by the City of Newark, was unconstitutional. The decision was based on the fact that the city lacked the power to adopt such an ordinance in the absence of enabling State legislation.

The power to zone, however, is a limited one. It must not be unreasonable, or open to charges of discrimination or uncertainty. In the case of Banks v. Fayette County Bd. of Airport Zoning,[331] a question was raised as to the degree of restriction an airport zoning ordinance can impose in regulating the use of private property, without being unreasonable and therefore invalid. The regulation was found to be unreasonable, due to the failure of the drafters to enact a specific zoning regulation for the particular area, attempting merely to use an existing zoning classification, which was designed for a

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(329) Rhyme, op cit, No. 71, p. 177

(330) Yara Engineering Corp. v. City of Newark [1945] U.S.Av.R 117

(331) Banks v. Fayette County Bd. of Airport Zoning(1958) 313 S.W. (2d) 416

purpose other than the elimination of 'airport hazards'.

The conflicting interests of the airport operator and nearby property owners must be adjusted or settled by the use of zoning regulations, by application of fundamentally the same test as that used in determining whether the airport is a nuisance to the landowner.(332) The landowner is allowed a reasonable use of his property with the necessary structures incident to it. A court will be much more likely to construe an ordinance as being valid, so long as it is compatible with the landowner's use of property.(333)

An important case is Harrell's Candy Kitchen Inc. v. Sarasota-Manatee Airport(334). A regulation of the Airport Zoning Board limiting the height of structures and trees in the vicinity of the airport was held, by the Supreme Court of Florida, to be valid, and the airport could obtain an injunction forbidding the landowner from building on his property in excess of the prescribed height. The court stated that regulation of the height of buildings in and near airports falls within the purview of public health, safety, morals and general welfare. Zoning regulations duly enacted pursuant to law are presumptively valid, and the person who attacks the

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(332) John M. Hunter - op cit, No. 111

(333) McCarthy v. City of Manhattan Beach (1953) 41 Cal(2d) 879, 264 P (2d) 932

(334) Harrell's Candy Kitchen Inc. v. Sarasota-Manatee Airport [1959] U.S.Av.R. 294

regulation has the burden of showing that the regulation is unreasonable and unrelated to the public health, welfare, etc.

> "Such regulations not only promote the general welfare of the State and community served, but contribute to the proper and orderly development of land areas in the vicinity of airports. Such regulations stabilize values and provide safety to those who use the airport facilities in taking off and landing as well as those living in the vicinity thereof."

The fact that buildings and structures are limited to a fixed maximum height by a valid local zoning ordinance, does not mean that the landowner, in such zone, has lost the right to challenge noisy aircraft in the airspace over the height restriction. It would seem that in order to use and enjoy his land below, he has the right to be free from the objec-
ionable noise of aircraft.(335)

No Federal Agency has the power to zone property in the vicinity of airports. This is the province of the community and because of perculiar local conditions and aspects, this matter cannot be dealt with effectively at the Federal level.(336) It is hoped that municipalities, county and state authorities planning new airports, will insure that where

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(335) Kenneth Lucey, op cit, No. 202

(336) Pamphlet: Sounds of the Twentieth Century - F.A.A. office of Public Affairs (1961); See another opinion;Kenneth Lucey op cit, No. 202

legally possible, the surrounding property is zoned, or otherwise reserved for light industrial and commercial purposes, that are not as sensitive to sound as residential subdivisions. A zoning plan based on careful study and accurate draftmanship would protect both, the interests of the community and those of commercial aviation.

PART V

CONCLUSION

A fundamental problem in the progress of humanity towards the space age, is the dispute between landowners and aviation. The law grows with the development of science and the progress of mankind. It has to encourage and develop, not hinder, this progress.

> "The law embodies the story of a nation's development through many centuries and it cannot be dealt with as if it contained only the axioms and corollaries of a book of mathematics." (337)

Now that the airplane is in existence and is in world-wide use, a new branch of law must be created, with all the attendant legal rules and principles to govern landowners' rights in airspace.

No court has ever held, in an aviation case, that the landowner owns the airspace above his property to an indefinite extent. But the landowner has in practice the right of effective use and enjoyment of his property. Therefore, the airspace over the land may be used by airplanes with impunity, so long as the flights do not substantially interfere therewith.

With the advent of aerial navigation, urban encroachment has increased to such an extent that adequate measures must be taken, both to insure the successful operation of existing and future airports and to protect surrounding land-

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(337) Holmes O. Wendell - The Common Law (1881) p. 1

owners from daily interference from an airport's operation.

Noise produced by aircraft is a problem to which it is hardly possible to turn a deaf ear. It would appear to be the most difficult thing to overcome, since it seems inevitable that it will increase with the use of supersonic aircraft. A high priority in research and design efforts is needed in order to bring noise within acceptable limits. It is also of great importance to find ways to operate aircraft from smaller areas, so as to keep them further away from built-up districts.

Some writers feel that landowners will gradually become accustomed to intense airplane noise, similar to the manner in which the public became accustomed to the 'horseless carriage'. Indeed, the general public already has exhibited such acclimatization, but to assume, at this stage, that the community will ever completely ignore the growing problem of noise, appears to be wishful thinking.(338) Present indications are that unless further progress on all fronts will reduce the noise level, there will be a strong public resistance, leading inevitably to restrictions, which would have a detrimental effect on the economy of supersonic operations.

In order to safeguard the public on the one hand and the operators on the other, governments will have to seek means of regulating air traffic without at the same time handicapping it. The decision as to what constitutes sufficient noise, so

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(338) K. Lucey, op cit, No. 202

as to cause legitimate complaint, will have to depend on subjective and objective considerations, with the ultimate and final word on the matter being that of the courts.

Although aviation is a new field in our modern world, it has developed during recent years along distinctive and enduring lines and has shown a large and steady annual growth. Let us hope that the coming years will bring an increase and a tremendous development in aviation and its legislation.

> "For I dipt into the future, far as human eye could see,
> Saw the vision of the world, and the wonder that would be,
> Saw the heavens fill with commerce, argosies of magic sails,
> Pilots of the purple twilight, dropping down with costly bales"
> (339)

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(339) Alfred Lord Tennyson, Locksley Hall (1842)

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APPENDICES

APPENDIX I

Original Text of the Roman Passages Referred to

(a) The Latin text of Digest VIII 2.1 reads:

"Paulus libro vicensimo primo ad edictum. Si intercedat solum publicum vel via publica, neque itineris actusve neque altius tollendi servitutes impedit: sed immittendi protegendi prohibendi, item fluminum et stillicidiorum servitutem impedit, quia caelum, quod supra id solum intercedit, liberum esse debet."

(b) The Latin text of Digest XLIII 24.22.4 reads:

"Si quis proiectum aut stillicidium in sepulchrum immiserit, etiamsi ipsum monumentum non tangeret, recte cum eo agi, quod in sepulchro vi aut clam factum sit, quia sepulchri sit non solum is locus, qui recipiat humationem, sed omne etiam supra id caelum, eoque nomine etiam sepulchri violati agi posse."

(c) The Latin text of Digest XLIII 27.1.8. & 9 reads:

"Quod ait praetor, et lex duodecim tabularum efficere voluit, ut quindecim pedes altius rami arboris circumcidantur: et hoc ideirco effectum est, ne umbra arboris vicino praedio noceret. Differentia duorum capitum interdicti haec est: si quidem arbor aedibus impendeat, succidi/eam praecipitur, si vero agro impendeat, tantum usque ad quindecim pedes a terra coerceri."

(d) The Latin text of Digest VIII 5.8.5 reads:

"Aristo Corellio Vitali respondit non putare se ex taberna casiaria fumum in superiora aedificia iure immitti posse, nisi ei rei servitutem talem admittit idemqui ait: et ex superiore in inferiora non aquam, non quid aliud immitti licet: in suo enim ali hactenus facere lcet, qua tenus nihil in alienun immittat, fumi autem sicut aquae esse immissionem: posse igitur superiorem cum inferiore agere ius illi non esse id ita facere."

(e) The Latin taxt of Digest IX 2.29.1 reads:

"Si protectum meum, quod supra domum tuam nullo iure habebam, reccidisses, posse me tecum damni iniuria agere Proculus scribit: debuisti enim mecum ius mihi non esse protectum habere agere: nec esse aequum damnum me pati reccisis a te meis tignis."

(f) The Latin text of Digest VIII 2.9 reads:

"Ulpianus libro quinquagensimo tertio ad edictum cum eo, qui tollendo obscurat vicini aedes, quibus non serviat, nulla competit actio."

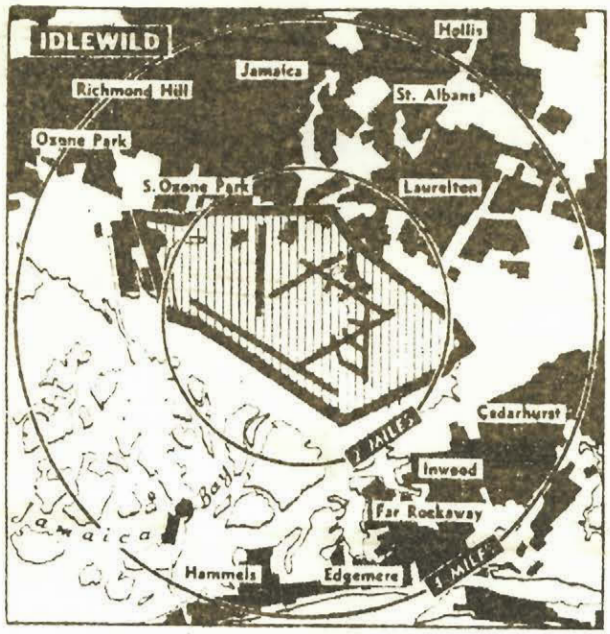
(g) The Latin Text of Digest VIII 2.24 reads:

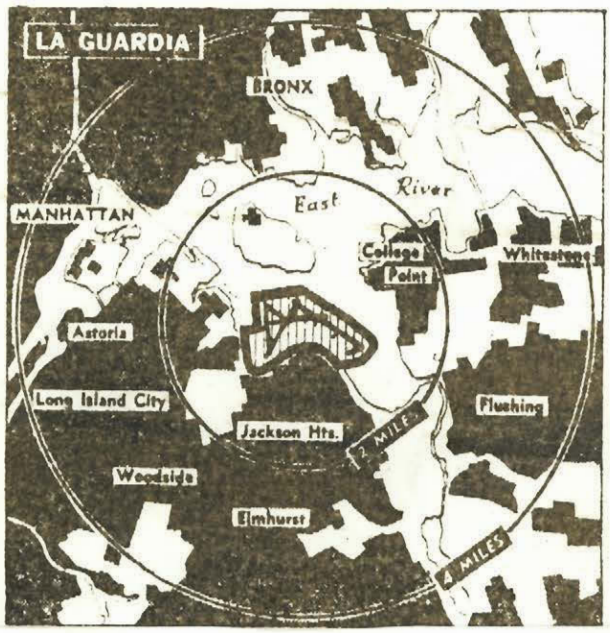
"Paulus libro quinto decimo ad Sabinum Cuius aedificium iure superius est, ei ius est in infinitio supra suum aedificium imponere, dum inferiora aedificia non graviore servitute oneret quam pati debent."

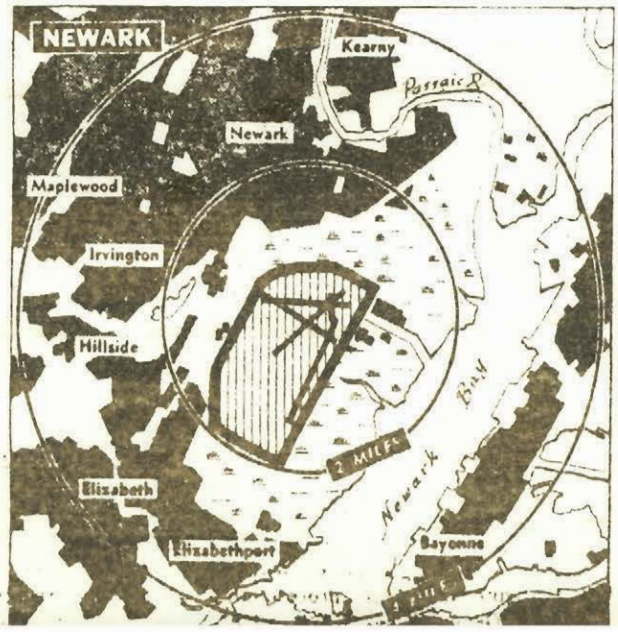
APPENDIX II

CITY AIRPORTS AND NEAR-BY AREAS

Heavy black lines indicate airport boundaries. Dark shading denotes heavily populated areas over which planes pass on takeoff and landing.







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Dec. 18, 1960

(Air Traffic Control:
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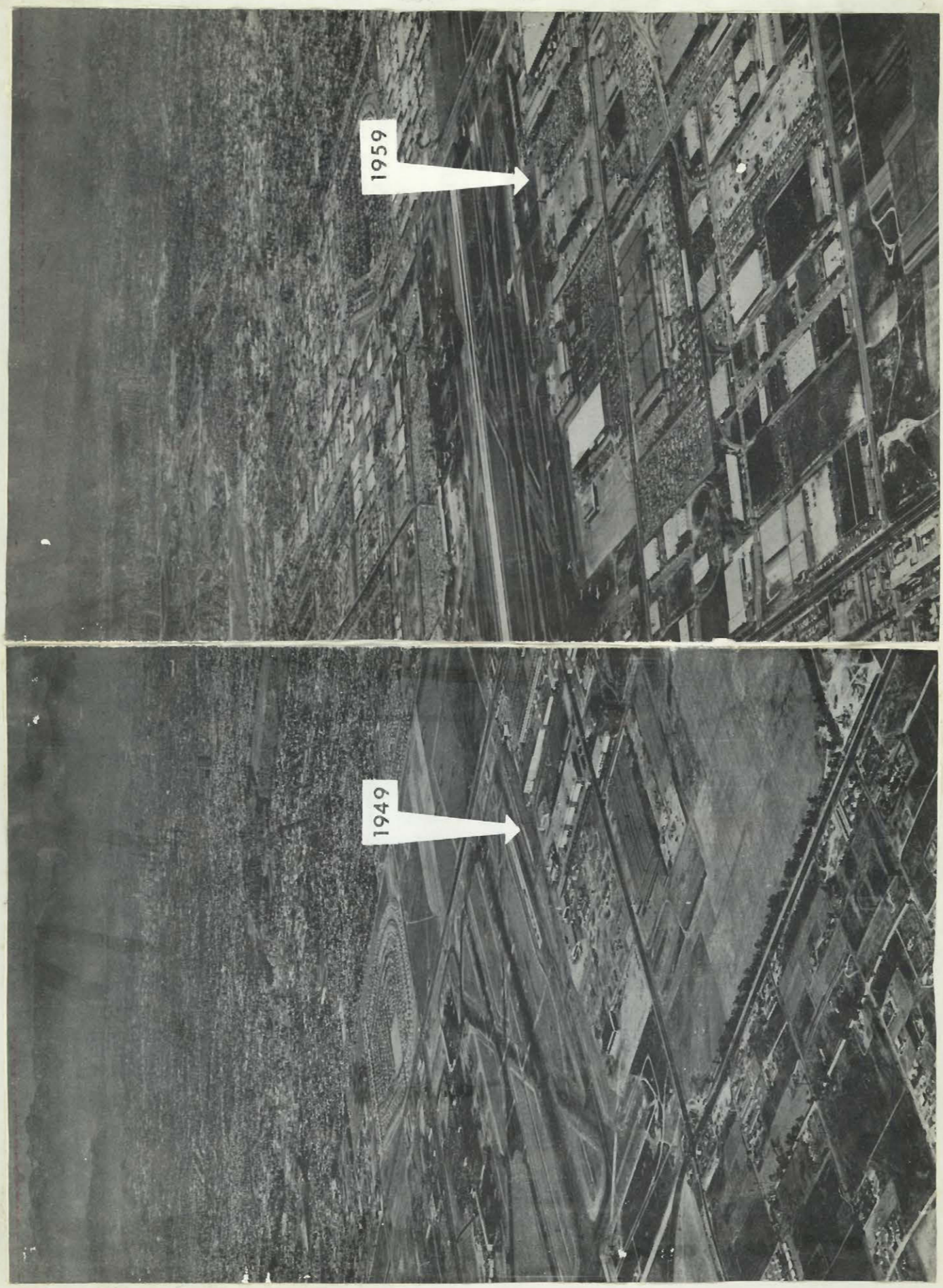
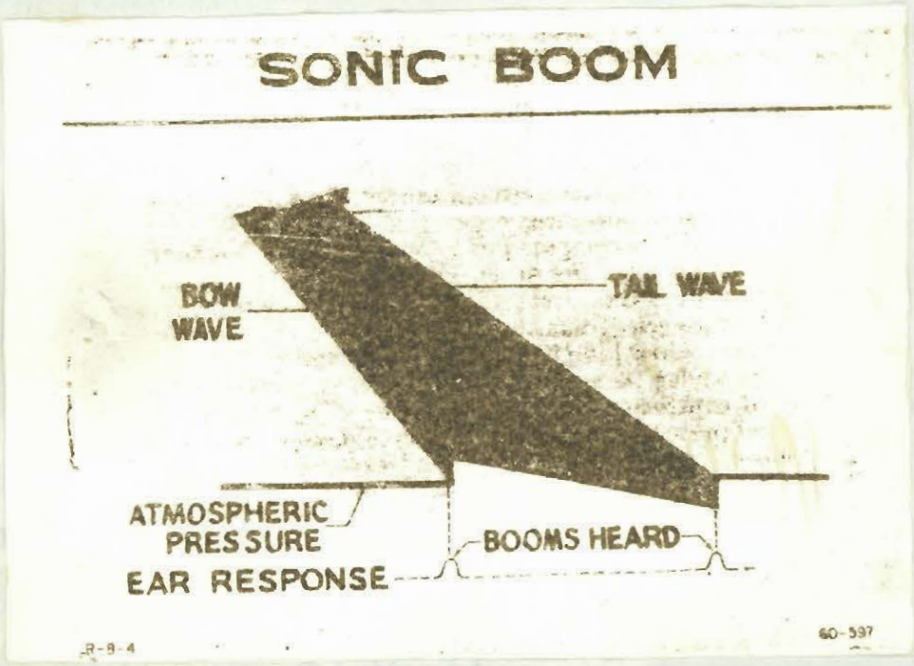
APPENDIX III

Los Angeles, Cal. Airport and the growth of the community nearby



(Sounds of the Twentieth Century F.A.A. Office of Public Affairs 1961)

APPENDIX IV



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