

## THE TRIAL OF ECONOMIC AND TECHNOLOGICAL ISSUES OF FACT: II\*

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WE have been considering the broad problems of economic and technological proof. We are now concerned with the narrower question of admissibility of the types of evidence which typically are available and relevant in antitrust proceedings. The nature of these types will become apparent in the course of the discussion. Grouped in relation to evidential doctrines familiar in the general run of cases, they will be discussed under the following heads: (a) Use of Judicial Notice; (b) Business Entries, Trade Publications, Standard Works and Official Records and Reports; (c) Specially Prepared Material; and (d) Expert Opinion.

The economic facts to be proved by such evidence usually include the industry's production capacity, price studies, analyses of comparative price behavior, sales, and financial statements of companies in the industry. The technological facts to be proved include the history of the technology; developments therein by particular defendant companies and others; and conflicts and their adjustment, such as notices of patent infringement, contested interferences, threats of patent litigation, litigation settlements, taking and granting of licenses, and purchase of patents.

The *sui generis* character of economic proof in antitrust conspiracy proceedings and a consequent tendency to relax many ordinary evidential requirements have been explicitly recognized by the courts.<sup>69</sup> Some of the major considerations which work in this direction may be worth reviewing briefly at this point before discussing the particular types of evidence involved.

*Effect of Having No Jury:* Federal Rule 43(a) provides, *inter alia*, that all evidence which would heretofore have been admissible ". . . in the Courts of the United States on the hearing of suits in equity, . . . ." shall be admissible in any event. This, as pointed out in Moore's *Federal Practice*, is a flexible provision; as with the rule as a whole, "The cast . . . is toward admissibility, not exclusion."<sup>70</sup> The case

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\* Part I of this Article appeared in 58 YALE L. J. 1019 (1949).

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69. Some of these are collected in the reference cited in note 51, *supra*.

70. 3 MOORE, FEDERAL PRACTICE § 43.02 (1938), at p. 3064-5: "One who goes to the former federal equity cases expecting to find a body of evidence law which will inform him whether particular evidence is admissible is likely to encounter some difficulty. Relatively few equity cases discussed points of evidence, since those cases were generally tried without a jury. True, equity opinions may be found which repeat common law rules of evidence concerning the qualifications and questioning of expert witnesses, *res gestae*, the admissibility of evidence of prior similar acts, or self-serving declarations. But these

for relaxation of exclusionary rules is strongest in the absence of a jury. As Moore points out:

"It is well known that the extensive and highly refined rules of evidence have developed largely as methods of controlling juries. It has been thought that a number of exclusionary rules are essential to prevent an untrained group of men from reaching erroneous conclusions regarding the facts developed at a trial. The validity of exclusionary rules of evidence as aids in determining what is a particular fact situation has been denied and rejected in practice before administrative boards. In great measure the same result has been occurring in suits in the federal courts, formerly denominated equitable."<sup>71</sup>

*Exceptional Complexity of Factual Issue:* When the issues presented to a court are such that proof must of necessity be voluminous, that proof other than hearsay would normally be unavailable, or that expert technical assistance would be unusually helpful, greater latitude should be permitted, and the courts act accordingly. These general trends should be noted: (1) greater latitude in the reception of hearsay; (2) enlargement of the concept of original entries, and (3) enhanced acceptance of expert opinion.

In a series of leading decisions, the federal courts, confronted with exceptional problems of proof, have relaxed the usual limitations on the admission of hearsay in the form of standard works, treatises, and government publications; and they have similarly relaxed the usual requirement that where an expert opinion or summary is based on reports by others the reports must be produced. Some of these deci-

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seldom attain the dignity of 'holdings'; they are usually only incidental to a discussion of the sufficiency of the proof."

71. 3 *id.* at 3060-1.

Rule 43(c), moreover, dealing with the record of excluded evidence—or offer of proof—provides: "In actions tried without a jury the same procedure may be followed, except that the Court upon request shall take and report the evidence in full, unless it clearly appears that the evidence is not admissible on any ground or that the witness is privileged."

Wigmore stresses the absence of juries in his explanation of the latitude permitted experts in patent litigation, as follows: "[I]n patent practice, the expert witnesses, nominally so-called, are virtually the retained partisan assistants of counsel, and yet no movement of complaint is made against this method. The reason is the same though converse, viz. that, in the absence of juries, the abuse is not felt." 2 WIGMORE, EVIDENCE § 563 n.3 (3d ed. 1940).

A similar suggestion that considerable latitude should be permitted in the introduction of expert cost accounting studies in a proceeding in equity appears in *Ohio Assac. Tel. Co. v. Geiger*, 3 F.Supp. 997, 1000-1 (S.D. Ohio 1933), a telephone rate case: "The facts disclose that the witness Stump prepared his data of unit costs, including material, rate of pay (about which there is no disagreement), and data of labor performance, from details furnished by the engineers of the commission, and data that had been prepared, systematized, redrafted, and scientifically treated through years of experience of the engineers and accountants of the commission, dealing with appraisals and valuations of industries of this

sions are cited in *United States v. Aluminum Co. of America*.<sup>72</sup> The disputed evidence in that case consisted in testimony by witnesses for Alcoa described as "thoroughly qualified experts on subjects relating to bauxite," concerning bauxite deposits of certain grades in Arkansas. Their testimony and summaries were based on numerous test-boring reports made by many drillers. The drillers were not produced, nor were all of their reports. The government contended that the evidence presented through these two experts therefore consisted in or relied upon hearsay, and was in violation of the best evidence rule. But Judge Caffey held this evidence admissible.<sup>73</sup> And in *United States v.*

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class and of public utilities of all classes. This data was placed at the disposal of the plaintiff's representatives. Certainly the experience of years of the commission's specialists, in connection with a highly specialized element of utility evaluation, and which is one of the particular concerns of the commission and its department, wherein the methods of valuation are improved and systematized, ought to have probative value and effect *in a court of equity* responsible for valuation solutions in connection with rate litigation. Fair opportunity for the company, through its experts, to examine the underlying data from which the facts and mathematical calculations are drawn, should be sufficient *in respect to an equitable consideration of the rights of parties* to render such evidence competent, of course subject to its weight and credibility." (Italics supplied)

72. 35 F.Supp. 820 (S.D.N.Y. 1940) (Government's motion to strike certain evidence denied).

73. *Id.* at 823-7: "As I conceive, the law on the point may be briefly stated thus: Opinion testimony by an acceptable expert resting wholly or partly on information, oral or documentary, recited by him as gathered from others, which is trustworthy and which is practically unobtainable by other means, is competent even though the first-hand sources from which the information came be not produced in court. With respect to the matter, in what impresses me as unambiguous authoritative judicial language, it has been said that 'the requisites of an exception of the hearsay rule' are 'necessity and circumstantial guaranty of trustworthiness.' *G. & C. Merriam Co. v. Syndicate Pub. Co.*, 2 Cir., 207 F. 515, 518. In other words, when hearsay evidence is offered it is admissible if resort to it be essential in order to discover the truth and if the surroundings persuade the court that the information adduced by the expert as a basis of his opinion is reliable.

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"In the Merriam case the opinion was written by Judge Learned Hand when a District Judge. This was quoted in its entirety and, so far as pertinent here, was 'fully' approved by the appellate court. He failed to find a court opinion directly stating the proposition he announced. His sole reliance was 3 Wigmore on Evidence, 1st Ed., secs. 1421, 1422 and 1690, published in 1913 and still standing without substantial alteration. With immaterial changes, the three sections mentioned have been carried forward in the second edition, published in 1923, and in the third edition, published in 1940.

"As will be observed, Judge Hand's test consists of two things. For purposes of identification these may be called (1) necessity and (2) trustworthiness. They will be considered in reverse order.

"The second element (namely, trustworthiness) is easy of application. (See Wigmore on Evidence, 3d Ed., Vol. V, sec. 1422; Vol. VI, secs. 1692 and 1702). That the material resorted to by the experts in the case at bar as foundation for their opinions was trustworthy seems to me clear: indeed, so abundantly established by the record as to admit of no real doubt.

"With respect to the first element (namely, necessity for using hearsay) there may be room for different views as to how it should be applied and, as I feel, we cannot intelli-

*Mortimer*, a summary compiled from tax records was admitted without concomitant examination of the compilers.<sup>74</sup>

gently or safely apply it unless first we arrive at an exact understanding of what is meant by 'necessity.' I think, however, particularly as Wigmore was relied on by Judge Hand as support for his statement of the reason of the rule, that we may rely on the learned author for a precise definition.

"In effect, Wigmore says that, as the word necessity is here used, it is not to be interpreted as uniformly demanding a showing of total inaccessibility of first-hand evidence as a condition precedent to the acceptance of a particular piece of hearsay, but that necessity exists where otherwise great practical inconvenience would be experienced in making the desired proof (Wigmore, 3d Ed., Vol. V, sec. 1421; Vol. VI, sec. 1702). . . . If it were otherwise, the result would be that the exception created to the hearsay rule would thereby be mostly, if not completely, destroyed.

"Perhaps an illustration may further elucidate the situation I am attempting to describe.

"One main specific instance in the record of a hearsay objection by the Government is where Alcoa had failed to produce third persons who drilled, or reports by drillers of, test holes showing or laying the basis for determining quality and quantity of bauxite disclosed by the drilling to various distances below the surface on particular tracts of land in Pulaski and Saline counties, Arkansas, referred to as the dumb bell. What are the pertinent facts as to whether non-production should be permitted?

"Among the facts for consideration in determining whether hearsay could properly be used are these: In the dumb bell region it is and long has been the general custom to accept such test hole reports as correct without calling the makers to verify them (pp. 36555-61, 37467-9, 37587-99). They spread over many years. They run to large numbers. The makers were numerous and are scattered. In order to supply the needed information direct from persons with first-hand knowledge, or from writings shown to have been made by them, on which to predicate an opinion, it is obvious that practically it would have been a physical impossibility to produce the makers or the documents at the trial of the case at bar. Such circumstances, as I understand Wigmore, are sufficient to constitute necessity, within the sense of the rule, for using hearsay in making proof of what is embodied in the reports.

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"When one reflects on how much time had already been consumed in the trial of this case when the experts were called as witnesses and how much additional time would have been required if they had not been allowed to resort to hearsay, certainly, if there be any discretion vested in the trial judge, it cannot have been error for him to have made 'a concession to the shortness of life' such as he did. Cf. *United States v. Secony-Vacuum Co.*, 310 U.S. 150, 230. . . . But if there exist no such discretion at least I think it not inapposite to express the view that failure to adopt the rule substantially as I have phrased it would be inconsistent with the fundamental philosophy running through the cases I have cited, more particularly through the opinions of the Second Circuit Court of Appeals.

"As I feel also, the rule stated is the unavoidable outcome of analysis of the opinions taken together in combination. Moreover, I believe that maintenance of it is demanded if we are to respect a somewhat general but concrete admonition by the Supreme Court. [Citing cases.] In substance, trial courts are there told to be practical and, so far as reasonably possible, to harmonize their evidence rulings with the current habits of the people generally in the communities in which they sit."

74. 118 F.2d 266 (2d Cir. 1941), *cert. denied*, 314 U.S. 616 (1941), per Clark, C. J.: "The most serious objection, technically, is that made to the admission in evidence of a number of charts purporting to show defaults in the payment of taxes on a high proportion of the mortgaged properties. These charts had been prepared by the prosecution wit-

The exception to the hearsay rule in favor of entries made in the regular course of business normally contemplates the admission of

ness Karcher, an experienced public accountant, assisted by several aides, of whom only one, in addition to Karcher, took the stand. One more seems to have been in the court room; the others were outside the district and at a distance at the time of the trial. The reliability of the charts is not questioned, and several of the defendants and their witnesses checked the figures and found no disparity, rather, indeed, that Karcher had been very fair. An exhibit by an expert for the defense—made up in the way appellant here criticizes—tallies remarkably with Karcher's charts particularly when allowance is made for the fact that it does not include the second half of the 1932 taxes. It did show that the ratio of all arrears in taxes and interest to the principal amount in the important mortgage series was less than 3 per cent, a matter not brought out by Karcher. But the number of mortgages in arrears, not the total amount of the arrears, was the 'danger signal.' *United States v. Dilliard*, supra, 110 F.2d at page 832. Appellant challenges the admission of the charts on two grounds: that they were prepared from tax records not themselves in evidence and that all those who participated in their preparation did not testify. Since the facts could have been brought out in any event by lengthy trial processes, and since appellant had the benefit of all the aid in rebuttal which his expert could suggest, we might well deny reversal merely for the lack of a showing of substantial injury. *United States v. Kelley*, 2 Cir., 105 F.2d 912, 917. But we think the charts were admissible.

"The voluminous material summarized by the charts was itself extracted from a great number of tax record books of each of the metropolitan counties. Not only would the production of those books have been a practical impossibility, but the procurement of either certified copies or title company abstracts, as authorized by New York Civil Practice Act, . . . of those records, involving hundreds of parcels of land, would have been most expensive, as well as disruptive of the activities of the record offices and burdensome upon the court. Furthermore, the records themselves, in official custody, were equally open to inspection by the defense. In such circumstances, secondary evidence is admissible to prove their contents, as it would be if they were outside the jurisdiction of the court or lost. . . .

"But appellant argues most strenuously that all of Karcher's aides should have been called. That this is a purely formal objection is shown by the testimony obtained from the one aide who took the stand. He testified that he and another assistant had made up the record cards, which he produced, covering their abstracts from the tax records on over a thousand parcels. Thus the amenities were formally satisfied, but certainly appellant was not the gainer, if, indeed, anyone was, by such routine testimony. Obviously the aides saw only part of the picture. The authenticity of the whole must depend upon Karcher's supervision and direction. He should therefore be the testimony upon which its evidential value rests. Karcher himself testified that he supervised the entire job, giving full time from November, 1934, until June or July, 1935 and then for various periods until the fall of 1937. First the arrears as shown by the company's own files were computed; then, since these were not complete, he directed the check from the tax records according to a plan which called for arrears of at least 30 days' duration, and resolved all doubtful questions in favor of defendants. We have seen that the results demonstrated the fairness of his method.

"There are numerous cases holding admissible on the testimony of a supervising agent statements compiled from voluminous records according to a method at once practicable and offering reasonable guaranty of accuracy, even though the supervisor had not examined each record himself. . . . Obviously this rule loses none of its force by reason of the passage of the recent statute, 28 U.S.C.A. 695, under which writings and records made in the regular course of any business, where it is the regular course of such business to make them, are admissible in any court of the United States. See *Ulm v. Moore-McCormack Lines, Inc.*, 2 Cir., 115 F.2d 492; *Id.*, 2 Cir., 117 F.2d 222. The only possible reason for

"original entries" only. This limitation, however, has often been relaxed.<sup>75</sup>

Complexity of issues likewise works in favor of the admissibility of expert opinion which might otherwise be deemed too speculative, which touches an ultimate issue in the case, or which in a simpler case might for other reasons be considered an invasion of the province of the court. The latitude sometimes permitted experts in patent cases has already been mentioned.<sup>76</sup> On other types of issues experts have likewise been permitted considerable latitude, provided always that the

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asserting that these authorities are not quite controlling is that these cannot be business entries, since they were made in preparing evidence for this trial; and, indeed, the case of *Morton Butler Timber Co. v. United States*, 6 Cir., 91 F.2d 884, 889, does say, as a ground for affirming a ruling made below, that entries 'made apparently for exclusive use as evidence in this case' were therefore not in the regular course of business. This ruling is, however, condemned by Wigmore as 'unsound; the men who made them were acting in the regular course of their employment.' 5 Wigmore on Evidence, 3d Ed. 1940, 1530, pp. 384, 385. And it is opposed to the leading case of *Northern Pac. R. Co. v. Keyes*, supra, where the tables in question were prepared for the particular case.

"On the principle we cannot see why an accountant's aides whose job it is to take off material from the public records so that their chief may construct his tables and charts accurately are not acting in the regular course of business. . . . [A]ccuracy is the life of an accountant's business, but the multitude of records cannot be checked by any one person alone. And here the system followed was not merely likely to insure accuracy, but apparently did so, since the other side, far from discrediting the records, actually supported them. The trend in the courts is unmistakably to follow the methods of ordinary business in assuming the validity, until discredited, of records daily accepted in commercial routine."

75. In *Cub Fork Coal Co. v. Fairmont Glass Co.*, 19 F.2d 273 (7th Cir. 1927), for example, part of the plaintiff's problem was to prove that shortages in deliveries of coal during three months were due to a shortage of coal cars on the C. & O. Railroad. Evidence on this issue held improperly excluded was described by the court as follows: "Error is assigned over the rejection of evidence offered by the plaintiffs tending to establish a car shortage. One Hodges who described himself as 'the statistician in charge of coal car accounts' of the Chesapeake & Ohio railroad, testified that his company published monthly bulletins showing the allotment of cars to coal companies for the succeeding 30 days. This allotment was based upon the affidavits of the shippers and represented the latter's requirements. From the records before him, he testified to the plaintiffs' allotments. He was then asked to state the number of cars furnished during the months wherein plaintiffs failed to ship defendant the 1,500 tons of coal. The objection to this question was sustained, but not until the witness had testified that the record which he had in his possession was made up in his office, and was based upon reports sent him, in the due course of business, by one Malley, an employee of the railway whose position was described as 'a local car distributor.' Malley sent daily reports, which showed the 'ratings of the mines, cars, orders, supplies, loadings, hours worked and cars billed east and west.' These daily reports were preserved and on file with the Chesapeake & Ohio Railway Company. In the due course of business the reports were transferred into permanent book form, and the witness had this record, but not the daily mine reports, in court." *Id.* at 274-5.

76. See note 71 *supra*. In *B. F. Sturtevant Co. v. Massachusetts Hair and Felt Co.*, 122 F.2d 900 (1st Cir. 1941), an expert on centrifugal fans was permitted to testify that in his opinion the mechanism described in plaintiff's patents was not disclosed or suggested in any of the prior art patents. In *National Development Co. v. Lawson-Porter Shoe Machinery Corp.*, 129 F.2d 255, 259 (1st Cir. 1942), the court observed that ". . . plain-

issue was sufficiently complex and the opinion of such a nature as to be considered helpful. In *Sheldon v. Moredall Realty Corp.*, the opinion testimony of various directors and managers of other theatres was received on the question of "the percentage of patrons who attended the performance" because of "attractions on the program other than the infringed play."<sup>77</sup> And in *United States v. Appalachian Electric Power Co.*—a suit by the United States to enjoin the construction of a dam and electric power plant on the New River—defendant was permitted to introduce evidence of findings by the Federal Power Commission and the Chief of Engineers of the U. S. Army that the river was not navigable (within the meaning of the Rivers and Harbors Act and the Federal Water Power Act) at the point in question.<sup>78</sup>

#### A. Use of Judicial Notice

As Thayer once observed: "Courts may judicially notice much which they cannot be required to notice. That is well worth emphasizing; for it points to a great possible usefulness in this doctrine, in helping to shorten and simplify trials."<sup>79</sup> The propriety of full use of this simplifying process in any proceeding as involved as those of the anti-trust type is probably obvious; and such utilization is facilitated by the absence of a jury.<sup>80</sup> Matter to be noticed may be inserted in a trial

tiff's machine . . . is a highly complex affair and the wording of the patent is such that the services of experts were required to explain it to and interpret it for the court below." The reception of such expert opinion was accordingly approved. And in *Bailey v. Sears, Roebuck & Co.*, 115 F.2d 904, 907 (9th Cir. 1940), the court approved the introduction of "certain drawings explanatory of the very small drawings of the patents involved," those introduced being "simplified" and "based upon the patent drawings and the description of the drawings."

77. 29 F.Supp. 729, 732 (S.D.N.Y. 1939).

78. 23 F.Supp. 83, 89 (W.D.Va. 1938), *aff'd*, 107 F.2d 769 (4th Cir. 1939), *rev'd on other grounds*, 311 U.S. 377 (1940). The court then refers to a report to the Secretary of War made in 1828 and transmitted to the House of Representatives, and two to the Army Chief of Engineers made in 1876 and 1912, early historical works including an account of an exploring trip made by John Peter Sully in 1742, and annual reports of the Army Chief of Engineers. The court then says: "It is clear that the question of navigability is one of fact which must be determined by the court upon all the evidence and that this duty cannot be abdicated; nor is it performed by mere acceptance of the findings or opinions of other persons no matter how competent. But the determination of the issue of navigability permits a wide range of testimony and coming permissibly within this range, I think, are the opinions of persons who by training and experience are competent to speak. So far as the official reports from which quotation has been made express opinions on the navigability of the river, they are accepted merely as opinions to be considered with the other evidence and given such weight as they may be deemed entitled to. With the same thought in mind, the court permitted witnesses to testify at the trial giving their opinions on the issue of navigability." *Id.* at 97-8.

79. 9 WIGMORE, EVIDENCE § 2583 (3d ed. 1940).

80. See Strahorn, *The Process of Judicial Notice*, 14 VA. L. REV. 544, 551 (1928): "More things are judicially noticed by the judge on request than will be permitted to come within the scope of jury notice."

brief, included in the testimony of an expert, or otherwise brought to the court's attention. In support of this process it may be pointed out that judicial notice does not preclude an opportunity on the part of the adverse party to question the accuracy of matter submitted for notice by offering evidence to the contrary.<sup>81</sup>

*General Scope of Judicial Notice:* The appropriate scope of judicial notice is implicit in what has already been said. The following formulations of the criteria of facts which may be judicially noticed are representative. Wigmore's is as follows:

"(1) Matters which are actually so notorious to all that the production of evidence would be unnecessary; (2) Matters which the judicial function supposes the judge to be acquainted with, in theory at least; (3) Sundry matters not included under either of these heads; they are subject for the most part to the consideration that though they are neither actually notorious nor bound to be judicially known, yet they would be capable of such instant and unquestionable demonstration, if desired, that no party would think of imposing a falsity on the tribunal in the face of an intelligent adversary."<sup>82</sup>

Strahorn suggests the following criteria: (1) common knowledge; (2) universal notoriety; (3) ease of precise ascertainment; and (4) impossibility of bona fide dispute.<sup>83</sup>

*Standard Works in Aid of Judicial Notice:* Standard Works of various kinds—histories, encyclopedias, scientific treatises or manuals, trade publications and price current lists, etc.—are sometimes admitted in evidence, and sometimes employed in aid of judicial notice.<sup>84</sup> Even when treated as evidence there would presumably be no necessity for a preliminary showing of authenticity when the standard and accepted character of the publication in the profession or trade is judicially known to the court.<sup>85</sup>

*Specific Kinds of Facts Noticed:* "Courts are found noticing, from time to time, a varied array of unquestionable facts, ranging through-

81. 9 WIGMORE, EVIDENCE § 2567 (3d ed. 1940).

82. 9 *id.* § 2571.

83. Strahorn, *supra* note 80, at 548.

84. 6 WIGMORE, EVIDENCE § 1699 (3d ed. 1940).

85. The opinions in the following cases illustrate the use of standard works in aid of judicial notice: *Home Bldg. & Loan Ass'n v. Blaisdell*, 290 U.S. 398 (1934) (various histories of the United States quoted with reference to former financial depressions); *Steenerson v. Great Northern Ry.*, 69 Minn. 353, 72 N.W. 713 (1897) (with reference to reasonable income on a railroad investment, facts and economic propositions cited from the *Yale Review*, *The London Economist*, *Bradstreet's Journal*, the *Banker's Magazine*, and the works of J. S. Mill, Adam Smith, and David A. Wells); *Parmalce v. United States*, 113 F.2d 729 (App.D.C. 1940) (publications of psychologists, sociologists and historians judicially noticed in majority opinion as bearing on the meaning of the statutory standard in a proceeding to confiscate certain allegedly obscene books imported from England).

out the data of commerce, industry, history, and natural science."<sup>86</sup> These have included such general economic conditions as the danger of inflation at the time of enactment of the Emergency Price Control Act,<sup>87</sup> crop failures by reason of drought, storms or hail in large areas of the United States during 1930,<sup>88</sup> collapse of the Florida land boom in 1927 and previous period of speculation,<sup>89</sup> and depression in the mining business during the latter part of 1921.<sup>90</sup> They have included facts bearing on the competitive situation in an industry such as that the facilities of a ferry company had been rendered obsolete by construction of an international bridge and tunnel,<sup>91</sup> that the anthracite industry was suffering severe competition from other fuels during a certain period,<sup>92</sup> and that the fact that any one can acquire, ship and compete with established maritime carriers is often disadvantageous to both carriers and shippers.<sup>93</sup> They have included such special conditions or problems affecting a particular industry or business at a particular time, as that subsequent to the entry of an order tremendous changes had occurred affecting all companies in the rubber industry,<sup>94</sup> and that in anthracite regions breakers are shut down for long periods of time because of lack of orders.<sup>95</sup> They have included such technological facts as that a patented device so resembled an ice cream freezer as not to constitute an invention,<sup>96</sup> and that a patented process constituted a mere application of "well known scientific principles" rather than an invention.<sup>97</sup> Such financial facts as the course of interest rates have also been noticed.<sup>98</sup>

### *B. Admissibility of Usual Source Materials*

*Entries in the Regular Course of Business:* The exception to the hearsay rule in favor of business entries is in a federal proceeding governed by Section 1732 of the new Title 28 of the United States Code:

"In any court of the United States and in any court established

86. 9 WIGMORE, EVIDENCE § 2580 (3d ed. 1940).

87. See *Rottenberg v. United States*, 137 F.2d 850, 856 (1st Cir. 1943).

88. *Person v. United States*, 112 F.2d 1, 2 (8th Cir. 1940).

89. *Rhodes v. Commissioner of Internal Revenue*, 100 F.2d 966, 970 (6th Cir. 1939).

90. *Morris-Poston Coal Co. v. Commissioner of Internal Revenue*, 42 F.2d 620, 622 (6th Cir. 1930).

91. *Walling v. Patton-Tully Transp. Co.*, 134 F.2d 945, 947 (6th Cir. 1943).

92. *State Line & S. R.R. v. Phillips*, 17 F.Supp. 607, 610 (M.D.Pa. 1937).

93. *McCormick S. S. Co. v. United States*, 16 F.Supp. 45, 48 (N.D.Cal. 1936).

94. *National Labor Relations Board v. Goodyear Tire and Rubber Co.*, 129 F.2d 661, 667 (5th Cir. 1942).

95. *John Conlon Coal Co. v. Rochester American Ins. Co. of New York*, 16 F.Supp. 93, 95 (M.D.Pa. 1935).

96. *Brown v. Piper*, 91 U.S. 37 (1875).

97. *Luten v. Allen*, 254 Fed. 587 (D.Kan. 1918), *aff'd*, 263 Fed. 986 (8th Cir. 1920).

98. See *Natural Gas Pipeline Co. v. Federal Power Commission*, 120 F.2d 625, 633 (7th Cir. 1941).

by Act of Congress any writing or record, whether in the form of an entry in a book or otherwise, made as a memorandum or record of any act, transaction, occurrence, or event, shall be admissible as evidence of said act, transaction, occurrence, or event, if made in regular course of any business, and if it was the regular course of such business to make such memorandum or record at the time of such act, transaction, occurrence, or event or within a reasonable time thereafter.

"All other circumstances of the making of such writing or record, including lack of personal knowledge by the entrant or maker, may be shown to affect its weight, but such circumstances shall not affect its admissibility.

"The term 'business', as used in this section, includes business, profession, occupation, and calling of every kind."<sup>99</sup>

The language of Section 1732—"any writing or record, whether in the form of an entry in a book or otherwise, made as a memorandum or record of any act, transaction, occurrence, or event,"—makes it clear that the statute is not limited to books of account and financial records. Nor has the language been construed to exclude government records.<sup>100</sup> One limitation on the language "a memorandum or record of any act, transaction, occurrence, or event" is suggested in the *Pollack* case:<sup>101</sup>

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99. 28 U.S.C. § 1732 (1948), supplanting § 695 of old Title 28. There was some conflict between the circuits as to the construction of subdivision (h) of this section's predecessor, Section 695, which read as follows: "Sections 695-695h of this title shall be prospective only, and not retroactive." 49 STAT. 1564 (1936). The prevailing and more probable interpretation was that the statute governed all proceedings instituted after its enactment, irrespective of whether the records offered were made prior or subsequent to June 20, 1936. *Landay v. United States*, 108 F.2d 698, 705 (6th Cir. 1939), *cert. denied*, 309 U.S. 681 (1940); *Ilseng v. United States*, 120 F.2d 823, 826 (9th Cir. 1941), *cert. denied*, 314 U.S. 665 (1941); *see Shreve v. United States*, 103 F.2d 796, 810 (9th Cir. 1939) (by implication), *cert. denied*, 308 U.S. 570 (1939). Compare *Hass v. United States*, 93 F.2d 427, 437 (8th Cir. 1937) (suggesting that the statute governs a proceeding initiated by indictment prior to the enactment of the statute, the trial being subsequent), *with Valli v. United States*, 94 F.2d 687, 693 (1st Cir. 1938), *cert. denied*, 304 U.S. 585 (1938) (treating the statute as inapplicable to records made prior to its enactment).

100. See cases cited *infra*. A rubber stamped notation "air mail" placed on an envelope by a recipient trust company, birth certificates and hospital records, memoranda and letters of corporate officers, and rekordak facsimiles of checks, have all been treated as within the scope of the statute. *United States v. Leathers*, 135 F.2d 507, 510 (2d Cir. 1943) (air mail stamp); *Pollack v. Metropolitan Life Ins. Co.*, 138 F.2d 123, 128 (3d Cir. 1943) (child's birth certificate and hospital records to prove parent's age); *Ulm v. Moore-McCormack Lines*, 115 F.2d 492, 494 (2d Cir. 1940), *cert. denied*, 313 U.S. 567 (1941) (hospital records to prove nature and scope of injuries); *Overfield v. Pennroad Corp.*, 42 F.Supp. 586, 628 (E.D.Pa. 1941) (memoranda and letters of corporate officials); *United States v. Manton*, 107 F.2d 834, 844 (2d Cir. 1938), *cert. denied*, 309 U.S. 664 (1940) (rekordak facsimiles of checks).

101. *Pollack v. Metropolitan Life Ins. Co.*, 138 F.2d 123, 128 (3d Cir. 1943).

"Certainly it cannot be said that the only entry admissible under the statute is the notation that a child was born. . . .

"We need not pass upon the question how far beyond the fact of a child's birth such entries may go before they cease to be included as a record of an 'act, transaction, occurrence, or event.' If information called for related to a parent's religion, political affiliations or economic status, a more difficult question would be presented."

The statute further provides that so long as a given entry or record was made in the regular course of business and contemporaneously with the event recorded, "All other circumstances . . . may be shown to affect its weight, but . . . shall not affect its admissibility." Situations in which a court might be reluctant to take this language literally, however, can be imagined; and some have occurred. In the *Pollack* case, for example, Magruder, C. J., dissented from the majority decision admitting a child's birth certificate and hospital records to prove a parent's age, on the ground that neither the hospital nor the registrar of vital statistics would ordinarily have knowledge of the fact. In *United States v. Kelley*<sup>102</sup> the court dealt with an inventory prepared by government accountants of Ringling Brothers' property as of 1935 (offered in a prosecution for assisting in the preparation of fraudulent income tax returns) as follows:

"The items entered upon it appear to have been noted down by the two accountants from personal knowledge, gained on the ground, and we can see no reason why the document was not pro tanto competent. However, the values set opposite the items, though likewise gathered on the spot, were, in part at any rate, gleaned by inquiry from unascertained persons, who may or may not have been qualified, and who certainly were not called. So far it was incompetent, and the values have been excluded."<sup>103</sup>

The limitation of the statute to entries made "in regular course of any business" was construed in *Palmer v. Hoffman*<sup>104</sup> to exclude records made primarily for use in litigation rather than for other purposes incident to the conduct and operation of a business. Regularity of preparation is thus not the whole test of admissibility. The act covers entries which constitute "routine reflections of the day to day operations of a business."<sup>105</sup> This is a narrower interpretation than that suggested by Clark, C. J., in *United States v. Mortimer*.<sup>106</sup> Beyond the fact that in both cases the questioned documents were prepared for use in litigation, the two decisions are quite distinguishable on their facts.

102. 105 F.2d 912 (2d Cir. 1939).

103. *Id.* at 917.

104. 318 U.S. 109 (1943) (excluding the written statement of a deceased railroad engineer made in his regular line of duty describing an accident).

105. *Id.* at 114.

106. 118 F.2d 266, 269 (2d Cir. 1941), *cert. denied*, 314 U.S. 616 (1941).

The *Palmer* decision does, however, cast some doubt on the discussion of the scope of the statute contained in the *Mortimer* opinion.

Generally speaking, the statute has not altered the familiar requirement that documents offered under this hearsay exception must be "books of original entry" or "the first permanent record" of a transaction.<sup>107</sup>

But decisions like that of Judge Caffey in the *Alcoa* case, discussed *supra*, and others presently to be discussed which permit the introduction of summaries based on voluminous original entries which are neither put in evidence nor made available for inspection, are in effect a relaxation of this requirement.

Production of all who participated in the transaction or making of the record is unnecessary. In *Palmer v. Hoffman*, the Court made it clear that the purpose of the act was to dispense with any necessity for calling as witnesses those who at all stages had a part in the transaction recorded, or in the making of the record. Testimony by "the one who superintended the making of the records" is sufficient.<sup>108</sup>

*Official Records and Reports:* Certified copies of a considerable variety of official registers, reports, and returns are expressly declared by piecemeal federal as well as state legislation to be admissible as evidence of facts therein stated. Beyond this, there is the familiar hearsay exception in favor of official written statements. The area of greatest uncertainty has to do with the class of official statements most likely to be of use in making economic proof, namely, official reports emanating from administrative agencies.

The difficulty with such reports arises out of the fact that they are usually not simple records of a transaction done by the recording official or his subordinates, and not limited to facts within their personal knowledge. Typically, they are the product of investigation and research. The general criteria of admissibility applicable to official reports of this nature have been discussed by Wigmore.<sup>109</sup> His general

107. See Tracy, *The Introduction of Documentary Evidence*, 24 IOWA L. REV. 436, 455-6; *Landay v. United States*, 108 F.2d 698 (6th Cir. 1939); and *John Irving Shoe Co., Inc. v. Dugan*, 93 F.2d 711, 713 (1st Cir. 1937) (holding that to prove the cost of work done and commissions earned, an itemized bill sent to the defendant was not admissible, the worksheets from which plaintiff's bookkeeper made up the bill being neither produced, offered for inspection, nor their absence accounted for).

108. *Palmer v. Hoffman*, 318 U.S. 109, 112-13 (1943). See also *Landay v. United States*, 108 F.2d 698 (6th Cir. 1939), *cert. denied*, 309 U.S. 681 (1940), and the discussion by Clark, C. J., in *United States v. Mortimer*, 118 F.2d 266 (2d Cir. 1941), *cert. denied*, 314 U.S. 616 (1941).

As to foundation requirements generally see *United States v. Feinberg*, 140 F.2d 592 (2d Cir. 1944), *cert. denied*, 322 U.S. 726 (1944) (books of account stipulated to be books of the corporation "subject to verification"), and Tracy, *op. cit. supra* note 107.

109. See 5 WIGMORE, EVIDENCE § 1635 (3d ed. 1940) at p. 531; and § 1670, at pp. 672-7, as follows: "Now there may be cases in which the officer's duty clearly does involve his ascertainment of facts occurring out of his presence and requiring his resort to sources of

conclusion from a review of the cases is that "the tendency of the Courts is to disapprove rather than to favor the admission of such reports or inquisitions, and to require a clear showing of an express authority to investigate and report."<sup>110</sup>

Reported decisions on reports containing economic data are relatively few. Census reports are admissible to prove the general facts reported, though ordinarily not the facts relating to a particular individual, business or instance.<sup>111</sup> Similarly, general facts susceptible of reasonably objective ascertainment, and reported in the publications of other supposedly reliable investigating agencies of the federal and state governments, are likewise usually considered admissible.<sup>112</sup> Reports which fail to qualify under the official statements

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information other than his own senses of observation; for example, an assessor's record of the value of real estate and of its occupancy, or a registrar of voters' record of electors' residences. When such a duty clearly exists, the general doctrine above, that a witness should have personal knowledge, need not stand in the way, for (as already noted) it has its conceded limitations and where the officer is vested with a duty to ascertain for himself by proper investigation, this duty should be sufficient to override the general principle. It is true that due caution should be observed before reaching the conclusion that the law has in fact in a given case intended to invest the officer with such an unusual duty. But when it clearly appears that a duty has been prescribed to investigate and to record or certify facts ascertained other than by personal observation, then it follows that, in accordance with the general principle of the present exception, the statement thus made becomes admissible. . . .

"Now an inquisition or report, if made under due authority, stands upon no less favorable a footing than other official statements. As a statement made under official authority or duty, it is admissible under the general principle (ante, §§ 1633, 1635): 1824, Mr. Thomas Starkie, Evidence, 260: 'Inquisitions, which are of a public nature, and taken under competent authority, to ascertain a matter of public interest, are, upon principles already announced, admissible in evidence against all the world. . . . It is not essential to the reception of evidence of this nature that the inquiry should have been made by virtue of some judicial authority and by means of witnesses examined upon oath; it is sufficient if it was made by virtue of competent authority on behalf of the public, and on a subject-matter of public interest. . . . It is, however, of the very essence of evidence of this nature that the inquiry should have been made under proper authority; in general, therefore, unless the authority be in its nature notorious, it must be proved by the production of the commission; as in the case of an inquisition "post mortem" and such private offices.'"

110. 5 *id.* § 1672, at p. 699.

111. 5 *id.* § 1671, at pp. 685-6.

112. In *United States v. American Tobacco Co.*, 39 F.Supp. 957 (E.D.Ky. 1941) (on objection to evidence), for example, the District Court admitted Internal Revenue reports showing the production of leading cigarette brands, a tabulation contained in the Federal Trade Commission's Agricultural Income Study showing the volume of sales of ten-cent brands, and reports of leaf tobacco prices from the Department of Agriculture's Yearbooks. Mimeographed Transcript, pp. 5643-72, 5475, 5507-12. However, with respect to an NRA Tobacco Study published in 1935, dealing comprehensively with conditions and practices in the industry, the court took a different view. This report had been prepared by a small staff under the supervision of Merle D. Vincent as Coordinator and Director of Industry Studies, and was based on data obtained from leading concerns in the industry, reports from Internal Revenue, Agriculture, Commerce, FTC and Labor, and from tobacco trade publications. Staff members had also made independent field investigations of wholesale,

hearsay exception may still be utilized within certain limits by a properly qualified expert as a part of the basis for his estimates, generalizations, or opinions.<sup>113</sup>

*Trade Publications and Market Reports:* A hearsay exception in favor of certain classes of commercial and professional lists, registers and reports is well recognized.<sup>114</sup> Accredited price lists and market reports are the most commonly admitted.<sup>115</sup> When the court is not

jobbing and retail practices. Testifying as "an expert in analyzing and studying the industry," *id.* at 5305, Vincent identified and described the Study. It was not offered in evidence, but the following colloquy concerning it occurred:

"The Court: I don't know what his NRA report was.

"Q.: It has not been offered in evidence.

"The Court: It obviously would not be competent, but it may enable him to identify his factual basis with the facts that are in this case." *Id.* at 5337.

The types of official statements most commonly discussed in the reported federal opinions are as follows: *United States v. Sussman*, 37 F.Supp. 294 (E.D.Pa. 1941) (certificate that search of the records of the SEC failed to disclose registration, admitted); *United States v. Meyer*, 113 F.2d 387, 397 (7th Cir. 1940) (chart compiled by government agents based on records of the United States' engineer, admitted); *United States v. Appalachian Electric Power Co.*, 23 F.Supp. 83 (W.D.Va. 1938), *aff'd*, 107 F.2d 769 (4th Cir. 1939), *rev'd on other grounds*, 311 U.S. 377 (1940) (official reports to and by the Army Chief of Engineers concerning the navigability of a stream, admitted); *Lloyd Sabauo v. Elting*, 55 F.2d 1048, 1050 (2d Cir. 1932) (certificates of U.S. medical examiners, admitted—immigration case); *Buckley v. United States*, 4 How. 250 (U.S. 1846) (official appraiser's appraisal of goods imported, return admitted—customs case); *see United States v. Buck*, 70 F.2d 1007 (5th Cir. 1934) (official reports of examining physician, but not affidavits, admitted—war risk insurance case).

This whole subject is dealt with in the proposed Uniform Act for the Use of Official Reports as Evidence, adopted in 1936 by the National Conference of Commissioners on Uniform State Laws. See 5 WIGMORE, EVIDENCE § 1673 (3d ed. 1940) at p. 703:

"An Act to Make Uniform the Use of Official Reports as Evidence. Section 1. (*Official Reports*). Written reports or findings of fact made by officers of this State on a matter within the scope of their duty as defined by statute shall, insofar as relevant, be admitted as evidence of the matters stated therein.

"Section 2. (*Notice Before Trial*). Such report or finding shall be admissible only if the party offering it has delivered a copy of it or so much thereof as may relate to the controversy, to the adverse party a reasonable time before trial, unless in the opinion of the trial Court the adverse party has not been unfairly surprised by the failure to deliver such copy.

"Section 3. (*Cross-Examination*). Any adverse party may cross-examine any person making such reports or findings or any person furnishing information used therein; but the fact that such testimony may not be obtainable shall not affect the admissibility of the report or finding, unless, in the opinion of the Court, the adverse party is unfairly prejudiced thereby."

113. See Subdivision "D" of this part of the article, *infra*.

114. 6 WIGMORE, EVIDENCE §§ 1702-S (3d ed. 1940) at pp. 22-39.

115. *Virginia v. West Virginia*, 238 U.S. 202, 212 (1915) (quotations in the *Richmond Times Dispatch* admitted to prove value of railway stock); *Cliquot's Champagne*, 3 Wall. 114, 140 (U.S. 1865) (French price current lists admitted to prove wholesale price in France); *Coplin v. United States*, 88 F.2d 652, 669 (9th Cir. 1937), *cert. denied*, 301 U.S. 703 (1937) (quotation sheets of Seattle Mining Exchange admitted to evidence prices);

in a position to notice an offered publication's standard and accepted character in the trade, foundation testimony is of course required.<sup>116</sup> There are, of course, many other kinds of trade publications, reports, and the like, which may fulfill the requirements already indicated. As Wigmore points out: "The present principle is capable of liberal expansion to include other classes of commercial and industrial records, made by persons disinterested in the particular litigation, published or kept accessible to third persons, and customarily relied upon by them in the conduct of particular occupations."<sup>117</sup>

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*Bausch Mach. Tool Co. v. Aluminum Co. of America*, 79 F.2d 217, 226 (2d Cir. 1935) (copies of *The London Times* admitted to show the price of aluminum in England); *The Blandon*, 39 F.2d 933, 936 (S.D.N.Y. 1929), *aff'd*, 42 F.2d 1013 (2d Cir. 1930) (Spanish trade journal admitted to show value of nitrate in Spain); *Rice v. Eisner*, 16 F.2d 358, 361 (2d Cir. 1926), *cert. denied*, 273 U.S. 764 (1927) ("bid and asked" quotations from accepted financial journals admitted).

116. In *Harris v. United States*, 48 F.2d 771, 778-9 (9th Cir. 1931), involving the admissibility of a guide of stocks used for trading on the New York Produce Exchange, for example, a ruling sustaining the exclusion of this guide laid down the following foundation requirements:

"Frank Hammond, a witness called for the defense, testified that, as receiver for the West Coast Finance Company, a certain book which is marked Defendants' Exhibit A-43 had come into his possession. He testified: 'This exhibit is a securities guide of stocks used for trading on the New York Produce Exchange.'

"The first question presented is whether or not the above statement of the witness is sufficient foundation for admitting the guide book. In *Whelan v. Lynch*, 60 N.Y. 474, 19 Am. Rep. 202, dealing with the admissibility of shipping and price current list, cited by the Supreme Court, as above stated, and also referred to by Wigmore in his work on Evidence, vol. 3, § 1703, it was said: 'The court was also in error, I think, in admitting the Shipping and Price Current List as evidence of the value of the wool, without some proof showing how or in what manner it was made up; where the information it contained was obtained, or whether the quotations of prices made were derived from actual sales, or otherwise. It is not plain how a newspaper, containing the price current of merchandise, of itself, and aside from any explanation as to the authority from which it was obtained, can be made legitimate evidence of the facts stated. The accuracy and correctness of such publications depend entirely upon the sources from which the information is derived.'"

See also *Von Reitzenstein v. Tomlinson*, 249 N.Y. 60, 162 N.E. 584, 585 (1928), rejecting reports of "National Quotation Bureau" containing bid and asked quotations on certain bonds and shares, because "There is no evidence that its employees did their work correctly. There is none that its price lists are generally recognized or acted upon as accurate by dealers in the market. This at least must be proved before quotations, not otherwise authenticated, became evidence of value . . . all that we have here is the fact that the Bureau sells its service to subscribers in numbers not disclosed."

117. 6 WIGMORE, EVIDENCE § 1708 (3d ed. 1940) at p. 38.

The following decisions illustrate the possibility: *People v. Eppinger*, 105 Cal. 36, 38 Pac. 538 (1894) (city directory, to prove non-existence of firm bearing certain name); *Donoghue v. Smith*, 114 Conn. 64, 157 Atl. 415 (1931) (probable duration of plaintiff's life could be proved by standard mortality tables); *Baum v. Stall*, 163 Md. 153, 161 Atl. 244 (1932) (race chart compiled by Associated Press and printed in newspaper, to show races run and horses running on a certain day); *Slocovich v. Ins. Co.*, 108 N.Y. 56, 14 N.E. 802 (1888) (American Lloyds and other shipping registers, to show condition, capacity, age, and value of ships); *Pittsburgh, C. C. & St. L. Ry. v. Sheppard*, 56 Ohio St.

*Standard Works and Scientific Treatises:* Apart from a few jurisdictions, the courts have been reluctant to recognize a hearsay exception for litigation generally in favor of standard treatises.<sup>115</sup> The argument on principle for acceptance of apparently reliable expert hearsay has been developed by Wigmore<sup>119</sup> and Judge L. Hand.<sup>120</sup> But as the decisions stand the hearsay exception is clearly established only as to mortality tables, almanacs, sundry scientific tables, dictionaries, histories (to prove facts of general history), and works of general literature (to prove literary usage and definitions).<sup>121</sup> Beyond this, standard works are employed much more freely in aid of judicial notice, or as "ancient reputation" evidence of matters of general interest. But general discussions of this principle of the law of evidence—whether in treatises like that of Wigmore, or in the opinions of the appellate courts—contemplate jury trial and speak from the frame of reference which includes it. When the jury is excluded, the reactions of the district court and of the circuit court of appeals in the *Appalachian Electric Power Co.* case<sup>122</sup> are more representative.

*Patents and Patent Office Records:* To the extent that patents or the originals of any documents and records in the possession of the Patent Office would be admissible, their contents may be proven as provided in Federal Rule 44, dealing with "Proof of Official Record." But existing provisions of the United States Code relating to proof of patents and patent office records are not superseded, and proof may also be made according to their provisions.<sup>123</sup>

68, 46 N.E. 61 (annual reports of the American Trotting Ass'n, to show speed record of a certain horse).

118. 6 WIGMORE, EVIDENCE § 1690 (3d ed. 1940) at p. 2. The federal decisions most favorable to such recognition are *United States v. Appalachian Electric Power Co.*, 23 F.Supp. 83 (W.D.Va. 1938), *aff'd*, 107 F.2d 769 (4th Cir. 1939), *rev'd on other grounds*, 311 U.S. 377 (1940); *G. & C. Merriam Co. v. Syndicate Pub. Co.*, 207 Fed. 515 (2d Cir. 1913) (admitting the author's statement of his sources contained in the preface to *Ogilvie's Imperial Dictionary* published in 1850); and *Western Assurance Co. v. Mehlman Co.*, 83 Fed. 811 (2d Cir. 1897), *crt. denied*, 163 U.S. 710 (1897) (civil engineer permitted on direct to read excerpts from Kent's *Mechanical Engineers Pocket Book*, and Johnson's *Strains in Frame Structure*).

119. 6 WIGMORE, EVIDENCE §§ 1690-1701 (3d ed. 1940).

120. See *G. & C. Merriam Co. v. Syndicate Pub. Co.*, 207 Fed. 515 (2d Cir. 1913).

121. 6 WIGMORE, EVIDENCE §§ 1698-9 (3d ed. 1940).

122. 23 F.Supp. 83 (W.D.Va. 1938), *aff'd*, 107 F.2d 769 (4th Cir. 1939), *rev'd on other grounds*, 311 U.S. 377 (1940).

123. See *Committee Note to Rule 44*, 5 MOORE, FEDERAL PRACTICE 3079 (1938). The relevant United States Code provisions are contained in Sections 1744-6 of the new Title 28, and Section 47 of Title 35.

Section 1744 of Title 28 places on the same evidential footing as originals written or printed copies, (when authenticated by the seal of the Patent Office and certified by the Commissioner of Patents or attested in his name by his designated chief of division) of (1) records, books, papers, or drawings belonging to the Patent Office, (2) letters patent, and (3) certificates of registration of trademarks, labels, or prints. Section 1745 of the same

### C. Specially Prepared Material

The principle is clearly established that trial judges have wide discretion to permit the use of prepared or pre-digested material (as distinguished from responsive oral answers to interrogation by counsel in open court, and from original source data) "when reasonably helpful under the particular circumstances."<sup>124</sup>

*Summaries:* Where facts in issue can only be ascertained by the inspection of voluminous records, papers, books of account, or other data, the best evidence rule will be relaxed, and an oral or written summary allowed in evidence.<sup>125</sup> The question is when the original sources thus summarized must be already in evidence, or at least available to the opposing party. But however this may be determined, it is clear that the original sources must be of an admissible character.<sup>126</sup>

title provides that the printed copies of specifications and drawings of patents, which the Commissioner is authorized to print for gratuitous distribution, shall be admissible as evidence of all matters therein contained when certified by the Commissioner and authenticated by the seal of his office. With respect to the authentication of such copies, ". . . it is enough that the copy offered *purports* to be printed by authority of the government; its genuineness is assumed without further evidence." 5 WIGMORE, EVIDENCE § 1684 (3d ed. 1940) at p. 843.

35 U.S.C. § 47 (1946) provides that assignments of patents and of applications for patent may be proved as follows: "If any such assignment, grant, or conveyance of any application for patent or patent shall be acknowledged before any notary public of the several States or Territories or the District of Columbia, or any commissioner of any court of the United States for any District or Territory, or before any secretary of legation or consular officer authorized to administer oaths or perform notarial acts under section 1750 of the Revised Statutes (U.S.C., title 22, sec. 131) the certificate of such acknowledgement, under the hand and official seal of such notary or other officer, shall be prima facie evidence of the execution of such assignment, grant, or conveyance. As amended Aug. 18, 1941, c. 370, 55 Stat. 634."

Proof of foreign letters patent is governed by Section 1746 of the new Title 28, which provides that: "Copies of the specifications and drawings of foreign letters patent, certified as provided in Section 1744 of this title, shall be prima facie evidence of the fact of the granting of such letters patent and of the date and contents thereof."

But a foreign patent may also be proved in the manner indicated in *Schoerken v. Swift & Courtney & Beecher Co.*, 7 Fed. 469 (C.C.S.D.N.Y. 1881) (copy of a French patent, certified by the director of the national conservatory of arts and manufactures, under its seal, and verified by the ministers of agriculture and commerce, and of foreign affairs, under their seals, but not under the great seal of France, admitted—on the ground that the mode of authentication was equivalent to that prescribed by § 892 REV. STAT., forerunner of Section 1744.

124. MORGAN & MAGUIRE, CASES AND MATERIALS ON EVIDENCE (2d ed. 1942), supplementary note at 288-92.

125. See Dewey, *Best Evidence Rule—Use of Summaries of Voluminous Originals*, 37 MICH. L. REV. 449 (1939); 4 WIGMORE, EVIDENCE § 1230 (3d ed. 1940) at pp. 434-41.

126. *Morton Butler Timber Co. v. United States*, 91 F.2d 884 (6th Cir. 1937); *Phillips v. United States*, 201 Fed. 259 (8th Cir. 1912). Wigmore states generally: "Most courts require, as a condition, that the mass summarily testified to shall, if the occasion seems to require it, be placed at hand in court, or at least be made accessible to the opposing party, in order that the correctness of the evidence may be tested by inspection if desired, or

The foundation will usually be considered sufficient: (1) where the source data is produced in court, but not offered in evidence,<sup>127</sup> or (2) where it is made available to the opposing party for purposes of check, and cross-examination, but not produced in court because of practical inconvenience,<sup>128</sup> or (3) where the source data consists of public records, not produced but equally available to the parties.<sup>129</sup> Where the original source data cannot feasibly be made available for inspection, but where it appears that it would be of an admissible nature if available, an expert summary may still be allowed in evidence, following the reasoning of Judge Caffey in *United States v. Aluminum Co. of America*.<sup>130</sup> Here, however, the rulings are conflicting. The case for admissibility is strongest where the summary in question was compiled in the regular course of business rather than merely for purposes of trial, for in that event all that is required is a relaxation of the "first permanent record" requirement. Admissibility also seems indicated where the summary was compiled by an expert thoroughly qualified to interpret the variety of source data in question.<sup>131</sup>

*Tabulations, Charts, Etc.:* Many rulings, as well as the daily practice of trials, sustain the admissibility of charts, maps, photographs, tabulations, and other devices for visual presentation, when properly verified, and as long as they contribute to a clear presentation of the facts.<sup>132</sup>

*Prepared Written Statements:* Federal Rule 43(a) provides that: "In all trials the testimony of witnesses shall be taken orally in open court, unless otherwise provided by these rules." The suggested pref-

that the material for cross-examination may be available. . . ." 4 WIGMORE, EVIDENCE § 1230 (3d ed. 1940) at pp. 434-5.

127. *Elmer Co. v. Kemp*, 67 F.2d 948 (9th Cir. 1933); *Butler v. United States*, 53 F.2d 800 (10th Cir. 1931); and *Lemon v. United States*, 164 Fed. 953 (8th Cir. 1908).

128. *Hartford Accident & Indemnity Co. v. Collins-Dietz-Morris Co.*, 80 F.2d 441 (10th Cir. 1935); *Esternman-Nerkamp Co. v. Rouse*, 221 Ky. 791, 278 S.W. 124 (1925); *Edelen v. Muir*, 163 Ky. 685, 174 S.W. 474 (1915).

129. *United States v. Mortimer*, 118 F.2d 266 (2d Cir. 1941), *cert. denied*, 314 U.S. 616 (1941) (tax records); *Pennsylvania Threshermen & Farmers' Mutual Casualty Ins. Co. v. Messenger*, 29 A.2d 653 (Md. 1943) (U.S. Geodetic Survey maps).

130. 35 F. Supp. 820 (S.D.N.Y. 1940) (Government's motion to strike certain evidence denied).

131. *Compare Berthold-Jennings Lumber Co. v. St. Louis, I. M. & S. Ry.*, 80 F.2d 32 (8th Cir. 1935), *cert. denied*, 297 U.S. 715 (1936) (excluding an accountant's incomplete summary of certain ledger entries, the ledgers having been destroyed), *with Greenbaum v. United States*, 98 F.2d 574, 578 (9th Cir. 1938) (accounting records which were not the "original" or "first permanent" entries held properly admitted).

132. 3 WIGMORE, EVIDENCE §§ 791-798a (3d ed. 1940) at pp. 173-208; MORGAN & MARGUIRE, CASES AND MATERIALS ON EVIDENCE 290-2 (2d ed. 1942); *United States v. Parl: Avenue Pharmacy*, 56 F.2d 753, 756 (2d Cir. 1932) (chart showing graphically how alleged conspirators withdrew liquor from storage); *Stone v. Chicago, M., St. P. & P. R.R.*, 53 F.2d 813 (8th Cir. 1931) (photograph); *Kalovsky v. Meyer Dairy Products Co.*, 30 Ohio App. 118, 122, 124, 164 N.E. 370, 372 (1928) (map).

erence for hearing witnesses orally in open court is understandable for reasons too obvious to require discussion. But where a mass of data to be presented is voluminous and complex, and in the absence of a jury, the use of a prepared written statement in lieu of oral testimony by an expert would appear to be within the discretion of the court, by analogy to the principles sanctioning the use of oral summaries of complex data and of visual pictorial devices.<sup>133</sup>

#### D. *Expert Opinion*

Opinion evidence on a given issue is appropriate "when the facts can be interpreted and conclusions be drawn only by a person having technical qualifications or special opportunities for knowledge not possessed by the average layman."<sup>134</sup> The broad formula employed in the proposed Uniform Expert Testimony Act is "Whenever . . . issues arise upon which the Court deems expert evidence is desirable . . . ." <sup>135</sup> The decision on the experiential qualifications of an expert witness is ordinarily "a concrete one, i.e., upon the fitness of the individual witness, as shown by the circumstances of his experience."<sup>136</sup> The requisite special experience may be of a practical nature, acquired through the pursuit of an occupation; or it may be the product of systematic study.<sup>137</sup>

*General Scope:* Expert testimony to economic or technological facts is most likely to be challenged on the ground that (1) the evidence is too speculative; (2) the opinion or interpretation is projected too far,

133. In an article, *On the Use of Experts in Patent Cases*, Judge Yankwich relates the following incident: "The dissatisfaction of district judges with interminable analyses of prior art is not new. I am told of an instance where a district judge from another state, who afterwards became one of the judges of the Ninth Circuit Court of Appeals, and who, knowing the habit of a certain patent attorney in introducing a large amount of prior art, asked him how many prior patents he was going to analyze. When informed that he would analyze some three hundred patents, he stated that he had other more important things to do and would rather read them in the transcript. He instructed the Clerk to identify them as exhibits, had a transcript of the testimony made, absented himself from court for three days and thereafter read the analysis in the record. This is an extreme case, of course, although it is an actual occurrence in the Southern District of California, and is attested to by my present Clerk." 22 J. PAT. OFF. Soc'y 639, 648-9 (1940).

134. ROGERS, *THE LAW OF EXPERT TESTIMONY* v (3d ed., Werne, 1941).

135. 2 WIGMORE, *EVIDENCE* § 563 (3d ed. 1940) at p. 651.

136. 2 *id.* § 560 at p. 640.

137. 2 *id.* § 556 at pp. 635-6:

"This special and peculiar experience may have been attained, so far as legal rules go, in any way whatever; all the law requires is that it should have been attained. . . .

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". . . In some instances the witness will need both; in some instances he may have both, though he does not need both. Neither is generally favored above the other by the Courts. The question in each instance is whether the particular witness is fitted as to the matter in hand."

as, for example, where it embraces an ultimate issue in the case; or (3) the opinion rests on unidentified or inadmissible hearsay.

Discussing testimony of a more or less speculative character, courts have often stated as a rule of general application that an inference could not be based upon an inference.<sup>138</sup> However, this seems an overly sweeping statement.<sup>139</sup>

Where expert testimony is rejected as too speculative, with or without reference to the supposed inference or inference rule, the failure is usually attributable to doubt on the court's part with respect to (1) the possibility of a valid expert contribution to the solution of the question presented, (2) the general qualifications of the expert proffered for the purpose, or (3) the sufficiency of the data on which the expert professes to base his opinion.<sup>140</sup>

In the *American Tobacco Co.* case an expert statistician testifying for the government was asked to state his conclusion "with respect to the kinds of tobacco in terms of government grades bought by one of these companies, American, Liggett and Reynolds, and those grades bought by more than one of these three companies" during the 1939 marketing season, taking into account certain data introduced in evidence and assuming "that tobacco within a given government grade, in the same belt, selling or reported as selling in this data at a price differential of one and one-half cents (1½c.) or more was recognizably different tobacco to a tobacco expert buyer." There was some evidence in the record, in the form of testimony by buyers, auctioneers, and warehousemen, to support the above assumption. The court sustained an

138. Many of these decisions are collected in 95 A. L. R. 162 (1935).

139. "[I]t seems clear, after examination of all of the cases which have discussed the question, that there is no such general rule in the sense in which the language itself implies. . . . The courts have apparently often used this phraseology merely as a convenient way of disposing of evidence which it regarded as too remote or uncertain to prove the ultimate facts at issue. . . . What is meant primarily is that an inference cannot be based upon evidence which is uncertain or speculative, or which raises merely a conjecture or possibility." *Id.* at 182.

Wigmore also denies any such rule concerning circumstantial evidence, 1 WIGMORE, EVIDENCE § 41 (3d ed. 1940) at pp. 434-41, and approves a statement in *New York Life Ins. Co. v. McNeely*, 52 ARIZ. 181, 195-6, 79 P.2d 948, 954-5 (1938), that: "[W]hen an inference of the probability of the ultimate fact must be drawn from facts whose existence is itself based only on an inference or a chain of inferences, it will be found that the Courts have, with very few exceptions, held in substance, although usually not in terms, that all prior links in the chain of inferences must be shown with the same certainty as is required in criminal cases, in order to support a final inference of the probability of the ultimate fact in issue. We think that this is the true meaning of the 'inference upon inference' rule in civil cases. . . ."

140. *United States v. American Tobacco Co.*, 39 F.Supp. 957 (E.D.Ky. 1941) (on objection to evidence), and *United States v. Boston, Cape Cod & New York Canal Co.*, 271 Fed. 877 (1st Cir. 1921), are good examples.

objection that the question called for pure speculation and a piling of inferences on inferences.<sup>141</sup>

In the *Boston, Cape Cod and New York Canal Co.* case,<sup>142</sup> the issue was as to the probable future growth and earnings of traffic through the canal, as bearing on the value of the canal property in a condemnation proceeding. A professor qualified as an expert on the history, theory and practice of canal transportation proposed to base his estimate on the record of the traffic and earnings of the Suez, Manchester, and Kiel canals. The trial court excluded the facts and figures with respect to these three canals, there being no showing of a similarity of conditions, but permitted the expert to testify to his estimate for the Boston, Cape Cod and New York Canal on the basis of his general background of knowledge. This led to a reversal on appeal, on the theory that the jurors needed no expert assistance to draw such inferences as could be drawn from the data in the record concerning the Boston, Cape Cod and New York Canal, and that the expert's opinion—since it appeared to be based on the experience of other canals, and since the tolls to be charged for interstate traffic would depend on government regulation—was a mere guess.

There are cases excluding expert opinion on the broad ground that an expert should not be permitted to give an opinion on an ultimate

141. *United States v. American Tobacco Co.*, 39 F.Supp. 957, 958 (E.D.Ky. 1941) (on objection to evidence):

"The assumption of fact set forth in the question propounded to the witness obviously represents only a part of his basic hypothesis. As to other underlying facts he is shown to have taken into account and considered voluminous data, all of which was prepared and introduced in evidence by other witnesses. There is no adequate disclosure of the particular facts found in this copious data which tend to support his conclusions or to which he attributed significance in forming his opinion as to the kinds of tobacco bought by the respective companies 'in terms of Government grades'. The mere showing that the witness 'considered' or 'took into account' documentary evidence brought into the case by other witnesses without definitely showing the particular points or features of the evidence upon which his opinion is predicated leaves the nature of his hypothesis so obscure it is impossible to determine whether the opinion is based upon facts or mere inferences. An expert opinion is not admissible in evidence when its factual foundation is nebulous. . . .

"Moreover, since it appears from the evidence that throughout the marketing season in each tobacco belt, tobacco is sold and graded at different times, at different places and under varying conditions, to render the opinion admissible insofar as it rests upon the stated assumption 'that tobacco within a given Government grade, in the same belt, selling or reported as selling in this data at a price differential of one and one-half (1½¢) or more, was recognizably different tobacco to a tobacco expert buyer', it would seem indispensable that the Government produce proof showing that at the times and under the conditions prevailing when the price differentials appeared they were reasonably attributable to a difference in the tobacco itself rather than to market price fluctuations, varying conditions under which sales were held at different times and places, variations in the judgment of different buyers or other factors having no relation to the quality or grade of the tobacco. Substantial evidence in this respect is lacking."

142. 271 Fed. 877 (1st Cir. 1921).

issue.<sup>143</sup> General support for so broad a proposition is, however, lacking.<sup>144</sup>

Where an opinion is not to be confined to the interpretation of specified data already in evidence, the question of how far an expert may go again depends on the multiple factors of (a) the scope of his expertness, (b) the apparent validity of such hearsay information as he may profess to take into account, and (c) the extent to which the premises for his inferences are based on his own study, experience, and observation, rather than on specific information supplied by other witnesses or evidence in the case. An expert representing a recognized and trusted discipline or science may base conclusions on his general background of study and observation, including the reported data of fellow scientists and technologists, despite its hearsay character.<sup>145</sup> But if the scope of the expert's qualification—or the status of the special discipline which he represents—falls short, then he is likely to be confined to the interpretation of specified data already in evidence. And in any event, where the proffered opinion appears to be based on factual premises supplied by other witnesses in the case rather than by the expert from his own observation and experience, his testimony will be accepted only in the hypothetical form.<sup>146</sup>

*Economic Facts:* Expert testimony to economic facts is normally elicited from two types of witnesses—the “practical” expert whose special knowledge is derived from personal experience in working in the industry or trade in question, and the trained economist or business analyst who, while perhaps never connected with the industry or trade in question, has had occasion to make a special study of it. The

143. *United States v. Spaulding*, 293 U.S. 498 (1935) (issue of “total permanent disability”—war risk insurance case); *Continental Casualty Co. v. First Nat. Bank of Temple*, 116 F.2d 885 (5th Cir. 1941) *cert. denied*, 313 U.S. 575 (1941) (issue whether assets of bank were reduced—action on surety bond); *Farris v. Interstate Circuit, Inc.*, 116 F.2d 409 (5th Cir. 1941) (issue of safety of construction and lighting of a theatre—but some question as to qualifications of expert in any event); *Prentiss v. Chandler*, 85 F.2d 733 (9th Cir. 1936) *cert. denied*, 300 U.S. 654 (1937) (issue of solvency of bank at time of payment of certain deposits—action by receiver).

144. In *New York Life Insurance Co. v. Wolf*, the foregoing broad proposition is interpreted and limited: “Experts are not allowed to state their conclusions on the whole case as where under a hypothetical question an expert witness is asked to sum up the entire issue and determine the ultimate question for decision by the jury. *United States v. Spaulding*, 293 U.S. 498. . . . But the opinion here asked was not an opinion on the merits of the entire case, and it has been repeatedly held by this and other courts that where evidence will aid a jury in reaching a correct solution of the issues and is therefore properly a subject of expert evidence, it is no objection that the opinion elicited from the expert is on an issue or point to be decided by the jury.” 85 F.2d 162, 165 (8th Cir. 1936), *cert. denied*, 229 U.S. 614 (1937).

145. 2 WIGMORE, EVIDENCE § 665b (3d ed. 1940) at p. 784; *Grayson v. Lynch*, 163 U.S. 468 (1896).

146. See *United States v. American Tobacco Co.*, 39 F.Supp. 957 (E.D.Ky. 1941), and 2 WIGMORE, EVIDENCE § 672 (3d ed. 1940) at pp. 792-5.

scope permitted either type of expert will depend on the apparent extent of his sources and knowledge. Problems in connection with this type of testimony may be grouped under the following heads: (1) industry history; (2) trade usages and customs; (3) volume of production and sales; (4) distribution practices; (5) prices; and (6) probability, cause and effect.

In the recent *American Tobacco Co.* case a witness for the government who had supervised an NRA study of the tobacco industry was permitted to narrate the development of the industry in the United States. Following an objection to such testimony insofar as it might include "any facts within his lifetime unless he had a personal connection with them" the following colloquy occurred:

"The Court: . . . Are you merely calling upon him as an introductory matter for a historical sketch of a historic nature of the tobacco industry and that is as far as you are going?"

"Q.: Precisely, Your Honor.

"The Court: Limit your answer to that, Mr. Vincent, and not to any detailed facts in regard to the present operation."<sup>147</sup>

When the witness began to describe brands which had appeared between 1911 and 1920 there was an objection on the ground that whatever had occurred after 1911 was "not a question of history, but a matter in the memory of many of the living men in the tobacco industry and who actually know the facts," and that it was "perfectly apparent that the witness doesn't know anything about it except from investigation." This objection was overruled.<sup>148</sup> A practical expert could, of course, testify to any developments in the industry to the extent of his own personal knowledge and recollection; and standard works and treatises are admissible to prove general facts of history.

Expert testimony to trade usages is commonly accepted.<sup>149</sup> With respect to volume of production and sales, as on any other topic, a

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147. Mimeographed Transcript, p. 5314, *United States v. American Tobacco Co.*, 39 F.Supp. 957 (E.D.Ky. 1941).

148. *Id.* at 5326.

149. See, for example, *Fidelity Investment Ass'n v. United States*, 5 F.Supp. 19 (Ct. Cl. 1933), *cert. denied*, 291 U.S. 685 (1933) (experts in the business of corporate securities permitted to testify whether securities in question—which were of an unusual type—were "known generally as corporate securities" within the meaning of the revenue act); *Manhattan Oil Co. v. Mosby*, 72 F.2d 840 (8th Cir. 1934), *cert. denied*, 293 U.S. 623 (1934) (rancher and commission man of many years' experience permitted to interpret market cattle quotations and apply them to cattle comparable to plaintiff's); and *Victor v. Nat'l City Bank of New York*, 200 App.Div. 557, 193 N.Y.Supp. 868 (1st Dep't 1922), *aff'd*, 199 N.Y.Supp. 955 (1st Dep't 1923), *aff'd*, 237 N.Y. 538, 143 N.E. 733 (1923) (holding that an assistant cashier of another bank, whose duties included issuing letters of credit and passing on documents and drafts presented under such letters, might testify to the meaning attributed in the trade to the word "shipment" when employed in a letter of credit).

witness with personal knowledge—as, for example, an officer of a company testifying to the production of his company—may speak to the extent of that knowledge. But an economist or statistician, whose knowledge of production or sales volume is based purely on investigation and research, may be confined to summarizing and interpreting appropriate data already in evidence, or otherwise identified and available. In *United States v. American Tobacco Co.* an economic expert not connected with the industry was confined in this fashion pursuant to an objection that he should not be permitted to speak generally of the volume of business done by each cigarette manufacturer since 1912.<sup>150</sup>

A practical expert may testify generally to practices and courses of dealing in a trade or industry, to the extent of his knowledge and observation. In *United States v. American Tobacco Co.* numerous dealers, auctioneers, and warehousemen were permitted to describe generally the auction markets, their modes of functioning, and practices relating thereto, in the areas and for the years in which they had been personally active in such markets. And they were permitted to generalize concerning the types of tobacco bid on by the buyers for each major company, and the maximum price each would bid, on the basis of mere observation in the markets.<sup>151</sup>

In the same case jobbers and retailers were similarly permitted to testify generally to continuing distributive practices concerning manufacturers' price announcements, drop shipments, free goods, trade discounts, and the like, to the extent of their professed personal observation, for the areas and during the period of time in which they had been actively engaged.

The chief problem as to price phenomena concerns the mode of proving actual (as distinguished from list) prices. An expert may, of course, summarize any records or data already in evidence which reflect actual prices. Beyond this, however, whether his expertness is based on practical experience in the industry or on study and investigation, his testimony to actual price is likely to be confined to transactions of which he purports to have personal knowledge and recollection. A witness connected with a given company could testify to actual prices charged or paid by that company, to the extent of his professed personal knowledge. In *United States v. American Tobacco Co.* the government's

150. Mimeographed Transcript, p. 5332, *United States v. American Tobacco Co.*, 39 F.Supp. 957 (E.D.Ky. 1941) (on objection to evidence): "The Court: If he has analyzed some figures at some other time and some other place and some other figures, his analysis would not be competent. In order to bring his testimony within the familiar rule, he must show that the computation that he has made is a computation of a series of reports or figures that are in evidence in this case or else produce what computation he has made from other sources. I don't know that it would be competent for him to testify as to his analysis or computation of something that is not in the record."

151. *Id.* at 2639-71, 5776-5803, 5814-44, 2694-2714.

economic expert was not permitted to testify whether, from his study of the industry and experience in supervising the NRA industry study, purchasers of cigarettes customarily took the listed discounts.<sup>162</sup> But the same expert, over objection and after a voir dire, was permitted to testify generally to the actual retail prices charged on a nation-wide basis, his testimony being based on the NRA investigation made under his supervision, which had included a field sampling of retail prices.<sup>163</sup>

Expert opinion may be projected to embrace the statement of conclusions as to probabilities, relationships, causes and effects, to be inferred from data in evidence. The common objection is that such evidence is speculative, and that the witness is being asked for a mere estimate. But the only pertinent questions in any given case are whether the witness appears to be sufficiently qualified for the purpose, and whether expert assistance in drawing the particular inference may be helpful.<sup>154</sup>

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152. *Id.* at 5473-4:

"Mr. McLendon: We object to that, if your Honor please, unless he can furnish the information on which he bases that. How could he possibly know such a fact as that without the basic data from which to draw such a conclusion?"

"Q.: If your Honor please, if the basic data on that subject were in the record it would comprise all of the invoices, I suppose, for the period in question. It seems to me Mr. Vincent is sufficiently familiar with this industry to make a statement of that kind based on his study of the industry.

"The Court: He may be; I don't know. But without the data in the record, his mere opinion of it, his interpretation of it would be incompetent."

153. *Id.* at 5476-80.

154. See 7 WIGMORE, EVIDENCE § 1976 (3d ed. 1940) ("There is no sufficient reason for excluding such statements from qualified witnesses. . . ." (p. 121), and his comment on the United States v. Boston, Cape Cod & N. Y. Canal Co. case, 271 Fed. 877 (1st Cir. 1921), discussed *supra*, p. 1262, that "[T]his ruling touches the top-notch as an exhibit of the practical nonsense of the Opinion rule" (note, at p. 122)); and State v. St. Paul City Ry., 196 Minn. 456, 265 N.W. 434 (1936), wherein on an appeal from an order of the State Railroad and Warehouse Commission requiring a street railway company to sell two tokens for 15 cents during a temporary trial period, it was held over objection that expert testimony was properly received as to what percentage of the patrons, given the proposed change, would use tokens rather than pay cash fares. The Court said, "There is no question of testimonial qualifications here. . . . In the instant case the trial court was not in as good a position as were the experts to draw conclusions and inferences from the evidence adduced at the hearing." *Id.* at 436-7.

Other cases supporting the same general proposition are Sheldon v. Moredale Realty Corp., 29 F.Supp. 729 (S.D.N.Y. 1939); Consolidated Coal Co. of St. Louis v. The Polar Wave Ice Co., 106 Fed. 798 (8th Cir. 1901) (coal dealer permitted to testify as to the amount of coal which a party could have sold in St. Louis between certain dates); and United States v. American Tobacco Co., 39 F.Supp. 957 (E.D.Ky. 1941) (economic expert for the government permitted to testify that on the basis of data in evidence there was no apparent relationship between leaf tobacco prices and the volume of production and stocks on hand—but not permitted to testify to the status of commodity prices generally in the United States at the time of a cigarette price rise in 1931, there being "no factual basis in the record to sustain an expression of opinion upon that matter"; and University of Kentucky field agent in agronomy permitted to testify that the proved average speed of

*Technology and Patents:* Expert testimony is frequently accepted by the courts to prove the history and current state of a given technology—or, in patent litigation, the prior art—and to interpret the specifications and claims of a given patent. Such testimony may be given by a practising scientist in the field, or by a patent attorney qualified as an expert for the purpose. Such testimony may relate to (1) the history of the technology; (2) the construction of claims and specifications; or (3) the estimation of damages and profits from infringement.

The use of both types of experts to prove the development of the technology and the state of prior art has been discussed by Judge Yankwich.<sup>155</sup> The trained scientist may testify fully, on the basis of his research and experience, to the general historical development, as well as to particular phases of the science or technology bearing on an issue of novelty of invention, infringement, etc. The legal "patent expert" may analyze prior patents on the issue of prior art, and similarly assist in the interpretation of the claims and specifications of a patent in issue.<sup>156</sup> Decisions sustaining the admissibility of expert testimony to aid in the interpretation of patent claims and specifications, like decisions on the admissibility of expert testimony of other types, appear to turn on the apparent helpfulness of the proffered testimony, taking into account the relative complexity of the questions presented as well as the apparent qualifications of the expert.<sup>157</sup>

sales in tobacco auction warehouses was too fast to give buyers an opportunity for fair appraisal of the tobacco on which they were bidding) (mimeographed Transcript, pp. 5532, 5344, 2694-2714).

155. *On the Use of Experts in Patent Cases*, 22 J. PAT. OFF. SEC'Y 639 (1940).

156. The considerations which determine the admissibility or inadmissibility of such expert assistance have been discussed by Judge L. Hand as follows, in *Kohn v. Eimer*, 265 Fed. 900, 902 (2d Cir. 1920) (patent infringement—affirming decree dismissing the complaint and commenting on appellant's contention that prior art patents should not be considered since appellee had called no expert at the trial to explain them):

"We have not the slightest wish to minimize the vital importance of expert testimony in patent suits, or to suggest that we are not absolutely dependent upon it within its proper scope; but that scope is often altogether misapprehended, as the appellant has misapprehended it here. Specifications are written to those skilled in the art, among whom judges are not. It therefore becomes necessary, when the terminology of the art is not comprehensible to a lay person, that so much of it as is used in the specifications should be translated into colloquial language; in short, that the judge should understand what the specifications say. This is the only permissible use of expert testimony which we recognize. When the judge has understood the specifications, he cannot avoid the responsibility of deciding himself all questions of infringement and anticipation and the testimony of experts upon these issues is inevitably a burdensome impertinence.

"Now the question whether the judge needs the assistance of experts to understand the specifications is for him to decide. . . .

"In the case at bar we see no reason whatever to differ from the learned District Judge in his conclusion that the specifications of all these patents speak a language comprehensive enough, without experts, for the disposal of the case."

157. Cases in which expert assistance was considered unnecessary and hence inappro-

The estimation of damages and profits from infringement is governed by Section 70 of Title 35 of the United States Code, as follows:

"[U]pon a judgment being rendered in any case for an infringement the complainant shall be entitled to recover general damages which shall be due compensation for making, using, or selling the invention, not less than a reasonable royalty therefor. . . .

"The court is hereby authorized to receive expert or opinion evidence upon which to determine in conjunction with any other evidence in the record, due compensation for making, using, or selling the invention, and such expert or opinion evidence is hereby declared to be competent and admissible subject to the general rules of evidence applicable thereto."<sup>158</sup>

### *E. Conclusions*

*Technological Facts:* Proof of this nature may be presented in the form of an expert summary, and may include expert interpretation of infringement hazards and of the necessity for and reasonableness of what has been done with reference to technological developments and patents.

The sources to be summarized will usually include, in addition to the technological or patent expert's own special knowledge, patents, patent office and judicial records, company records made in the regular course of business, special studies based on the foregoing types of material made by persons working under the supervision of the expert, and, to show the state of the art at various times, relevant foreign and domestic technical publications and treatises, books copyrighted in the United States and printed catalogues circulated in the trade.

So far as is practically feasible all of the foregoing source material to be summarized or otherwise relied upon by the expert should be put in evidence or at least made available to the adverse party. Some of it, however, will be judicially noticeable; and as to the remainder, given genuine practical difficulty in the way of production, and as long as it appears to the court that the source materials are satisfactory and would be admissible if available, there is substantial authority for dispensing with their production.

One or more experts may summarize technological developments in the industry as a whole, and there is no requirement that such an expert be associated with a particular company in order to speak of developments within that company. To the extent that he has personal

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private are *Wisconsin Alumni Research Foundation v. George A. Breon & Co., Inc.*, 85 F.2d 166 (8th Cir. 1936), *cert. denied*, 299 U.S. 598 (1936); *Young v. Ralston-Purina Co.*, 88 F.2d 97 (8th Cir. 1937); *Ceasar v. Joseph Pernick Co., Inc.*, 1 F.Supp. 290 (E.D.N.Y. 1932); *National Machine Corp., Inc. v. Benthall Machine Co. Inc.*, 241 Fed. 72 (4th Cir. 1916).

158. 60 STAT. 778, 35 U.S.C. § 70 (1946).

knowledge, however acquired, he may speak from it; beyond that, he may summarize acceptable source materials of the kinds indicated above.

Notices of infringement, threats of litigation, settlements, purchases of patents and the granting of licenses may be proved by the documents or correspondence involved, where these are available and identifiable. Documents over thirty years old are, of course, self-proving as "ancient". Lacking the documents, such transactions and occurrences may be proved by company records made in the regular course of business which happen to reflect them, or by a witness with personal knowledge.

There is ample authority for the admission of opinion testimony by a qualified technologist or patent expert to explain a technological device or process, to interpret the specifications and claims of a patent, to interpret other patents and literature reflecting the state of the art, and to determine the existence of probability of infringement. Expert testimony addressed to the ultimate necessity for and reasonableness of what was done with reference to patents and patent conflicts should so far as possible speak to the probabilities, causes and effects attending alternative courses of conduct rather than to the ultimate evaluation of reasonableness.

*Economic Facts:* To prove industrial productive capacity, contemporary records of particular companies or the testimony of persons connected with such companies and having the requisite personal knowledge can, of course, be used. But there is no "best evidence" requirement that the fact of productive capacity be proven in this particular fashion.

Government reports, industry handbooks and other recognized trade sources are admissible to prove capacity. A qualified expert may summarize the results of a survey of productive capacity in the industry based on source data, whether compiled by himself or by others working under his supervision. The testimonial summary should clearly show the nature and identity of the sources upon which it is based, and where practically feasible these should already be in evidence or at least have been made available to the adverse party. Where any of the sources cannot be produced, the testimony must at least show their reliability and admissible character. With this foundation, the precedents dispensing with the normal requirements of production may be invoked.

The necessity for producing subordinates who participated in the preparation of the summary is governed by similar considerations. Where the expert's supervision has been so close as to amount to a continuing check, production of the other participants is, of course, unnecessary. Failing this, they would normally have to be produced, since studies made for purposes of trial are not deemed to exhibit the

same "guaranty of trustworthiness" as the records made in the regular course of business. But here again the precedents for relaxing this requirement on grounds of practical feasibility may be invoked.

List prices—whether of a company now in existence or of one no longer in existence—may be proved in any one of several ways: quotations in trade journals and lists or "price currents" circulated and relied upon in the trade are admissible, as are government reports. One whose business involves following the market and who has personal knowledge of the prices in question may testify. Records made in the regular course of business in any given company showing prices quoted by or to it are likewise admissible, the only problem in the case of a company no longer in existence being to identify the records as such where they are not sufficiently old to be self-proving. An expert may compare the movement or other aspects of prices in the industry with those of prices in other industries, as has been done in numerous antitrust proceedings.

Differentials reflected in actual sales prices though not in published discount sheets may be roughly approximated by a witness speaking from personal knowledge, assuming that he can be shown to be sufficiently acquainted with the courses of dealing in the areas whereof he speaks. How far such a "practical expert" may go obviously depends on the extent to which pricing practices lend themselves to patterning and generalization. To measure the differential more exactly, sample spot check tabulations from invoices, coupled with general "practical expert" testimony as to the typical character of the areas and times covered in relation to practices in other areas and at other times, might be employed.

Volume of sales may be proved by the same types of evidence as list prices. Government reports which measure up to the general requirements of an official record or report, to the extent that they happen to be available and to cover the ground, would be the most conveniently handled form of basic data.

There may be occasion to employ I.B.M. machine tabulations in connection with proof of actual prices, volume of sales, and quantities handled by particular distributors. In that event it should not be necessary to put in evidence all of the invoices tabulated, or all of the cards, worksheets, decoding sheets, etc. Samples should, however, be offered; and the whole lot should be available to the adverse party for purposes of cross-examination. The testimony of a witness who supervised and directed the study should suffice to support the offer in evidence of the resulting tabulations, assuming that his supervision, while falling short of an actual check of all the operations involved, appears sufficiently close and informed to supply a practical "guaranty of trustworthiness."

The financial statements of each company in the industry present no serious problem of admissibility. Those of companies in exist-

ence can readily be identified, whereas those of companies no longer in existence will qualify as records made in the regular course of business<sup>159</sup> and, where 30 years or more in age, will prove themselves as ancient documents.

#### GENERAL IMPLICATIONS

In this article and the preceding installment we have surveyed some of the unique problems of proof and procedure which arise when cases of such exceptional complexity as industry-wide proceedings under the Sherman Act are brought before ordinary judicial tribunals shaped for vastly simpler situations. We have also surveyed some of the working rules for court and counsel which have been adopted in litigations of this sort. They involve some relaxation of various rules of evidence and procedure which are considered feasible and salutary in ordinary trials; and they pose some novel problems of economic expertise. They indicate the ways in which the judicial institution has managed thus far to absorb these relatively indigestible conflicts of interest.

How well the conflicts are being resolved is another question. The public interest is to obtain as informed and adaptively value-oriented findings of fact and prospectively operating decrees as possible. Here we have reason to pause. Despite the procedural adaptations which have been described, it is observable in these cases that the judicial process is still over-loaded. The limitations of human thought fully to comprehend any real social situation within a finite period with conventionally finite investigative resources become painfully apparent. Many realities of the situations in question tend to recede from the focus of attention as litigation progresses, and the situations themselves tend to be replaced by verbal patterns more manageable because artificially simplified. The illusory character of the safeguards to defendants supposed to inhere in the requirements that a "conspiracy" or "intent to monopolize" be shown, for example, was discussed in the previous installment.

There is no brief here, however, for any notion that a non-judicial type of tribunal or agency would *ipso facto* do better. The use of intellect and imagination, and the development of an inclination to due process, probably become no easier if one is designated as an executive, administrator or legislator, rather than a judge. The discussion has pre-supposed an adversary procedure, be it judicial or administrative; and it has pre-supposed that some if not all of the initiative to find and present evidence rests on the parties rather than on the tribunal or agency. Within this framework, any tribunal charged with decision in a particular case is faced with the problem here discussed—that of ways and means to ensure a more adequate flow of relevant information in more assimilable form.

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159. Within the meaning of the new 28 U.S.C. § 1732 (1948).