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THE AMERICAN JEWELLED WATCH INDUSTRY

by

WALTER SPARKS MEASDAY

A.B., College of William and Mary  
(1941)

SUBMITTED IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE

DEGREE OF DOCTOR OF

PHILOSOPHY

at the

MASSACHUSETTS INSTITUTE OF

TECHNOLOGY

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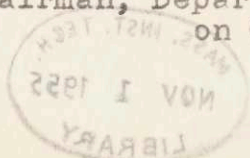
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DEWEY

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THE AMERICAN JEWELED WATCH INDUSTRY

by Walter Sparks Measday

Submitted to the Department of Economics on May 7, 1955, in partial fulfillment of the requirements for the degree of Doctor of Philosophy

The modern watch was perfected by European watchmakers, principally British, in the eighteenth century. After 1840 Switzerland dominated world watch markets through the efficiency of her merchant-employer system of production. This position was threatened by the development of mechanized production methods in American factories. Swiss mechanization in response to this threat enabled the Swiss to maintain their position in the world market and, after World War I, to regain an important position in the American market.

The annual demand for jeweled watches in the American market is influenced by a number of factors, such as advertising and style, the useful life of watches, watch prices, the general price level and population. Over the past twenty-five years, however, variations in annual demand have been most closely correlated with variations in the level of disposable personal income. If disposable income remains at high levels in the future, the influence of the other factors mentioned should increase in importance.

This demand is filled by an industry containing three types of firms: integrated domestic producers, "assemblers" of imported movements in domestic cases, and importers of complete watches. Three of the seven "major" firms are primarily domestic producers (Elgin, Hamilton and Waltham), although each has imported some movements in recent years. Three others (Benrus, Gruen and Longines-Wittnauer) are assemblers. The seventh firm (Bulova) is both the largest assembler and the second-largest domestic producer of jeweled watches. Competition among these firms has been largely on the basis of product differentiation and advertising expenditures, although changing patterns of retail distribution have increased the possibility of retail price competition in the industry in recent years.

In contrast to the American industry of large-scale integrated firms, the Swiss industry is composed of a large number of very small enterprises, most of which specialize in the production of separate parts or in particular operations related to watch manufacturing. These firms have been organized into a strong cartel which controls prices, output and marketing policies for the industry as a whole.

The Waltham Watch Company, the oldest American firm, has suffered severe financial reverses since 1946. These reverses reflect half a century of managements which were either unable

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or unwilling to operate Waltham in a manner consistent with the firm's long-run welfare. It is doubtful whether the present management, competent as it is, can save the company.

Waltham's collapse has provided the domestic industry with powerful ammunition in its pursuit of higher tariff protection in recent years. This pursuit was rewarded in 1954 when President Eisenhower virtually eliminated the tariff reductions granted in the 1936 trade agreement with Switzerland, on the ground that these reductions had seriously injured an industry essential to national defense. The President's action may well open the way to a revival of protectionism in the United States.

Neither the "serious injury" nor the "national defense" argument appears to afford a sound basis for increasing the tariff on jeweled watch movements. The Tariff Commission and the President find that serious injury has occurred because the domestic industry supplied only twenty percent of the domestic market in 1953 in contrast to more than fifty percent from 1931-1935. This "share of the market" argument ignores the facts that watch consumption has risen considerably, that a large part of domestic capacity is being utilized for defense production, and that the industry is prospering "by all of the customary standards of levels of production, profits, wages and employment." While several governmental agencies have reported that the jeweled watch industry is essential to national defense, a careful study by the Department of Defense belies these findings. The Defense report states that military requirements for jeweled movements are "nominal" and that other defense products of this industry can be and have been produced by a number of firms outside of the jeweled watch industry.

On the whole, Swiss competition in the past has proved to be a powerful stimulant to technological progress and improvement in productive efficiency within the American jeweled watch industry. Any policies which markedly reduce this competition may prove deleterious to the industry itself, as well as to the consuming public.

Thesis Supervisor: Dr. Morris A. Adelman  
Title: Associate Professor of Economics

BIOGRAPHICAL NOTE

Walter S. Measday was born in New York City on May 18, 1920. He received his primary and secondary educations in the public schools of Westwood, New Jersey. He was graduated from the College of William and Mary in June 1941, with the degree of Bachelor of Arts. From September 1941 to June 1942, he attended the Graduate School of Duke University.

After a period of military service, he was in residence at the Massachusetts Institute of Technology from September 1946 to June 1950. He received the Doctor of Philosophy degree from this institution in June 1955.

During the summer of 1946, he taught economics at the College of William and Mary. At M. I. T. he served as a graduate assistant, teaching half-time in the Department of Economics and Social Science. Since 1950 he has been an instructor in economics at the University of Maryland.

He is a member of Phi Beta Kappa, Theta Chi Delta (honorary chemistry fraternity), the American Economic Association and the Econometric Society.

### ACKNOWLEDGEMENTS

In the preparation of this study, I have derived great benefit from the information and counsel provided by a number of persons familiar with the jeweled watch industry, both in the United States and Switzerland. Among these persons are executives of the domestic firms, retail jewelers, officers of the Swiss Watch Chamber and Machor, S.A., Mr. A. H. Stuart of the Department of Commerce, and Mr. J. C. Burrit of the Tariff Commission. The footnote references in the following pages are but a bare indication of the help which they have given me.

I owe a special debt of gratitude to Professors Morris A. Adelman and Charles P. Kindleberger, of the Massachusetts Institute of Technology, under whose guidance this study was conceived and brought to completion. Needless to say, I alone am responsible for any errors, questionable judgments or inaccurate conclusions in the work which follows.

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## CHAPTER I

### BACKGROUND OF THE MODERN WATCH

The measurement of time has concerned man throughout the span of history. With the development of social organization and technology, the importance of accurate time measurement has increased. The Egyptians in the fifth millennium, B.C., were content with a calendar to measure the passage of days and years. The fourteenth century lord was inordinately proud of his castle clock, accurate to within an hour or two a day. The twentieth century physicist measures his time in microseconds.

The basic problem is that one cannot construct an absolute standard of time. Any unit of time once experienced exists only in the memory, in contrast to finite space which can be measured against a standard yardstick, or weight which can be balanced against a standard pound. Time can be measured only with reference to cyclically recurrent phenomena of nature (such as the periodic flooding of the Nile, the phases of the moon, or the movements of stars through the heavens) or, alternatively, against mechanically generated cycles of unvarying periodicity (as in the modern clock or watch).

The earliest mechanical clocks, powered by falling weights, appear to have been made between the eleventh and

the thirteenth centuries.<sup>1</sup> The principal problem to be met was that of controlling the rate of fall of the weights (or in later years, the rate at which the mainspring uncoils). The solution to this problem, i.e. the escapement, is the most important single invention in horological history. The general function of the escapement is easily described. The falling weights drive a train of geared wheels, known as the time train; unchecked, these weights would fall continuously at an accelerating rate, causing the clock to run down in short order. The escapement, by alternately braking and releasing the time train, permits the weights to fall (or the mainspring to uncoil) only in short, interrupted intervals during which acceleration is negligible. This makes it possible to construct a clock which will run for one day, eight days, or longer, and which will indicate the passage of time at a constant rate throughout this period. The simplicity of the escapement principle, however, obscures the tremendous technological difficulties in constructing an oscillating mechanism which will cause the larger mechanism of which it is a part to keep accurate time.

The most notable of the early clocks is that made by Henri de Vick (Heinrich von Wieck) of Wurttemberg, for King Charles V of France. This clock was completed in 1370 and performed its function for another five centuries; existing drawings and descriptions of the movement as originally constructed leave "no possible doubt of the complete mastery of

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<sup>1</sup> L. Bolton, Time Measurement (New York, 1924), p. 54.

all the primary principles of the mechanical clock".<sup>1</sup> The mechanism itself was not changed significantly for three centuries. Even in subsequent periods, the innovations have been improvements--such as refinements in gearing and better escapements--rather than revolutionary changes in the principles of operation.

The growth of intellectual interest in astronomy and experimental science gave increasing emphasis to the clock as an instrument of measurement. Consequently, in the sixteenth and seventeenth centuries conscious efforts were made by the most brilliant men of the period to analyze the mechanical principles of the clock and to improve its accuracy. These efforts bore fruit in the development of the modern pendulum clock.

A major defect of the early clocks was their lack of isochronism.<sup>2</sup> The "verge" escapement was universally employed. With this escapement, the escape wheel (geared to the time train) is alternately locked and unlocked by the movement of a vertical spindle (the verge) bearing two teeth (or "pallets") which engage teeth on the escape wheel. The motion of the verge itself is controlled by the balance. Until the seventeenth century, the only balance known was the foliot, a bar with two weights at its extremities which

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<sup>1</sup>A. P. Usher, A History of Mechanical Inventions (New York, 1929), p. 160.

<sup>2</sup>The term "isochronism", in horological usage, has two closely-related connotations. A clock or watch is isochronous to the extent that it indicates the passage of time at a constant rate. This in turn depends upon the isochronism of the balance, or the constancy of the balance's periods of oscillation.

swings in a horizontal plane. The period of the foliot's oscillation is directly proportional to the length of its arc. Thus variations in the arc cause variations in the intervals during which the time train moves, making verge-controlled clocks erratic timekeepers.

Galileo Galilei was the first person to note the isochronism exhibited by a swinging pendulum, i.e., variations in the amplitude of its oscillation do not affect the pendulum's periodicity.<sup>1</sup> In addition, the period is independent of the pendulum's mass, being determined solely by the length of the string or rod from which it is suspended. These characteristics make the pendulum an ideal regulator for a clock.

Credit for this application of the pendulum is customarily given to Christian Huygens, the celebrated Dutch mathematician who produced a pendulum clock in 1657. Huygens' careful analysis of the pendulum (in his Horologium oscillatorum, published in 1673) and the publicity which his work received led to the rapid introduction of the device in the leading clockmaking centers.

A second important innovation of the period was the anchor escapement, developed by the eminent Robert Hooke in 1675.<sup>2</sup> The verge rotates back and forth to an extent which requires its controlling pendulum to swing through a relatively large arc. As the arc of oscillation increases, the

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<sup>1</sup>L. W. Taylor, Physics, The Pioneer Science, (New York, 1946), p. 192.

<sup>2</sup>J. R. McCarthy, A Matter of Time (New York, 1947), p. 60.

pendulum loses its isochronism.<sup>1</sup> Hooke's anchor locked and released the escape wheel with very little motion, so that the required arc of the pendulum was small enough to maintain isochronism. With the application of Huygen's pendulum and Hooke's anchor escapement to the going train developed by earlier horologists, the mechanism took a form which would be perfectly familiar to present-day clockmakers.

The development of watches, as distinct from clocks, was impossible so long as falling weights were used as a power source. Between 1500 and 1510, however, one Peter Henlein (a clockmaker of Nuremberg) earned a wide reputation for his ability to make "out of a small quantity of iron, horologia devised with very many wheels, and these horologia in any position and without any weight, both indicate and strike for 40 hours, even when they are carried on the breast or in the purse".<sup>2</sup> Henlein, the first "watchmaker", accomplished this by the use of a coiled spring wound with a ratchet, a method which has survived for four and a half centuries.

Early watches were hopelessly inaccurate, but despite their mechanical failings, they became leading articles of conspicuous consumption and a favorite gift among monarchs for the cementing of international friendships. Unfortunately, the watch caught the public fancy as an expensive, if

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<sup>1</sup>Huygens solved this problem by means of an elaborate set of checks which forced his string-suspended pendulum to follow a cycloidal path with which the pendulum exhibits isochronism even through large arcs of oscillation.

<sup>2</sup>Ibid., P. 109.

somewhat useless, gadget, and little was done to improve its movement. Instead, the creative energy of watchmakers everywhere was directed towards elaborating and decorating the cases in which the movements were housed. Until the end of the seventeenth century, the watch was an ostentatious plaything for the wealthy, practically devoid of any significance as a timekeeper. Under these conditions it was impossible to expect the development of watchmaking as an important industry.

The watch industry entered the eighteenth century producing expensive toys; it left this century producing watches which were substantially the same as those in use today. This was the great century of invention in watchmaking. And with very few exceptions the major inventions were the work of the Englishmen.

Lack of isochronism in the balance plagued the early watchmakers. The pendulum, so admirably suited to maintain isochronism in the clock, is obviously no solution for the watch. The answer was found, almost simultaneously, by Robert Hooke and Christian Huygens: a spring-controlled balance is isochronous, just as is the pendulum.<sup>1</sup>

The next area of improvement was the escapement itself. Hooke's anchor was unsatisfactory for escapements controlled by a delicate balance spring, since the escape lever (the anchor itself) was in constant contact with the arbor of the

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<sup>1</sup>From the standpoint of posterity, Huygens is the more important, since he invented the spiral hairspring and the circular balance which are used universally in watches at present.

balance wheel. This resulted in sufficient friction to interfere with the natural period of oscillation of the balance (which should, ideally, be determined solely by the characteristics of the balance and balance spring).

The goal of eighteenth-century watchmakers was an escapement which was "detached" (i.e., one which permits the balance assembly to oscillate as freely as possible). Hooke's anchor was modified by George Graham in 1715. By a further modification of Graham's escapement, Thomas Mudge in 1750 introduced the first detached-lever escapement, in virtually the same form used in nearly all jeweled watches today.<sup>1</sup>

Friction is a serious source of trouble in any mechanism as delicate as a watch. Early watchmakers relied upon careful workmanship to minimize contact between surfaces where friction might arise. The arbors on which wheels were mounted were carefully ground down at their extremities to form "pivots", smaller in diameter than a human hair. Nevertheless, bearing holes (in which the pivots rotate) tended to wear in use, throwing pivots out of alignment and creating friction in the movement. To combat this, Nicholas Facio proposed the use of jewels for bearings in a British patent application filed in 1704.<sup>2</sup>

The advantages of jewelings were soon evident to watchmakers, and many of the finest watches made in the eighteenth

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<sup>1</sup>W. I. Milham, Time and Timekeepers, (New York, 1944), p. 266.

<sup>2</sup>J. R. McCarthy, op.cit., p. 114.



century were jeweled. The art appears to have been jealously guarded for a number of years, however, and jewels did not come into general use until the beginning of the nineteenth century.

Although there were few British watchmakers before the end of the seventeenth century, the next century saw England leading the world. The prosperity and political stability of England in this period were important in providing a climate in which British technical skill could flourish. The successful British watchmakers became wealthy men, and, no matter how humble their origins, moved in the higher strata of London society.<sup>1</sup> And since this was a period of innovation, the successful men were generally the inventive ones.

The most important single factor, however, was the rise of British sea power. The voyages of Columbus introduced an era in which navigation beyond the sight of fixed landmarks was essential. The basic information required for marine navigation is direction and position. Improvements in the compass made the accurate knowledge of direction possible, but the determination of position lagged for nearly three centuries. Both latitude and longitude are needed to find position, and the sextant can give only latitude. Longitude remained the unsolved problem, estimated in practice by dead reckoning on the basis of log and sand glass.

The inaccuracy of dead reckoning frequently led to

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<sup>1</sup>Two of the leading British watchmakers of the period, Thomas Tompion and George Graham are buried in Westminster Abbey.

maritime disaster, and in 1714 the British Admiralty established a board of "commissioners for the determination of longitude at sea". The solution to the problem had been suggested as early as 1530 by R. Gemma Frisius.<sup>1</sup> Since the earth rotates fifteen degrees an hour, comparison of local time at any position with the time at some standard meridian should give the longitude of that position.<sup>2</sup> Frisius' suggestion required a timekeeper of unusual accuracy. Since one degree of longitude equals sixty nautical miles at the equator, a watch which is one minute off Greenwich Mean Time will give a distance error of fifteen miles. On a two-months' voyage such an error would result if the watch ran faster or slower than standard time by one second a day (out of 86,400 seconds).

To encourage the development of precision timekeepers, the Longitude Commission offered annual grants to assist experimenters. In addition, large prizes were offered for the first instrument which would perform satisfactorily on the long voyage to the West Indies and back: £10,000 for a determination within sixty miles, £14,000 for one within forty miles, and £20,000 for one within thirty miles. Between 1737 and 1815, the Commission paid out a total of £101,000, an impressive sum for the period.<sup>3</sup> The grand

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<sup>1</sup>W. I. Milham, op. cit., p. 261.

<sup>2</sup>As an example, let us suppose that a proper Bostonian has set his watch to Greenwich Mean Time. He finds exact noon in Boston by "shooting the sun" with his sextant. Since his watch then reads 4:44 P.M. (G.M.T.) he knows that Boston is close to the 71° meridian of longitude.

<sup>3</sup>Milham, op.cit., p. 262.

prize was probably sufficient to make its winner the eighteenth-century equivalent of a modern millionaire. With this incentive, the achievement of precision became the goal of British watchmakers.

The prize was won by John Harrison, who worked for nearly forty years (supported in large part by grants from the Commission) before completing his famous chronometer, "No. 4".<sup>1</sup> No. 4 was tested on the prescribed voyage to Jamaica and back in 1762. The trip lasted nearly five months during which the chronometer was not touched except for winding. The final error was one minute and fifteen seconds (less than half a second a day) or eighteen miles of longitude. On a later five months' voyage, No. 4 was accurate to within a tenth of a second a day.

The effort devoted to the development of chronometers had a great influence upon watchmaking generally. Standards of workmanship and accuracy rose, and the mechanical design of watches improved. By 1800 the watch was virtually identical to those known today. There have been minor improvements, but the major technical innovations had been achieved by the end of the eighteenth century.

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<sup>1</sup>Paul M. Chamberlain, It's About Time (New York, 1941), p. 326.

## CHAPTER II

### THE DEVELOPMENT OF THE BRITISH AND SWISS INDUSTRIES

The British watchmakers dominated world markets, by reason of the superiority of their products, until 1840.<sup>1</sup> Unfortunately, little except the names of some master craftsmen is known about the early organization of the industry. The typical eighteenth century shop consisted of a master, aided by several journeymen and apprentices. The master designed a watch model and then disassembled it so that the journeymen and apprentices could reproduce the parts. As the parts were completed, the master and more skilled journeymen performed the final finishing, assembly and adjustment. Since interchangeability of parts was unknown, it is probable that the whole shop worked on only one or two watches at a time.

After 1800 the prevalent form of manufacturing involved considerable specialization of labor under the domestic system.<sup>2</sup> The watch "manufacturer" became a small capitalist who purchased materials and distributed them to homeworkers who fabricated the parts, each worker specializing in one or two of these. The merchant-employer then picked up the parts

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<sup>1</sup>C. W. Moore, Timing a Century, (Cambridge, 1946) p. 65.

<sup>2</sup>W. I. Milham, Time and Timekeepers, (New York, 1944), p. 425.

and had them assembled in his own shop for distribution.

H. D. Fong gives some data for the industry in 1841.<sup>1</sup> At that time there were 13,118 persons employed in watch-making, largely concentrated in a few counties. The heaviest concentration (35.6 percent) was in London and its suburbs, with important centers in Lancaster (18.6 percent) and Warwick (9.0 percent). The remainder (36.8 percent) were scattered through every county in the kingdom. These last were, for the most part, owners and employees of local retail shops which bought movements, cased them and performed local repair work.

In the counties where watch manufacturing proper took place, the domestic system was used almost exclusively. Occasional factories making accessory products, such as watch chains, appeared, but even here it was usual to find "more hands employed outside the factory than in it".<sup>2</sup> Some years later the Factory Returns of 1875 showed only six factories in the clock and watchmaking field, employing a total of 385 persons.<sup>3</sup> The remainder worked at home or in small shops having fewer than five employees.

In the face of Swiss and, later, American competition, the British watch industry declined rapidly in the second half of the nineteenth century. England ceased to export

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<sup>1</sup>H. D. Fong, Triumph of the Factory System in England, (Shanghai, 1930), p. 155.

<sup>2</sup>Ibid., p. 157.

<sup>3</sup>Ibid., p. 158.

watches and began to rely increasingly upon imports for its domestic market. By the turn of the century, production of quality watches had dropped below 100,000 units a year, and by 1924 fewer than 5,000 were produced; the relative insignificance of the British industry may be gauged from the fact that imports during 1925, 1926 and 1927 averaged four million movements a year.<sup>1</sup>

It should be noted, however, that England is making a serious attempt to recover her prestige in the field of watchmaking, as well as to become reasonably self-sufficient for defense purposes. On the eve of World War II, her domestic capacity for the production of clocks, watches and time-recording instruments was about two million units annually.<sup>2</sup> Of this capacity, only a small fraction was for jeweled watches. The market was dominated by a single firm (Smith's English Clocks, Ltd.) which accounted for seventy-five percent of the annual output.

In the postwar period, several new firms have been attracted to the industry. The watch industry as a whole has been the first beneficiary of a government plan to encourage national defense industries. Under this plan the government provides fully-equipped plants under very favorable leasing terms, the rentals to apply towards the purchase price for

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<sup>1</sup>J. M. Calvin, "International Trade in Clocks and Watches", Trade Information Bulletin #585 (U.S. Department of Commerce, 1928), p. 29.

<sup>2</sup>"The United Kingdom's Clock and Watch Industry", Foreign Commerce Weekly, March 8, 1947, p. 26.

those lessees who may later wish to buy their plants outright.<sup>1</sup>

The government goal is an industrial capacity of nine million clocks and 3.5 million watches a year. By July 1950 actual production was at the annual rate of six million time-recording instruments, 3.25 million clocks and one million watches.<sup>2</sup> Although the figure for watches includes both jeweled and nonjeweled movements, it is evident that the productive capacity of the British industry has increased remarkably in a relatively short span of time. Should this trend continue, England may once again become an important supplier of world watch markets.

The Swiss watchmaking industry originated in Geneva during the latter part of the sixteenth century. Its growth was steady, but far less spectacular than the development of the British industry, during the seventeenth and eighteenth centuries. The reasons for this lay in the fact that the Genevese watchmakers were primarily artisans, with little of the genius for technical innovation which characterized British watchmaking, and in the general political instability of Switzerland during this period.

Watchmaking was introduced in Geneva at a time when the city was experiencing important political and economic changes. The city had earlier developed as an important commercial center, situated as it was on the major trade route

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<sup>1</sup>Ibid., p. 27.

<sup>2</sup>Data supplied by the British Information Service, Washington, D. C.

between the Hanseatic cities, southern France and Italy. It had also become famous as a producer of jewelry and other commodities fashioned from the precious metals. Geneva's commercial prosperity had declined, however, as that of Lyons had grown, during the reign of Louis XI. And the Reformation nearly destroyed the jewelry industry.

The city officially became Protestant in 1536.<sup>1</sup> Soon after, control of the new Church of Geneva was secured by John Calvin in the face of strong opposition from many of Geneva's native Protestants. In order to cement his power, Calvin encouraged the immigration of religious refugees, to whom he offered not only asylum but also easy access to the bourgeois class. By this "packing" of the electorate, the partisans of Calvin were able to secure complete control of the city government.

Among the immigrants who accepted Calvin's offer were a number of Huguenots; the small stream of French refugees became a flood after the Saint Bartholomew's Day Massacre in 1572. Nearly all of these were skilled artisans who brought new life to the existing industries of Geneva and who introduced a number of new trades, among which was watchmaking.<sup>2</sup>

The early watchmakers received a warm reception at Geneva, since the trade was excellently suited to local conditions. Scarcity of natural resources and the great

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<sup>1</sup>William Oechsli, History of Switzerland, (London, 1922), p. 155.

<sup>2</sup>H. Babel, Histoire Corporative de l'Horlogerie, (Geneva, 1917), p. 36.



difficulty of importing materials ruled out the development of any heavy industry. The watchmakers required only small quantities of steel and brass. By a tremendous amount of handwork, providing employment for many artisans, a product combining great value in small bulk was made available for export.

The jewelers and goldsmiths, with the most powerful guild in the city, were especially eager to help the horologists. Calvinistic disapproval of ostentation, enforced by sumptuary taxation, had destroyed the domestic market for their products. By the same token, a law prohibiting the manufacture of "crosses, chalices and other instruments serving popery and idolatry" had eliminated most of their export trade.<sup>1</sup> Many of these native craftsmen moved into the new industry, providing a pool of skilled labor which required a minimum of training; others entered upon the manufacture of watchcases and accessories.

The watchmakers were permitted to form their own guild, and the craft grew steadily throughout the seventeenth century. By 1700 Geneva was an important horological center, with one hundred masters and three hundred journeymen producing about 5,000 watches a year. A century later nearly six thousand persons were employed in the industry, and the output was over 50,000 a year.<sup>2</sup>

With this growth, however, the guild became increasingly

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<sup>1</sup>Ibid., p. 39.

<sup>2</sup>W. I. Milham, Time and Timekeepers, (New York, 1944), p. 430.

interested in restricting competition in the trade.<sup>1</sup> By 1690 the watchmaking apprenticeship was limited to the bourgeois class. The industry was thus controlled by a small group of prosperous masters whose economic power was buttressed by strong political influence in the city. The effect of this restrictionism was, in the long run, fatal to the interests of Genevese watchmakers. Throughout the eighteenth century, increasing numbers of watchmakers of the lower classes left the city to aid in the development of competing centers.

The policies of the guild hindered the division of labor in the industry, but some specialties (such as spring-making and tool-making) did appear. The most significant area of specialization, from the standpoint of the present Swiss industry, was the separation between "ébauche-making" and watch-finishing. The craftsmen who left Geneva proper in protest against guild policies faced a difficult situation. They could market their products only through the trade channels of Geneva, but in deference to the guild, the city council strictly enforced laws prohibiting the importation of watches into the city. Consequently, among these "craftsmen of the countryside", the practice arose of making "ébauches", or rough movements (consisting of plates, pillars and wheels), which were sold to masters within the city for finishing. In the early part of the eighteenth century, the nascent industry of Neuchâtel lacked the technical facility to make high

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<sup>1</sup>Cf. Babel, op. cit., pp. 79-85.

quality watches and the marketing contacts to sell them; it, too, became an important supplier of ebauches to Geneva.

The guild was properly horrified and passed rules against the importation of ebauches on many occasions. In their own shops, however, the individual masters found the arrangement so profitable that no serious attempts were made to stop the practice.<sup>1</sup> As a result, the dichotomy between ebauche-makers and finishers, which still exists, continued to develop.

During the eighteenth century, the knowledge of watchmaking spread rapidly throughout northwest Switzerland. The first great rival to Geneva was the canton of Neuchâtel. From the first, Neuchâtel watchmakers followed a different path from those in Geneva. There was little attempt at guild restrictiveness, and the division of labor with a high degree of specialization flourished.<sup>2</sup> This was partly the result of the environment. Geneva was a large city abounding with skilled artisans and possessed of a long craft tradition. Neuchâtel contained a few villages and a large agricultural population. For any development here it was necessary to break watchmaking down into a large number of operations, each of which could be performed by semi-skilled workers in shops or by homeworkers whose principal interest was agriculture. Success in this direction is indicated by the fact

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<sup>1</sup>Ibid., p. 81.

<sup>2</sup>H. C. Brearley, Time Telling through the Ages, (New York, 1920), p. 151.

that in 1818 Neuchâtel's production of quality watches ( in gold or silver cases) was 130,000--more than double that of Geneva.<sup>1</sup>

From Neuchatel the craft spread through the Jura Mountains. From the principal watchmaking villages of Neuchâtel (Neuchâtel, Le Locle and La Chaux-de-Fonds) came the craftsmen and entrepreneurs who carried the trade to the neighboring cantons of Berne, Solothurn and Basle. By the end of the nineteenth century, the location of the watch industry had taken the shape which it has today. Shops and factories were scattered through the Jura mountains from Geneva in the south to Rheinfelden in the north. The area is bounded on the west by the French frontier, and on the east by a chain of rivers and lakes, running from Lac Lemane through Lac de Neuchâtel, the Bieler See and the river Aare.<sup>2</sup>

The rise of skilled craftsmen and the increasing productivity of the Swiss industry are not enough, in themselves, to explain why Switzerland was able to acquire England's lead in world markets. Much credit must also be given to the fact that the Swiss created a class of ubiquitous watch merchants, who developed a world-wide demand for Swiss watches in their travels.

The merchants found their earliest commercial outlets in great fairs of Europe, but as the trade increased, large

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<sup>1</sup>F. Scheurer, Les Crises de l'Industrie Horlogère dans le Canton de Neuchâtel (Neuchâtel, 1914), p. 136.

<sup>2</sup>A. Chapis and E. Jaquet, Histoire et Technique de la Montre Suisse, (Berne, 1947), p. 74.

numbers of Swiss took up residence in foreign cities. As early as 1592, a colony of Genevese merchants and watchmakers was located in Constantinople.<sup>1</sup> In Europe Swiss residential firms in foreign cities appeared during the seventeenth century, as the fairs gave way to more permanent business arrangements.

Trade between Switzerland and North America was insignificant prior to the Revolution. Only British watches were in demand. From the beginning of the nineteenth century, however, sales of Swiss watches began a steady growth, as Swiss merchants immigrated to the United States for the purpose of introducing the products of their compatriots to the American trade. Two decades before the Civil War, the Swiss took the lead from the British in furnishing watches to the American market. By 1885 more than eighty-five percent of the watches imported into the United States were of Swiss origin, with England, France and Germany sharing the rest of the market.<sup>2</sup>

The Swiss received a rude shock during the 1870's. The United States had become their watch industry's most important market. Between 1865 and 1874, sales to this country were more than triple the total value of sales to France, Italy and Germany, the next three markets of importance.<sup>3</sup> Exports of watches and parts to the United States reached a

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<sup>1</sup>Chapuis and Jaquet, op.cit., p. 135.

<sup>2</sup>U.S. Treasury Department, Foreign Commerce and Navigation of the United States (Washington, 1885).

<sup>3</sup>Scheurer, op. cit., p. 89.

peak value of 18 million Swiss francs in 1872, a level which was not again approached until after World War I. The depression of 1873-78 reduced the American demand for imported watches, as one would expect. With recovery, however, it became evident that the dominant position in the American watch market had been seized by the domestic industry. The capacity of the American industry had risen rapidly in the post-Civil War years, and the depression induced a period of sharp competition among the mechanized American plants. The Swiss industry, with a production apparatus rendered obsolete by the "American System" was completely out of the race.

For a period of forty years after 1875, Swiss imports played a negligible role in the American jeweled watch market. Professor Scheurer's data, shown in Table 1, indicates the initial impact of this decline. The brief recovery shown for the years 1880-83 was a temporary phenomenon, as imports dropped back to the depression level and stayed there until the eve of World War I. Throughout this period imports were considerably less than the sales of the largest American producer, Waltham (see Table 2), and there were several other large firms in the United States by this time.

The volume of sales which the Swiss continued to make to the United States reflects a major shift in the composition of these imports. From 1885 until the war, the sale of parts (especially bearing jewels) to the American industry accounted annually for one-half to two-thirds of the imports by value.<sup>1</sup>

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<sup>1</sup>Cf. Foreign Commerce and Navigation of the United States, annual volumes for the years cited.

TABLE 1

EXPORTS OF WATCHES, MOVEMENTS AND PARTS  
FROM SWITZERLAND TO THE U.S., 1870-1885

Year	Value	Year	Value
1870	16,512	1878	3,996
1871	17,106	1879	5,292
1872	18,313	1880	10,144
1873	13,054	1881	11,809
1874	12,120	1882	13,238
1875	8,500	1883	11,146
1876	4,810	1884	7,470
1877	3,569	1885	4,000

Note: Values expressed in thousands of Swiss francs.

Source: F. Scheurer, Les Crises de l'Industrie Horlogère dans le Canton de Neuchâtel (Neuchâtel, 1914), p. 89.

TABLE 2

IMPORTS OF WATCHES, MOVEMENTS AND PARTS INTO  
THE U.S. COMPARED TO SALES OF THE WALTHAM  
WATCH COMPANY, 1891-1900

Year	Total Imports	Imports from Switzerland	Waltham Sales
1891	\$1,984,414	\$1,707,007	\$4,277,487
1892	1,734,648	1,509,221	3,396,539
1893	1,743,591	1,497,070	(missing)
1894	1,098,972	940,066	2,001,494
1895	1,012,696	825,925	1,653,776
1896	1,098,900	903,099	2,085,893
1897	1,118,399	936,630	1,743,055
1898	689,656	507,203	1,899,799
1899	1,061,959	824,306	2,479,087
1900	1,406,111	1,023,967	3,107,566

Sources: Import data from Foreign Commerce and Navigation of the United States, (Washington, 1900), Vol. II, p. 114. Waltham Watch Company sales from C. W. Moore, Timing a Century, (Cambridge, 1946), p. 81.

The movements which did enter were preponderantly of the cheap, non-jeweled class. Mr. Ingersoll had just started to produce "the watch that made the dollar famous", and there was a good market for these products of the Swiss industry.

Loss of the American market, coupled with recognition of the technological superiority of American manufacturing methods, raised fears akin to panic among the watchmakers of Switzerland. It was feared that this was the prelude to American domination of the world markets upon which the Swiss industry depended. Swiss apprehension in this respect proved to be exaggerated. The industrialization of the United States brought a new emphasis upon accurate timekeeping. As a result the rapidly growing American market absorbed most of the domestic output. Except in England and Canada, the American industry did not offer any serious competition to the Swiss. At the same time, the rising demand for watches in Europe soon made up for the loss of the American market. Although American exports rose from less than \$300,000 in 1890 to nearly \$2,000,000 in 1912, they were never equal to more than three or four percent of the volume of Swiss exports.<sup>1</sup> The threat posed by the new competition did lead, however, to a revolution in the technology and organization of the Swiss watch industry.

The nineteenth century was a period of technological progress in the Swiss industry, with improvements both in the quality of the product and in production methods. At the

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<sup>1</sup>Chapuis and Jaquet, op. cit., pp. 87, 88.



beginning of the century, the Swiss watch was notably inferior to British products. Until about 1840 the inaccurate verge escapement (see Chapter I) was usually employed, although the superiority of the lever escapement had been recognized by the English industry a century earlier.<sup>1</sup> In part, the emphasis upon merchandising rather than quality led Swiss producers to cut corners with inferior materials and workmanship. And certainly, in large part the fault lay in the fact that Swiss craftsmen, with few exceptions, were wedded to a "cut and try" type of practical thinking, with little interest in the "theoretical" aspects of horological science.

During the nineteenth century, however, many manufacturers began to work towards improvement of their products. They were aided in these efforts by the appearance of two types of institutions: the "societies of emulation" and the horological training schools. The former (financed by members' dues and contributions from interested citizens) stimulated invention by means of medals, honors and monetary prizes. The latter (usually financed by municipal or cantonal governments) provided the industry with cadres of carefully trained horologists.<sup>2</sup>

The Society of the Arts, founded at Geneva in 1776, focused its attention upon the theoretical aspects of watchmaking. The competitions of Neuchâtel's "Société d'emulation

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<sup>1</sup>Ibid., p. 153.

<sup>2</sup>Ibid., p. 153.

patriotique" produced the first practical machine to cut teeth on watch wheels, the first high-quality Swiss hair-springs and many other improvements.<sup>1</sup>

The first formal courses in horology were offered by the Society of the Arts. These courses, in theory and practice, were brought together in 1843 in the famous "École de l'Horlogerie", the administration of which was assumed by the city.<sup>2</sup> Schools for formal education in watchmaking, under the aegis of cantonal and city governments, also spread throughout the mountains. Those which are still in existence include the schools at La Chaux-de-Fonds (founded in 1865), Le Locle (1866), St.-Imier (1867), Bienne (1872), Solothurn (1884) and Le Sentier (1901).<sup>3</sup>

Mention must also be made of the establishment of two excellent observatories in Switzerland. The Geneva Observatory was founded in 1773, while that at Neuchâtel dates from 1858.<sup>4</sup> Through the efforts of these observatories, scientific standards of accuracy were established for the better grades of watches and chronometers. The testing facilities of the observatories were supplemented, by the time of the First World War, with official rating stations at La Chaux-de-Fonds, Le Locle, St. Imier, Le Sentier and Bienne.

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<sup>1</sup>Ibid., p. 156.

<sup>2</sup>Ibid., p. 155.

<sup>3</sup>"Die Uhrmacherschulen der Schweiz", Die Schweizer Uhr, 1949, p. 146.

<sup>4</sup>Chapuis and Jaquet, op. cit., p. 190.

Besides improvements in technique and quality, the nineteenth century is also notable for the rise of factory methods in Swiss watchmaking. This development was exceedingly slow during the first three-quarters of the century.

With a decline in the power of the Genevese guild and growing technical facility in the Jura by the end of the eighteenth century, there was a rapid expansion in watch finishing. This created a relative shortage of *ébauches*, so it was in this area of production that the pressure for more rapid methods was felt most strongly. At that time *ébauches* were supplied in a rough state; the finisher had to disassemble the "rough movements", finish the parts by hand, and then reassemble them, adding the escapement and other parts which were not supplied with the *ébauches*.<sup>1</sup> It was felt that work of this sort could safely be entrusted to semi-skilled workers.

The first *ébauche* factory was established at Fontainmélon, a few miles from La Chaux-de-Fonds, in 1793.<sup>2</sup> Machinery was used extensively, motive power being supplied by teams of oxen and by laborers who turned the drive wheels by hand. The success of the firm in supplying large quantities of *ébauches* at reasonable prices led to a rapid spread of this type of production. The inaccuracy of the early machine tools precluded any interchangeability of parts; consequently

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<sup>1</sup>H. Buhler, "Tools and Materials Used in the Watchmaking Industry", Swiss Industry and Trade, October, 1946, p. 17.

<sup>2</sup>Chapuis and Jaquet, op.cit., p. 84.

handwork remained of major importance in the industry.

The first successful attempt to reduce the amount of handwork required in finishing was made by Vacheron & Constantin, of Geneva. In 1839 this firm hired a famous watch and toolmaker, George-Auguste Leschot, to design a line of machine tools which would permit factory fabrication of all parts of the watch.<sup>1</sup> Leschot succeeded in his mission, creating tools which worked rapidly and accurately. Vacheron & Constantin kept its machines and processes a closely-guarded secret, however, and they had little immediate effect upon the industry as a whole.

The rise of factory methods proceeded slowly. The Swiss tradition of small shops and domestic work was hard to overthrow. In addition, the reticence of those firms which did develop superior machinery hindered the spread of knowledge in the field of machine design. The federal census of 1870 disclosed a total of nearly 40,000 persons employed in watchmaking. Three-quarters of these were domestic workers, and only one-quarter were employed in shops and factories.<sup>2</sup>

Several warnings were sounded in Switzerland about the superiority of American manufacturing methods in the post-Civil War period. These went unheeded, however, until the time of the Centennial Exposition at Philadelphia in 1876. M. Favre-Perret, a Swiss member of the International Jury on

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<sup>1</sup>Ibid., p. 172.

<sup>2</sup>Ibid., p. 185. The principal cantons were Neuchâtel (14,772 persons employed), Berne (14,689), Vaud (3,633) and Geneva (3,234).

watches, may be credited with arousing his countrymen. Reported Favre-Perret: "We have heard here in Switzerland of an American competition, without believing it...Today we are FORCED to believe. I have seen the American factories and their power...Had the Philadelphia exhibition taken place five years later, we should have been totally annihilated without knowing how we received the terrible blow". With respect to the quality of machine-made watches: "I am completely overwhelmed...One would not find such a watch among fifty thousand of our manufacture".<sup>1</sup>

Favre-Perret's point was well taken. According to one source, the annual output of the Swiss (under the domestic system) averaged forty watches per worker employed in the industry in 1878, in contrast to the American factory average of 150 watches per employee; by 1900 the American average had risen to 250 watches per employee.<sup>2</sup>

Since the Swiss have the ability to face facts, the next half-century was characterized by a true industrial revolution. Swiss engineers and technicians came to the United States to study American methods. The federal government and the cantonal watchmaking schools provided facilities for disseminating the information which these engineers brought back. And as skilled watchmakers were replaced by semi-skilled workers, these artisans moved into a nascent machine

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<sup>1</sup>From an address by Favre-Perret, quoted in J. J. Bowman, Lancaster's Part in the World's Watchmaking Industry, (Lancaster, Pa., 1945), p. 36.

<sup>2</sup>W.A. Countryman, "Watches and Watchcases", Twelfth Census of the United States (Washington, 1902), Vol. X, p. 493.

tool industry to aid in the development of precision watch-making machinery.<sup>1</sup>

As a result of mechanization, factories rapidly replaced the old merchant-employer system. By 1905 the 1870 ratio of domestic to factory workers had been reversed. Of 51,000 persons employed in the industry, nearly 40,000 worked in outside shops and factories.<sup>2</sup> At this time the average output per worker employed in the Swiss industry was nearly two hundred movements a year, still below that of the American industry but five times Swiss productivity three decades earlier.<sup>3</sup>

TABLE 3

SWISS EXPORTS OF WATCHES AND FINISHED MOVEMENTS, 1885-1913

Year	Number	Value
1885	2,975,180	82,026
1890	4,788,982	105,067
1895	4,737,087	94,635
1900	7,314,270	120,193
1905	9,106,704	131,290
1910	10,416,885	147,017
1913	16,855,349	182,849

Note: Values expressed in thousands of Swiss francs.

Source: F. Scheurer, Les Crises de l'Industrie Horlogère dans le Canton de Neuchâtel (Neuchâtel, 1914), p. 136.

The available data on Swiss exports (Table 3) indicate

<sup>1</sup>Chapuis and Jaquet, op.cit., p. 227.

<sup>2</sup>Ibid., p. 185.

<sup>3</sup>Based upon exports (Table 3), 1905 production may be estimated at nearly ten million units. A rough rule of thumb (used by the Swiss themselves for production estimates) is that exports amount to ninety-five percent of production.

the impact of industrialization. With an increase in the labor force of no more than twenty-five percent between 1885 and 1913, output showed a sixfold increase. While one cannot properly compute unit values from these figures, it is clear that mechanization reduced costs sharply.<sup>1</sup>

The Swiss lost their position in the American market in the 1870's on the basis of cost competition. By the end of the century, they were again competitive. The average unit value of 8-17 jewel movements imported into the United States in 1899 was \$4.14.<sup>2</sup> In the same year, Waltham's unit cost (including administrative and selling costs) was about \$4.00 a movement.<sup>3</sup> An average duty equivalent to forty-five percent ad valorem (under the Dingley Tariff of 1897) was the principal deterrent to the reappearance of Swiss watches on the American market in large numbers.

For a period of three centuries, the Swiss watch industry had shown little capacity for technological innovation. Its growth rested upon two factors: the early development of aggressive merchandising and a merchant-employer system of

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<sup>1</sup>Unit values cannot be calculated from Table 3 because the "product mix" varied widely in the period shown. Between 1885 and 1900, the proportion of complete watches in gold and silver cases to total exports of watches and movements rose from 33% to 75%. Between 1900 and 1913 this percentage fell from 75% down to 23%. (Scheurer, op. cit., pp. 135-142).

<sup>2</sup>U.S. Bureau of the Census, Foreign Commerce and Navigation of the United States, 1900, (Washington, 1902), Vol. II, p. 114.

<sup>3</sup>Waltham's unit cost for 1899 was computed by subtracting net earnings from sales and dividing by the number of movements produced. Data from C. W. Moore, op. cit., pp. 81, 87.

production which was, for its day, exceedingly efficient. Faced with the American threat to prosperity, the Swiss turned to mechanization and factory production. The speed with which this was accomplished enabled them to maintain their position in the world market, even though they lost it in North America. From the standpoint of the American industry, however, the full force of the Swiss industrial revolution was not to be felt until after World War I.



## CHAPTER III

### THE RISE OF THE AMERICAN WATCH INDUSTRY

In contrast to England and Switzerland, each with several centuries of watchmaking experience, the American industry has just completed its first hundred years of existence. The first half of this period was characterized by vigorous economic development. The latter half, and in particular the years after World War I, have been disappointing in many respects.

The foundation of the watch industry is to be found in the concept of mass-production, through the fabrication of interchangeable parts produced by automatic or semi-automatic machinery. This concept was made practical through the work of Eli Whitney, Simeon North, and other manufacturers of firearms in the beginning of the nineteenth century. The success which these men achieved in the machine production of precision parts had a significant influence in the rise of a whole group of industries which adopted the same techniques, in Connecticut and Massachusetts.

The first application of the interchangeable parts system outside of the firearms industry occurred in Connecticut clockmaking.<sup>1</sup> The effectiveness of the clockmakers in mass-

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<sup>1</sup>C.M. Green, "Light Manufactures and the Beginnings of Precision Manufacture Before 1861", The Growth of the American Economy, ed. H. F. Williamson (New York, 1944), p. 233.

producing clocks led to the establishment of the jeweled watch industry. The first successful watch factory (the present Waltham Watch Company) was founded in 1850 at Roxbury, Massachusetts, by Aaron L. Dennison and Edward Howard. From the beginning these men believed that machine production of watches would be superior to hand methods. The reasons for this belief have best been expressed by Howard himself<sup>1</sup>:

"I knew from experience that there was no proper system employed in making watches. The work was all done by hand. Now, hand-work is superior in many of the arts because it allows variation according to the individuality of the worker. But in the exquisitely fine wheels and screws and pinions that make up the parts of a watch, the less variation the better. Some of these parts are so fine as to be almost invisible to the naked eye. A variation of one five-thousandths of an inch would throw the watch out altogether, or make it useless as a timepiece. As I say, all of these minute parts were laboriously cut and filed out by hand, so it will be readily understood that in watches purporting to be of the same size and of the same makers, there are no two alike, and there was no interchangeability of parts. Consequently it was 'cut and try'. A great deal of time was wasted, and many imperfections resulted".

Howard was a prosperous manufacturer of clocks, scales and standard weights at the time that the watch company was established. Dennison was a jeweler and watch repairman, who had given considerable thought to the possibilities of producing watch parts by automatic machinery. When he showed his plans for such machinery to Howard, the latter was not only enthusiastic, but was also able to provide the financial

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<sup>1</sup>Edward Howard, "The American Watch and Clock Industry", One Hundred Years of American Commerce, Ed. Chauncey M. Depew, (New York, 1895), p. 542.

backing which Dennison lacked. Howard's firm, Howard & Davis, provided \$10,000 for the new company, and his father-in-law, Samuel Curtis invested another \$20,000.<sup>1</sup>

A new building was completed at Howard's plant in Roxbury by the fall of 1850. The difficulties of the new firm, however, were just beginning.<sup>2</sup> Certain skills, such as dial making and jewel cutting, were unknown in this country and had to be developed. The machinery which Dennison constructed lacked the requisite precision, and a new start had to be made in the design and construction of machines. Finally, Dennison's first watch model, an 8-day movement with two mainsprings, was hopelessly inaccurate; a new 36-hour model, based on the standard English lever movement, had to be designed.

Because of these problems, it was not until 1853 that the first commercial lot of one hundred movements was completed.<sup>3</sup> The facilities at Roxbury appeared to be inadequate, however, and the partners decided to construct a new plant in Waltham. Production was transferred to Waltham in the fall of 1854; employment at this time had risen to ninety people, and the output was about five watches a day.<sup>4</sup> Success appeared certain.

Unfortunately, the developmental problem of the new firm

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<sup>1</sup>C. W. Moore, Timing a Century (Cambridge, 1945), p. 11.

<sup>2</sup>Ibid., p. 16.

<sup>3</sup>W. I. Milham, Time and Timekeepers (New York, 1945), p. 396.

<sup>4</sup>Ibid., p. 397.

proved to be too much of a strain for the amount of capital available. The company went into bankruptcy, and the property was sold at auction in May, 1857, for \$56,500.<sup>1</sup> The buyer was Royal E. Robbins, senior partner in the New York watch importing firm of Robbins & Appleton. Howard went back to his clock company and developed the machinery to manufacture his own high quality watches. Dennison remained at Waltham as factory superintendent through 1861; at this time violent differences of opinion between Dennison and the new management led to the termination of his employment.

Robbins retained direct control of company policies until 1883; this period has aptly been called by Moore, "the Golden Age" of Waltham.<sup>2</sup> And for another two decades, the "Robbins Group" (members of the Robbins and Appleton families) held enough stock to dominate the annual stockholders' meetings.

The first watches produced at Waltham were basically handmade, with machines serving to speed the work of skilled craftsmen. Progress in the design of automatic machinery came rapidly in the post-Civil War period, however, and by the last quarter of the century, watches were primarily machine products. The operators were simply machine tenders, responsible for batteries of up to half a dozen fully automatic machines. Skilled watchmakers were required only for the task of adjusting the completed movements.<sup>3</sup> By the end

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<sup>1</sup>Moore, op. cit., p. 20.

<sup>2</sup>Ibid., p. 40.

<sup>3</sup>W.A. Countryman, "Watches and Watchcases", Twelfth Census of the United States (Washington, 1902), Vol. X, p. 495.

of the century, three thousand Waltham employees were turning out some two thousand watches a day.<sup>1</sup> The capacity of this one plant was triple the capacity which the entire Swiss industry had contained a hundred years earlier.

The Civil War brought prosperity to Waltham. Wartime incomes created a good market for the more expensive movements, while the cheaper ones sold readily to soldiers. Sales rose from \$180,583 in 1859 to \$838,534 in 1864; at the same time earnings increased tenfold from \$49,837 to \$491,573.<sup>2</sup> Such affluence, of course, was a powerful temptation to investors outside the company, and competition began to appear from new domestic firms as well as from the Swiss.

The first successful competitor of Waltham was the National Watch Company, founded in Illinois in 1863. On a vacation trip to Chicago, P. S. Bartlett (of Waltham) interested a local watchmaker, J. C. Adams, in the future of American watch manufacturing. Adams was able to secure the backing of several Chicago capitalists, among them Benjamin W. Raymond, a former Chicago mayor, who had business interests in the town of Elgin. A company was formed, and the plant location was offered to Elgin in return for thirty-five acres of land and subscriptions to \$25,000 worth of capital stock by the local townspeople.<sup>3</sup>

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<sup>1</sup>Ibid., p. 493.

<sup>2</sup>Moore, op. cit., p. 50.

<sup>3</sup>"Through the Years", The Watch Word (Elgin National Watch Company publication), September 1949, p. 6.

Meanwhile, Bartlett acted as a recruiting agent to secure six more of the top employees of Waltham for supervisory positions at Elgin. With Waltham as a precedent and Waltham experts as executives, Elgin developed rapidly. Employment rose from two hundred people in 1870 to nearly twenty-four hundred by the end of the century. At that time output was approximately thirteen hundred movements a day.<sup>1</sup>

During the last quarter of the nineteenth century, watch companies were an irresistible lure to speculative investors. There were at least eighty ventures promoted in the industry (only a quarter of these firms actually made any watches). The rapid expansion of Elgin and Waltham, plus the popular belief that their profits were even higher than was actually the case, were responsible for this situation. The entrepreneurs in this activity fall into three general categories: inventors with "revolutionary" ideas about watch-making, men who gained experience in the major companies and felt qualified to head new enterprises, and finally a group of "promoters" who appear to have been rather sophisticated confidence men.

Typical of the first category, the inventive genius, was Don J. Mozart, a man who "by his natural gifts was fitted to be one of the most brilliant lights in the horological firmament, but who, from a lack of mechanical education and of what may be called judgment, was prevented from attaining success".<sup>2</sup> Mozart's first enterprise was a factory in

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<sup>1</sup>Ibid., pp. 45, 48.

<sup>2</sup>Paul M. Chamberlain, It's About Time (New York, 1941), p. 228.

Connecticut to produce a clock which would run for a year on each winding, a venture which began and ended in 1860. Four years later he started a factory in Providence, Rhode Island, to manufacture a watch with only three wheels in the train. This watch had one major weakness--it would not keep time. Undaunted, Mozart formed another company in Ann Arbor, Michigan. This company, which failed in 1870, made thirty movements for the stockholders but none for the market. Meanwhile Mozart had designed his masterpiece, a complicated device with a new escapement, a new winding mechanism (operated by opening and closing the case), and a perpetual calendar. Failure to secure financial backing to produce this gem led to a mental collapse, and Mozart died in an asylum.

J. C. Adams was typical of the second category of entrepreneurs. Adams, the moving spirit in the organization of Elgin, came to be known as "The Great American Starter".<sup>1</sup> He was active in the promotion of half a dozen other watch companies in locations ranging from Pennsylvania to California. The most noted of these was the Illinois Watch Company, organized by Adams with the backing of Springfield capitalists in 1869. The company had a long and honorable history and was eventually purchased (in 1927) by the Hamilton Watch Company. Adams was primarily an organizer. The only firm in which he appears to have played an active managerial role was the Adams & Perry Company of Lancaster, Pennsylvania. This

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<sup>1</sup>John J. Bowman, Lancaster's Part in the World's Watch-making Industry (Lancaster, Pa., 1945), p. 36.

company was organized in 1874, with a paid-in capital of \$78,000; production of an excellent movement had just started in 1876 when the plant failed.<sup>1</sup> The plant and equipment later formed the nucleus of Hamilton.

The third category of entrepreneur in the watch industry consisted of men who were considerably less scrupulous than those of the first two types. For some reason or other, the citizens of many small towns, especially in the Midwest, were easily persuaded that a watch factory could transform their hamlets overnight into thriving industrial cities. A number of venturesome "city slickers" were more than willing to provide such persuasion. Invariably the watch factory was the bait in a real estate speculation deal and never achieved any tangible existence.<sup>2</sup> The promoters would sell a local citizens' group the idea of an economic utopia in return for a quantity of land and a sizeable cash bonus. Once the bonus had been paid and the land sold, the promoters would depart, and the project would collapse.

Most of the watch companies did not get beyond the planning stage, and the mortality rate was severe among those which actually managed to start production. Nevertheless, it would be incorrect to conclude that entry into the industry was impossible in the last quarter of the nineteenth century.

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<sup>1</sup>Ibid., p. 43.

<sup>2</sup>An interesting description of the "demon promoters" is given in R. E. Dahl, The American Watch Movement Manufacturing Industry (unpublished thesis, Clark University, 1941), Ch. III.



Waltham and Elgin were the giants of the industry, but they were sharply conscious of the competitive threat posed by the appearance of a number of smaller firms. In 1887 the capacity of the industry was in the neighborhood of five thousand movements a day, of which roughly two-thirds could be accounted for by Waltham and Elgin. The remainder of this capacity was distributed among a dozen other firms, with outputs ranging from Edward Howard's twenty movements a day to the daily production of over four hundred movements each by Illinois-Springfield and Hampden.<sup>1</sup>

Competition was increased by the prevalent methods of distribution. The watch manufacturers generally made only movements, and case manufacturing was a separate industry. A key role was played by the jobbers, who bought the movements and cases separately, assembled them and distributed the complete watches into retail channels. Obviously, the larger jobbers were in a position to put powerful pressure upon individual manufacturers for special discounts and trade terms.

Waltham's initial policy, during the 1870's, was to expand output in the face of the new competition. Plant capacity was increased, machinery was improved, and sales efforts were intensified. Robbins believed that such a course would drive the weaker firms out of the industry. According to

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<sup>1</sup>These estimates are based upon data reported for individual companies in H. G. Abbott, The Watch Factories of America (Chicago, 1888). The figures do not include the daily production of 1,500 non-jeweled watches by the Waterbury Watch Company, the first producer of "clock-type" watches.

Moore, the drawback to this policy was it was also adopted by other firms: "The net result was that a large increase in productive capacity of the industry and further weakness in the price structure".<sup>1</sup>

At this point, Robbins began to relinquish his direct control over the company. In 1886 Ezra C. Fitch was elected to the presidency, with considerably more power than Robbins had permitted to any of Fitch's predecessors.<sup>2</sup> The new president continued Robbins' policy of plant improvement, but he also appears to have been much more sympathetic towards the possibility of industry-wide cooperation.

The first step in this direction involved pooling the patents of Waltham and Elgin.<sup>3</sup> Infringements by smaller companies were vigorously prosecuted. Patents in American watchmaking have never been particularly important, since they have generally covered only minor improvements in design.<sup>4</sup> Thus the patent pool was primarily a device to harass competitors of the two dominant firms.

More effective action was soon to follow. In 1885, the watch industry turned to horizontal combination through trade associations as the "cure" for competition. Ninety percent

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<sup>1</sup>Moore, op. cit., p. 75.

<sup>2</sup>Moore, op. cit., pp. 73-75. Following New England tradition, Robbins himself held the post of treasurer and hand-picked his own presidents.

<sup>3</sup>Dahl, op. cit., p. 107.

<sup>4</sup>Moore, op. cit., p. 224.

of the three hundred-odd jobbers in the country joined forces in the "National Association of Jobbers in American Watches".<sup>1</sup> The association proceeded to enact a series of rules governing prices and trade practices. Violators were subject to fines, suspension, or expulsion from the association.

At the same time the case and movement manufacturers established an organization which was soon divided into two parts: a formal association, the "American Watch Case Manufacturers' Association", and a more informal group known as the "Cooperating Movement Companies".<sup>2</sup> Waltham and Elgin were exceedingly influential in the operations of all three groups.

Control over the industry was secured by a series of agreements among the three organizations. The case manufacturers and the movement companies agreed to sell only to members of the jobbers' association. The member jobbers in turn, were pledged to buy cases and movements only from

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<sup>1</sup>Dahl, op. cit., p. 109.

<sup>2</sup>Dahl, op. cit., p. 107. In 1891, following the withdrawal of Hampden and Illinois from the movement association, a revised list of members was published (Ibid., p. 116).:

American Association of  
Watch Case Manufacturers

Bates & Bacon  
Bay State Watch Case Co.  
Brooklyn Watch Case Co.  
Crescent Watch Case Co.  
Duhine & Co.  
Essex Watch Case Co.  
Kenosha Watch Case Co.  
Keystone Watch Case Co.  
H. Muhr's Sons

Cooperating Movement  
Companies

Waltham Watch Co.  
Elgin National Watch Co.  
Columbus Watch Co.  
E. Howard Watch and Clock  
Co.  
New York Standard Watch Co.  
Seth Thomas Clock Co.  
Trenton Watch Co.

members of the other two associations. All parties to these agreements prospered. Price competition was eliminated among the jobbers, where it had flourished because of the large number of these functionaries. At the same time, since the jobbers' association controlled virtually all of the distributive facilities, pressure was removed from the other two groups, whose control of their respective markets was considerably less than that of the jobbers.<sup>1</sup> "Outside" case and movement manufacturers found it nearly impossible to distribute their products to retail markets.

The initial assault upon this harmonious arrangement was made by John C. Dueber, owner of the Dueber Watch Case Company and (after 1886) of the Hampden Watch Company, a movement firm. In 1887, the Dueber Watch Case Company was suspended from the case makers' association for selling a large quantity of cases to the Rockford Watch Company (which was not a member of the cooperating movement group) at cut prices.<sup>2</sup> To support the suspension, members of the case and movement associations notified jobbers in the United States and Canada "that they would not thereafter sell any goods manufactured by them to any person whatsoever...who thereafter should buy or sell any goods manufactured by (Dueber)".<sup>3</sup> By 1890 Dueber was bankrupt. The boycott continued after he

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<sup>1</sup>Dahl, op.cit., p. 125, indicates that members of the case and movement associations controlled respectively 60% and 80% of the outputs of their industries.

<sup>2</sup>Ibid., p. 110.

<sup>3</sup>Dueber Watch Case Manufacturing Company v. E. Howard Watch & Clock Co., et. al., 55 Fed. 851 (C.C.S.D.N.Y., 1893).

reorganized the Dueber-Hampden Watch Company in 1891.

Dueber then sued a number of members of the case and movement groups under the Sherman Act. He alleged that after passage of the act, the defendants "had ratified, confirmed, renewed and continued in force the said contracts...and served notice thereof upon all dealers in the plaintiff's goods".<sup>1</sup> The defendants demurred to the complaint, and the suit was argued upon this basis.

Judge Coxe (Circuit Court, Southern District of New York) sustained the demurrer on May 29, 1893. His decision anticipated, by a year and a half, the position taken by the Supreme Court in the E. C. Knight case.<sup>2</sup> Said Coxe: "A corporation may have an operating manufactory in every state of the Union and yet not be engaged in interstate commerce".<sup>3</sup> The good judge expressed horrified amazement at an interpretation of the Sherman Act which would make unlawful "almost every combination by which trade and commerce seek to extend their influence and to enlarge their profits".

Dueber then amended his complaint to more specifically allege a conspiracy to restrain interstate commerce. A demurrer to the amended complaint was sustained in the Circuit Court, without a written opinion. Upon appeal, the Circuit Court of Appeals, Second Circuit, upheld the lower court.<sup>4</sup>

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<sup>1</sup>55 Fed. 852.

<sup>2</sup>U.S. v. E. C. Knight Co., 156 U.S.1 (1895)

<sup>3</sup>55 Fed. 853.

<sup>4</sup>Dueber Watch Case Manufacturing Co. v. E. Howard Clock and Watch Co. et al., 66 Fed. 637 (C.C.A. 2nd, 1895).

The higher court's opinion was divided, however, and Dueber lost the case solely upon technical grounds. Judge Lacombe, linking the Sherman Act to the common law, held that "it is not an unlawful enterprise for sellers to seek to secure the entire trade of individual buyers, and an agreement among sellers, who wish to confine their trade to such buyers only, not to sell to others, is not an unfair or unreasonable measure of protection for such trade".<sup>1</sup>

Judge Wallace, dissenting, took the position that the defendants "are acting not from motives of self-preservation, but oppressively, and are actively concerting to destroy the business of a rival".<sup>2</sup> According to Wallace, the Sherman Act prohibits any combination which "is oppressive in its nature and mischievous in its effects", whether or not such a combination is a conspiracy under common law.

The third member of the court, Judge Shipman, concurred in sustaining the demurrer. He clearly implied, however, that the actions specified did constitute a violation of the Sherman Act. Shipman took refuge in the technicality that the complaint inferred that some jobbers who ceased patronizing Dueber lived in states other than Ohio (the location of Dueber-Hampden), but did not actually name the residences of any of these out-of-state buyers.

Meanwhile, the National Association of Jobbers experienced increasing difficulties in policing its membership.

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<sup>1</sup>66 Fed. 645.

<sup>2</sup>66 Fed. 652.

From 1892 onward price-cutting occurred frequently.<sup>1</sup> And the effect of the Dueber decision cast serious doubt upon the legality of open agreements among members of the three trade associations. The jobbers' association was dissolved in 1895, and competition was restored for a few years.

The return to a competitive market was short-lived. Declining profits soon led to "new experiments in organized marketing".<sup>2</sup> The new "Watch Trust" was considerably more circumspect than the old one. The leading spirit in it was E. C. Fitch, of whom Moore says, "It is conceivable that he may have accomplished much in the way of parallel action by individual members of the industry without resorting to anything in the nature of an agreement".<sup>3</sup>

Waltham and Elgin, dominating movement manufacturing, earnestly tried to maintain "fair" competition by means of resale price-fixing contracts at the jobber and retail levels. Price changes were announced simultaneously by both firms.<sup>4</sup> Apparently they tried to secure the same sort of cooperation throughout the industry, for the existence of a "Watch Trust" was taken for granted in the trade. The South Bend Watch Company, for example, took pains to announce that it would sell watches "without conforming to the rules laid down by the

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<sup>1</sup>Moore, op. cit., p. 82.

<sup>2</sup>Ibid., p. 86.

<sup>3</sup>Ibid., p. 88.

<sup>4</sup>Cf. Dahl, op. cit., pp. 134, 135, 140, 141.

Elgin and Waltham companies".<sup>1</sup>

In 1906 and 1907, the "Watch Trust" became a favorite target for attack in the press and in Congress. The Department of Justice investigated the industry, but decided that the evidence was too limited to support a successful prosecution.<sup>2</sup> Nevertheless, an interesting case did arise out of the policies pursued by the combination.

In 1912 Waltham sued a cut-rate retail jeweler, Charles A. Keene, for patent infringement and for selling Waltham's "Riverside" movements at prices below that established by the company. Keene had long been a problem to the industry, since he retailed watch movements at prices which approximated those charged by the manufacturers to their jobbers.<sup>3</sup> Adding insult to injury, Keene openly advertised his procurement methods. He had been buying up American movements which were being dumped in Europe, at prices low enough to permit a handsome profit through reimportation.

Relying upon the fact that certain parts of its movements were patented, Waltham enclosed a "Waltham Contract Notice" with each movement, providing that jobbers could sell only to authorized retailers at prices and discounts fixed by the company and that retailers could sell only to buyers for use and not for resale, at retail prices announced by the company. Waltham's position was that violation of these conditions constituted patent infringement.

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<sup>1</sup>Ibid., p. 135.

<sup>2</sup>Moore, op. cit., p. 88.

<sup>3</sup>Dahl, op. cit., pp. 137, 142, 146.



Judge Ray (District Court, S.D. New York) ruled that once the manufacturer of a patented article has sold such an article to the trade and "is in no event to receive any further sum therefrom, (he) has received in full the benefit of the monopoly given him by patent law, and it is not within his right to attach to the contract of sale a condition fixing the price at which the article shall be sold to users".<sup>1</sup> Further, the judge asserted, "every jobber or dealer who assents (to such conditions) becomes a party to an illegal combination, which is illegal principally because it has for its purpose the fixing of prices for sales to the general public".<sup>2</sup> Judge Ray's decision was affirmed (per curiam) by the Circuit Court of Appeals and by the Supreme Court (certiorari denied).<sup>3</sup> For a few years, at any rate, the power of the watch manufacturers to fix prices was broken.

During this period, the third member of the existing triumvirate of wholly domestic manufacturers made its appearance, in Lancaster, Pennsylvania. After the failure of Adams & Perry, the stockholders of that firm made several unsuccessful attempts to reorganize the business. The last, and most ambitious of these, was the Keystone Standard Watch Company, organized in 1886 with a paid-in capital of \$500,000.<sup>4</sup> This firm lowered the quality of its watches, and tried to

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<sup>1</sup>Waltham Watch Company v. Keene, 202 F. 225 (1913).

<sup>2</sup>Ibid., p. 239.

<sup>3</sup>209 F. 1007 (1913); 232 U.S. 724 (1914).

<sup>4</sup>Bowman, op. cit., p. 45.

market them by an unorthodox "club" method which involved installment sales and lotteries.<sup>1</sup> By the time the company failed, in 1890, the reputation of Lancaster watches had been ruined.

At the same time, the Aurora Watch Company, of Illinois, was in difficulties. Although the company had operated with reasonable success for several years, a series of adversities (including a patent infringement suit by Waltham and Elgin) led to its failure in 1889.<sup>2</sup> The properties of both Aurora and Keystone Standard were acquired by a Lancaster syndicate headed by Charles H. Rood, Henry J. Cain and H. M. North. A new firm was chartered as the Hamilton Watch Company in December, 1892, with a paid-in capital of \$350,000.<sup>3</sup> The Keystone plant was expanded and refurbished with the best equipment from Aurora, and within a year the first products were on the market.

From the first, Hamilton pursued a quality policy different from those of Waltham and Elgin. The latter companies had endeavoured to tap a broad consumers' market with a wide variety of movement grades. Substantial portions of their sales were in the seven to fifteen-jewel grades. The Hamilton Watch Company, however, has never made a watch with less than seventeen jewels.<sup>4</sup> This policy appears to have arisen

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<sup>1</sup>Ibid., p.45

<sup>2</sup>Dahl, op. cit., p. 159.

<sup>3</sup>Ibid., p. 167.

<sup>4</sup>Bowman, op. cit., p. 47.

from two prime considerations. The first was the fact that Lancaster watches were generally suspect in the trade, because of Keystone Standard, and the new company's success hinged upon overcoming this suspicion. The second consideration was the appearance of a new market for full-jeweled watches of high quality.

The tremendous growth of rail transportation had been accompanied by an equally impressive growth in railroad disasters, many of which were traced to faulty timepieces used by train crews. To combat this, a Cleveland jeweler, W. C. Ball, worked out in 1891 the present system of rigorous and continuous watch inspection.<sup>1</sup> This system, which was soon adopted by all railroads, required trainmen to use only full-jeweled watches of the highest quality. Hamilton's management was quick to recognize the potentialities of a market which could be approached on the basis of price and quality, with a minimum of advertising and selling expense. As a result, sales of railroad watches provided the foundation of Hamilton's growth for the next three decades.

The new company grew steadily in the years before the first World War, with sales rising from \$1,500 in 1893 to over \$1,500,000 by 1916.<sup>2</sup> The first dividend of 5% (on \$500,000 of capital stock) was declared in 1899; despite a hundred percent stock dividend in 1908, dividends from 1908 through 1914 averaged twenty-five percent on the new \$1,000,000.

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<sup>1</sup>Brearley, op. cit., p. 180.

<sup>2</sup>Hamilton Watch Co., Fiftieth Anniversary Report (1942), p. 13.

capital stock value.<sup>1</sup> Throughout this period, railroad watches remained the mainstay of Hamilton's business, although the company began to broaden its line to include dress watches for men and women after 1909.

On the eve of World War I, census figures showed a total of fifteen firms making watch movements.<sup>2</sup> This figure includes the makers of clock-type watches and assemblers, in addition to domestic jeweled watch manufacturers, only the latter being listed in Table 4, below:

TABLE 4

DOMESTIC JEWELLED WATCH MANUFACTURERS--1914

Waltham Watch Company  
Elgin National Watch Company  
Illinois Watch Company  
Rockford Watch Company  
South Bend Watch Company  
Dueber-Hampden Watch Company  
Webb C. Ball Company  
Hamilton Watch Company  
\*E. Howard Watch Company  
\*New York Standard Watch Company

Note \*(Subsidiaries of Keystone Watch Case Company)

The American watch industry had progressed a long way, from the small enterprise established by Dennison and Howard to a position of world leadership. The British had originally held this position by virtue of their technological improvement of the watch itself, changing a decorative toy to a precision instrument. The Swiss had taken the lead from the British by adapting the putting-out system to the

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<sup>1</sup>Moody's Manual of Investments (1936) Industrials, p.846.

<sup>2</sup>Milham, op. cit., p. 422.

requirements of efficient mass-production. And the Americans, in turn, had seized the lead by the development of a factory system, based upon automatic machinery, which could achieve mass production much more efficiently than the domestic system. Nevertheless, the seeds of the postwar difficulties of the American industry had been sown.

In the first place, the Swiss had revolutionized their own industry. By 1914 they had taken watchmaking out of the home and put it into factories equipped with machinery the equal of that used in the United States. As a result, after 1900 Swiss movements were competitive in price with American movements, and only a tariff schedule which was equivalent to over forty percent ad valorem (the Dingley Tariff of 1897) kept imports from rising more rapidly than they did.

In the second place, the industry had grown soft and flabby by World War I, as a result of over two decades of "cooperation". There was every appearance of cartelization: price-fixing, restriction of supplies to the domestic market, dumping abroad, and exorbitant profits to the leading firms. Finally there was little emphasis upon technological progress after 1890. One may guess that the prevalent view was "the Swiss can't become any better than we are, and we have the tariff on our side". Consequently, Swiss penetration of the American market came as a rude shock to the industry after 1920.

## CHAPTER IV

### THE DEMAND FOR WATCHES

The watch is one of the most nearly ubiquitous accessories of the "American way of life". This is not surprising in an environment dominated by production schedules and timetables, one in which even the success of a pleasure trip is usually measured in terms of the average speed maintained by the driver. In addition to its obvious utilitarian value, the watch is a favored article for conspicuous consumption. This, too, is readily understandable. The potlatch may be acceptable conspicuous consumption in some primitive tribes, but a basic puritanical streak in the civilized American causes him to rebel against waste purely for the sake of waste. Veblen has pointed this out with reference to conspicuous leisure, which in our society so often takes the form of club work with an ostensibly "useful" goal. For the same reason, the average American will part with a substantial sum of money for a good watch without any pangs of conscience, because any watch is "useful". He easily convinces himself that he needs a watch "of railroad accuracy" even if he is not the conductor of the Twentieth Century Limited.

Most adult Americans own at least one watch, and many own two or more. The most detailed survey of watch ownership in recent years was carried out in 1939, in Akron, Ohio, by

the marketing department of Kent State University.<sup>1</sup> This study indicated that watch ownership was universal among both men and women in the upper income group. In the middle income group, ninety percent of the men and eighty-one percent of the women owned watches, while in the lower income group, the respective percentages were eighty-three percent and eighty-two percent.<sup>2</sup> It is undoubtedly true that the percentages of adults owning watches would be even higher in the postwar years of high incomes.

Even among the younger generation, watch ownership is widespread. This was indicated by a survey of school children in 3,000 parochial schools, carried out by the magazine, The Young Catholic Messenger.<sup>3</sup> The replies received indicated that sixty percent of the children in the sixth, seventh and eighth grades had their own watches. One of the most significant bits of information in this survey is the fact that a majority of the timepieces owned by these youngsters were jeweled watches of quality, rather than the "Mickey Mouse" clock-type instruments which one might reasonably expect to find among children of this age group.

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<sup>1</sup>This survey was financed by a major trade journal, Jewelers' Circular-Keystone, and reported in the June, July and August, 1940, issues of this publication.

<sup>2</sup>The following income classifications were used: "High" (ten percent of the survey)--families owning homes worth more than \$7,500, or paying more than \$75 a month rent; "Medium" (sixty-five percent)--families owning homes worth \$3,000 to \$7,400 or paying \$31 to \$75 a month rent; "Low" (twenty-five percent)--remainder of the sample. Note that these are 1939 figures.

<sup>3</sup>Reported in a mimeographed release by the Market Research Division of the McCall Corporation in 1949.

The nature of the watch--an object both of utility and adornment--is responsible for one of the primary characteristics of the demand for this product. More watches are purchased as gifts than for the personal use of the buyer. Nearly sixty percent of the men and over eighty percent of the women who own watches have received them as gifts.<sup>1</sup> The Kent State survey indicated that members of the middle and lower income groups are especially impressed by the desirability of watches as gifts. Consequently, watch sales exhibit a strong seasonal fluctuation, with a primary peak (about thirty-five percent of annual sales) at Christmas and a secondary peak (about twenty-five percent) in May and June for graduation and wedding presents.<sup>2</sup>

One result of buyers' attitudes towards watches has been the extent to which product differentiation has been carried out by the industry. A primary dichotomy, leading to separate industrial classifications, exists between "clock-type" watches and "quality" watches with jeweled-lever escapements. The former are made by firms which also manufacture desk and alarm clocks, and are similar in construction (pin-lever escapement) to such clocks. Jeweled watches are made by firms which concentrate primarily upon watch manufacturing. The escapements are jeweled (seven jewels is the minimum for this purpose), other wheels may be jeweled, and the parts are

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<sup>1</sup>"Who Gives Watches?", Jewelers' Circular-Keystone, July 1940, p. 62.

<sup>2</sup>U. S. Tariff Commission, Watches, War Changes in Industry Series, Report No. 20 (Washington, 1947), p. 161.



usually more carefully made than in clock-type watches. Such watches will give better service over longer periods of time than the pin-lever products, if properly constructed and cared for.

Among jeweled watches themselves, there is considerable differentiation upon the basis of jewel count. The buying public has been educated to associate the quality of a watch with the number of jewels contained in the movement. The minimum number of jewels for satisfactory performance is seven, and the maximum number used is twenty-three; most watchmakers consider anything over seventeen to be superfluous. Now in fact there is no particular correlation between performance and jewel count; a well-made seven-jewel movement is far superior to a poorly made seventeen-jewel one. In addition, differences in manufacturing costs arising solely from differences in jewel count are slight (roughly five cents per jewel). The product differentiation in the minds of the buyers, however, is sufficiently great to permit the average manufacturer to practice price discrimination readily. By offering a line of fifteen-jeweled watches in cheap cases, he can tap a sizeable market at low prices without endangering his "quality" market for movements containing seventeen or more jewels. And the latter market can still further be separated into that group of buyers which wants a "good" seventeen-jeweled watch and another group which will pay for "nothing but the best" in movements with nineteen or twenty-one jewels.

Another type of product differentiation, and of price

discrimination, arises from the practice of using the same grade of movement in a number of different "models".<sup>1</sup> These models differ in the style and quality of cases, dial decoration and straps or bracelets. Hamilton, as one example, uses the same movement in their "Todd" model (gold-filled case, black numerals), at \$60.50, as they do in the "Norde" (gold, dust-proof case, with gold numerals) at \$160.<sup>2</sup> This company, in 1951, produced fifteen movements, which were utilized in some 150 models ranging in price from \$52.25 to "price upon application". An extreme example of this sort of differentiation is found in the case of one of the leading assemblers. In 1946 this firm was importing movements which ranged in value from \$5.13 to \$6.92; the line of watches "produced" from these movements ranged in price from \$30 to \$5,000.<sup>3</sup> As is true of variations in jewel count, this type of product differentiation makes it possible for an individual manufacturer to realize widely varying returns from different units of the same basic commodity.

The demand for watches is far from being independent of the demand for other goods. Only a few of these inter-relationships need be cited to indicate the nature of the problem.

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<sup>1</sup>In the post-war years, this type of product differentiation has become more important than jewel count. The flood of inexpensive seventeen-jewel Swiss movements has virtually destroyed the market for anything with less than seventeen.

<sup>2</sup>Hamilton Watch Company, 1951 catalog.

<sup>3</sup>U. S. Tariff Commission, op. cit., p. 106.

Since watches are so frequently bought as gifts, they must compete with a wide range of other products which, in the mind of the buyer, may be equally acceptable for the recipient. The first question in the buyer's mind is not "Which watch shall I buy?", but rather, "What shall I buy?". Thus at graduation time, watches must face the competition of pen and pencil sets. The husband buying a gift for his wife compares a good watch with other jewelry, imported lingerie and the down payment on an automatic washer. His wife, in turn, has to decide between a watch, a drillpress for the home workshop and an assortment of hand-painted neckties.

Even watch repair services may have a substitutive relationship to watches.<sup>1</sup> When there is a shortage of repairmen, charges rise. And when cleaning and minor repairs may cost \$20, the owner of a defective watch often decides to buy a new one rather than have his old one repaired. Vice versa, when repair charges are low, the purchase of a new watch is more readily postponed.

In view of this situation, the producers of watches are among the major buyers of advertising space and radio time. Their commercial appeals generally have two aspects, reflecting the attempt to differentiate watches from other products as well as the attempt to differentiate the advertiser's watches from those of other manufacturers. To such statements as, "One gift that never, never disappoints!" (Parker pens),

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<sup>1</sup>Ibid., p. 166.

or, "A lasting answer to the burning question--What, oh what, to give her?" (a Sunbeam toaster, said to be "A happy blend of touching sentiment and practicality"), the watch-makers reply with dignity, "A watch is the gift that truly says--Forever".

Having persuaded a potential buyer that a watch is the answer to his prayers, the advertisers then proceed to tell him which watch is really the answer. This approach invariably stresses two factors, quality and style. Thus, for the 1951 Christmas season an Elgin would enable you to "get the most Christmas watch for your money", and at the same time, an Elgin is "The Beautiful Way to Tell Time".

The usual advertising "gimmicks" are used to impress the public with both factors. With respect to quality, Hamilton has long relied on the fact that it is "the watch of railroad accuracy", and every other nationally advertised watch seems to be "The Official Timepiece" of at least one airline. The "Man (or Woman) of Distinction" approach has long been used by watch manufacturers to prove the style of their products. The classic achievement in this direction, beyond any shadow of doubt, was a 1928 Bulova campaign. The company was able to use a picture of Calvin Coolidge presenting their latest model, "The President", to Bucky Harris, then the boy-wonder manager of the Washington Senators.<sup>1</sup> Since then most advertisers have had to be content with the usual run of movie stars, debutantes, displaced European royalty and

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<sup>1</sup>Sales Management, December 8, 1928, p. 605.

sports figures.

The advertising efforts of watch manufacturers have been steadily increasing since World War II, reflecting both the prosperity of the advertisers and the increasing competition between watches and other goods for the gift market. It is impossible to form any quantitative judgment of the effectiveness of this advertising. The Tariff Commission takes the position (but does not analyze it) that this increase in advertising has increased the total demand for watches, but that it has been partly offset by the increased advertising of such competing goods as "fountain pens, photographic equipment, electrical appliances, leather goods, jewelry, and even Government bonds".<sup>1</sup>

There can be little question that large advertising budgets are essential for the major producers who wish to sell in the national market. The purchase of a watch usually represents a sizeable investment in a mechanism which is a mystery to the purchaser. Consequently, in any particular price range, buyers generally prefer the nationally advertised brands, not only for the prestige value associated with the brand name, but also because a "familiar" name is felt to be a guarantee of value which the buyers cannot judge for themselves. This has been indicated by S. R. Lazrus, of Benrus:<sup>2</sup>

"We have discovered that it does not pay us

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<sup>1</sup>U. S. Tariff Commission, op. cit., p. 170.

<sup>2</sup>"How Benrus Allocates its Advertising Appropriations", Printers' Ink, August 3, 1945, p. 20.

to seek business where we do no advertising... If we want to break into a new territory...It is necessary to spend money in advance of the time that we try for better distribution. That is absolutely essential because we compete with widely advertised products on an even basis. Our price is high against nondescript unknowns sold in the same territory. Missionary work must make our name familiar, or the attempt to build up sales is doomed to failure."

Styling is another factor, closely associated with advertising, in the demand for watches of a particular manufacturer. The major style revolution in the industry was the post-World War I change in consumers' tastes from pocket to wristwatches. This early nineteenth-century style had achieved very limited popularity from time to time as a novelty watch for women, although most women preferred the chatelaine, or fob, type of watch which was pinned to their dresses.

On the eve of World War I, the wristwatch was well accepted in Europe, and small quantities were made in the United States for women. To the American male, the wristwatch was in a class with cigarettes and cocktails; the man who did not smoke cigars, drink his whiskey straight, and use a pocket watch was considered effeminate by his peers.<sup>1</sup> The war completely reversed this attitude. Millions of men were introduced to the convenience of wristwatch (especially the cheap Ingersoll "Radiolite") in the course of military

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<sup>1</sup>One is reminded of Sinclair Lewis's Babbitt. Near the end of the tale, George F. Babbitt is forced to plead guilty to a serious charge placed against him by his fellow Boosters, who have always accepted him as a Real Guy: "Boys, I've got to admit it. I've never worn a wristwatch or parted my hair in the middle, but I will confess to 'Follansbee'."

service, and returning veterans led the trend toward men's wristwatches. At the same time, the newer styles of female dress were not engineered to bear the stress of a pinned-on chatelaine watch, and women, too, began to demand wristwatches. At present, pocket models account for less than three percent of the total number of jeweled watches sold annually in this country.<sup>1</sup>

Since the wristwatch is far more exposed to the public gaze than a pocket watch, this change in tastes has increased the emphasis on the styling of cases, dials and bands. This factor is especially important in the design of women's watches, which seem to be more desired as ornamental accessories than as timekeepers.<sup>2</sup> At the present time, the view prevails in the industry that successful styling is as much responsible for Bulova's leading position as any other factor, and, conversely, that obsolete styles were a major reason for the collapse of Waltham.<sup>3</sup> The result is that most manufacturers today exert much more effort trying to capture buyers upon the basis of appearance than upon the quality of watch movements.

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<sup>1</sup>U.S. Bureau of the Census, Census of Manufactures: 1947 (Washington, 1949), Vol. II, p. 790.

<sup>2</sup>Cf. U.S. Tariff Commission, op. cit., p. 168, for the true tale of a lady who returned a \$5,000 watch several months after she purchased it; a friend had casually tried to wind the watch and "it didn't go". The manufacturer found that his shipping department had sent the watch out without a movement. Had it not been for her chance encounter, the customer might have enjoyed her movement-less "watch" for years.

<sup>3</sup>"Elgin Bows to the Times", Business Week, September 15, 1951, p. 146.

The extent to which product differentiation (upon the bases of jewel count, advertising and styling) has been bred into consumers' attitudes towards watches destroys the product homogeneity required for successful derivation of an industry demand curve. Rather, one would find hundreds of separate demand curves for small groups of models offered by particular manufacturers. In addition, factors other than price exert so much influence upon watch sales that the ceteris paribus assumption necessary for analysis of price-quantity relationships cannot be safely made. On the other hand, recourse to the broader concept of a demand function may be quite valuable.

A reasonably complete demand function should relate annual purchases of jeweled watches (in physical units) to at least five other variables: (1) the existing stock of watches in the hands of consumers, (2) some index of watch prices, (3) the general price level, (4) the level of disposable personal income, and (5) the size of the population in those age groups for whom watches are bought. The first two factors cannot be successfully measured; fortunately, the latter three appear to be the principal determinants of the function.

In the absence of compulsory watch licensing laws, there is no way to estimate accurately the number of watches in use by the public. Nevertheless, it is obvious that a large proportion of jeweled watches are bought for replacement purposes. The remainder are bought, for the most part, by or for individuals in the younger segments of the watch-consuming



age group.

Although many people own more than one watch (and the manufacturers encourage this), multiple ownership appears to be the exception rather than the rule. Consequently, it would seem that the average person buying his own watch becomes a customer when his present timepiece is worn out or damaged beyond economical repair. In the important gift market, watches are usually bought by individuals for other members of their immediate families; it is unlikely that many donors select watches as gifts when they know that the recipients of these gifts already possess satisfactory timepieces.

The annual replacement demand depends upon the relationship between the current stock of jeweled watches (which is not known) and the useful life of the average watch (which is not known either). One can say, however, that the change from pocket to wristwatches, and the subsequent emphasis upon "contemporary" styling have almost certainly contributed to an increasing demand for watches, by shortening the average useful life. In days gone by, a youth was presented with a good pocket watch on his twenty-first birthday; he normally expected to use it all his life and to pass it on to his heirs. The modern wristwatch will seldom provide such service. The life expectancy of a man's wristwatch is estimated to be somewhere between three and ten years, while women's watches last on the average between two and five years.<sup>1</sup>

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<sup>1</sup>U.S. Tariff Commission, op.cit., p. 167.

The movement of the wristwatch is considerably less durable than the larger movement of a pocket watch. The smaller the movement, the more fragile it is. At the same time, a watch worn upon the wrist is in much more danger than one carried in the pocket of damage from shocks, perspiration, water and wear-causing changes in position. Particularly in the field of women's watches, the trend towards smaller sizes has raised the watch mortality rate and increased replacement demand. In the men's field, the same result will occur if the present trend towards novelty watches becomes significant. Further, if manufacturers succeed in their efforts to induce the public to accept rapid style changes, an increasing number of watches will become "obsolete" and may be replaced before wearing out.

The inability to measure a replacement factor is not fatal to an analysis of jeweled watch demand. It is plausible that the replacement demand for watches (and for most "semi-luxury" consumers' goods) is closely correlated with the level of disposable income. In periods of low income, a watch which breaks down is frequently either repaired or replaced by a cheap clock-type instrument from the corner drugstore. Among a large proportion of watch owners to whom a timepiece is not a necessity (such as housewives), the defective watch may simply be relegated to the rear of a dresser drawer. And clearly, style obsolescence, ownership of several "working" watches and jeweled watches for children are luxuries which can only be afforded in periods of high disposable income.

The second variable in the demand function for jeweled watches is price. Watch prices range in an almost unbroken line from about fifteen dollars ("promotional" sales of the cheapest imported movements in inexpensive cases) to figures containing five integers (on special orders where price is no object). Nevertheless, certain categories can be distinguished. The price range from \$15 to \$40 is fairly well filled by watches containing imported movements which are either unadvertised or else advertised on a relatively small scale. Some of the large manufacturers (Bulova, Elgin and Benrus) compete with the "unknowns" in the \$30 to \$50 bracket. Most of the models offered by manufacturers of the leading nationally-advertised brands are priced at from \$50 upward (in which range there is virtually no competition from "unknowns").

Because of the wide variety of prices which exist and the scarcity of data pertaining to retail sales, it is impossible to trace the recent price history of the industry. It has been estimated that the average retail price paid for jeweled watches in 1941 was \$34.<sup>1</sup> The average price is said to have risen to \$55 (Federal tax included) by 1950.<sup>2</sup> If these estimates are valid, the rise in average watch prices

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<sup>1</sup>D. S. Parris, "Will U. S. Watches Tick in Peace?", Domestic Commerce, July, 1943, p. 39.

<sup>2</sup>U. S. Tariff Commission Investigation No. 4 under Executive Order 10082, Brief in Behalf of the American Watch Association, Inc. (Washington, 1951), p. 8.

closely paralleled the rise in the cost of living.<sup>1</sup>

Higher prices paid by consumers in the postwar period, as compared to 1941, can be explained only to a small extent by price increases in particular watch grades. An important influence has been the Federal excise tax imposed since April, 1944. This tax is levied at 10% of the retail price for watches; until August, 1954, the rate was 20% for watches retailing at more than \$65. If the average tax in 1950 was, say, 12½% (i.e., if we assume that one-quarter of all jeweled watches sold for more than \$65), then the average retail price, ex-tax, rose from \$34 to \$48 between 1941 and 1950.<sup>2</sup> In other words, one-third of the sixty-two percent increase in average prices paid by consumers is traceable to the Federal tax.

The second important factor in explaining the apparent price rise has been the change in the "product mix" offered to consumers. While no breakdown of retail sales by jewel count exists, it is apparent that the average quality of watches, measured on this basis, has been considerably higher in the postwar period as compared to prewar years. Before

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<sup>1</sup>The \$34 to \$55 change in average watch prices amounts to a rise of 62%. In the same period, 1941 to 1950, the B. L. S. Consumers' Price Index rose by 64% (Monthly Labor Review, July 1952, p. 113). The rise in watch prices was noticeably less than the 73% rise in consumers' durable goods prices, as a whole, from 1941 to 1950 (National Income, 1951 ed., supplement to the Survey of Current Business, p. 146).

<sup>2</sup>Both the Collections and the Statistical Divisions of the Internal Revenue Service report that taxes paid on jeweled watches are not segregated from taxes on all "jewelry". Thus, the author is forced to estimate the average tax rate.

the war, Elgin, Bulova, Benrus and Waltham sold large quantities of watches with seven to fifteen jewel movements. At present none of these companies offers movements containing less than seventeen jewels. The breakdown of imported movements also supports this observation. From 1936 to 1940, fifty-seven percent of the jeweled-lever movements imported were in the seven to fifteen jewel class, while forty-three percent contained seventeen jewels; by 1953 the respective percentages were twenty and eighty.<sup>1</sup> Since seventeen jewel watches normally retail at prices above those watches containing fewer jewels, the trend towards higher jewel counts has served to inflate the "true" increase in prices.

Another aspect of the "product mix"--and one which explains most of the price increases since 1941--reflects the pricing philosophy of the leading manufacturers. Prices for particular models and grades of watches (offered by the leading firms) are relatively inflexible. Apparently it is feared that open price increases in the face of increased demand may alienate consumers. And it is known that open price cutting, when demand declines, will irritate retailers. Since retail inventory turnover is relatively slow, price cutting at best deprives the retailer of part of his normal markup (roughly 100%) on watches in stock and, if carried far enough, may result in inventory losses. No other action of the manufacturer succeeds in earning the ill-will of

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<sup>1</sup>U. S. Tariff Commission, Watches, Movements, and Parts, Report to the President on Escape-~~cl~~ause Investigation No. 26 (Washington, 1954), Table 4.

retailers to the extent that price cutting does.<sup>1</sup>

Nevertheless, average prices for the total supply of watches offered by even the leading firms are far from rigid in the face of changes in demand. The multiplicity of models offered by each firm makes it possible for the firm to manipulate its price structure without open changes. Elgin's "new model" policy affords an example. This company maintains its line at about two hundred models, but it introduces roughly forty new models and drops forty "slow sellers" each year.<sup>2</sup> By channeling new models into certain price ranges and withdrawing models in other price ranges, the leading manufacturers can effectively change their average prices without the problems which would arise from raising or lowering advertised prices as such. Some indication of this appeared in 1949, in the face of softening watch markets. Unit sales of the leading firms dropped by 5.5% in that year, while the estimated value of their watches sold at retail dropped by about 12%.<sup>3</sup>

The third and fourth variables in the demand function for jeweled watches--the general price level and the level of disposable income--are believed by the author to have been

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<sup>1</sup>Waltham's 1949 and 1950 distress clearances of watches at half-price (chiefly through the Federated Stores chain of department stores) provide a case in point. Retail jewelers throughout the nation appear to have maintained a remarkably effective boycott of Waltham products ever since.

<sup>2</sup>"Elgin Bows to the Times", Business Week, September 15, 1951, p. 148.

<sup>3</sup>U. S. Department of Commerce, Postwar Watch Markets (Washington, 1950), p. 13.

the principal determinants of annual consumption over the past quarter-century. These variables may be combined by deflating the level of disposable income (current dollars) with an index of the general price level. Apparent consumption of jeweled watches may then be viewed in relation to the level of real disposable income.

The historical relationship (from 1929 to 1953) between apparent consumption and real disposable income is shown in Table 5. Two-year moving averages were used to eliminate the effects of sudden changes in the data.<sup>1</sup>

The term "apparent consumption", used by the United States Tariff Commission, deserves some explanation. There is no measure of the number of watches annually sold at retail. Consequently, the Commission defines "apparent consumption" as the domestic production of jeweled movements plus competing imports and minus exports; this concept might better be titled "supplies of jeweled watches to the domestic market".

In Table 5 apparent consumption for the years 1946-1953 was taken from the Tariff Commission's 1954 report to the President.<sup>2</sup> Annual data for earlier years were computed by

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<sup>1</sup>As explained below, "apparent consumption" more closely approximates a measure of production than it does sales to consumers. The time factor involved in scheduling domestic production and in ordering movements from Switzerland causes finished watch production changes to lag behind market changes. The use of two-year moving averages reduces the cobweb effect, resulting from these lags, which appears in the annual data.

<sup>2</sup>U. S. Tariff Commission, Watches, Movements and Parts, Table 12.

TABLE 5

REAL DISPOSABLE INCOME, POPULATION (14-69 YEARS), AND  
 APPARENT CONSUMPTION OF JEWELLED WATCHES  
 (Two-Year Moving Averages, 1929-1953)

Years	Consumption (thousands)	Income (billions)	Population (millions)
1929-30	4,383	\$ 64.5	85.0
1930-31	2,505	59.8	86.0
1931-32	1,133	53.5	87.0
1932-33	879	49.0	88.0
1933-34	1,310	51.4	89.1
1934-35	2,111	56.5	90.2
1935-36	3,094	62.9	91.3
1936-37	4,343	67.9	92.4
1937-38	4,013	67.1	93.5
1938-39	3,595	67.8	94.6
1939-40	4,562	73.0	95.7
1940-41	5,694	81.4	96.9
1941-42	6,688	93.7	98.0
1942-43	7,790	103.5	99.1
1943-44	8,032	111.9	100.1
1944-45	8,415	117.2	101.0
1945-46	9,587	115.7	101.8
1946-47	9,209	110.0	102.6
1947-48	9,164	107.9	103.5
1948-49	8,934	109.5	104.4
1949-50	8,792	114.1	105.3
1950-51	10,103	120.0	106.2
1951-52	10,523	122.5	107.1
1952-53	10,621	126.7	108.0

Sources: Apparent consumption of jeweled watches (domestic production plus competing imports, less exports): see text.

Real disposable income: Disposable Income (current dollars) from the U. S. Department of Commerce, National Income (1951 supplement to the Survey of Current Business) and the Federal Reserve Bulletin, June 1954, deflated by the Consumers' Price Index (1935-39 = 100) from the Monthly Labor Review, July 1953. For the year 1953, the "new" B.L.S. index (1947-49 = 100), reported in the Federal Reserve Bulletin, June 1954, was adjusted to the 1935-39 base.

Population (ages 14-69): U. S. Bureau of the Census, Current Population Estimates, Series P-45, No. 5 (1930-39), Series P-25, No. 93 (1950-53) and No. 98 (1940-49).



the author.<sup>1</sup> Domestic production figures were secured from the Commission's report.<sup>2</sup> Data on imports and exports are from Foreign Commerce and Navigation of the United States, except for the 1929 and 1930 import figures which are estimates of the American Watch Association.<sup>3</sup> "Competing" imports are total movement imports less those in the 0-1 jewel class, with the resulting figures adjusted downward by 5% for the years 1931-1940 and 2½% for the years 1941-1945 to eliminate those movements which compete with domestic clock-type watches rather than with jeweled-lever watches.<sup>4</sup>

Where apparent consumption of jeweled watches is measured in thousands of physical units and real disposable income in billions of dollars, the linear least-squares regression is represented by the equation:

$$Y = -4,447 + 119.68 X$$

The standard error of estimate is 527 (thousand watches). The high coefficients of correlation (+.9858) and of determination (+.9728) suggest that the influence of factors

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<sup>1</sup>The Commission reports only five-year averages for the years before 1946. The author's estimates are in complete agreement with these averages (i.e., the largest discrepancy is for 1936-40, when the five-year average of the author's annual figures is 4,126 versus the Commission's average of 4,161 thousand).

<sup>2</sup>U.S. Tariff Commission, op. cit., Table 6.

<sup>3</sup>Brief cited, p. 29.

Official statistics understate 1929-30 imports. The lowest category of movements under the 1922 Tariff was "less than seven jewels". Many of these were jeweled-lever movements imported with only six jewels, the extra jewels being added after the movements had cleared Customs.

<sup>4</sup>U.S. Tariff Commission, Watches, Watch Movements, Watch Parts, and Watchcases (1952 report to the President), p. 89.

other than the level of real disposable income has been very small.

Further, the observations which show a large divergence between actual and predicted values may be readily explained. The method of measuring "apparent consumption" ignores annual variations in inventories, which cannot be measured (especially at the retail level). And illegal (smuggled) imports are not included.

In 1929 and early 1930 (above the regression line), imports were at an abnormally high level in anticipation of the imminent increase in tariff rates. To some extent the decline in demand after 1929 was met by a reduction in inventories. Of greater significance was the fact that the Tariff Act of 1930 led to a remarkable increase in watch smuggling until 1936, when the Swiss government agreed to help suppress it in return for tariff reductions. Thus actual consumption in these years may have been much closer to the predicted values than is indicated by apparent consumption. The low level of consumption in 1944 reflects both a drop in domestic production (as domestic firms reached a peak in production of military items) and a drop in imports (with the tide of battle turning against Germany, the Swiss found it more difficult to fill U. S. orders). It should be noted that the regression line developed below pictures only an historical relationship, through a period of years dominated by deep depression and war. In such a period, one may logically assume that the great variation in real disposable income has overridden other factors in the demand function

Apparent Consumption of Jeweled Watches  
(thousand units)

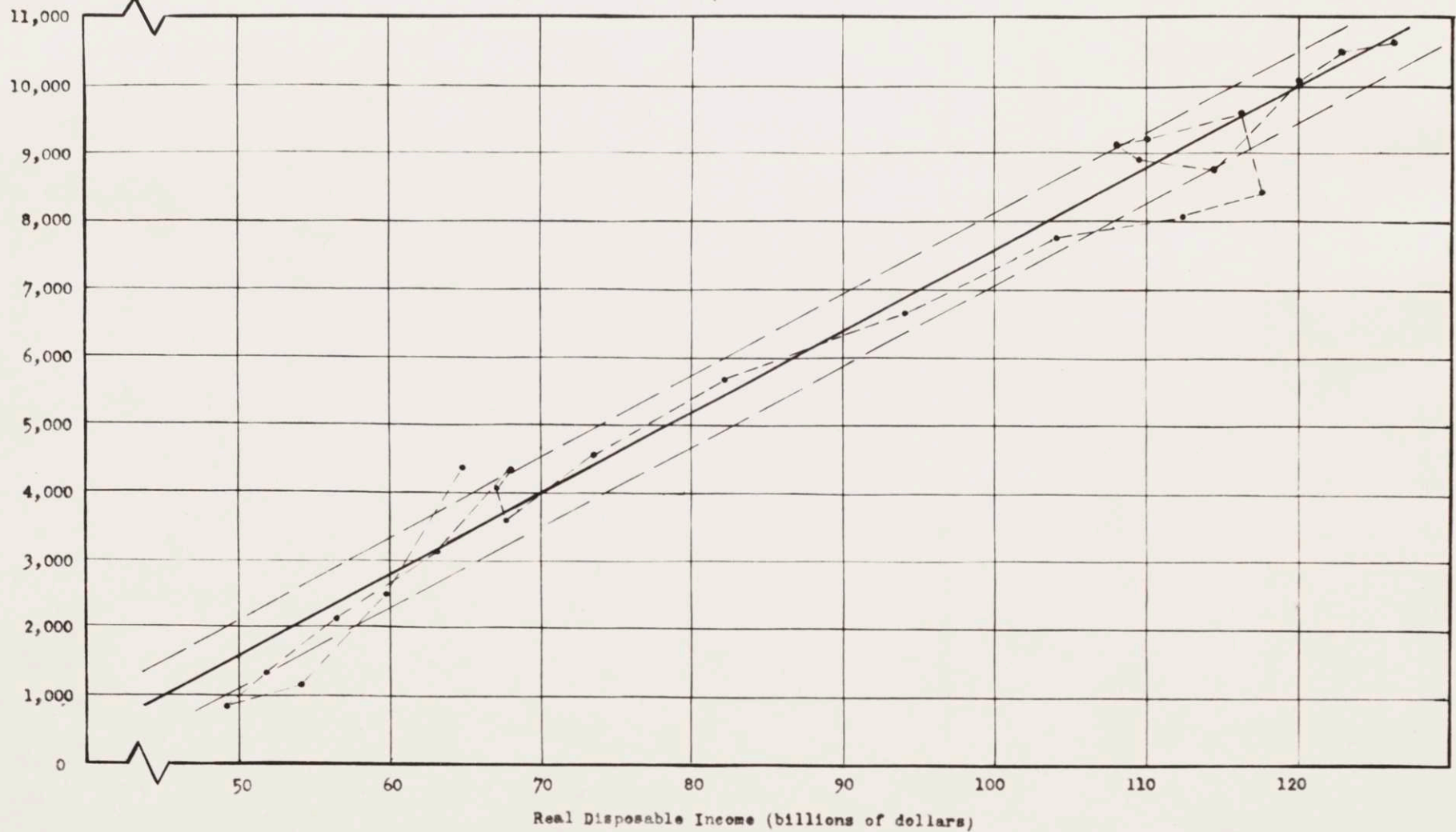


Chart 1. Jeweled Watch Consumption and Real Disposable Income, 1929-1953.

for jeweled watches. In particular, the effect of population growth has been ignored.

If the future holds a long period of full employment income levels, one would not expect to see changes in real disposable income as sizeable and as rapid as those in the past twenty-five years. Conversely, population growth in the watch-consuming age groups would become a more significant factor in the demand for jeweled watches.

One approach to this problem, using the data in Table 5, is to deflate the figures for apparent consumption and real disposable income by population in the watch-consuming age group (14-69 years). The dimensions selected in Chart 2, below, are apparent consumption per thousand population (14-69 years) and disposable income per capita. These are related by the linear equation:

$$Y = -57.2 + .1325 X$$

This equation has a standard error of estimate of 6.1 watches, a coefficient of correlation of +.9770, and a coefficient of determination of +.9555.

If one chooses to engage in the hazardous occupation of predicting the future from the past, rather than by the use of a well-made crystal ball, he may venture some guesses as to the effect of population growth. Based on projections by P. K. Whelpton (for ages 15-64), population in the watch-consuming age group should be roughly 116 million in 1960 and 128 million in 1970.<sup>1</sup> Assuming real disposable income to be

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<sup>1</sup>"Sixty-Six Million More Americans", Fortune, January, 1954, p. 97.

Apparent Consumption of Jeweled Watches  
Per Thousand Population (14-69 years)

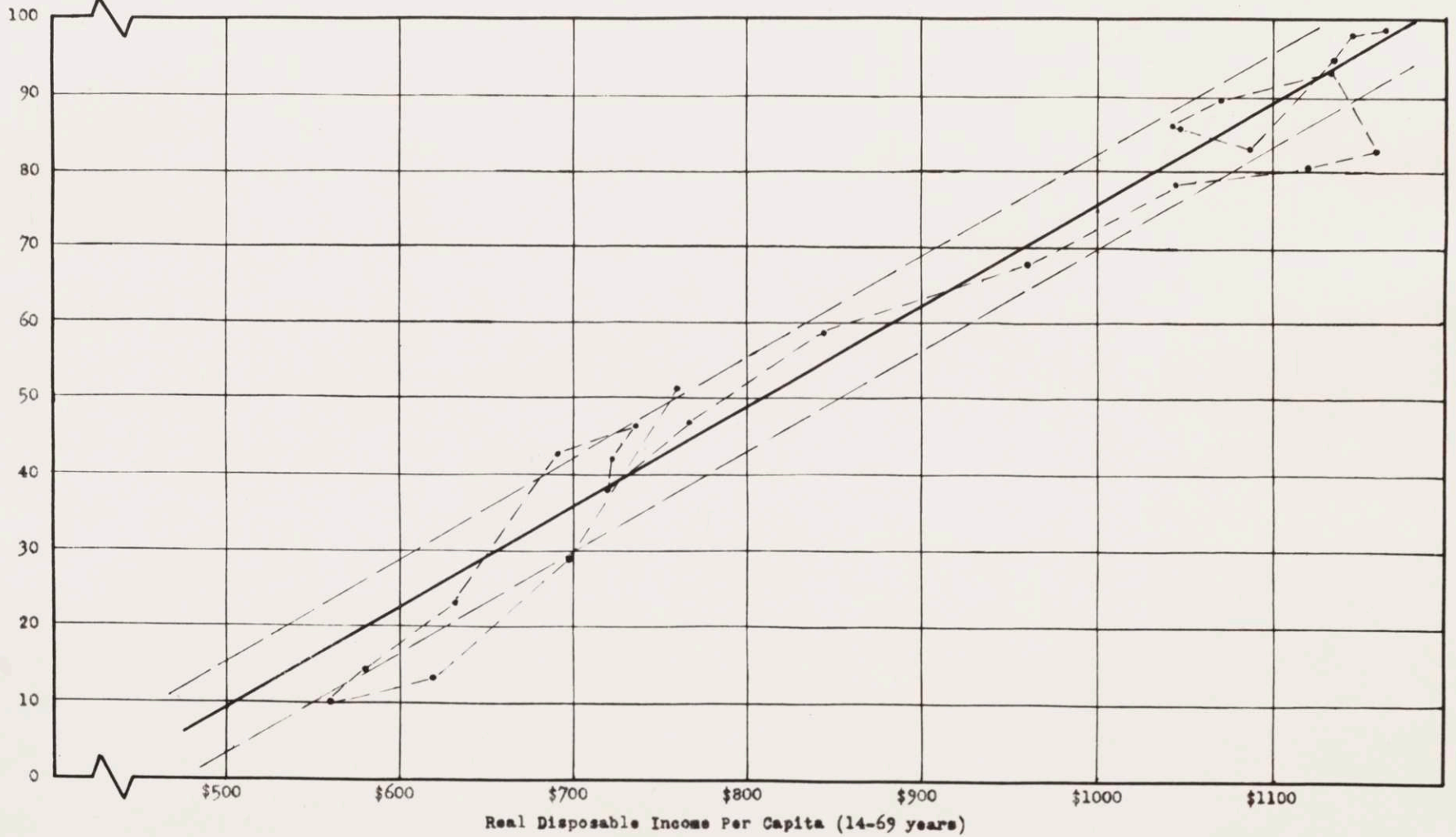


Chart 2. Watch Consumption and Disposable Income, Adjusted for Population, 1929-1953.

constant at, say, \$1,200 (based on 1935-39 prices) per capita in this age group, the preceding regression equation indicates consumption of about one hundred watches per thousand population. Thus consumption should rise from the 1952-53 average of 10.6 million watches to 11.6 million by 1960 and to 12.8 million by 1970, as a result of population growth alone.

The foregoing are obviously minimum estimates. Two-thirds of the projected population increase by 1970 will result from an increase in the 15-24 year age group. At present this group shows the effect of depression birth rates: 1953's 21.9 million persons is less than 1930's 22.5 million, despite a rise in the population as a whole of thirty-three percent.<sup>1</sup>

Since the 15-24 age group includes most people who are receiving their first watches, rather than replacement time-pieces, and since it includes most high school and college graduations and weddings, one would expect that this age group would have a markedly higher rate of apparent consumption than the watch-consuming age group as a whole. Thus, an assumption that the 15-24 group has an annual rate of consumption double that of the whole 14-69 group yields a prediction for 1970 of 14.2 million, rather than 12.8 million. Combining this growth in population with a probable increase in real disposable income would make the picture for 1970 watch sales even brighter.

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<sup>1</sup>U. S. Bureau of the Census, Current Population Estimates, Series P-45, No. 5, Series P-25, No. 93.

Regardless of the future, the high correlation between apparent consumption of jeweled watches and real disposable income leads to two generalizations with respect to demand. The first is that price-elasticity of demand, within the ranges in which prices may have changed, is relatively low.<sup>1</sup> During periods of high disposable income, potential customers will not be deterred by moderate price increases, nor can persons who have decided to forego watch purchases in periods of low income be induced to change their plans by moderate price decreases.

On the other hand, the income-elasticity of demand for jeweled watches has been very high. From 1929 to 1932 as real disposable income fell by thirty percent, apparent consumption of jeweled watches fell by eighty percent. During the 1933-1937 revival, real disposable income rose by forty percent and apparent consumption rose by four hundred percent. The reasons for this are evident. When income drops sharply the replacement of all durable goods, including jeweled watches, tends to be postponed. At the same time, cheaper products are substituted for watches as gifts. In addition, clock-type wristwatches may exhibit a strong inferior-goods effect, contributing to the decline in demand for

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<sup>1</sup>Cf. New York Times, August 13, 1954, p. 23.

The concensus of opinion at the National Retail Jewelers' Association convention as to the tariff increase was that possible price increases up to \$3.50 for watches with imported movements would have no effect on unit sales, except in the lowest price ranges. Here it was felt that potential customers for "promotional" watches might tend to move up to the lowest-priced models of the major brands (but not that these customers would be deterred from buying watches).

jeweled watches. From 1931 to 1933, for example, consumption of pin-lever wristwatches rose by twenty percent.<sup>1</sup>

With recovery the replacement of older watches is accelerated, and wristwatches replace fountain pens as graduation gifts. New watch purchases tend to be in the jeweled-lever grades. The inferior-goods relationship of pin-lever watches is clearly seen in a comparison of the late depression years, 1936-1940, with the 1949-1953 full employment period. In the latter period, consumption of jeweled watches was 2.4 times that of the former, while consumption of pin-lever watches (including imports which compete with this grade) was five percent less than in the earlier period.<sup>2</sup>

A final point is that income-elasticity of demand has been lower during the recent period of high real disposable income than during the depression years. If one ignores the possible inaccuracy of 1931-1935 data (due to the omission of smuggled imports) and the dangers in drawing regression lines for short time periods, the data in Chart 2--apparent consumption per thousand population and real disposable income per capita--may be used to derive equations for the years 1931-1940 and 1945-1953:

$$1931-1940: Y = -93.6 + .1864 X$$

$$1945-1953: Y = -29.3 + .1093 X$$

This reduction in sensitivity of watch consumption to changes

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<sup>1</sup>U. S. Tariff Commission, Watches, War Changes in Industry Series, Report No. 20, p. 173.

<sup>2</sup>U. S. Tariff Commission, Watches, Movements, and Parts, Table 12.



in disposable income suggests that there may be a saturation point in the market.

If this is the case, further increases in real disposable income will be much less effective in stimulating watch consumption than past increases. To an increasing extent, growth in the demand for jeweled watches would depend upon the growth of the watch-consuming sector of the population, and upon the ability of the industry to shift consumers' tastes away from competing goods or to shorten the useful life of watches by convincing consumers of the importance of style factors.

## CHAPTER V

### THE SUPPLY OF JEWELLED WATCHES

The suppliers of jeweled watches to the American market fall into three general classes. One class consists of the domestic producers, Elgin, Hamilton and Waltham. These firms manufacture nearly all of their movements within the United States. A second class, and a considerably larger one from the point of sales, includes the "assemblers". The members of this group are primarily concerned with the importation of movements, which are inspected and cased in this country. The third class is made up of the true importers, firms which import complete watches and perform only a distributive function. Prior to World War II, this last group was an insignificant factor in the market.

These categories are not at all exclusive. For some years, Bulova has manufactured movements in this country on a large scale. Gruen, likewise, recently built a small plant for the manufacture of domestic movements. On the other side of the fence, the three domestic producers began to import some movements in 1951 to supplement their domestic production. In the choosing of sides over the controversial tariff issue, however, Bulova and Gruen have usually identified themselves with the assemblers, while the domestic producers are

continuing their old fight for greater protection.<sup>1</sup>

The decade after World War I was a period of major change in the domestic industry. Two of the pre-war firms (above, Table 4) had disappeared, leaving eight plants, of any importance, manufacturing domestic watch movements in 1920.<sup>2</sup> Ten years later there were only three. The mortality of the industry during these years is worthy of some attention.

Competition from outside the domestic industry had greatly increased. In the first place, manufacturers of non-jeweled "clock-type" watches had taken over the low-price market. Robert H. Ingersoll's business expanded rapidly during the war, since nearly all American soldiers carried

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<sup>1</sup>Bulova occasionally changes sides. The firm was aligned with the domestic producers in the 1945 Congressional hearings on extension of the Trade Agreements Act. And since the summer of 1954, Bulova has expressed great concern over the import threat to an "essential defense industry" (see the "open letter" by General Omar N. Bradley, now head of Bulova's research division, which appeared as a full-page advertisement in the New York Times, February 15, 1955, and in other leading newspapers).

<sup>2</sup>W. I. Milham, Time and Timekeepers (New York, 1923), p. 401, lists the following firms for 1920:

- Elgin National Watch Company, Elgin, Ill.
- Hamilton Watch Company, Lancaster, Pa.
- Waltham Watch Company, Waltham, Mass.
- Illinois Watch Company, Springfield, Ill.
- South Bend Watch Company, South Bend, Ind.
- Dueber-Hampden Watch Company, Canton, Ohio
- \*E. Howard Watch Works, Waltham, Mass.
- \*New York Standard Watch Company, Jersey City, N. J.

Note:\*(subsidiaries of the Keystone Watch Case Company.

cheap, easily-replaced Ingersoll pocket or wristwatches. By 1919 the firm's output of 20,000 watches a day exceeded the total volume of domestic and imported jeweled watches supplied to the market.<sup>1</sup> The Ingersoll firm failed in the 1921 depression, but by this time other clock manufacturers were producing cheap watches in large quantities.

A second source of competition was the Swiss watch industry. Mechanization of the Swiss industry was now making itself felt through reduced costs and prices. Imports of Swiss watches and movements, which had averaged less than a million movements in the years before the war, rose to an annual average of threemillion movements in the decade after the war despite the Tariff of 1922 which levied duties equivalent to fifty percent ad valorem on imported movements. The assemblers, among whom only Gruen had been of any importance, became an important element in the supply of jeweled watches. Penetration of the domestic market was not the consequence solely of lower costs. Product styling was of much greater importance. The assemblers and importers were able to meet the new demand for wristwatches at a time when domestic producers still concentrated upon the production of pocket watches.

Several of the old firms were unable to make the adjustment to new competitive conditions. Dueber-Hampden was sold to a group of Cleveland investors in 1925; two years later the company went into receivership. The equipment was

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<sup>1</sup>H. C. Brearley, Time Telling Through the Ages (New York, 1919), p. 204.

shipped to Russia, where it became the nucleus of the Soviet watch industry.<sup>1</sup> The South Bend Watch Company, which had never been conspicuously successful, appears in the 1920's as a subsidiary of the South Bend Mail Order Company.<sup>2</sup> This firm, and with it the watch company, failed in the early stages of the Great Depression.

The owners and management of the famous, but fairly small, Illinois Watch Company were unwilling or unable to make the switch to wristwatches. Profits were small in the years after the war, and in 1927 the assets were sold to Hamilton for \$5 million (a surprisingly high figure, in view of the company's earnings).

The two firms owned by the Keystone Watch Case Company also departed from the scene. The New York Standard Company, which produced very cheap movements, was closed in 1927, and the property was sold a few years later. The Howard plant, on the other hand, produced a line of watches which were too expensive for the market. This plant received its death blow from the depression and was liquidated in 1932 (the trade name was purchased by Hamilton).

The case of Waltham will be discussed in some detail in Chapter VIII. With poor management, obsolete products and an inefficient labor force, the company was virtually insolvent by 1922. A reorganization was engineered in 1923 by an

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<sup>1</sup>John J. Bowman, Lancaster's Part in the World's Watch-making Industry (Lancaster, 1945), p. 36.

<sup>2</sup>Information on the failures of South Bend and other firms mentioned was obtained from Moody's Investor's Service, Inc., Moody's Manual of Investments.

investment banking syndicate headed by Kidder, Peabody & Company. The success of this reorganization, and F. C. Du-maine's subsequent leadership, gave the company a new lease on life.

The decade of the 1920's was a period of major adjustment for the Elgin National Watch Company, at the time the largest watch manufacturer in the world. The company faced the same basic problem that other companies did, namely the conversion of production from pocket to wristwatches. Elgin was able to make this conversion, and then attacked the problem of offering "Ritz-Carlton style at Statler prices".<sup>1</sup> With production reaching a peak of 4,500 movements a day, the late 1920's were a period during which Elgin "enjoyed larger sales, higher earnings, more people employed...and greater dividends than during any previous period".<sup>2</sup>

Elgin's sales and earnings dropped sharply during the depression, but recovery was noticeable by 1934. With rising costs and taxes, however, net income even in the years since World War II has never reached the 1924-1929 annual average of nearly \$2.5 million, despite a five-fold increase in sales.<sup>3</sup>

Elgin has been an important technological leader in the domestic industry in recent years, through the work of its

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<sup>1</sup>Printers' Ink, December 6, 1928, p. 18.

<sup>2</sup>The Watch Word (Elgin's company magazine), September, 1949, p. 48.

<sup>3</sup>From income statements reported annually in Moody's Manual of Investments.

own research department and through the subsidization of research at the Battelle Memorial Institute, the Mellon Institute of Industrial Research and the Armour Research Foundation.<sup>1</sup> An example of the work in this field is the widely-publicized "Dura-Power" mainspring, fabricated from a non-corroding alloy which surpasses steel as a spring material.

The most noteworthy achievement of Elgin has been its introduction of the assembly line, and true mass production, to the watch industry. This was the dream of Aaron Dennison in 1850. For nearly a century, however, the difficulty of manufacturing tiny parts to tolerances close enough to permit true interchangeability, without any "cutting and trying", prevented the use of an assembly line. Despite the development of automatic machinery to fabricate the parts, and the consequent de-skilling of most operations, assembly remained a laborious process. Each assembler was provided (and still is in Swiss plants) with a supply of parts from which he put together complete movements.

By solving the tolerance problem, Elgin was able to place its assembling operations upon a line basis in 1948. In the opinion of a company executive, "The basic innovation was to change the method from assembly of a complete movement by each of a large number of operators, all highly skilled in the entire process, to progressive assembly in which each of a slightly smaller number of people is highly

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<sup>1</sup>The Watch Word, September, 1949, p. 50.

skilled in only a few operations."<sup>1</sup> The principal advantages in this method at present are increased flexibility of operations and a considerable reduction in the work-in-process inventory.

Under the older method, a movement would require several weeks in the assembly department for completion. In addition, the assemblers protected themselves against running out of work by putting a large supply of parts "in the bank", i.e., by maintaining a reserve supply of work. With progressive assembly, this inventory is eliminated, and a movement which starts down the line in the morning is ready for timing by the end of the day.

At present, Elgin is second only to Bulova in volume of sales. The impetus given to the company by military orders was, of course, tremendous; sales rose from an annual average of less than \$9 million, for the years 1935 to 1939, to an average of \$21 million for 1943 to 1945. Elgin's sales have continued to mount in the post-war period, passing \$50 million in 1952.<sup>2</sup>

The expansion in sales has been matched by an equally impressive expansion in productive facilities. During the war two additional plants were acquired for work upon military orders. In the postwar period these have housed the repair department and the Industrial Products Division, which

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<sup>1</sup>Corwith Hamill, assistant treasurer of Elgin, in a letter to the author, October 2, 1951.

<sup>2</sup>Data from Moody's Manual of Investments. See also Table 8, below.



produces abrasives, timing devices and parts for industrial customers.

Soon after the war, the company decided to increase watch production by twenty percent.<sup>1</sup> Since labor was scarce at Elgin, a new branch was established at Lincoln, Nebraska. A small cadre of skilled supervisory employees was used to hire and train a completely new labor force. Within seven months the first watches were coming off the assembly line, and in three years over a million movements had been produced.

The Hamilton Watch Company is the third member of the trio of domestic manufacturers. By the end of World War I, Hamilton had a solid reputation for railroad watches of high quality. This was not an unmixed blessing, as the railroad market was practically saturated, and the company lagged far behind its competitors in the variety and styles of its other watches. Since ninety-six percent of Hamilton's output consisted of pocket watches, this company was hit harder than either Elgin or Waltham by the shift in demand to wrist-watches.<sup>2</sup> The transition was painful, but it was made. Hamilton had one immensely valuable asset, its reputation. Whereas both Elgin and Waltham were offering large quantities of cheap seven to fifteen-jewel models in the 1920's, Hamilton abided by its original tenet of never offering anything but full-jeweled watches. As a result of this emphasis upon

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<sup>1</sup>The Watch Word, September 1949, p. 42.

<sup>2</sup>"Hamilton Watch", Fortune, January 1947, p. 100.

quality, the company's sales climbed from \$1.6 million in 1918, to nearly \$6 million ten years later.<sup>1</sup>

The demand for Hamilton's high priced products dropped precipitously after 1929. The company went through a voluntary reorganization in 1932, a year in which it lost a million dollars on a sales volume of \$1.8 million.<sup>2</sup> Sales by 1937, however, passed the 1929 peak and have continued to climb ever since, averaging about \$21 million for the years 1948 to 1953.

Hamilton, like Elgin, has actively pursued a policy of increasing productive efficiency in the face of competition. Perhaps the best single example of the firm's technical ability is its performance on chronometer contracts during World War II.<sup>3</sup> These instruments had always been made by hand by a few British and Swiss firms. Hamilton received its first order in early 1941, started from scratch and began making deliveries within a year. By the end of the war, Hamilton was producing chronometers more rapidly than the ships which used them could be built. The company even made some major improvements in chronometer design--over the violent objections of the Navy, which tends to be somewhat hidebound

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<sup>1</sup>Hamilton Watch Company, Fiftieth Anniversary Report, 1942, pp. 14, 15.

<sup>2</sup>Moody's Manual of Investments, Industrials, 1932.

<sup>3</sup>"Hamilton Watch", p. 106. See also A. J. Rawlings, The Science of Clocks and Watches, 2d ed. (New York, 1948), pp. 201-209. Ten Hamilton chronometers picked at random were subjected to the same rigorous tests as those of the Neuchatel Observatory. The poorest Hamilton instrument performed markedly better than the average of those tested at Neuchatel over a ten-year period.

in such matters--and delivered these improved instruments at prices which were considerably lower than prewar foreign prices.

Including Bulova's American-made movements (discussed below), domestic production in recent years has accounted for roughly one-third of the volume of jeweled watch sales (measured by wholesale values). The remaining two-thirds have been made by upwards of two hundred firms which import movements or complete watches. Of these firms, four are "major" producers of nationally-advertised brands: Bulova, Longines-Wittnauer, Gruen and Benrus. Together with Elgin and Hamilton, they make up the "Big Six" companies which sell over ninety percent of the nationally-advertised watches and nearly three-quarters of all jeweled watches in the American market.<sup>1</sup> Table 6 illustrates the important components, in terms of wholesale values, of this market for the year 1950 (before the Korean crisis caused any considerable diversion of domestic capacity from watches to defense products).

The oldest of these firms is Longines-Wittnauer. Albert Wittnauer arrived in this country before the Civil War as a sales agent for several Swiss firms, among them Longines. The progenitor of today's firm, A. Wittnauer Company, was established in 1866 and took its present name in 1936. Swiss operations are controlled through a subsidiary, Wittnauer & Cie., of Geneva. This company like Hamilton has always stressed the quality of its products, and has consequently

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<sup>1</sup>Hamilton Watch Company v. Benrus Watch Company, Inc.  
114 F. Supp. 307 (1953), Findings, 10.

TABLE 6

RELATIVE SHARES OF THE WHOLESALE  
MARKET FOR JEWELLED WATCHES, 1950

	Dollar Volume of Sales (millions)	Percent of Total
Imported movements:		
Four largest assemblers:		
Bulova (a)	\$29.7	13.0%
Longines-Wittnauer	20.9	9.2
Benrus	16.3	7.2
Gruen	15.8	6.9
Total	\$ 82.7	36.3%
Other national advertisers (b):	13.0	5.7
"Non-advertised brands:	60.7	26.5
Imported movements, total:	\$156.4	68.5%
Domestic movements:		
Elgin	\$29.3	12.9%
Bulova (a)	20.0	8.8
Hamilton	18.7	8.2
Waltham	3.7	1.6
Domestic movements, total:	\$ 71.7	31.5%
Estimated total sales	\$228.1	100.0%

Notes: (a) Division of Bulova's sales between domestic production and assembly estimated by the author on the basis of a \$45 million retail value for the firm's domestic production (U.S. Tariff Commission, 1951 Escape-Clause Investigation, Brief in Behalf of the American Watch Association, Inc., p. 8.

(b) Includes brands such as "Omega", "Rolex", "Movado", etc., which are less widely advertised and usually sell at higher prices than the "major" brands.

Sources: Assembler-importer sales from Reavis Cox and D. F. Blankertz, "An Analysis of the Jeweled-Watch Industry" (mimeo., 1951), p. 7. Sales of major firms from Moody's Manual of Investments, 1951 (domestic producers' sales figures reduced by 3% to reflect non-watch production).

operated primarily in the higher price ranges. "Longines" watches, retailing at \$71.50 and up, account for more than half of the company's sales.<sup>1</sup> The "Wittnauer" line (from \$40 to \$70) accounts for forty percent of sales. The "Le Coultre" clocks and "Vacheron & Constantin" watches (retail prices starting at \$315).

The Gruen Watch Company is another old firm. Dietrich Gruen, who came to this country in 1867, founded the Columbus Watch Company in 1882.<sup>2</sup> Although successful in manufacturing movements, Gruen purchased a plant in Bienne to augment domestic production. The Columbus plant was sold to the South Bend Watch Company in 1903, and thereafter Gruen functioned as a watch assembler.

At present most of the firm's movements are imported from its Bienne plant and cased in the main plant at Cincinnati. Since 1949 the company has been manufacturing "domestic" movements (most of the essential parts for these movements are imported) in a leased plant at Norwood, Ohio. The level of domestic production is low (less than 100,000 movements a year), but the company feels that it can be expanded in the event of tariff increases or another European war which might shut off Swiss supplies.<sup>3</sup>

The Benrus Watch Company is a comparative newcomer to the field, having been founded in 1919.<sup>4</sup> This company

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<sup>1</sup>Moody's Manual of Investments, 1953.

<sup>2</sup>H. C. Brearley, op. cit., p. 246.

<sup>3</sup>Gruen Watch Company, Annual Report, 1949, p. 4.

<sup>4</sup>Moody's Manual of Investments, 1953.

produces its movements at La-Chaux-de-Fonds, its cases in a plant at Waterbury, Connecticut, and maintains offices and assembly facilities in New York City. Benrus does approximately the same volume of business as do Gruen and Longines-Wittnauer. All three firms had sales of about \$20 million (comparable to Hamilton) in 1951 and 1952.<sup>1</sup>

The largest seller of watches in the world is the Bulova Watch Company. Bulova's sales in 1952 passed \$60 million.<sup>2</sup> The founder of the firm, Joseph Bulova, established a small jewelry manufacturing business in 1875. During World War I, Bulova began to import Swiss watches. In the post-war years, this became the principal business in the company, and the present firm was incorporated in 1923.

As sales rose the company expanded its physical plant. The first movement plant was established at Bienne in 1919. The company's main plant, at Woodside, Long Island, was opened in 1931, and the domestic production of movements was undertaken on a limited scale. Since the late 1930's this phase of the company's operations has been expanded; at present this company can produce in the neighborhood of a million movements a year at Woodside, which makes it the second largest producer (after Elgin) of domestic movements.<sup>3</sup> Bulova manufactures most of its own cases in a plant at Providence, Rhode Island. Assembling operations are performed

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<sup>1</sup>See Table 8, below.

<sup>2</sup>See Table 8, below.

<sup>3</sup>U. S. Congress, Senate Committee on Finance, Hearings on H.R. 1211 (February, 1949), p. 567.

at Woodside and through a subsidiary, the American Standard Watch Company, at Waltham, Massachusetts, and Jersey City, New Jersey.<sup>1</sup>

An interesting aspect of the assemblers' operations is the fact that the Swiss "production" also consists primarily of assembly, although they usually endeavour to give the opposite impression. That is, the movements themselves are put together from parts purchased from other Swiss supplies. In general, only the highest quality Swiss watches (e.g., Vacheron & Constantin, Philippe-Patek and so forth) are produced in integrated plants. In its Bienne plant, Bulova produces only thirty percent of the parts utilized in its Swiss movements.<sup>2</sup> Gruen supplements its own production by the purchase of complete movements from other firms.<sup>3</sup> This may also be true of the other leading assemblers. Perhaps the most revealing admission in this respect was made recently by S. R. Lazrus (of Benrus): "For instance, in calling our factory abroad--well, we call it a 'factory', but it is really our offices abroad...".<sup>4</sup>

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<sup>1</sup>Ibid., p. 574.

<sup>2</sup>Stenographic transcript, "U.S. Tariff Commission hearing on Watches and Parts under the escape clause of the Trade Agreement with Switzerland" (Washington, 1951) p. 1487.

<sup>3</sup>Moody's Manual of Investments, Industrials, 1950, p. 158: "All movements are produced at the plant... in Bienne, or under its supervision".

<sup>4</sup>U.S. Tariff Commission, transcript cited, p. 1165. See also Benrus' registration statement with the Securities and Exchange Commission (S.E.C. Docket 1-3436-2). The company purchases all component parts for its movements. An undisclosed portion of the firm's movements are assembled in its own plant, the remainder by outside contractors.

This method of production gives the assemblers a greater degree of flexibility in changing styles and sizes than is possessed by the domestic producers.<sup>1</sup> The latter, with integrated plants, face a serious retooling problem if a change in models is desired. For the assemblers this problem is mitigated by the fact that most Swiss firms specialize in particular sizes and types of movements and parts. Thus a model change is often simply a matter of changing suppliers.

It should be noted that the domestic assemblers perform services which differ from those of mere importers. In general, only the movements of "assembled" watches are imported from Switzerland. Cases and accessories are purchased in this country, and the major firms are all American concerns.<sup>2</sup> The movements themselves usually represent less than fifteen percent of the retail value of complete watches, and roughly one-third of the assemblers' wholesale values.<sup>3</sup> In other words, about two-thirds of the assemblers' sales represent value added within this country (by the assemblers

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<sup>1</sup>See below, Chapter VII.

<sup>2</sup>The blood pressures of assemblers rise to dangerously high levels during Congressional hearings on tariff policy, since domestic producers and congressmen alike invariably refer to them, directly or by implication, as "Swiss".

<sup>3</sup>American Watch Association, brief cited, pp. 14, 15. According to a confidential survey made for the Association by Professor Reavis Cox, the retail value of assembled watches in 1950 amounted to \$376 million, and the wholesale value was \$156 million. Of this latter amount, \$53.8 million was paid for imported parts, leaving domestic expenditures and profits of \$102.4 million. The combined sales of Elgin and Hamilton in 1950 amounted to \$49.2 million (wholesale).



themselves and their case and accessory suppliers). In recent years this contribution to production within the United States by the assemblers has been about double that of the purely domestic producers.

In the years between the two world wars, comparatively few complete watches were imported. Ninety-five percent of the movements entering were cased in the United States. One factor in the overwhelming predominance of domestic assembly was a tariff of 45% ad valorem on watchcases. A more significant factor is that the American watchcase industry is more efficient than the Swiss, providing higher quality cases at lower costs. The combination of high tariffs and low American costs made assembly a more economical process than the importation of complete watches. The few complete watches which did enter the country fell into two distinct classes: watches of the highest quality, for which the case duty amounted to a negligible part of the price, and those of the poorest quality, which sold in the price ranges between domestic clock-type watches and the lowest priced advertised jeweled watches.<sup>1</sup> Most of the latter are produced by members of the Swiss Roskopf Association, which prohibits the export of uncased movements.

Since the beginning of World War II, however, the importance of imported complete watches has increased markedly. As the demand for watches rose during the war, there were

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<sup>1</sup>U. S. Tariff Commission, Watches (War Changes in Industry Series, Report #20, 1947), p. 45.

shortages of both movements and cases, and many of the assemblers began to import cased watches from Switzerland in large quantities. At the same time, since even inferior watches commanded premium prices, the number of importers rose from about one hundred to more than five hundred.<sup>1</sup> Most of the newcomers lacked casing facilities and were perforce obliged to buy complete watches. By 1945 nearly thirty percent of the total imports of jeweled movements entered in complete watches.<sup>2</sup>

After the war the relative importance of these imports declined, but remained considerably above prewar levels. From 1947 to 1945, complete watches accounted for an average of fifteen percent, by number, of total movements imported.<sup>3</sup> The increased demand for higher priced watches, as well as watches with "novelty" features (e.g., self-winding watches, chronographs, and so forth) not always available in the major brands explains this continued high level of complete watch imports.

The importers, as distinct from the assemblers, have become an important factor in the market. There are no unique characteristics of this group, except for the functions performed by its members. Most of the assemblers import some complete watches. Some of the larger department stores (such as R. H. Macy) are heavy importers. A number

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<sup>1</sup>Ibid., p. 46.

<sup>2</sup>American Watch Association, brief cited, p. 6.

<sup>3</sup>Table 7, below.

of firms are agents for reputable Swiss manufacturers who are entering the American market for the first time, their normal markets being closed by quota and exchange restrictions, And of course, many of the importers are speculators who see the chance "to make a fast buck" in a period of high demand.<sup>1</sup>

The relative shares of these three groups (domestic producers, assemblers and importers) in recent years are shown below in Table 7. Since the majority of the assembled watches and all domestically produced watches are nationally advertised brands, it may be presumed that a sharp drop in the demand for jeweled watches would fall most heavily upon the importers and would result in a drop in the percentage of the market supplied by this group. Some indication of this can be seen in the figures for 1948 and 1949. The softening of the market was felt especially by the importers, while the more widely-advertised brands held up well.<sup>2</sup>

Some significant financial data for the seven major firms is shown in Table 8. No other firms in the industry are large enough to feel any compulsion, legal or financial, to make such information public. For each firm, an attempt has been made to measure "profitability" by comparing net income (before taxes) to invested capital. Invested capital,

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<sup>1</sup>The author knows of a case, perhaps not atypical, of a New York manufacturer of ladies' underwear who has been speculating in watches on a considerable scale in recent years.

<sup>2</sup>Cf. U. S. Department of Commerce, Postwar Watch Markets (Washington, 1950), p. 7.

TABLE 7

RELATIVE SHARES OF THE AMERICAN JEWELLED WATCH MARKET

Year	Apparent Consumption (1,000 units)	Percent of total supplied by:		
		Domestic Producers	Assemblers	Importers
Average:				
1926-30	4,567	38.4%		61.6%
1931-35	1,473	52.8		47.2
1936-40	4,161	39.7	56.7%	3.6%
1941-45	7,805	20.0	67.1	12.9
1946-50	9,103	26.1	58.2	15.7
Annual:				
1945	9,787	11.3%	65.3%	23.4%
1946	9,605	17.5	63.4	19.1
1947	8,813	25.9	62.4	11.7
1948	9,515	30.7	56.5	12.8
1949	8,352	31.4	55.5	13.1
1950	9,232	26.0	52.9	21.1
1951	10,977	28.2	49.8	22.0
1952	10,069	23.0	61.9	15.1
1953	11,173	20.2	66.9	13.9

Note: U.S. import statistics do not distinguish movements imported as components of complete watches from movements imported separately. Since 1936 Swiss statistics on direct exports to the U.S. have made this distinction.

Sources: Data on apparent consumption and domestic production from U. S. Tariff Commission, Watches, Movements, and Parts, (Washington, 1954), Table 12.

Data on imports of complete watches, 1935-1950, from U. S. Tariff Commission, 1951 Escape-Clause Investigation, Brief in Behalf of the American Watch Association, Inc., p. 6. Data from 1951-1953 from official Swiss statistics provided by the Legation of Switzerland.

as used here, is the sum of net worth (equity capital) and long-term liabilities (debt capital).

While there have been severe fluctuations in the data for particular firms from year to year, a general pattern is apparent. Assembling is a more profitable operation, on the basis of the measurement used, than domestic production. During the eight-year period, 1946 to 1953, Elgin and Hamilton together averaged a fourteen percent return on invested capital. Waltham's recent dismal history furnishes the grounds for eliminating it from this computation; had this company been included, the return would have been considerably less than fourteen percent. At the other extreme lie the two firms which conduct only assembling operations. Benrus and Longines-Wittnauer averaged thirty-four percent on invested capital. Bulova and Gruen, which combine domestic production with assembling, are between two poles with an average rate of return of twenty-one percent.<sup>1</sup>

It is obvious from the data that domestic production has been less profitable than assembling because of the relatively greater capital investment required in recent years. During the period indicated, domestic production (represented by Elgin and Hamilton) appears to have required roughly \$1.00 of invested capital for each \$1.50 of sales. In contrast, the assemblers (represented by Benrus and

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<sup>1</sup>Unfortunately no information is available with which to separate Bulova and Gruen profits arising from domestic operations from profits on importing operations. This information has been denied even to the Senate Committee on Finance (Hearings on H.R. 1211, February 22, 1949, pp. 567-572).

TABLE 8

PROFITABILITY OF SEVEN MAJOR WATCH PRODUCING FIRMS

Company	Net Sales	Net Income Before Taxes	Invested Capital	Ratio of Profits to Investment
(All dollar figures in thousands)				
<u>1953:</u>				
Elgin	\$56,720	\$3,979	\$34,118	11.7%
Hamilton	33,180	3,455	14,135	24.4
Waltham	5,964	62	4,906	1.3
Bulova	69,369	6,047	36,675	16.5
Gruen	not stated	1,710	11,653	14.7
Benrus	24,641	2,135	7,527	28.4
Longines	26,345	2,193	7,230	30.3
<u>1952:</u>				
Elgin	\$50,800	\$2,900	\$33,170	8.7%
Hamilton	19,419	1,136	13,541	8.4
Waltham	5,042	163	5,177	3.1
Bulova	60,710	5,476	35,337	15.5
Gruen	not stated	3,274	13,560	24.1
Benrus	22,220	2,139	7,129	30.0
Longines	26,211	2,238	7,935	28.2
<u>1951:</u>				
Elgin	\$42,721	\$3,481	\$32,619	10.7%
Hamilton	17,343	1,862	13,660	13.6
Waltham	2,338	12	4,749	0.3
Bulova	53,264	5,341	34,828	15.3
Gruen	not stated	2,032	12,432	16.3
Benrus	20,100	1,143	6,698	17.1
Longines	21,917	2,371	7,232	32.8
<u>1950:</u>				
Elgin	\$30,201	\$2,859	\$31,099	9.2%
Hamilton	19,045	2,801	11,308	24.8
Waltham	3,735	( 430)	6,882	----
Bulova	49,693	6,683	34,489	19.4
Gruen	15,777	2,277	11,964	19.0
Benrus	16,343	1,930	4,906	39.3
Longines	20,896	2,238	6,718	33.3

TABLE 8--Continued

Company	Net Sales	Net Income Before Taxes	Invested Capital	Ratio of Profits to Investment
(All dollar figures in thousands)				
<u>1949:</u>				
Elgin	\$27,626	\$2,537	\$20,209	12.6%
Hamilton	18,740	2,337	10,418	22.4
Waltham	3,409	(1,979)	4,540	----
Bulova	44,619	5,680	28,860	19.7
Gruen	13,007	1,299	10,027	13.0
Benrus	9,326	428	4,066	10.5
Longines	13,708	983	5,820	16.9
<u>1948:</u>				
Elgin	\$28,478	\$2,895	\$19,308	15.0%
Hamilton	19,983	2,847	9,527	29.9
Waltham	8,243	(1,664)	4,601	----
Bulova	50,852	8,593	27,359	31.4
Gruen	15,312	2,273	10,010	22.7
Benrus	11,160	1,631	4,175	39.1
Longines	15,734	1,613	4,362	37.0
<u>1947:</u>				
Elgin	\$22,158	\$2,247	\$18,597	12.1%
Hamilton	15,596	1,700	8,507	20.0
Waltham	11,233	( 314)	4,824	----
Bulova	47,157	8,452	24,748	34.2
Gruen	14,426	2,812	9,359	30.0
Benrus	12,646	1,918	3,649	52.7
Longines	15,625	1,905	4,094	46.3
<u>1946:</u>				
Elgin	\$17,689	\$1,989	\$18,090	11.0%
Hamilton	10,980	1,522	8,135	18.7
Waltham	9,790	(1,311)	5,474	----
Bulova	38,394	6,147	21,376	28.8
Gruen	13,862	2,640	8,070	32.7
Benrus	14,948	2,668	2,887	92.4
Longines	13,320	1,600	3,210	49.8

TABLE 8--Continued

Company	Net Sales	Net Income Before Taxes	Invested Capital	Ratio of Profits to Investment
(All dollar figures in thousands)				
<u>1946 to 1953, Annual Averages:</u>				
Elgin	\$34,540	\$2,861	\$26,026	11.0%
Hamilton	19,286	2,207	11,154	19.8
Waltham	6,219	( 683)	5,069	---
Bulova	51,757	6,552	30,459	21.5
Gruen	not stated	2,254	10,872	20.8
Benrus	16,673	1,999	5,728	34.9
Longines	19,219	1,893	5,825	32.5

Sources: All financial data, with the exceptions noted below, have been secured from Moody's Investors' Service, Inc., Moody's Manual of Investments.

The 1948 Waltham data are from the United States District Court (Massachusetts), In the Matter of WALTHAM WATCH COMPANY, DEBTOR, No. 70629, pp. 32-39. Data for 1949 and 1950 are from reports to the Securities and Exchange Commission, S.E.C. Docket No. 1-3527-2.

Bulova and Longines-Wittnauer data for 1953 (fiscal year ending March 31, 1954) are from reports to the Securities and Exchange Commission, S.E.C. Dockets No. 1-457-2-2 (Bulova) and No. 1-3386-2 (Longines-Wittnauer).

The Gruen Watch Company does not publish its net sales figures. Since Gruen is not required to register with the Securities and Exchange Commission, these figures are not a matter of public record. The Gruen sales figures for the years 1946-1950 were made available to the American Watch Association in connection with the 1951 Tariff Commission hearings on watches, movements and parts: United States Tariff Commission, Brief in Behalf of the American Watch Association (1951), p. 78.



Longines-Wittnauer) have been able to support \$3.00 of sales volume with \$1.00 of invested capital.

Despite the higher profitability of assembling, the two principal domestic producers' ratios of net income to investment hardly support the thesis that they are faced with imminent bankruptcy at present levels of demand for jeweled watches. The lure of assembling profits, however, has led all of the domestic producers into this field of operation.<sup>1</sup> During the Korean War this facilitated the expansion of defense production. Since 1953 both Elgin and Hamilton have been striving to diversify their production into the fields of military and scientific instruments. Should this trend continue, the American watch market will depend to an even greater extent in the future than in the recent past on imported movements.

Very little can be said about the channels of distribution of jeweled watches. The "Big Six" major brands (Elgin, Hamilton, Bulova, Benrus, Gruen and Longines, Wittnauer) are sold directly by the manufacturers to retail outlets. Some of the minor brands are sold directly, but the majority are marketed through jewelry wholesale houses.

At the retail level there are four principal channels of distribution: retail jewelry stores, department stores, "discount houses" and mail-order houses (e.g., Sears Roebuck and Montgomery Ward). Trustworthy information as to the

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<sup>1</sup>U. S. Tariff Commission, Watches, Movements, and Parts, Report to the President on Escape-Clause Investigation No. 26 (Washington, 1954), p. 17.

relative importance of these outlets is non-existent.

The retail jeweler has traditionally been the mainstay of the industry. And indeed, outside of the major cities, he probably still is the chief form of retail outlet and occupies a strategic position from the standpoint of being able to influence local public opinion, either in support of or as a detractor from the national advertising of the manufacturer. Further, he is extraordinarily sensitive to any efforts on the part of manufacturers to market their products through other channels. Consequently every major manufacturer insists, on direct query, "Why, we sell nearly all of our watches through retail jewelers", and no further information is forthcoming. This reticence was highlighted during a 1950 survey of ten firms by the Department of Commerce. Several of the companies admitted "that they now sell as much as 10 percent of their total output" to department stores.<sup>1</sup>

The numerical importance of the small retail jeweler among the customers of the major firms is indicated in Table 9. This data was disclosed during the Federal Trade Commission's 1951-52 price discrimination cases against Elgin, Bulova, Gruen and Benrus. Because of the volume categories reported by the manufacturers, it has been necessary for the author to interpolate roughly in a few instances-- i.e., Benrus reported sixty-six customers in its \$8,000 to \$12,000 bracket, and the author simply allocated half to the

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<sup>1</sup>U.S. Department of Commerce, Postwar Watch Markets (Washington, 1950), p. 15.

\$8,000 to \$10,000 range. The resulting inaccuracy is minor, however, because of the small numbers of customers involved.

TABLE 9

JEWELLED WATCH RETAILERS CLASSIFIED  
BY ANNUAL WHOLESALE VOLUMES, 1948.

Company	Under \$10,000	\$10,000-\$50,000	Over \$50,000
Bulova	8,000	567	116
Gruen (a)	918	494	9
Benrus	2,859	111	30
Elgin	14,794	154	20

Note (a): Gruen actually had some 7,500 customers. The figures include only those who participated in the advertising allowance plan.

Source: Federal Trade Commission, Dockets No. 5830, (Bulova), 5836 (Gruen), 5837 (Elgin) and 5969 (Benrus).

This data indicates that roughly ninety-five percent of retail outlets, by number can be safely presumed to be "small" retail jewelers. Aggregate dollar wholesale volumes are not given for Elgin and are incomplete for Gruen. However, on the basis of volumes reported by Bulova and Benrus, it appears that roughly half of the total volume of manufacturers' sales are accounted for by this group.

Retail sales of jeweled watches were estimated for the year 1950 only at \$580 million (including federal taxes) by Professor Reavis Cox, of the University of Pennsylvania.<sup>1</sup> In that same year total retail jewelry store sales amounted to

<sup>1</sup>U. S. Tariff Commission, Brief in Behalf of the American Watch Association, Inc., (Washington, 1951), p. 8.

\$1,140 million (excluding federal excise taxes).<sup>1</sup> Sales of jeweled watches alone amount to --very roughly-- twenty percent of total retail jewelry store sales.<sup>2</sup> If so, in 1950 retail jewelers sold about \$230 million worth of jeweled watches, excluding excise taxes, or about \$260 million including taxes. If 1950 can be taken as a reliable guide, it is apparent that no more than half of all jeweled watch sales are made through retail jewelers. The remainder are made chiefly by mail-order houses, department stores and discount houses.

Any quantitative evaluation of the importance of these last three outlets is impossible. One may guess, however, that mail-order houses are the least important. The role of department stores, on the other hand, has been increasing in importance of late. By 1951 the Tariff Commission found that "promotional sales" by department stores of minor brands (including private brands of the stores themselves) had become a significant factor in the jeweled watch market.<sup>3</sup> Three years later, promotional sales "are coming to be more

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<sup>1</sup>U. S. Department of Commerce, 1951 Business Statistics (supplement to the Survey of Current Business), p. 42.

<sup>2</sup>Estimates of this percentage are highly variable. The American Watch Association (op. cit., p. 11) states that from 20% to 25% of retail jewelry store sales are accounted for by jeweled watches. The Department of Commerce (Postwar Watch Markets, p. 3) gives an estimate of 15.6% for "watches and clocks", based on a survey of about 100 of the 30,000 retail jewelry stores in the country. The 1948 Census of Business (Volume II, p. 24.03) reports 29.5% for "watches, clocks and silverware".

<sup>3</sup>U.S. Tariff Commission, Watches, Watch Movements, Watch Parts and Watchcases (Washington, 1952), pp. 20, 97.

and more a regular method of merchandising".<sup>1</sup> Non-fair traded brands are offered for sale at all times at the "special sale" prices. In other words, department stores are willing to retail this merchandise at lower than "normal" markups; the author's estimate would be markups of about 25 percent, versus the "normal" markup of at least 100 percent for the major brands. Further, to the extent that these sales attract customers who decide to buy "big-name" watches, the department stores have increased their share of the fair-traded market as well. One "off-hand guess" is that department stores account for as much as thirty percent of total jeweled watch sales today.<sup>2</sup>

The phenomenon of the discount house is worthy of note. The popular saying, "Only suckers pay list prices", may be applicable to retail watch markets to an increasing degree as time passes. Indeed, in many large cities, orthodox retail jewelers complain that their principal function appears to be one of providing facilities where potential discount house customers may check the list prices of desired merchandise. Since many discount houses are now issuing catalogs for mail-order customers, it is possible that their influence may spread beyond the confines of the urban marketing areas in which they have heretofore operated.<sup>3</sup>

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<sup>1</sup>U. S. Tariff Commission, Watches, Movements and Parts (Washington, 1954), p. 16.

<sup>2</sup>J. C. Burritt, U. S. Tariff Commission analyst, in an interview with the author, August 11, 1953.

<sup>3</sup>In October, 1953, the faculty of the University of Maryland received circulars (offering Benrus and Bulova watches among other merchandise) from a discount house in Flint, Mich.

The situation in the Washington, D. C., area provides an excellent example of discount house operations.<sup>1</sup> The Washington situation may differ, however, from other cities because of the large number of federal employees in the area and because the absence of a D. C. "fair-trade" law permits the discount houses to advertise their branded wares quite openly.

In Washington there are some 150 federal employees' "recreational clubs", which seem to perform the primary function of distributing courtesy cards for discount houses. In many cases federal employee credit unions publicize the fact that they will finance purchases from discount houses. As a result, the discount houses have proliferated in the area, accounting for a large portion of the retail business transacted. It is conservatively estimated that at least half of all jeweled watch sales in the Washington marketing area are made by discount houses.<sup>2</sup> This proportion of sales may be approached in any other large cities in which discount houses have developed.

The economic value of the discount house operation is open to serious question in the case of jeweled watches. The individual discount house, competing on a price basis, may give customers the advantage of purchasing merchandise without paying for more than a bare minimum of selling cost. On

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<sup>1</sup>Information on Washington discount house operations has been obtained from Mr. Bernard Burnstine, chairman of the D. C. Business Practices Council.

<sup>2</sup>Ibid.

the other hand, there is some merit to the argument of orthodox retailers: "We perform the selling function, and the discount houses make the sales". To the extent that customers refuse to buy from discount houses until they have paid a few "just looking" visits to retailers, the true reduction in selling costs to the economy as a whole is less than what it appears to be when one limits his view only to the discount houses.

A second factor arises from the willingness of some discount house operators to stretch their ethical principles. This is especially true in the case of jeweled watches. Because of the wide range of models offered, the average customer is incompetent to judge the value of any particular watch. Thus exorbitant markups may readily precede any discounts, simply by switching the printed price tags on particular watches. It is not unusual, in Washington at any rate, for the unwary customer to buy "a \$71.50 Hamilton for 25% off", only to learn later that he had paid \$54 for the regular \$52.50 model.

Nevertheless, it appears at present that discount houses will continue to be an important outlet for jeweled watches. Some watches reach discount houses from small retailers who must liquidate inventories in order to meet their own obligations. In the cases of five of the six major sellers of watches (Elgin, Bulova, Gruen, Benrus and Longines-Wittnauer), it is clear that the firms themselves abet the operations of discount houses, despite all pious protestations to the contrary. The most typical channel is one in

which the manufacturer sells, say, five hundred watches to a small retailer who has never sold over fifty a year, knowing full well that said retailer will resell them (the standard markup here is ten percent over wholesale) to some discount house. Elgin, which "went direct" in 1946, continues to sell to several jobbers in Philadelphia, a leading center of discount house supplies in the Middle Atlantic states. In the cases of Benrus and Bulova, several discount operators queried by the D. C. Business Practices Council responded, "No problem at all; we order them from the factory".

The curtain may be rung down on "The Discount House Problem" with one choice anecdote, illustrating that even the discount houses themselves have problems. The head of the D. C. Business Practices Council recently received this call: "Bernie, this is \_\_\_\_\_. I'm selling watches and jewelry at twenty percent off, and that's the best I can do. Now some \_\_\_\_\_ down the street is selling the same stuff at thirty percent off. Can you people do anything about it?".



## CHAPTER VI

### COMPETITION IN THE INDUSTRY

The degree of competition among suppliers of jeweled watches has been considerably greater in the years since World War I than it was in the period from 1890 to 1914. This increased competition has been due in large measure to the presence of importers and assemblers in the market. It should be noted, however, that competition among the major firms (at least on the surface) has been directed towards product differentiation and selling costs, rather than towards price reduction.

The purpose of non-price competition is to shift the demand curve of the individual firm, i.e., to secure for that firm a larger share of the total market (or from a defensive standpoint, to protect the share which the firm already enjoys). The inability of consumers to judge the differences in quality among various models and brands of watches (as well as the beliefs of the same consumers that there are differences in quality) provides ample reason for the attention given by major firms to non-price competition.

Dorfman and Steiner have described a market situation which is clearly applicable to the jeweled watch industry; ". . . markets in which products are differentiated and in which product differences are important to consumers but are

difficult for them to measure".<sup>1</sup> In such markets price-elasticities of demand for individual brands tend to be low for two reasons. First, unilateral changes in price structures invite retaliatory action by competitors. Second (and more important in watch markets), price-brand preferences indicate consumer uncertainty which makes consumers reluctant to respond to price changes.

A psychologist, H. J. Leavitt, has in fact suggested that in such markets price reductions may be self-defeating.<sup>2</sup> When consumers are uncertain about quality differences between two brands or models of a product, price itself tends to be taken as an index of quality. Price reductions in a particular brand may be viewed as an indication that quality has been reduced.

In the watch market, one may agree with Dorfman and Steiner that "consumer uncertainty blurs the sharp edge of preferences and replaces a cardinal ranking by something more like an ordinal one. The result is reduction in the effectiveness of changes in the price gaps between brands. At the same time consumers' uncertainty has the effect of increasing the marginal effectiveness of advertising, because consumers will not hold firmly to their appraisals of the relative merits of competing products. These circumstances

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<sup>1</sup>R. Dorfman and P. O. Steiner, "Optimal Advertising and Optimal Quality", American Economic Review, December, 1954, VLIV, pp. 826-36.

<sup>2</sup>H. J. Leavitt, "A Note on Some Experimental Findings about the Meaning of Price", Journal of Business, July 1954, XXVII, pp. 205-210.

are conducive to heavy advertising expenditures."<sup>1</sup>

Advertising budgets are one of the most closely guarded trade secrets in the jeweled watch industry. Nevertheless, fragmentary information occasionally appears regarding the expenditures of individual companies. Several examples may be given.

Elgin spends \$1.25 million a year on magazine and newspaper advertising (based on 1953 figures).<sup>2</sup> The company also sponsors a network television show (an hour of drama sponsored on alternate weeks by Elgin and U.S. Steel) which costs about \$2.3 million.<sup>3</sup> In addition this firm is one of the larger users of "spot" television advertising.<sup>4</sup> Thus Elgin's advertising budget probably exceeds \$4 million, or about ten percent of watch sales.

Longines-Wittnauer approaches the \$5 million mark (roughly sixteen percent of sales) in advertising. The company's television program, "Chronoscope", costs at least \$2.5 million a year.<sup>5</sup> Time charges for its extensive radio

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<sup>1</sup>R. Dorfman and O. Steiner, op. cit., p. 830.

<sup>2</sup>Publishers' Information Bureau figures supplied to the author by the American Association of Advertising Agencies, letter of April 30, 1954.

<sup>3</sup>U. S. Steel's budget for its share of the series is \$2.3 million (Broadcasting-Telecasting, November 1, 1954, p. 84). Elgin's budget could be somewhat above or below this figure, depending upon the station line-up utilized.

<sup>4</sup>"Leading Buyers of TV Spot Commercials", Broadcasting-Telecasting, June 14, 1954, p. 79.

<sup>5</sup>Production costs estimated at \$27,500 a week for 52 weeks (Broadcasting-Telecasting, September 13, 1954, pp. 104-105). Net time costs estimated by the author on the basis of CBS charges for its basic required group of stations (published by Standard Rate and Data Service, November 10, 1954).

offerings (five evening quarter-hours, six five-minute news broadcasts, and a Sunday afternoon half-hour) would come to \$1.3 million.<sup>1</sup> A conservative guess of radio production costs would be another half million. Finally, the company spends about \$300,000 a year on magazine advertising.<sup>2</sup>

The Bulova Watch Company has for some years been a leading advertiser in spot radio and television. No figures on spot advertising are published, but "the word in the advertising trade" is that Bulova currently spends \$3.50 to \$4 a watch for radio and television spots.<sup>3</sup> With sales in excess of 2.3 million watches, this would indicate that Bulova's radio and television advertising budget alone exceeded \$9 million in 1954.

It is obvious that advertising efforts, as percentages of sales, vary considerably from company to company among the major firms. One of these firms has stated that the "guesstimates" of competitors' activity upon which it based its own 1954 advertising budget range from six percent of gross watch sales for Hamilton to eighteen percent each for Bulova and Benrus.<sup>4</sup> The author's estimates for the other

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<sup>1</sup>Net time costs (forty weeks) estimated by the author on the basis of CBS radio charges (published by Standard Rate and Data Service, November 10, 1954).

<sup>2</sup>American Association of Advertising Agencies, letter cited.

<sup>3</sup>Information received from the research director of a national radio and television network, personal interview.

<sup>4</sup>Information received from the public relations director of a major watch manufacturing firm, letter of April 8, 1954. In partial support of this source, it may be pointed out that Bulova published "advertising and selling expense" in its annual reports up to 1950 (see Moody's Manual of Investments). For the years 1936-1940 and 1946-1950 (during which defense

three firms are ten percent of sales for Elgin, twelve percent for Gruen, and sixteen percent for Longines-Wittnauer. Weighting these estimates by the 1953 sales of each company, it appears that for the industry as a whole, advertising amounts to fourteen percent of sales.

In Table 10 below, the author has estimated advertising expenditures by the six major firms in recent years (assuming that advertising has averaged fourteen percent of sales). It should be noted that the sales figures for civilian watches are themselves estimates. These have been based upon findings by the Tariff Commission that the shares of Elgin, Hamilton and Bulova sales accounted for by defense contracts amounted to thirty-two percent in 1953, eighteen percent in 1951 and three percent in earlier years.<sup>1</sup> Benrus and Gruen sales have been adjusted by twenty percent for 1953 and ten percent for 1951. Longines-Wittnauer's participation in defense contracts appears to have been negligible.

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business was negligible) advertising expense averaged just over 18% of net sales.

<sup>1</sup>U.S. Tariff Commission, Watches, Movements, and Parts (1954), Report to the President on Escape-Clause Investigation No. 26 (Washington, 1954), p. 13.

TABLE 10

ESTIMATED SALES OF CIVILIAN WATCHES AND ADVERTISING  
EXPENDITURES BY SIX MAJOR COMPANIES

Year	Sales (thousands)	Advertising (thousands)
1953	\$177,000	\$24,800
1952	172,300	24,100
1951	165,500	23,100
1950	149,000	20,800
1949	124,300	17,400
1948	138,200	18,300
1947	125,000	17,500

Source: Total sales of the Elgin, Hamilton, Bulova Gruen, Benrus and Longines-Wittnauer watch companies, as reported in Moody's Industrials, adjusted to eliminate estimated sales on government contract.

Pricing policies of the major firms reflect the product differentiation discussed above, Chapter IV. Each manufacturer uses a small number of basic movements (never more than a dozen) differing primarily in size and shape as the foundation for an imposing product line of two to three hundred "models". The primary purpose of this is to secure as much as possible of the "consumers' surplus" which would exist if the firm standardized its output and offered this at a single price.<sup>1</sup>

The first price problem to be faced by any firm is the decision as to the range over which it will offer its products. Thus, Benrus aims at what it calls a "popular price" line, with models starting at \$25; although this company

<sup>1</sup>See Joel Dean, "Problems of Product-Line Pricing", Journal of Marketing, January 1950, XIV, p. 522; E. W. Clemens, "Price Discrimination in the Multiple-Product Firm", Review of Economic Studies, 1950-51, XIX, p. 10.

offers models ranging in price up to \$350, ninety-six percent of its sales are at prices below \$71.50.<sup>1</sup> Hamilton places more emphasis upon quality, with a bottom price of \$50; in Hamilton's case, only seventy percent of the firm's watches are sold in the range below \$71.50.<sup>2</sup> Longines-Wittnauer plays heavily upon the prestige theme ("Winner of Ten World's Fair Grand Prizes"). Although this firm offers watches in the same ranges as Hamilton, more than half of its physical volume and two-thirds of its dollar volume of sales arise from models selling at more than \$71.50.<sup>3</sup>

The second problem is to develop the product line within the chosen price range. This is done by manipulating dials, cases and straps. Put a movement in a stainless steel case, call it the "Vardon" model, and offer it at \$57.75.<sup>4</sup> Place it in a gold-filled case, call it the "Haddon", and price it at \$69.50. In an 18K gold case, our movement becomes the "Kirk" at \$135 and, with a slightly different dial and case, the "Kingdon" at \$150.

At the risk of tautology, the reasoning behind product-lining of watches may be examined here. It is a reasonable

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<sup>1</sup>Hamilton Watch Company v. Benrus Watch Company, Inc., 114 F. Sup. 307, p. 311.

<sup>2</sup>Ibid., p. 311.

<sup>3</sup>Longines-Wittnauer Watch Co., Annual Report, 1953, p. 3.

<sup>4</sup>The examples of different "models" containing the same movement have been taken from the 1953 catalog of the Hamilton Watch Company. The extent of Hamilton's differentiation may be seen in the fact that the catalog contains 147 models (including the Illinois line) at 64 different prices, ranging from \$57.75 to \$350.

hypothesis that individual demand curves for watches, at prices below which the individuals in question enter the market, are highly inelastic. The person who will buy one watch at \$150 would in most cases buy only one watch at \$57.75, if the firm's output were standardized. The person who comes into the market at \$69.50 will not buy any more watches at \$57.75 than he would at the higher price. The only trick is to differentiate the product sufficiently so the potential \$150 customer thinks that his purchase carries two and one-half times the prestige of the \$57.75 customer's purchase.

The advantages of price discrimination of this sort depend upon the firm's ability to keep the marginal costs of product differentiation for alternative models below the resultant price differentials. The simplest method of accomplishing this end is to base selling prices upon "full costs" with a standard percentage of gross margin for each model. A hypothetical (but typical) case of a firm using the same movement in three models is shown below: Model "A" has a gold-filled case, a simple dial and a leather strap, Model "B" has a 10K gold case, and Model "C" has a 14K gold case, a gold expansion bracelet, silver dial and gold hour markers.



TABLE 11

HYPOTHETICAL PRICE DISCRIMINATION CASE

	"A"	"B"	"C"
Retail Price (tax included)	\$52	\$80	\$140
Wholesale Price	\$24	\$36	\$ 64
Movement Cost	\$12	\$12	\$ 12
Cost of case, dial and strap	\$ 6	\$15	\$ 36
Gross Margin	\$ 6	\$ 9	\$ 16
Ratio: Gross Margin to Movement	50%	75%	133%

It is a reasonable hypothesis that a pricing formula similar to the one above is used by every major watch manufacturer. The author submitted a comparable example to five of the "Big Six" firms and received four replies. Two firms stated that the comments requested involved highly confidential information. A third firm replied that "our practice is to use a gross profit formula method for pricing", but also argued that "in our case there is not as much difference in the gross profit on a movement as you suggest". The fourth firm (one which has consistently given the author the most candid answers to his inquiries) explained its policies as follows: "Quite generally, our pricing, because our business is so competitive, aims to earn a standard percentage of profit on each watch sold... Your for-instance example comes very close to returning the same percentage of profit on actual costs--and would not be too far off from an equitable and uniform pricing formula".

One aspect of competition, which helps to explain the

multiplicity of models offered, is that each firm endeavors to "cover" its price range as completely as possible. This may involve some modification of profit margins on particular models; i.e., the standard percentage margin on a given model may be sacrificed to permit this model's sale at a particular retail price which would otherwise be a "gap" in the overall line. Alternatively, inverted pricing may be practiced. The firm may decide that a gap in its line exists and then produce a model at a cost which "justifies" a price to fill the gap. Thus the fourth firm referred to in the preceding paragraph finds that "sometimes it is advantageous to case a less expensive movement in a gold case to fill a gap in our price range".

Price competition, at least through 1952, has been more heavily emphasized at the wholesale level rather than at retail, as far as the major brands are concerned. Here the principal competitive device has been the "markup" suggested to the retailer (the major brands are all sold directly to the retailer by the manufacturer). Thus Hamilton has been a "high-priced" watch to retailers in the past, since the markup was only eighty percent over the wholesale price.<sup>1</sup> Elgin's markup is 100% on most models, while the margins on nationally advertised assembled watches range from 90% to 125%.<sup>2</sup> Since it is generally believed in the industry

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<sup>1</sup>"Hamilton Watch", Fortune, January 1947, p. 106.

<sup>2</sup>U. S. Tariff Commission, Watches, (Washington, 1947), pp. 7, 80.

that the retailer will "push" those items with the highest markups, such markups are often used competitively. Two examples may illustrate this point.

Mr. S. Ralph Lazrus, testifying before the Tariff Commission, said that Benrus's policy is to give the retailer a choice of markups: "We produce lots of watches of equal cost and equal value to sell at different prices".<sup>1</sup> In other words Benrus produces groups of watch models each of which may be advertised at higher or lower retail prices than other models with the same wholesale cost to the retailer. The retailer makes his choice on the basis of the markup he desires. Says Mr. Lazrus, "50%?--we have a watch for him. 55%?--we have a watch for him."<sup>2</sup>

Hamilton affords another example of this competitive pressure. Prior to 1946, Elgin, Waltham and Hamilton all distributed their products through jobbers to the retailers. Elgin and Waltham had markups of roughly 25% over factory price for the jobber and 100% over the jobber's price for the retailer; Hamilton's respective markups were 20% and 80%. Elgin and Waltham turned to direct selling to retailers in 1946. Since their old retail markups were felt to be competitive with the markups on assembled watches, these two firms took unto themselves the old jobber's markup and maintained the same pattern of wholesale prices to the retailer.

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<sup>1</sup>Stenographic transcript, "U. S. Tariff Commission hearing on Watches and Parts under the escape clause of the Trade Agreement with Switzerland" (Washington, 1951), p. 1204.

<sup>2</sup>Ibid., p. 1205.

Hamilton has apparently come to the conclusion that its 80% markup was not competitive.<sup>1</sup> When the company "went direct" in the fall of 1952, it absorbed the additional cost of maintaining a sales force required for direct selling and lowered prices to the retailers. Thus Hamilton's retailers now enjoy the "full markup" of 100%.

Cumulative quantity discounts and advertising allowances have also been employed by four of the major firms. In March, 1952, the Federal Trade Commission found Bulova, Elgin and Gruen guilty of violating the Robinson-Patman Act through the granting of discriminatory advertising allowances; at the same time, a complaint was issued against Benrus, charging price discrimination.<sup>2</sup>

In the advertising allowance cases, the three firms made payments to some of their customers as compensation for

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<sup>1</sup>According to Bernard Burnstine (Chairman of the D. C. Business Practices Council), one of Washington's largest credit jewelers forbade his salesmen to sell more than one or two Hamilton watches a month, because of the low markup.

<sup>2</sup>The four F.T.C. cases, with the action thereon are:

"In the Matter of ELGIN NATIONAL WATCH COMPANY", Docket No. 5837. (Complaint: January 4, 1951. Decision: March 24, 1952. Compliance Report: January 13, 1953.)

"In the Matter of BULOVA WATCH COMPANY, Inc.", Docket No. 5830. (Complaint: December 1, 1950. Decision: March 24, 1952. Compliance Report: January 6, 1953.)

"In the Matter of THE GRUEN WATCH COMPANY", Docket No. 5836, (Complaint: January 4, 1951. Decision: March 24, 1952, Compliance Report: March 10, 1953.)

"In the Matter of THE BENRUS WATCH COMPANY, Inc., Docket No. 5969. (Complaint: March 24, 1952. Consent Settlement: November 6, 1952.)

advertising expenditures by these customers; in each case the amount of the allowance varied directly with the annual volume of purchases from the manufacturer. Bulova paid no allowances to those customers who purchased less than \$10,000 worth of watches a year (more than 8,000 of Bulova's 8,700 customers in 1948 were in this category). The remaining customers received allowances ranging from one percent of the dollar volume of purchases for customers in the \$10,000 to \$20,000 bracket to ten percent for customers taking over \$1 million worth of Bulovas annually. Gruen's allowances ranged from two percent for customers with annual wholesale volumes of less than \$15,000 to eight percent for those with volumes of \$500,000 or more. Elgin provided no allowances for customers with annual volumes of less than \$1,500 (14,300 of Elgin's 15,000 customers in 1948). Customers in the \$1,500 to \$2,500 bracket were entitled to allowances equal to three percent of their volumes. Customers in higher volume brackets received higher percentage allowances; in the top bracket (\$150,000 and over), three customers received lump sum payments of \$22,150 each plus twenty percent of purchases in excess of \$150,000.

Only Benrus was charged with open price discrimination. This company paid rebates (not dependent upon advertising expenditures or any other services provided by the customer) ranging from one percent for customers in the \$2,000 to \$4,000 bracket to eight percent for customers buying more than \$75,000 worth annually. One customer, whose purchases amounted to \$385,000 in 1948, was granted "special list

prices" which were equivalent to a fourteen and one-half percent rebate.

In all of these cases the Federal Trade Commission held that the discriminatory practices operated to give large retailers unfair advantages over competing smaller retailers in the consumers' market. The Commission offered the further argument in the Benrus case that Benrus' discounts were unfair competition to other watch manufacturers, since they encouraged retailers to channel their orders over time to Benrus in order to secure the highest possible discounts.

Unfortunately for outside observers, all four cases were settled by consent, and no litigation in open court arose.<sup>1</sup> Thus the question of whether or not the "advertising allowances" may have been concealed rebates to favored customers cannot be answered. Regardless of this possibility, it is clear that price discrimination existed. A large wholesale customer and a small one may have paid identical wholesale prices for a watch, but the larger customer received more for his money--the watch plus an advertising subsidy.

Open price competition at the retail level among the major firms is rarely seen, for reasons indicated in Chapter IV. Basically it is felt that such competition destroys the

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<sup>1</sup>The hearing transcripts in these cases are not much help. The F. T. C. trial examiners showed a disconcerting willingness to permit the hearings to go "off the record" whenever the subject matter was at all sensitive to the defendants.

"prestige" associated with particular brand names.<sup>1</sup> Nevertheless it would be wrong to conclude that price competition of a sort does not exist at all among the major brands. The multiplicity of "models" offered by each firm means that prices can generally be "lowered" by increasing the output (and advertising) of lower-priced models, rather than by open price reduction, and that prices can be "raised" by increased offerings of higher-priced models.

A closer approach to price competition may be seen in the recent growth of trade-in allowances. Throughout most of 1953 and 1954, Bulova has urged consumers to trade in their old watches on new Bulovas. The trade-in allowance generally exceeds the secondhand market value of the watches turned in; this "loss" is borne by the jeweler, not by Bulova.<sup>2</sup> Effectively, the company has granted permission, through this policy, to the individual retailer to cut the fair-trade prices on Bulova watches to any prices which the retailer himself is willing to accept. In turn retailers themselves have extended trade-in allowances toward purchases of other brands, without either overt sanction or disapproval from the other major manufacturers. In the same key, the extent to which all of the major manufacturers except

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<sup>1</sup>Two domestic manufacturers who have recently begun to import Swiss movements for use in watches retailing at lower prices than their customary lines offer these watches under different brand names, (Elgin's "Wadsworth" and Hamilton's "Illinois" lines). This is done to preserve the prestige of "fine American movements" in their regular lines.

<sup>2</sup>Interview with Bernard Burnstine, Washington jeweler and head of the District of Columbia Business Practices Council, October 16, 1953.

Hamilton have permitted their merchandise to flow through discount houses may also be taken as an indication of retail price competition.

To the author's knowledge, there have been only two cases in which price competition has taken the form of reductions advertised by the manufacturers themselves. For two-week periods in the spring and fall of 1954, Gruen offered its new models at "special introductory prices" which were from ten to twenty percent lower than the regular list prices of these models. And for a six-week period in the late spring of 1954, Elgin had an advertised sale, with all Elgin models offered at twenty percent reductions (both wholesale and retail). There is no indication, however, that these sales will become a regular aspect of the competitive pattern in the industry.<sup>1</sup>

The chief competitive pressures upon price come from producers of unadvertised assembled or imported watches. Markups on these watches are customarily higher than on the nationally advertised brands, but the retail price is decided by the individual retailer. Thus a watch which wholesale for \$7.50 might be sold at prices ranging from \$10 to

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<sup>1</sup>Both of these cases may have reflected desperation, rather than any voluntary price policy. Jeweled watch markets were soft in early 1954. In Gruen's case a completely new management assumed control in March and was almost immediately faced with the cancellation of a \$20 million fuse contract (Moody's Industrials, June 12, 1954). Elgin's move occurred in the face of excessive inventories and first quarter operating losses (Moody's Industrials, June 30, 1954). Other companies were apparently able to reduce production without cutting prices.



\$30 by different retailers.<sup>1</sup> The growing importance of department stores in the distribution channels for jeweled watches has accentuated this competitive pressure. With relatively lower overhead than the retail jewelers, the department stores have been willing to accept lower than "normal" markups on the non-advertised brands.<sup>2</sup> The willingness of reputable department stores to guarantee this merchandise appears to secure for it much of the consumer acceptance formerly reserved for the "name brands".

The number of movements imported for unadvertised brands rose sharply during World War II and in the early post-war years, when most of the nationally advertised brands were in short supply. As shortages of the major brands disappeared in 1948, the relative oversupply of the unadvertised brands became apparent. Imports fell in 1949, but rose sharply again after the outbreak of war in Korea, in the expectation that the major brands would again become scarce. As this has not occurred, minor brands have been offered at cut prices since early 1949, which has helped to forestall price rises among the advertised brands.

Despite the competitive pressure of the assemblers, both Elgin and Hamilton have had little difficulty in disposing of their outputs in the years since World War II.<sup>3</sup>

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<sup>1</sup>U.S. Tariff Commission Investigation No. 4 under Executive Order 10092 (1951), Brief in Behalf of the American Watch Association, Inc., p. 60.

<sup>2</sup>U.S. Tariff Commission, Watches, Watch Movements, Watch Parts, and Watchcases, Report to the President (Washington, 1952), pp. 28, 97.

<sup>3</sup>This statement would be disputed by the domestic firms.

Indeed it is possible that the principal limitation upon the domestic industry's ability to capture a larger share of the great postwar jeweled watch market has been plant capacity.

Expansion of output beyond current levels is considerably more difficult for domestic producers than it is for the assemblers. The assemblers, as was indicated above, secure a large portion of their parts (and often complete movements) from outside suppliers in the Swiss industry. Output can be increased in the short run by making wider use of the facilities of these outside suppliers, with little or no new investment by the assemblers proper. This has been a relatively simple matter for many years; widespread unemployment in the Swiss industry prior to World War II and postwar import restrictions in markets alternative to the United States seem to have made Swiss firms anxious to cooperate with requests of American assemblers.

The domestic producers, on the other hand, are fully integrated (except for jewels, which are imported). Thus any substantial expansion at the present time involves heavy new investment by the producing firms. And this is "investment" in a very real sense. There are no producers of watch-making machinery, as such, in this country as there are in Switzerland.<sup>1</sup> Some machines have been imported from that

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During the 1951 Tariff Commission escape clause hearings, Elgin and Hamilton claimed the ability to produce 800,000 more movements annually than the 2 million they were producing (an all-time peak). Even if these estimates were accurate, the domestic industry could still satisfy no more than one-third of the domestic jeweled watch market.

<sup>1</sup>The problem of economies or diseconomies of integration will be discussed in Chapter X.

country in the past, but the Swiss are understandably reluctant to contribute to the success of their major competitors. So the domestic firms are forced to produce as much as ninety percent of their ~~new~~ machinery in their own plants.<sup>1</sup> When these plants are operating at capacity, as at present, this capacity can only be expanded by diverting designing facilities and skilled labor from the production of watches to the production of machinery. Long-run expansion of capacity may require a short-run sacrifice of current output.

The possibility of an increase in domestic capacity by the entry of new firms into the industry is exceedingly remote. It may be estimated that construction of an integrated plant with a respectable capacity of 500,000 movements a year would cost \$5 million; a million movement plant would cost \$8 million.<sup>2</sup> Plant costs, however, are only a part of the picture. Since the new entrant would have to construct most of its own machinery and train its labor force, the time factor is important. Arde Bulova has said that even with the help of Swiss technicians, his firm required nearly fifteen years to develop an efficient integrated system of production in this country.<sup>3</sup>

Apart from the initial plant costs and the time requirements, the task of breaking into the established markets of

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<sup>1</sup>U.S. Tariff Commission, Watches (Washington, 1947) p. 118.

<sup>2</sup>James G. Shennan, President of the Elgin Watch Company, supplied these estimates to the author (April 8, 1954) on the basis of Elgin's engineering studies of the problem.

<sup>3</sup>U. S. Senate Committee on Armed Services, Hearings before Preparedness Subcommittee No. 6, (83d Congress, 2d Sess., (1954), p. 68.

the major manufacturers might well prove to be insurmountable. As an example, the George W. Borg Corporation has apparently considered the manufacture of jeweled watches. On the basis of its experience in making automobile clocks and military timing devices, this company may be technically competent to enter the field. Its decision to stay out of jeweled watch manufacturing was made primarily upon considerations of the merchandising and marketing problems which it would face.<sup>1</sup>

A second approach might be for new entrants to operate initially with parts purchased from other domestic or Swiss firms with a program of gradually building up its own manufacturing facilities. To this it may be categorically stated that the opportunities for new entrants to start on a small scale with non-integrated plants are simply nonexistent. Three recent attempts in this direction are worthy of note.

Roland Gsell, a large importer-assembler, operated the Mount Vernon Watch Company from 1935 to 1942.<sup>2</sup> Since his plant was too small to permit vertical integration, Gsell was forced to rely upon Swiss sources for most of his parts. No domestic producer would supply him, although there was idle capacity in the industry at the time. Waltham, for example, refused to fill even small orders for watch screws. Gsell closed the plant when World War II threatened his Swiss

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<sup>1</sup>Ibid., p. 172.

<sup>2</sup>U.S. Tariff Commission, transcript cited, pp. 847-850.

supplies; the plant and equipment were sold to Gruen.

Benrus also attempted to manufacture movements, using a large proportion of Swiss parts, from 1933 to 1941.<sup>1</sup> The Waterbury Clock Company was purchased for this purpose. Benrus originally intended to sell its "Central" watches through jobbers to the regular trade. This was prevented by an Elgin edict to the jobbers that they could carry "Elgin watches or Central watches, but not both".<sup>2</sup> After several years of selling its output exclusively to Montgomery Ward, Benrus converted the plant to military production. With the conclusion of hostilities, the plant was liquidated in 1946.<sup>3</sup>

The refusal of domestic producers to assist new entrants has been paralleled since 1941 by the rigid refusal of the Swiss industry to permit the export of ébauches and detached parts to foreign manufacturers. The sole exception to this embargo, as far as the United States is concerned, has been the Gruen Watch Company. In 1941 Gruen was able to secure permission from the Swiss Federal Council to import parts for use in domestic movement manufacturing.<sup>4</sup> Production began

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<sup>1</sup>Ibid., pp. 1172-1175.

<sup>2</sup>Ibid., p. 1174.

<sup>3</sup>A recent anti-trust suit filed by the Department of Justice against Benrus, among other firms, charges that Benrus abandoned the plant pursuant to an agreement with the Swiss "Superholding" organization (U.S. v. The Watchmakers of Switzerland Information Center, Inc., et. al., Civil Action No. 96-170, U.S. District Court, Southern District of New York, paragraph 29).

<sup>4</sup>Court of Arbitration of the Collective Convention of the Swiss Watch Industry of April 1, 1949, "Judgment in the case of the Swiss Confederation of Watch Manufacturers' Associations v. Gruen Watch Company, S.A.", translated and reproduced in U.S. Senate Finance Committee, Hearings on H.R. 1612, 82d Congress, 1st Sess. (1950).

late in 1948 at Norwood, Ohio. Severe restrictions limit this operation: Gruen has committed itself to purchase at least 300,000 movements annually from Switzerland and to confine its domestic production to twenty percent of the actual number of units imported in any year. It is highly unlikely, at present, that another firm could make a similar arrangement to import parts even under the restrictions which Gruen has accepted.

In view of this situation, it is not surprising that the most recent attempt to enter the domestic watch manufacturing field was directed towards acquiring control of an existing firm. In January, 1952 Benrus began to purchase Elgin stock.<sup>1</sup> By March, apparently having bitten off more than it could chew, Benrus began to sell its Elgin stock and to transfer its attention to Hamilton. Within six months, Benrus held a twenty-five percent interest in the latter firm.<sup>2</sup>

On February 7, 1953, Hamilton filed a complaint in the United States District Court (Connecticut) charging that the Benrus purchases violated Section 7 of the Clayton Act and prayed for an order enjoining Benrus from voting its Hamilton stock, pending the Court's decision upon the complaint.

Benrus' defense rested primarily upon its contention that the company purchased Hamilton stock solely as an investment and that it wished to exercise voting privileges

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<sup>1</sup>Hamilton Watch Company v. Benrus Watch Company, Inc., 114 F. Sup. 307, p. 312.

<sup>2</sup>Ibid., p. 313.

in order to protect this investment.<sup>1</sup> Secondly, the company argued (a) that even if it had intended to control Hamilton, the organization of a voting trust by Hamilton's management had effectively prevented this, and (b) that if Benrus had been able to gain control of Hamilton, competition in the industry would not have been substantially reduced (since the combined sales of the two companies were less than the sales of either Elgin or Bulova).<sup>2</sup>

On the basis of its findings of fact, the District Court concluded as matters of law that the Benrus purchases were not solely for investment, but rather to exercise a degree of control over Hamilton which would substantially lessen competition within the meaning of the Clayton Act (Section 7); further, the Court concluded that possible election of a "Benrus director" on the Hamilton board constituted an imminent threat of harm, enjoinable under the Clayton Act (Section 16).<sup>3</sup> On these grounds, the relief sought by Hamilton was granted in a preliminary injunction entered on April 13, 1953.

Upon appeal by Benrus the Circuit Court of Appeals (2d) upheld the preliminary injunction.<sup>4</sup> Two major questions were

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<sup>1</sup>See the pre-trial deposition and the answering affidavit of S. Ralph Lazrus before the District Court and Defendant-Appellant's brief before the Court of Appeals (2d). To this argument, District Judge Hincks replied with some feeling, "In my judgment such a finding would have been naive" (114 F. Sup. 315).

<sup>2</sup>Hamilton Watch Company v. Benrus Watch Company, Inc. (C.C.A. 2d) 206 Fed. 2d 738.

3114 F. Sup. 314, 315.

<sup>4</sup>206 Fed. 2d 738.

considered by the Court. In the first place, Benrus argued that it had not violated the Clayton Act, so the plaintiff could not hope for final relief. The Circuit Court agreed that if this were the case, the preliminary injunction was an obvious error, "But the record clearly indicates that the court, after a trial, might readily find Benrus guilty".<sup>1</sup> Thus the preliminary injunction was a proper policing measure to prevent the parties from harming one another during litigation.

The second question was whether or not Judge Hincks, in granting the injunction, had exceeded the bounds of discretion outlined in Section 16 of the Clayton Act. Said the Circuit Court, "Here no substantive harm from the injunction to defendant is preceptible; but the hardship to plaintiff, were there no injunction, would be very considerable...In the light of the evidence before the judge and his findings not unreasonably derived therefrom, we hold that he surely did not 'abuse' his discretion".<sup>2</sup>

After further reflection on its chances in a court trial (as distinct from the injunction hearing), Benrus decided that discretion was the better part of valor. An out-of-court settlement was reached whereby Hamilton purchased the 92,000 shares of Hamilton stock owned by Benrus and the parties agreed by mutual consent to drop further litigation.<sup>3</sup>

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<sup>1</sup>Ibid., p. 740.

<sup>2</sup>Ibid., p. 743.

<sup>3</sup>New York Times, May 6, 1954.



These difficulties in the way of expansion mean that the bulk of the domestic market will be supplied, for some years to come, by imported movements if demand remains at the current level of roughly ten million movements a year. Present capacity of the domestic firms is about 3.6 million movements a year.<sup>1</sup> This represents an increase of some forty percent in capacity since 1929, although the demand for jeweled watches has increased two and one-half times since that date.<sup>2</sup> Most of this increase in capacity occurred prior to 1941 (reflecting the development of Bulova's domestic movement plant from 1931 to 1941). Investment in the years since 1945 has been heavy, but the bulk of this appears to have been directed towards the replacement of obsolete machinery and the improvement of operating efficiency within the limits of present capacity. The only notable case in which domestic capacity has been increased since World War II has been the opening of the new Elgin plant at Lincoln, Nebraska.

In summary, the supply conditions of the jeweled watch industry present an excellent picture of monopolistic competition. The average watch buyer is unable to judge the

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<sup>1</sup>This is the author's estimate, based upon various disconnected reports of employment and daily capacity of individual firms, annual output of the industry, and so forth. The estimates for individual firms appear below, in Chapter X.

<sup>2</sup>Cf. U.S. Department of Commerce, Postwar Watch Markets (Washington, 1950), p. 25:

"Capacity in 1929 was estimated at 3,700,000 movements". No basis is given for this estimate, and it appears to be highly exaggerated. The author's most generous estimate for 1929 is a capacity of 2.1 million movements. Peak production up to 1929 was 1.74 million movements, according to the Department of Commerce.

quality of the product he purchases, yet it represents a substantial monetary outlay. Hence, he relies to a great extent upon the "reputation" of the manufacturer. Each of the major producers, in consequence, has a degree of monopolistic control over some segment of the market. At the same time, the average buyer is influenced by the outward appearance of the watches he is offered, and so the market control exercised by any single producer is a fragile thing. He may lose it at any moment to some other producer who is able to catch the public fancy with a new style of case, or a smaller movement, or a different watch band, or a more attractive gift carton. Therefore any monopolistic profits which the major producers may enjoy (gross margins for the major firms have averaged thirty percent or more of sales in recent years) tend to be speedily dissipated in the development of new styles and larger advertising campaigns.

Competition is further heightened by the presence of that small but influential segment of the industry which consists of assemblers and importers who offer watches which are unadvertised or advertised only in limited local markets. This group has to compete principally upon a price basis, since for the most part its brands are "unknown" to prospective buyers. Entry into this segment of the industry is relatively simple, as capital requirements are low.<sup>1</sup> Thus any rise in the general level of watch prices may bring new

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<sup>1</sup>A large number of assemblers have no fixed assets. They operate by buying movements, cases and accessories and may have fewer than half a dozen employees each.

entrants into the field and lead to price cutting in local markets. The major producers avoid direct price cutting in response to this; but it has been a factor in recent years which has influenced some of the largest producers to increase their offerings in the lower price categories.<sup>1</sup>

The results of monopolistic competition in the jeweled watch industry cannot be adequately assessed. What the situation of the industry might have been if competition had been purely upon the basis of price rather than selling costs is moot. The very ignorance of the vast majority of buyers in retail markets precludes one of the most important requirements for a perfectly competitive market. Does excess capacity exist? This may well have been the case prior to World War II. At present, with a high level of consumption, domestic capacity appears to be fully utilized.<sup>2</sup> Is entry into the domestic movement manufacturing industry difficult? The answer is "yes", but the extent to which this reflects barriers raised by present producers versus the extent to which it reflects the competition afforded by the importer-

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<sup>1</sup>As an example, in March of 1952 Elgin announced seventeen new models. Fifteen of these were priced at less than \$50, and eight were in the \$33.75 to \$39.75 range. Similarly, Bulova appears to have increased offerings in its cheap "Westerfield" line (\$20 to \$30).

<sup>2</sup>It is estimated that domestic movement production in 1954 was 1.7 million units, compared to 3.1 million at the 1951 peak (House Ways and Means Committee, Hearings on H.R. 1, 84th Congress, 1st Sess., p. 854). This drop reflects the diversion of domestic capacity to defense production rather than the existence of idle capacity. Half of the drop can be explained by the fact that Bulova alone reduced domestic production from a million movements (1951) to 350,000 in 1954, with a compensating rise in imports to two million movements (Senate Committee on Armed Services, op. cit., p. 201).

assemblers cannot be evaluated.

Despite high selling costs, or because of them, all of the major producers, with the single exception of Waltham, have enjoyed substantial profits for the past fifteen years. The wide variety of styles available may well serve to satisfy some public craving for "beauty" better than a more standardized product would, but this is hardly measurable. To the extent that the consuming public enjoys conspicuous consumption, the economic costs of monopolistic competition may be offset by social gains in the area of consumer satisfaction.

Competition in the industry has had one noticeable effect. The mechanism of the wristwatch has been vastly improved over the past twenty-five years. And Elgin and Hamilton, at least, have been exerting strong efforts to improve production methods and plant efficiency in order to meet the comparative advantage of the Swiss industry. These efforts have been most noticeable since World War II, culminating in the achievement of true interchangeability of parts and mass-production. As long as there is sufficient competition to ensure continued technical progress, perhaps what appears to be over-concern with style "progress" may be forgiven in the jeweled watch industry.

## CHAPTER VII

### THE SWISS WATCH INDUSTRY TODAY

Switzerland is one of the more amazing countries of the world. With practically no natural resources, her people are among the most prosperous on the planet. Watchmaking plays a key role in this country's economy and in the high living standards of her population.

The importance of international trade to Switzerland's domestic prosperity is evident from Tables 12 and 13 below. In the postwar years, exports have accounted for roughly one-quarter of the country's national income and perhaps one-fifth of gross national product.<sup>1</sup> And since the prosperity of many purely domestic industries rests upon the activity of those industries which depend upon foreign trade directly, any fluctuations in Switzerland's trade with the rest of the world has serious domestic repercussions.

Switzerland's imports are fairly evenly divided among raw materials, foodstuffs and manufactured goods.<sup>2</sup> In the

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<sup>1</sup>Swiss statistics are available only for national income (at factor cost). In references to gross national product, the author has applied the U.S. average NI/GNP ratio of 0.845 (for the years 1948-1953) to Swiss national income figures.

<sup>2</sup>Swiss Office for the Development of Trade, Switzerland and Her Industries (Lausanne, 1948), p. 27. In 1947 raw materials amounted to 33%, foodstuffs 30% and manufactured goods 37% of total imports.

raw materials category, the Swiss rely heavily upon foreign sources for supplies of iron, steel and copper for their metallurgical industries and imported wool, silk and cotton for textile production. The principal foodstuffs are cereals and wine. Imports of manufactured goods consist principally of automotive vehicles, machinery and textile products of types which are not produced domestically.

Nearly all of Switzerland's exports are in the manufactured goods category.<sup>1</sup> Well over half of these exports are produced by two industries, machinery and watchmaking. The Swiss "machinery industry" is actually a group of metal-working industries which produce everything from aluminum pots and pans to huge generators and railroad rolling stock. In the postwar period this group has accounted for roughly one-third of total exports. Watchmaking is the largest single export industry, providing twenty to twenty-four percent of all exports in recent years (see Table 13). The remaining share of the export trade is largely filled by products of the textile and chemical industries.

It should be noted that Switzerland normally has an unfavorable balance of trade. The excess of merchandise imports over exports is balanced by such invisible items as tourism, banking and insurance services for foreigners, and by the returns on Swiss capital invested abroad. Currency restrictions in most European countries have seriously

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<sup>1</sup>Ibid., p. 27. 94% of Swiss exports are manufactured goods, 4% are raw materials, and 2% are foodstuffs.

TABLE 12

## SWISS NATIONAL INCOME AND FOREIGN TRADE

Year	National Income	Merchandise Trade Imports	Trade Exports	Watch Exports	% Watches to Total Exports
	(figures in millions of Swiss francs)				
1938	8,700	1,599	1,320	238	18.0%
1939	8,830	1,883	1,300	200	15.5
1946	15,030	3,423	2,676	605	22.6
1947	16,840	4,820	3,268	769	23.6
1948	17,650	4,999	3,435	743	21.8
1949	17,360	3,791	3,457	703	20.3
1950	18,160	4,536	3,911	730	18.7
1951	19,470	5,911	4,690	1,010	21.5
1952	20,100	5,193	4,748	1,083	22.8

Sources: National income and merchandise trade from International Monetary Fund, International Financial Statistics, February, 1954, p. 154. Watch exports from "The Watch-making Industry as a Vital Factor of Swiss National Economy" (mimeo., Swiss Legation, December 22, 1953), p. 3.

TABLE 13

RATIOS OF EXPORTS TO GROSS NATIONAL PRODUCT,  
SELECTED COUNTRIES, 1948-1953

Country	Range of Annual Ratios	Average Over the Period
Switzerland	16.4-21.0%	19.0%
Belgium-Luxembourg (1948-52)	26.8-38.2%	30.0%
Netherlands	17.0-35.6	29.0
United Kingdom	14.1-19.0	16.6
Western Germany (1949-53)	7.0-13.7	11.7
France	5.7-12.4	10.2
Italy	8.0-11.3	9.3
United States	3.6- 6.6	4.4

Note: Switzerland, Italy, and Belgium-Luxembourg report only national income (at factor cost). Exports/GNP ratios were estimated by multiplying Exports/NI figures by 0.845 (the U.S. NI/GNP ratio over the 1948-1953 period).

Source: International Monetary Fund, International Financial Statistics, March, 1955.

interfered with the flow of these invisible exports for the past fifteen years. Thus the maintenance of a high level of merchandise exports has been even more important to the Swiss than it was in prewar years.

In the decades before World War I, the main emphasis of the Swiss industry was upon the perfection of machine techniques, and style was relatively neglected. In the decade after that war, with the major problems of machine production solved, the Swiss watchmakers once again turned to the problem of style. With the new machinery, it was possible to produce movements small enough for use in wristwatches. As machinery was further improved, movements were made in ever-smaller sizes--"25/0" movements (approximately two-fifths of an inch wide) are common today. The watch mechanism itself was redesigned to permit the manufacture of oval movements, rectangular movements, and variants of the two, in addition to the traditional round movement.

In the words of one writer, the Swiss recognized that "horology must always combine the perfection of mechanical techniques with all of the resources of artistic creation".<sup>1</sup> This attitude toward their product gave the Swiss a considerable advantage in the marketplace over any competitors. In addition, they were able to introduce in mass-produced watches a number of features which appealed to the buying public, e.g., the sweep-second hand, waterproof cases, "shock-absorbing" mountings for balance wheels, and the automatic

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<sup>1</sup>A. Chapuis and E. Jaquet, La Montre Suisse (Basle, 1945) p. 223.



winding mechanism.

Despite the general trend towards mechanization within the industry, watchmaking in Switzerland has continued to be based upon production by a large number of individual enterprises, most of which operate on a very small scale. At present there are roughly 1,300 separate firms.<sup>1</sup> Approximately sixty thousand persons are employed in "watchmaking and allied crafts".<sup>2</sup> The distribution of these employees among the various branches of the industry in 1948 is shown in Table 14.

Very few Swiss firms make complete watches. The typical Swiss manufacturer has a small plant in which he produces parts of a certain type and generally of a certain size. The larger firms are usually the *ébauche* manufacturers. The final product is turned out by assembly firms which buy their *ébauches*, other parts and cases from specialty firms. These finished watches may then be exported by the assembler, or they may be sold to other firms which perform only distributive functions.

Table 14 indicates that three hundred-odd companies produce finished watches and movements. These are classified by the Swiss as manufacturing firms and assemblers ("manufactures et établissemens"). The assemblers (about 250 firms)

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<sup>1</sup>E. Primault, L'Industrie Horlogère Suisse (La Chaux-de-Fonds, 1949), p. 15.

<sup>2</sup>Swiss statistics are not comparable to American figures, since the Swiss "horological industry" includes a number of functions (such as the manufacture of cases and accessories, jewel bearings, and pin-lever watches). Details on these differences are shown in Table 14.

make no parts at all; the manufacturers (less than sixty firms) make some of their parts.<sup>1</sup> Thus Bulova, which makes thirty percent of the parts used in its imported movements, is a Swiss "manufacturer". Fewer than twenty firms are integrated manufacturers in any sense approaching the operations of American domestic producers. If any of these were large producers, the picture of "vertical disintegration in the Swiss industry could be questioned, but such is not the case. The "integrated" producers (without any exceptions, to the author's knowledge) are the producers of the highest quality watches in the world--such firms as Patek-Philippe, Audemars Piguet, Jules Jurgenson, International, and so forth. These watches are virtually hand-made in limited quantities; in the American market they are priced at from \$250 or \$300 upward.

An important factor in the development of the Swiss watch industry has been the existence of an external source of supply for new machinery.<sup>2</sup> Whereas the American firms have had to produce about ninety percent of their own machinery, a substantial portion of the Swiss machine tool industry specializes in precision equipment for the watch industry. Thus if a watch manufacturer needs a special piece of equipment, he can readily find a machine tool firm to produce it

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<sup>1</sup>Estimates of the number of firms provided to the author by M. Jean Jacques Bolli, of the Swiss Watch Chamber, in a letter of October 22, 1953.

<sup>2</sup>The contrast between the Swiss and American industries in this respect will be discussed in detail in Chapter X.

TABLE 14

DISTRIBUTION OF FIRMS AND EMPLOYMENT  
IN THE SWISS WATCH INDUSTRY, 1948

Industry Branch	Number of Firms	Number of Employees	Employees Per Firm
Jewel bearings	165(a)	5,194	30.9
Dials and crystals	77	3,343	43.4
Hands, mainsprings, and hairsprings	66	1,984	30.0
Other parts (pivots, pinions and polishing)	147	7,999	54.4
Ébauches and movements	70	5,102	72.9
Roughing out and refining of precious metals	8(a)	264	33.0
Watch cases	157(a)	5,091	32.4
Accessories for cases	8(a)	436	54.5
Chains and bracelets	15(a)	361	24.1
Manufacture and assembly of complete movements	302	17,587	58.2
Clocks of all types	13(a)	486	37.4
Watchmakers hand tools	15(a)	240	16.0
Total	1,043	48,089(b)	46.1

Notes: (a) designates firms which would not be included in the American "jeweled watch industry" classification. In addition, it is estimated that 15% of the remaining 36,281 persons were employed in the manufacture of Roskopf (pin-lever) watches. Thus the number of employees in 1948 comparable to those in the U.S. was about 31,000.

(b) Does not include an estimated 3,500 homeworkers and another 2,500 employees of firms employing fewer than seven persons.

Source: Swiss Federal Office for Industry, Trade and Labor. Cited by A. H. Stuart, "Swiss Watch Industry's Drive", Foreign Commerce Weekly, August 29, 1949, p. 6.

for him. Conversely, the machine tool manufacturers are familiar with the problems of watchmaking and have often taken the lead in introducing new or improved types of machinery in the industry.

The existence of outside suppliers also saves considerable time when a firm needs to replace machinery, according to the president of Elgin.<sup>1</sup> An American firm must take the time to check designs and produce the machinery from scratch. The Swiss manufacturer can usually secure immediate delivery from the stock of a machine supplier.

The fact that the watch manufacturers buy their machinery from another industry has contributed to a high degree of standardization in the design, sizes, and so forth, of Swiss watch parts. The resulting interchangeability of parts produced by different manufacturers has contributed in no small measure to the great flexibility of the Swiss industry in making style changes. It has also helped to solve the problem of providing repair facilities for Swiss watches in foreign countries. Watch repair shops can handle almost any Swiss watch with a relatively small inventory of parts.<sup>2</sup>

In contrast, each of the American firms has developed its own standards. Hence the parts used in Elgin movements cannot also be used in Hamilton or Waltham movements. This has operated to prevent the appearance of specialized parts

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<sup>1</sup>U.S. Senate Committee on Finance, Hearings on H.R. 1211, 81st Congress, 1st Sess. (1949), p. 608.

<sup>2</sup>On the other hand, separate inventories of similar parts must be maintained for each of the American movement brands.

manufacturers in this country. It has also burdened the domestic companies with the task of producing all the parts required for current production and a considerable volume of replacement parts for movements which are no longer made. This has undoubtedly been a factor in the relative reluctance of the American firms, as compared to the Swiss, towards changing movement styles in new watch models.

Finally one must remember that watchmaking is not a continuous-process industry. Even in an integrated plant the separate departments manufacturing individual parts are in reality separate small plants feeding their products simultaneously to the assembly department. A dozen workers turning out balance wheels for a given sized movement may represent the "optimum" scale of production just as well in a small shop as in a department of the largest factory in the world. The Swiss industry, with very few exceptions, has taken the position that the disadvantages of plant integration outweigh the advantages. Specialization and the division of labor within the industry have been carried out on the basis of the firm as well as on the basis of the individual worker. Thus the Swiss industry has been able to secure the principal advantages of large-scale production while enjoying the advantages, chiefly flexibility of operations, of small-scale plants.

Mechanization rapidly increased the productivity of the Swiss watch industry during the first quarter of the twentieth century. Between 1910 and 1929, the number of watches and movements exported doubled, from 10.4 million to 20.8 million,

although employment declined slightly.<sup>1</sup> At the same time mechanization raised a number of problems. The industry enjoyed great prosperity during World War I; the boom ended with the 1921 depression, and exports dropped by fifty per cent. For a period of three years there was little improvement, with unemployment hitting one-third of the labor force.<sup>2</sup>

During this period the world-wide elevation of tariff barriers, which characterized the years between the world wars, began. Germany, Japan, England, Poland and the United States, all of which had been important Swiss markets, raised their tariffs in such a way as to discriminate against the importation of complete watches. The result was intense competition among the numerous firms of the Swiss industry.<sup>3</sup> This competition took two forms: price-cutting on watches and movements, and "chablonnage" or the export of ébauches and detached parts for assembly abroad. The average value of watches and movements exported was cut in half between 1920 and 1929, but chablonnage was felt to be even a greater threat. Industry leaders believed that this practice would encourage the development of rival watch industries in other countries, with the ultimate loss of Swiss markets.

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<sup>1</sup>F. Scheurer, Les Crises de l'Industrie Horlogère dans le Canton de Neuchâtel (Geneva, 1914), p. 137; Chapuis and Jaquet, op. cit., p. 265.

<sup>2</sup>London Economist, December 27, 1924, p. 1050.

<sup>3</sup>Cf. J. Jones, Tariff Retaliation (Philadelphia, 1934), pp. 127-129.

At this point there began the movement towards cartelization which has characterized the Swiss industry ever since. The Watch Chamber, an organization of regional trade associations, endeavored to secure agreements among its members with respect to price maintenance, "fair" competitive practices, and so forth. In 1929 most of the ébauches firms were integrated by a trust, Ébauches, S.A., for the purpose of controlling chablonnage. Both of these efforts failed because several large independent firms refused to participate in any of the intra-industry agreements.<sup>1</sup> The value of exports by the industry in 1929 was thirteen percent below the 1920 value, although the number of watches and movements exported had risen by sixty percent.<sup>2</sup> In these circumstances the onset of depression again in 1930 brought chaos to the industry.

The average annual exports from 1931 to 1935 were only forty percent, both in number and value, of the 1925-1929 average.<sup>3</sup> The trade associations, lacking the power to enforce order, besought the assistance of the Federal Council.<sup>4</sup>

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<sup>1</sup>Ibid., p. 128.

<sup>2</sup>Chapuis and Jaquet, op. cit., p. 265.

<sup>3</sup>U.S. Tariff Commission, Watches, War Changes in Industry Series, Report No. 20, (Washington, 1947) p. 143.

<sup>4</sup>The Federal Council was granted special emergency powers by Parliament on October 13, 1933, to protect domestic industries in the face of the depression. Action with respect to the watch industry was taken under these powers. The basic decree expired on December 31, 1951. Permanent legislation for control of the watch industry, discussed below, was enacted on December 22, 1951.

This assistance was forthcoming with the first decree for the "protection" of the watch industry on March 12, 1934. Through a series of subsequent decrees, this protection was extended into a comprehensive system of control for the entire industry.

The Swiss Watch Chamber ("Chambre Suisse de l'Horlogerie") is the highest authority within the industry, exercising a general supervision over the operations of various special associations and representing the industry in its relations with the cantonal and federal governments. Membership in the Chamber is confined to the regional and cantonal associations, the "conventional" associations and certain other agencies formed to help control the industry. At present there are twenty-two member groups in the Chamber.

There are three "conventional" associations: "La Fédération suisse des associations de fabricants d'horlogerie" (known as F.H.), "l'Union des branches annexes de l'horlogerie" (Ubah) and Ébauches, S.A. The first of these, F. H., is composed of regional associations of manufacturers and assemblers. Ubah is an organization of the manufacturers of parts necessary to finish movements, and Ébauches, S.A., is the holding company which controls ébauche manufacture. The term "conventional" refers to the convention (the "Collective Agreement") which regulates commercial relationships among the three groups -- F. H. being the buyers, and Ubah and Ébauches the sellers, of the parts necessary to assemble a complete watch.

The key role in the industry is played by the "Super-



Holding" trust, "la Société générale de l'horlogerie suisse, S. A.". This corporation was formed in 1931 with a capital of thirty million francs, contributed in equal shares by the industry associations, a banking syndicate and the federal government. "Super-Holding" itself controls four subsidiary holding companies: Ébauches, S.A., the United Lever Assortment Manufacturers (escapements), the United Balance Wheel Manufacturers, and the Association of United Hairspring Manufacturers. Through these subsidiary trusts, "Super-Holding" owns a majority of the stock in all firms which produce the principal components of watch movements.<sup>1</sup>

A final group in the industry is "l'Association d'industriels suisses de la montre Roskopf". This association controls the manufacture of the cheap non-jeweled Roskopf watches. In turn it is regulated by a special convention with Ubah.

The general purposes of industry regulation, according to the president of the Watch Chamber, are "to avoid an exaggerated development of productive capacity, especially in periods of prosperity, to maintain as regular a level of activity as is possible, and to suppress the disastrous effects of frenzied competition leading to the lowering of prices",<sup>2</sup> To effect these purposes, the decrees of the Federal Council which were in force through 1951 provided

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<sup>1</sup>A. H. Stuart, "Regulation of the Swiss Watch Industry", World Trade in Commodities (mimeographed supplement) Vol. III, Part 14, Sup. No. 2, February 1950, p. 3.

<sup>2</sup>E. Primault, op. cit., p. 9.

regulation in four complementary areas -- price fixing, control of plant expansion, export controls and the utilization of homeworkers.

The establishment of a comprehensive schedule of minimum prices for all parts, movements and complete watches was achieved through the medium of agreements among the "conventional" organizations, including the Roskopf group. All firms, whether or not members of any association, were required by federal decree to abide by these price schedules. Under this arrangement, the minimum prices for watches and finished movements were established in 1945 at a level approximately fifty-three percent higher than in 1940. In 1949 these minima were raised by another eight to fifteen percent, depending upon the class of watch.<sup>1</sup>

The industry's level of production is, of course, determined to a great extent by the decisions of the "Super-Holding" trust, which controls the output of ébauches and balance assembly parts. This control is reinforced by the introduction of a permit system administered by the federal Department of Public Economy. Since March 12, 1934, D. P. E. permits have been required for the opening of new enterprises, the transfer of a firm from one locality to another, and for the expansion of an existing firm. "Expansion" in this sense includes an increase in the working force, horizontal integration through the acquisition of another firm in the same branch of the industry, or vertical integration through the

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<sup>1</sup>New York Times, July 18, 1949, p. 30.

acquisition of firms in other branches of the industry.<sup>1</sup> The D.P.E. can grant such permits only after consultation with representatives of the whole industry (i.e., the Watch Chamber).

All horological exports were also subjected to a permit system, administered by the Watch Chamber itself. Export permits were granted only to those firms which could demonstrate that their export prices and terms of sale conformed to the conventions within the industry. The export of parts which could be used to assemble movements abroad were prohibited, except to established customers (as of 1933) or in the limited amounts necessary for foreign repair servicing of Swiss movements.

Wages, hours and working conditions are determined by collective bargaining between a single union, F.O.M.H. (la Fédération des ouvriers sur métaux et horlogers), and the conventional associations. Since 1945 the employers' associations have been joined into a single bargaining organization "to ensure social peace".<sup>2</sup> As was the case with other intra-industry agreements, under the emergency legislation the terms of employment arrived at through this bargaining bound even non-members of the trade associations.

Strict regulation of homework was achieved by a federal decree of 1942, urged by both the organized manufacturers and the union. Any firm which wishes to employ homeworkers must

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<sup>1</sup>E. Primault, op. cit., p. 10.

<sup>2</sup>Ibid., p. 7.

first secure a permit, which is granted only if the firm can satisfy legal requirements as to wages, terms of payment, work loads and social security for the workers. Both the government and the union police these regulations.

Several agencies have been created to exercise the controls which exist within the industry.<sup>1</sup> Chief of these is the "Délégations Réunies", a commission of thirteen members, which has broad powers in supervising the application of the terms of the agreements among the conventional associations. The actual policing of the agreements, through the inspection of both members and non-members, is carried out by "Fidhor" ("Fiduciare Horlogère").<sup>2</sup> The third agency, "Consulthor", is a consultative commission to the Department of Public Economy; it advises the D.P.E. on the desirability of granting particular permits for the opening of new firms, plant expansion, and so forth.

A fourth agency, and perhaps the most controversial one in the eyes of the American industry, is Machor, S.A. The export of horological machinery, tools, dies, and drawings was prohibited in 1939. Considerable pressure was exerted by foreign governments (including the United States) to secure some modification of this prohibition. Consequently,

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<sup>1</sup>Cf. A. H. Stuart, "Swiss Watch Industry's Drive", Foreign Commerce Weekly, August 29, 1949, pp. 4, ff.

<sup>2</sup>Fidhor was established in 1928 as a centralized credit information agency for banks which lend to horological firms. Legislation since 1934 has recognized Fidhor, in addition, as the investigative agency of the D.P.E. Thus violations uncovered by Fidhor could lead to an immediate curtailment of bank credit to the firms involved as well as to legal action.

the law was amended in 1946 to permit the export of these goods where such exports are "not contrary to the general interests of the watch industry".<sup>1</sup> Machor was established later in the same year to control the export of machinery. This organization is a corporation with a capital of 600,000 francs, contributed equally by the horological associations, the F.O.M.H., and the machinery manufacturers' association. The president of the Swiss Watch Chamber serves as president of Machor. All foreign orders for machinery must be directed to Machor, which then decides whether or not such orders may be filled. If an order is favorably received, Machor purchases the machinery from a Swiss manufacturer and ships it to the foreign customer.

All machinery secured from Machor is shipped under lease rather than outright sale. The terms of leases are uniform for all customers.<sup>2</sup> These terms may be briefly summarized in three categories: the rental terms, the so-called "horological" clauses, and the enforcement provisions.

The rental for each machine is designed to return to Machor a certain "base amount" over the ten-year period of the lease. The "base amount" is Machor's purchase price plus a very moderate markup to cover the company's overhead and the risks inherent in permitting the machinery to be installed outside of Swiss territorial limits.

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<sup>1</sup>U.S. Tariff Commission, Watches, p. 138.

<sup>2</sup>Information on leasing policy was supplied by Hermann Dütschler, Director of Machor, S.A., letter to the author, October 13, 1949.

The "horological" clauses have been the chief target for American criticism of the Swiss "Watch Trust". A penalty rent (equal to one-eighth of the annual rental) must be paid for any three-month period during which a machine has been operated in excess of forty-eight hours a week for two weeks or more. There appears to be no limitation, however, if the firm is willing to pay the extra rent. The lessee must agree not to produce ebauches for sale to other manufacturers or any parts to be sold separately except for repair requirements. Finally, the lessee must agree not to adopt any unfair trade practices (presumably any practices prohibited within Switzerland by the trade associations) towards members of the Swiss industry.

The enforcement provisions give Machor the right to inspect the machines and premises of customers, in order to see that the leasing terms are observed, and the right to cancel the lease if any violations are continued after one warning. Any litigation arising out of the agreements is to be argued according to Swiss law before the Court of Justice at Bienne.

At present, Machor has leased machines to the British watch industry, to some French and German firms, and to the Waltham Watch Company. The Russian government has been negotiating for machinery, but refuses to accede to the inspection provisions. Elgin and Hamilton have opposed the whole leasing arrangement, on the grounds that the horological clauses violate American anti-trust law.

In a world in which international trade is far from free, the Swiss can make a strong case for their machinery

policy. The Swiss industry can exist only by exporting. It feels that free trade in machinery, coupled with foreign barriers against finished watches, could lead to the rise of rival watch industries in other nations.<sup>1</sup> The Swiss watch industry would prefer to maintain its competitive position by preventing the export of any machinery. Since this has proved to be an unworkable goal, the Swiss are trying to do the next best thing--namely, to prevent foreign manufacturers from using Swiss machines in ways which are prohibited to the Swiss manufacturers themselves by their own intra-industry agreements.<sup>2</sup> Only in this way can controls be enforced within the industry without encouraging foreign manufacturers, aided by Swiss machinery, to undercut the industry's position in the world market. In addition, the control of machinery exports has provided the Swiss with a bargaining weapon to use against foreign trade barriers which restrict the trade in Swiss watches.<sup>3</sup>

Since the wage and price-fixing agreements and other limitations on competition in the industry were incorporated in federal decrees through 1951, the Swiss government placed

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<sup>1</sup>Before the Swiss restricted machinery exports, American firms frequently "placed sample orders for newly-designed Swiss machines with a view to reproducing them in the United States" (U. S. Tariff Commission, Watches, p. 119).

<sup>2</sup>Information received from Machor, S. A.

<sup>3</sup>In the case of England, for example, the arrangements for leasing machinery were made between Machor and the British Government. In return for the machinery, England eased her import quota and exchange restrictions upon the importation of Swiss watches.

its power behind the actions of the conventional associations. Violations of the agreements thus became criminal offenses, punishable in the Courts of Justice by fines and imprisonment.<sup>1</sup> The legislation of the Federal Assembly which empowered the Federal Council to issue these "emergency" decrees expired on December 31, 1951. For several years prior to this date, however, the Watch Chamber and its constituent associations had been actively pressing for permanent legislation in view of the "special situation" of the watch industry in the Swiss economy. On June 21, 1951, the Federal Assembly enacted such legislation, to protect the industry from January 1, 1952, to December 31, 1961.<sup>2</sup> This was implemented, in specific details, by an ordinance of the Federal Council in the following December.<sup>3</sup>

The present regulation of the industry is modified in some respects from that which developed under the emergency decrees. Basically, however, the present legislation appears to be all that is needed to maintain the pattern of intra-industry restrictions developed since 1934.

The system of export permits for *ébauches*, detached parts, tools, dies, drawings, and horological machinery continues in force. Permits for the export of complete watches and finished movements are no longer required. However, the

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<sup>1</sup>Primault, *op. cit.*, p. 10.

<sup>2</sup>"Arrête Fédéral sur les mesures propres à sauvegarder l'existence de l'industrie horlogère suisse (du juin 1951)."

<sup>3</sup>"Ordonnance d'exécution de l'arrête fédéral du juin 1951 (du 21 décembre 1951)."



act states that "in order to prevent abuses, the customs authorities will exercise control over these exports".<sup>1</sup> This clause indicates that the relaxation of the Watch Chamber's control over movement exports may be more of a formality than a reality.

The requirement of D. P. E. permits for the opening of new enterprises, the reopening of firms which have been shut down, horizontal or vertical integration of existing firms, and increases in the labor forces of existing firms is continued in the new legislation. The Federal Council's "ordinance of execution" contains a comprehensive series of articles which regulate homework and the work of small family establishments.<sup>2</sup> Basically these measures make it impossible to use homeworkers or small enterprises to circumvent industry regulations.

The principal difference between the current legislation and the regulation developed by emergency decrees from 1934 to 1951 is that the price-fixing agreements of the trade associations are no longer incorporated in federal decrees. This does not mean that the Swiss watch industry expects a return to the conditions of a free market. Rather, the industry feels that direct governmental support of price maintenance is no longer necessary.

As has been stated, the early attempts to "rationalize" the industry foundered on the rocks of non-cooperation by

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<sup>1</sup>"Arrête Fédéral du 22 juin 1951", Article 2.

<sup>2</sup>"Ordonnance d'exécution du 21 décembre 1951", Articles 13-42.

several large firms which remained outside of the trade associations. Government support of intra-industry price fixing made independent action by these firms impossible. The development of the "Super-Holding" trust, again with government aid, has created an effective monopoly in the production of ébauches and escapement parts, without which no movement can be assembled. Granting power to the Watch Chamber to supervise export permits and to advise in connection with the D. P. E. permit system has considerably increased the influence of that organization.

Completing the list of pressures upon "independents" is the principle of "syndical reciprocity" embodied in the Collective Agreement. The firms in Ébauches, S. A., and Ubah will supply parts only to those manufacturers and assemblers in the F. H. group, while the latter will purchase parts only from the former. Syndical reciprocity was quite openly utilized to eliminate "outsiders".<sup>1</sup> As a result, by 1941 non-members of the trade associations found it virtually impossible to exist.<sup>2</sup> With the industry completely controlled by the trade associations, government legal support of price-fixing agreements would serve little purpose today.

There is no room to doubt today that violators of price provisions in the Collective Agreement would find it difficult

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<sup>1</sup>"Problems in the Swiss Watch Industry", Neue Zürcher Zeitung, May 19, 20, 1954 (mimeographed translation provided by the Legation of Switzerland, Washington, D. C.).

<sup>2</sup>A. H. Stuart, "Regulation of the Swiss Watch Industry", ibid., p. 3.

to secure essential parts from firms associated with Super-Holding. The only possible threats to the mental peace of industry leaders would be an expansion of production by the few integrated firms or the entry of new firms into the areas controlled by Super-Holding. But neither of these things could occur (at least before 1962) without permission of the Department of Public Economy, which so far has been understandably reluctant to change the status quo in the industry.

One should note in passing, however, that support of this status quo is not universal among Swiss entrepreneurs themselves. The end of the boom engendered by the Korean crisis and the revival of German and Japanese production (aided by "low wages" according to the Swiss) has provided serious competition for exporters to southern Europe, South America and Asia. Members of F. H. serving these areas charged that the Swiss position was endangered by artificially high prices maintained for dials and cases (by members of Ubah).<sup>1</sup> As a result, F. H. and Ébauches, S. A., notified Ubah that the Collective Agreement would be terminated on March 31, 1954.<sup>2</sup>

This action precipitated a major debate in the industry. Opponents of the Collective Agreement charged that the system is too inflexible to permit rapid adaptations to competitive conditions (on a price basis). A second argument was that

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<sup>1</sup>"Problems of the Swiss Watch Industry", ibid., pp. 15, 16.

<sup>2</sup>Ibid., p. 17.

price-fixing had caused stagnation in many sectors of the industry: "It is well known that with respect to the price policy associations the rates are based on the performance levels of the weaker members."<sup>1</sup>

Supporters of the conventions insisted that the system is essential to prevent a recurrence of the industry's experience in the 1920's. Swiss leadership in world markets can best be maintained by a continuing emphasis upon quality, rather than price alone. Further, a period of price-cutting could only serve to give American manufacturers more ammunition in their war against Swiss imports.<sup>2</sup> Although there are some clouds on the herological horizon, "Their destructive potentialities should vanish when coming into contact with that solidarity which has been forged so slowly and with such difficulties through hard experience".<sup>3</sup>

In March 1954, the Collective Agreement was temporarily extended for three months. During this period parity commissions of the associations worked out new price schedules (with some reductions in parts prices charged by Ubah). These won majority approval, and the Collective Agreement has been re-established for three years (from July 1, 1954).<sup>4</sup>

The question arises, of course, as to the extent to which

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<sup>1</sup>Ibid., p. 15.

<sup>2</sup>Ibid., p. 13.

<sup>3</sup>Edgar Primault, The Legislative History of the Swiss Watch Industry" (Swiss Watch Chamber of Commerce, 1954), p. 18.

<sup>4</sup>Information provided by the Legation of Switzerland, Washington, D. C.

Swiss intra-industry regulations affect the American watch market. Clearly enough, export prices of Swiss movements, parts and complete watches were fixed by government decree through 1951 and are at present fixed by the industry conventions. Movement prices are determined through a parity system (based upon 1940 prices) which reflects five cost elements--ébauche, parts, labor, inspection and overhead-- with provision for a minimum gross profit over production costs.<sup>1</sup> The minimum profit on parts and complete watches has been fixed at twenty-five percent of cost; for uncased movements the minimum profit is thirty percent.<sup>2</sup> Thus the price paid by the American assembler for his Swiss movements is competitively determined only during periods when actual movement prices are above parity.

The American Watch Association (representing the assemblers) and the Swiss Legation in Washington have emphatically denied that any attempt has been made to influence American retail prices.<sup>3</sup> In other words, there is nothing to prevent the assembler or importer from selling movements or complete watches at any price, above or below his own costs.

A somewhat different picture has been painted by the

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<sup>1</sup>A. H. Stuart, "Swiss Watch Industry's Drive", Foreign Commerce Weekly, August 29, 1949, p. 5.

<sup>2</sup>U.S. v. The Watchmakers of Switzerland Information Center, Inc., et al. (D. C., S. D. N. Y.), Civil Action No. 96-170, filed October 19, 1954 (hereafter cited as "Complaint").

<sup>3</sup>In letters to the author and in public announcements subsequent to the Justice Department's antitrust complaint discussed below.

U. S. Department of Justice in recent months. In the fall of 1953, the Justice Department subpoenaed the records of a number of watch manufacturers (including all of the "Big Six") and trade groups in order to investigate relationships between the American industry and the Swiss cartel. The New York Times report on this action stated: "In effect, the cartel forces manufacturers and importers of jeweled watches throughout the world to deal with the Swiss on Swiss terms. They must sign contracts that specify how many movements they may buy, prices at which the watches may be sold and where they may be sold...American companies say they must sign in order to survive."<sup>1</sup>

The results of the Justice Department's investigations have been embodied in a complaint charging a number of American importers, assemblers, Swiss manufacturers and trade associations with a conspiracy to violate Section 1 of the Sherman Act and Section 73 of the Wilson Tariff Act of 1894 (prohibiting agreements between American and foreign firms designed to affect prices within the U. S.).<sup>2</sup>

The offenses charged fall into four general categories.<sup>3</sup> In the first place, minimum prices for watches and component

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<sup>1</sup>New York Times, December 16, 1953.

<sup>2</sup>Complaint cited, paragraph 1. The complaint names 24 defendants (including F. H., Ébauches, S.A., the advertising agency, Foote, Cone and Belding, the American Watch Association, and sundry manufacturers and importers) and 27 co-conspirators (including Ubah, Superholding, 18 Swiss exporters and 7 American repair parts importers).

<sup>3</sup>Complaint, paragraphs 25-39.

parts and methods of distribution have been "established, policed, and enforced within the United States". Secondly, the defendants have entered into agreements to restrict and curtail the production of jeweled watches within the United States. Thirdly, the conspiracy has limited the export markets of American firms to certain countries in the Western Hemisphere and has barred these firms from competing with the Swiss elsewhere in the world. Finally, a monopoly over the importation and distribution of repair parts has been secured to the seven co-conspirator American parts importers.

Several comments may be made about these charges. With respect to the first category, what prices are the defendants supposed to have fixed? Wholesale or retail prices for imported complete watches (a minor factor in total imports)? Wholesale or retail prices for watches assembled in the U.S. with Swiss movements? This is Justice's secret: "It is not possible to disclose in advance of trial any information concerning the evidence underlying the complaint and for this reason I am unable to answer your questions concerning the meaning of Paragraph 26(f)."<sup>1</sup>

The second category of charges is more explicit, but rather difficult to prove. Has Bulova curtailed domestic production because of Swiss pressure, as charged by Justice (Complaint, paragraph 30), or because of a patriotic desire to serve the nation through defense production, as claimed by Bulova? Have Longines-Wittnauer, Rolex, Cyma, and other

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<sup>1</sup>R. B. O'Donnell, Special Assistant to the Attorney General, letter to the author, February 24, 1955.

firms failed to establish American manufacturing facilities because of Swiss pressure (Complaint, paragraph 29), or is it because these firms have been impressed by Elgin, Hamilton and Waltham arguments for the past few decades that domestic movement manufacturing is unprofitable?

There is little economic weight to the third group of charges, regardless of the legal questions involved. Exports have never been important relative to the size of the domestic market. In fact, if one chooses to be technical, exports of jeweled watches have risen nearly seven thousand percent (by number) while the Swiss have been practicing their restrictions.<sup>1</sup>

The last category of charges, involving the selection of seven repair parts importers as exclusive distributors of parts imported from the Swiss cartel, has some curious aspects. Four defendants (F.H., Ébauches, S. A., the Watchmakers of Switzerland Information Center, and Foote, Cone and Belding) are charged with conspiring with the seven importers to exclude other distributors and to fix repair parts prices (Complaint, paragraph 38). If the agreement among the eleven conspirators is intended to restrain trade in watch parts, it clearly violates American law. But what can be done about it? The two principal defendants are

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<sup>1</sup>From 1931-35, average annual exports of jeweled watches amounted to 3,000 units, all of which were products of the domestic manufacturers. During the 1948-53 period, average annual exports have exceeded 200,000 units, half of these being assembled watches containing Swiss movements. U. S. Tariff Commission, Watches, Movements, and Parts (1954), Table 9.



Swiss organizations pursuing in Switzerland a course of action which is lawful before the Swiss courts. The other principal conspirators are the American repair parts importers, but no charges lie against them: they are co-conspirators, not defendants in the case. The Justice Department seeks to have the importing contracts declared illegal.<sup>1</sup> As the complaint is drawn, however, it appears that Justice is powerless to prevent F.H. and Ébauches from imposing present conditions upon the export of Swiss parts to the United States.

It should be noted that the case as a whole has the Swiss understandably confused. On July 27, 1954, President Eisenhower raised the watch tariff because Swiss watches were entering the U. S. in such quantities and at such low prices as to endanger the American industry. On October 19, 1954, the United States charged that the restrictive policies of the Swiss cartel maintain watch prices at an artificially high level. The Swiss reaction appears to be, "What does it take to make Americans happy?"

The American defendants in the case (supported by Representative Emmanuel Celler) insist that the anti-trust action has been inspired by Elgin, Hamilton and Waltham to create a monopoly over the market for these firms.<sup>2</sup> There is some supporting evidence for this countercharge. The three domestic producers have all imported Swiss movements in recent

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<sup>1</sup>Complaint: Prayer, paragraphs 1, 2.

<sup>2</sup>"Swiss Watches on the Stand", Business Week, October 20, 1954, pp. 58, 60.

years; it is certain that these imports have been subject to the restrictions charged to the defendants. Yet these three firms are conspicuously absent from the list of defendants.<sup>1</sup>

A second bit of evidence is the heart of the government's prayer for relief: that the Court perpetually enjoin the defendants "from importing into the United States any brand-named Swiss watches subject in their manufacture, sale or distribution to any or all of the unlawful restrictions herein described."<sup>2</sup> Such relief, if granted, would seriously reduce competition in the American market. It is unlikely that the Swiss industry would abandon the pattern of control over exports built up over the past two decades. Bulova would be reduced to that share of the domestic market which could be filled from the firm's domestic facilities. Gruen, Benrus, Longines-Wittnauer and other firms which advertise on a smaller scale would be crippled.

It is improbable that the Justice Department and the domestic producers have any real hope that Swiss watches and component parts will be excluded from the American market. It is certain that the last thing in the world desired by the American industry would be a Swiss reaction, "Very well; We'll abide by your rules--no more minimum prices, no more

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<sup>1</sup>The Justice Department will give no reasons for this (R. B. O'Donnell, letter cited). Technically, Justice may hold that the three American firms are not signatories of the Collective Agreement. On the other hand, Justice has charged that mere adherence to the terms of the agreement is an offense (Complaint, paragraph 28).

<sup>2</sup>Complaint: Prayer, paragraph 4.

restrictions of any sort." If Elgin, Hamilton and Waltham cannot compete with the Swiss while the cartel is maintaining high prices, these firms are in no condition to face a truly competitive market. The only conclusion left is that this suit is designed to cow the assemblers and the Swiss. The domestic industry has not yet received what it considers "adequate" tariff protection.<sup>1</sup> The threat of antitrust action may be sufficient to keep the assembling sector of the industry from opposing further increases in the tariff on movements.

Until the Justice Department discloses its full case in open court, it is impossible to give a final answer to the question "To what extent does the Swiss cartel control prices and sales policies in the American market?". The means of such control does exist; every Swiss movement exported must be marked with a trademark or serial number assigned to the exporter.<sup>2</sup> Thus violators of agreements may be readily traced and reported to the cartel.<sup>3</sup>

This control has been used from time to time for other purposes. After the Reciprocal Trade Agreement of 1936, it was utilized to withdraw export permits from firms which sold

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<sup>1</sup>This question will be discussed in Chapter IX.

<sup>2</sup>The marking requirement was adopted by the Swiss government as the only practical method for suppressing smuggling, in fulfillment of her commitment to the U.S. in connection with the Reciprocal Trade Agreement of 1936.

<sup>3</sup>Justice has charged that the American Watch Association, the Watchmakers of Switzerland, Foote, Cone & Belding, and a number of the importing firms are the "policemen" (Complaint, paragraphs 34, 36, 37 and 39).

movements to smugglers. In 1947 it was used to insure conformance to the American import quota agreed to by Switzerland; penalties were levied against Swiss firms selling to buyers in third countries for re-export to the United States. Again, foreign importers cannot cancel contract orders for movements or watches from Swiss firms. The penalty is the blacklisting of the offender, so that no Swiss firm can sell to him in the future.<sup>1</sup> The marking system insures that individual Swiss firms comply with any blacklists.

The ability of the Swiss industry associations to influence American business practices has been evident on several other occasions. In 1938 one of the prominent domestic assemblers contracted for a large number of fifteen-jewel movements with the intention of "upjeweling" these to more than seventeen jewels.<sup>2</sup> Although the firm's plans were laid in great secrecy, the news somehow reached Switzerland. The firm was promptly notified that if any upjeweling were practiced, it would be completely cut off from Swiss supplies in the future.<sup>3</sup>

Another interesting example is presented by the Gruen

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<sup>1</sup>Stenographic transcript, "U.S. Tariff Commission hearing on Watches and Parts under the escape clause of the Trade Agreement with Switzerland" (Washington, 1951), p. 856.

<sup>2</sup>According to A. H. Stuart, National Production Authority, in an interview with the author.

<sup>3</sup>Again it should be noted that in connection with negotiation of the reciprocal trade agreement, the Swiss government had agreed to prevent sales to firms which engage in upjeweling.

Watch Company's attempt to start manufacturing movements in this country, discussed in Chapter VI. In 1949 Mr. Henri Thiebaud, the director of Gruen's plant at Bienne, visited Cincinnati to render some technical assistance in the operation of the new plant. The conventional associations' own "Court of Arbitration" thereupon fined Gruen 2,000 francs and costs on the grounds that it was prohibited to any Swiss enterprise (e.g., Gruen, Bienne) to assist in any manner a foreign enterprise (Gruen, Cincinnati).

The judgment was later set aside by the regular Swiss Court of Justice at Bienne, which held that Thiebaud was actually an employee of the Gruen Watch Company (Cincinnati).<sup>1</sup> Nevertheless, the whole case does illustrate the difficulties which may face an American importer who endeavours to make any arrangement which might violate Swiss intra-industry agreements.

The Swiss watch industry presents an excellent picture of compulsory cartelization over the past two decades. While the organization of the conventional associations and the Watch Chamber itself is highly democratic, in practice the actual control of the industry has been centralized in an unofficial "cabinet" which meets frequently to decide the industry's responses to the broad problems which arise. The members of this group are the respective presidents of the Watch Chamber, the F. H., Ubah, Ébauches, S. A., the Roskppf association and, occasionally, the F. O. M. H.<sup>2</sup> Until 1952

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<sup>1</sup>U. S. Tariff Commission, Transcript cited, p. 1314.

<sup>2</sup>A. H. Stuart, op. cit., p. 38.

the Watch Chamber had the power to impose effective production quotas on the individual manufactures by its power to grant or withhold movement export permits. Entry into the industry or changes in the productive capacities of existing firms are both legally impossible without the approval of the industry's leaders. Finally, the ability to control the export of watchmaking machinery, parts and bearing jewels gives this "cabinet" a considerable amount of influence in the possible development of the watch industry in other nations than Switzerland.

## CHAPTER VIII

### THE COLLAPSE OF WALTHAM

On December 28, 1948, the oldest watch company in the country filed a petition for reorganization, under the provisions of Chapter X of the United States Bankruptcy Act. That this could occur after several years of wartime prosperity and in the face of the booming postwar watch market is surprising. On the other hand, this failure can be viewed as the culmination of half a century of declining vigor, a decline that began with the death of Royal E. Robbins in 1902.

Robbins, who reserved to himself the office of company treasurer, had exercised virtually complete control over company policies for forty-five years. This control was based upon merit, however, for during most of this period, Robbins held only a minority stock interest. "He was a dictator only by virtue of (the stockholders') unfailing confidence in his ability."<sup>1</sup> Ezra Fitch, who had been hand-picked by Robbins for the presidency of Waltham, held his office for two decades after his mentor's death but was unable to retain any real control after Robbins' support was removed.

The direction of Waltham, as C. W. Moore pictures it,

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<sup>1</sup>C. W. Moore, Timing a Century (Harvard, 1945), p. 91.

became a lesson in pure anarchy. The policies of the directors were not enforced by management, but the directors were unable to muster enough stockholders' support to make any sweeping changes. Individual members of the managerial group sought primarily their own personal advantage. And with no effective supervision, the employees followed their own inclinations in performing their jobs; as a result efficiency of the labor force dropped by fifty percent. By 1921 it was evident that "the whole structure of the Waltham organization was rotten to the core."<sup>1</sup>

The financial difficulties of the company mounted as the quality of executive control disintegrated. The directors attempted to capitalize past earning power in 1906 by inflating Waltham's capital stock from \$4 million to \$12 million.<sup>2</sup> The halcyon days of the Watch Trust had passed, however, and the company's earning slipped badly. Profits, which had averaged over one million dollars a year from 1900-1905, fell from \$732,000 in 1906 to \$150,000 in 1911.<sup>3</sup>

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<sup>1</sup>Ibid., p. 112.

<sup>2</sup>The directors replaced the 40,000 shares (\$4 million) of the "Old Company" with 70,000 shares (\$7 million) of common and 40,000 shares (\$5 million) of 6% preferred. \$1 million of the preferred was sold. The remaining preferred and the common shares were pro-rated among holders of the "Old Company" common. The \$7 million inflation was accomplished by transferring surplus to the capital stock account and by writing up intangibles from \$167,000 to \$4,500,000. See R. E. Dahl, The American Watch Movement Manufacturing Industry (Ph.D. dissertation, Clark University, 1941), p. 174; C. W. Moore, op. cit., pp. 269, 297.

<sup>3</sup>C. W. Moore, op. cit., p. 81.



These earnings could not justify the inflated capital structure. Dividends on Waltham's common stock (\$100 par) averaged less than \$1 a share annually from 1907-1921.<sup>1</sup> Under these conditions it was impossible to attract equity investors, and the company was forced to turn to the short-term capital market during the World War I expansion. Waltham's short-term debt rose steadily from only \$77,000 in 1906 to nearly \$9 million in 1921.<sup>2</sup> By that time it could no longer market its paper.

During 1921 several banks, headed by the First National Bank of Boston, "bailed" the company out with direct loans to cover maturing paper. When Waltham's directors proved to be unable to arrange any permanent financing, the banks assumed control of the company. Fitch was replaced as president by Gifford K. Simonds, a director of the First National Bank and former head of the Simonds Saw and Steel Company.

Simonds was a capable man, and during fourteen months in office he was able to show some progress. Unfortunately he was unable to exercise any real authority; control in fact was divided among four factions--the banks, the directors, the old-line management and the employees themselves.<sup>3</sup> In the face of this situation, the banks withdrew their support and prevailed upon Kidder, Peabody and Company to undertake a complete reorganization of Waltham.

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<sup>1</sup>Moody's Investors Service, Moody's Rating Books, 1922.

<sup>2</sup>Dahl, op. cit., p. 174; Moody's Rating Books, 1922.

<sup>3</sup>Moore, op. cit., p. 119.

The Kidder, Peabody plan called for the formation of a new company to assume the assets and liabilities of the old one. Assets were scaled down from \$20 million to \$13 million, and the following capital structure was adopted:<sup>1</sup>

First mortgage, 20-year bonds	\$3,000,000	
Five-year, 6% debentures	3,000,000	
7% prior preferred stock	1,700,000	
6% preferred, non-cumulative	5,000,000	
Class A common stock, no par		25,000 shares
Class B common stock, no par		70,000 "

The comparative balance sheets shown in Table 15 illustrate the changes effected by the reorganization.

A primary goal of the reorganization was to raise somewhat over \$7 million in cash to pay bank debts.<sup>2</sup> \$5.3 million was provided by Kidder, Peabody and the F. S. Mosely Company, in return for the bonds and debentures, ten thousand shares of 6% preferred (par value of \$1,000,000), and seven thousand shares of Class B common. Another \$1.7 million was realized by sale of the prior preferred, chiefly through pressure on the old stockholders. The remainder was raised by sale of the Class A common stock at \$10 a share.

The Class A common was reserved to management. It was issued with the provision that twenty percent of the company's profits, after dividends on the prior preferred, would accrue as dividends upon the Class A common; in other words, this stock received preferred treatment over the regular 6% preferred. The new president, F. C. Dumaine, purchased forty-

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<sup>1</sup>Dahl, op. cit., p. 178.

<sup>2</sup>Loc. cit.

TABLE 15

## WALTHAM WATCH COMPANY

Comparative Balance Sheets  
 March 31, 1922, and February 9, 1923

<u>Assets</u>	<u>3/31/22</u>	<u>2/9/23</u>
Cash	\$ 209,325	\$ 574,522
Accounts receivable	2,759,637	1,446,628
Inventory	7,906,611	4,000,000
Other quick assets	_____	249,900
Total current assets	\$10,875,573	\$6,271,050
Plant and equipment	5,015,122	4,338,860
Patents, trademarks, etc.	2,790,091	2,790,090
Deferred charges	149,986	
Deficit	1,283,087	_____
Total assets	<u>\$20,112,859</u>	<u>\$13,400,000</u>
<u>Liabilities and Net Worth:</u>		
Accounts payable	\$ 4,939,859	\$ 239,937
Notes payable	3,000,000	_____
Total current liabilities	\$7,939,859	\$ 239,937
6% mortgage bonds		3,000,000
6% debentures		3,000,000
Other liabilities	173,000	260,063
Total liabilities	\$ 8,112,859	\$ 3,500,000
7% prior preference stock		1,700,000
6% preferred stock	5,000,000	5,000,000
Common stock	7,000,000	200,000
Total liabilities & N.W.	<u>\$20,112,859</u>	<u>\$13,400,000</u>

Sources: March 31, 1922, balance sheet from Moody's Investors' Service, Inc., Moody's Rating Books, 1923.  
 February 9, 1923, balance sheet from C. W. Moore, Timing a Century (Cambridge, 1945), p. 310.

two percent (10,000 shares) of the Class A stock; an equal amount was taken by Kidder, Peabody and Company, and the remainder went to the F. S. Mosely Company and to Waltham executives.<sup>1</sup>

Frederic C. Dumaine, who was chosen as Waltham's chief executive by the underwriters, enjoyed a brilliant reputation among New Englanders as a financier and executive. That this reputation did not include any "softhearted" tendencies towards stockholders or employees was possibly an added consideration in his appearance on the Waltham scene. In a number of situations (e.g., the old Fore River Shipbuilding Company) Dumaine had exhibited his capacity to take a decaying enterprise, restore it to health, and then to turn it over at a profit to the salvagers. This task at Waltham was to require twenty years of Dumaine's effort, but he succeeded admirably. One can view F. C. Dumaine as an exemplary capitalist of the highest order, as does Waltham's semi-official biographer, C. W. Moore. Or one can feel, as this writer does, that the Dumaine policies were in the long run detrimental to Waltham. In either case, one must agree that few other men could have accomplished what Dumaine did with the inefficient, infirm corporation which he had agreed to manage.

The company's assets had been scaled down in the reorganization. Nevertheless the paper value of \$13 million was still far in excess of the tangible assets, which were worth only

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<sup>1</sup>Moore, op. cit., p. 144.

seven millions.<sup>1</sup> Plant, inventory, and intangible accounts were all over-valued. The company's products had deteriorated in quality and were largely obsolete.<sup>2</sup> And the general inefficiency of top management was reflected in the inefficiency of the labor and sales forces. The measures which Dumaine instituted to correct these deficiencies were harsh but effective.

One of Dumaine's primary objectives was to squeeze the water out of the capital structure; he attacked this objective from two directions. Between 1924 and 1926, over-valued asset accounts were written down by nearly four million dollars.<sup>3</sup> At the same time, a large portion of the cash received by the company was used to retire outstanding securities. This policy continued throughout Dumaine's tenure in office. By the end of 1943, the book value of the company was a realistic \$9 million, as compared to a highly inflated \$13 million in 1923.<sup>4</sup> There was no funded debt, in contrast to the \$6 million which had existed at the beginning of his term. Total preferred stock had been reduced from \$6.7 million to \$3.7 million, ninety percent of which was non-cumulative 6% preferred. The equity of the common stockholders had risen from nothing to over \$3 million. In view

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<sup>1</sup>Moore, op. cit., p. 146.

<sup>2</sup>Despite the heavy trend toward wristwatches after World War I, ninety percent of Waltham's output at this time consisted of pocket watches.

<sup>3</sup>See Table 17.

<sup>4</sup>Data in this paragraph are from Moody's Manual of Investments.

of Dumaine's cavalier treatment of the Class B stockholders (to be discussed below), it would not be amiss to indicate that most of this increase in the common equity accrued to the benefit of F. C. Dumaine, the principal Class A stockholder.

The second major problem to be faced by Dumaine was that of productive efficiency. Given competent management, the efficiency of a plant is a function of its labor force and its capital equipment. In both of these respects, Dumaine inherited an unsatisfactory situation.

The new president spent a full year re-establishing discipline and supervisory control in his organization. Having done this, he announced a wage reduction, effective August 11, 1924. The cut averaged about ten percent; it was however, graduated so that some of the more highly skilled employees faced reductions of up to forty percent.<sup>1</sup> On August 11 the entire labor force walked out of the plant. The strike dragged on for the rest of the year, and was finally settled on January 7, 1925, with the complete capitulation of the strikers to the company's original terms. After this there was no further question of Dumaine's absolute control over the labor force.

Dumaine's efforts to improve productive efficiency were directed almost entirely to factory personnel. He was most unwilling to tie up liquid resources in the improvement of his fixed assets. In two decades, \$1.3 million was spent

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<sup>1</sup>Moore, op. cit., p. 187.

for new equipment, an average of only 1.5 percent a year of the book value of machinery in 1923.<sup>1</sup> Well over half of these expenditures took place in four of the twenty-one years: 1939 through 1941 and 1943, when the plant was tooling up for military orders. Machine design was ignored after 1923, in strong contrast to the previous traditions of the company. Dumaine relied upon external domestic sources and upon Switzerland to provide equipment when replacement was necessary.

In the field of sales effort, Dumaine's actions were as direct as they were in labor relations. Selling expense in 1922 amounted to nearly \$900,000 or sixteen percent of sales; in 1937 selling expense was only \$271,000 or less than five percent of sales.<sup>2</sup> National advertising was virtually eliminated. The little bit which Dumaine consented to spend went largely for point-of-sale material and for local newspaper advertising in cooperation with dealers who were willing to contribute some of their own money for this purpose.

By means of this austerity program, Dumaine was able to revive Waltham as a competitive factor in the industry. His efficiency measures and wage reductions brought substantial reductions in the costs of production.<sup>3</sup> This in turn enabled

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<sup>1</sup>See Table 17 below.

<sup>2</sup>Moore, op. cit., p. 251.

<sup>3</sup>No accurate cost figures are available. Moore reports that Dumaine reduced the executive and office force payroll by \$1,000 a day during a three week period in 1923 (op. cit., p. 163). Between 1923 and 1926, man-days of direct labor per movement were reduced from 1.7 to 1.15 (ibid., p. 232). Coupled with the wage cut discussed above, this productive increase must have reduced labor costs per unit of output by at least one-third.

the firm to reduce prices, which had been from fifteen to twenty-five percent above the prices of similar Elgin and Hamilton models, to the market level of these latter firms.<sup>1</sup> In the prosperous days of the late twenties, sufficient prestige still attached to the old Waltham name to maintain sales at a satisfactory level despite the lack of advertising.

The onset of the Great Depression clouded Waltham's skies. Sales dropped from the \$7 million of 1929 down to \$2.3 million by 1933. Dumaine reacted in characteristic fashion: wages were cut by another thirty percent, averaging only 31.5 cents an hour when the National Industrial Recovery Act was passed.<sup>2</sup> It appears that the salvation of the company lay in the production of automobile speedometers, especially for the Ford Motor Company; this accounted for perhaps half of total sales in the depth of the depression.

With the revival of business conditions, Waltham's sales began to rise again. With the exception of 1938, sales were between five and six million dollars a year in the late thirties. It was not until World War II, however, when Waltham turned exclusively to military production, that the sales levels of the first World War were again reached:

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<sup>1</sup>Ibid., p. 165.

<sup>2</sup>Ibid., p. 334.



TABLE 16

WALTHAM WATCH COMPANY SALES, 1936 to 1944

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1936-1940 (average)	\$5,127,619
1941	7,331,262
1942	8,487,013
1943	10,877,564
1944	11,682,714

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Source: Moody's Investors' Service, Inc., Moody's Manual of Investments, 1937-1945.

At the height of this war-borne prosperity, in May of 1944, Dumaine sold his interest in the Waltham Watch Company; he undoubtedly foresaw that the future of the company might not be as bright as its current health might indicate. The question of just how well Dumaine discharged his responsibilities to the firm inevitably arises, in view of Waltham's recent history. He himself had made not less than \$1.6 million out of his Waltham venture.<sup>1</sup> The Sources and Applications of Funds statement, Table 17, provides a convenient summary of Dumaine's operations.

The underwriters of the 1923 reorganization had every reason to be pleased with Dumaine's performance. Through their speculative holdings of the company's stock and their underwriting profit on the senior securities, Kidder, Peabody and Company realized approximately \$2.5 million.<sup>2</sup> This is a

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<sup>1</sup>Cf. Moore, op. cit., pp. 148, 149, and 329, and Moody's Manual of Investments (Industrials), 1944, p. 2822

Dumaine received over \$600,000 in salary. His original 10,000 shares of Class A common brought over \$400,000 in dividends and was sold at a profit of \$60 a share. Since he actually held more stock than this (the amount is not available), his total return was considerably in excess of \$1,600,000.

<sup>2</sup>Moore, op. cit., p. 149.

TABLE 17

WALTHAM WATCH COMPANY

Sources and Applications of Funds  
(February 9, 1923, to December 31, 1944)

Sources of funds:

Earnings	\$ 6,197,800
Depreciation charged against income	3,359,288
Over-valued inventory, plant, pa- tents, written off against earnings (1923 to 1926)	3,886,430(a)
Income Adjustments	1,454,613(b)
Accounts receivable (decrease)	613,644
Inventories (decrease)	421,406
"Other quick assets" at 2/9/23	249,900(c)
Accounts payable (increase)	292,408
Accrued taxes	1,309,179
Common stock and capital surplus credits (1937 to 1944)	<u>140,800</u>
Total sources of funds	<u>\$17,925,468</u>

Application of funds:

Dividends:	
Preferred	\$3,009,549
Class A common	1,224,660
Class B common	<u>83,648</u>
	\$ 4,317,857
Cash and government securities	2,946,700
Plant and equipment	1,363,644
Other assets	176,131
Liabilities at 2/9/23 paid	260,063
Reacquisition of own securities	<u>8,861,073</u>
Total application of funds	<u>\$17,925,468</u>

Notes: (a) These writeoffs did not themselves provide funds. They indicate rather that the true earnings were understated--i.e., although the company "lost" money in this period, Dumaine was able to reacquire \$3.4 million worth of the debentures and bonds outstanding at 2/9/23.

(b) Credit balance of miscellaneous surplus adjustments to prior income reports--i.e., tax refunds (city tax refunds alone amounted to \$462,000 from 1926-38, according to Moore, op. cit., p. 198), adjustments in other liability reserves, and so forth.

(c) Appears to represent subscriptions to Class A stock.

Source: Supporting statements, Appendix III.

princely return for the reorganization of a company which was worth in real assets only about \$7 million.

The other stockholders had less reason for rejoicing. Less than one-fifth of the \$17 million which became available through earnings, non-cash charges against earnings and other income during Dumaine's tenure was paid out in dividends. Fifty percent of these funds were used to retire securities senior to Dumaine's Class A common stock.

The total amount distributed in dividends from 1926 to 1942 amounted to \$3.3 million. Another million was distributed by order of the Supreme Judicial Court of Massachusetts in 1944, following a successful stockholders' suit for back dividends on the preferred stock for the years 1939-1941.<sup>1</sup> Taking cognizance of the forced dividend, the following estimates appear to be accurate. Dividends were paid in full on the 7% prior preferred, if one ignores the fact that a company exchange offer in 1936 effectively settled arrears of \$31.50 a share for \$3.00 on about five thousand shares. Dividends on the 6% preferred outstanding (roughly 32,000 shares after 1928) averaged about three percent on the par value of these shares over the years.

The Class A common stockholders, principally Mr. Dumaine and Kidder, Peabody, fared very well indeed. Total dividends on this stock (for which \$250,000 was paid) amounted to well over a million dollars, or an average annual return of twenty

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<sup>1</sup>"The Waltham Mess", Fortune, May 1951, p. 198.

percent.<sup>1</sup> The Class B common stockholders were the forgotten men. A dividend of \$2.00 a share was paid in 1937; this was the first and the last dividend which the Class B stockholders received from Dumaine.

The management of a modern corporation has certain responsibilities towards its stockholders. It also has responsibilities with respect to its employees, but such a view was completely foreign to Dumaine. He believed that it was management's duty to see that labor produced as efficiently as possible, under the conditions and in return for the wage scales laid down by management. This attitude colored the plant's labor relations for twenty years.

Management's attitude prevented the development of effective unionization until 1941, although the company had "bargained" for several years with a company union of sorts. In that year Mr. Walter W. Cenerazzo, ex-printer and demon organizer for the International Jewelry Workers' Union, A.F.L., appeared on the scene. Within seven weeks he organized the plant and won a representation election by a four to one majority over the company union.<sup>2</sup> Shortly thereafter Cenerazzo concluded that affiliation with the Jewelry Workers raised certain jurisdictional barriers to his broad objective of unionizing all three of the domestic manufacturers. Accordingly, he led the Waltham local out of the I.J.W.U. and used

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<sup>1</sup>See Table 17.

<sup>2</sup>Moore, op. cit., p. 279.

it as the nucleus of his American Watch Workers Union (Independent) which successfully organized both Elgin and Hamilton by 1944.

Under the combined influence of the union and wartime prosperity, Dumaine granted wage increases of sixty percent between 1941 and the end of 1943. Average hourly earnings (excluding overtime) rose from 53¢ to 84¢ during this period.<sup>1</sup> During this period also, Mr. Cenerazzo's position within the Waltham local was solidified. Loudly and emotionally aggressive, he was the inevitable result of Dumaine's industrial relations policies.

While financial and personnel matters created major problems for the Dumaine management, the most important problem of all was the product itself. And in no other sphere of its operations was the Dumaine management more susceptible to criticism. Consumer acceptance of a particular watch brand is influenced to a considerable degree by the quality of the movement and by style factors in the cases. In neither respect did Dumaine succeed noticeably in correcting the weaknesses he had inherited from the Fitch regime.

The reluctance of the company to spend any money upon research or new machinery and the apathy of the labor force towards careful workmanship inevitably resulted in a serious deterioration of Waltham quality. Even a sympathetic observer had to admit that "the Dumaine management cut corners where it could, and some refinements were lost in the process.

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<sup>1</sup>Ibid., p. 279.

An unfavorable comparison with other quality watches could not be avoided".<sup>1</sup>

A similar situation prevailed with respect to styling. There appears to have been no attempt to develop any standards of style or case design at Waltham, even though every other major producer was active in this direction. As a result Waltham fell farther and farther behind the rest of the field in the appearance of its product. The combination of poor quality, poor styling, and little advertising succeeded in dissipating virtually all of the prestige which Waltham had enjoyed prior to World War I. By 1944 a few people associated the name "Waltham" with fine watches.

This was the situation faced by Ira Guilden, Dumaine's successor. With the assistance of an investment banking house, the Union Securities Company of Maryland, Guilden had purchased a controlling interest in the company for approximately \$1.6 million.<sup>2</sup> Despite the low estate to which

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<sup>1</sup>"These are the Facts", editorial in the Waltham News-Tribune, January 19, 1949.

<sup>2</sup>Moody's Manual of Investments (Industrials), 1945, p. 2321.

On May 22, 1944, the Union Securities Co. offered to purchase Waltham stock. Dumaine announced that his shares and those of "certain other stockholders" would be sold. The offer prices, stock sold to Union Securities, and stock outstanding is listed.

	<u>Offer Price</u>	<u>Shares Acquired by Union Securities</u>	<u>Shares Outstanding</u>
7% Prior Pfd.	\$102.50	531.1	3,766
6% Preferred	75.00	3,184.6	33,843
Class A Common	70.00	19,395	24,630
Class B Common	11.00	6,648.6	41,869

Waltham watches had fallen in the pre-war civilian market, Guilden was confident of his own ability to restore the company to its former glory. He announced glowing plans for postwar expansion to an employment level of 3,500 people and an output of 3,000 watches a day (about fifty percent higher than prewar levels of civilian production).<sup>1</sup> And C. W. Moore wrote ecstatically that Guilden was not an industrial capitalist or a financial capitalist, but a "national capitalist" -- "a man who does not deal primarily in tangibles; his thinking and action cut through to the ultimate sales appeals, to the fundamental human incentives...this is the bright thread that runs through all of Guilden's speech and action".<sup>2</sup>

There was reason for this optimism. Waltham's sales in 1944 reached an all-time high of \$12 million. And whatever else he had done, Dumaine left behind a sound financial structure. Of the company's \$9 million in assets at the end of 1943, over \$4 million were liquid, in cash and government securities.<sup>3</sup> Never before had the company had so comfortable a working capital position. Unfortunately, Mr. Guilden's "bright thread" proved unequal to the task which he faced.

The comfortable financial position inherited by Guilden soon began to deteriorate. Over a million dollars in cash had to be paid out in back dividends, pursuant to the court

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<sup>1</sup>"New and Better Deal", editorial in the Waltham News-Tribune, January 21, 1949.

<sup>2</sup>Moore, op.cit., p. 287.

<sup>3</sup>Moody's Manual of Investments, 1944.

order referred to above. The company was reorganized in 1945, in order to increase the control of the Guilden interests.<sup>1</sup> The former capital structure (two classes of preferred and two classes of common stock) was changed to consist of thirty-year income debentures and \$1 par common stock. Another million had to be spent to call in the outstanding 7% preferred and any of the 6% preferred which was not exchanged for the new debentures.<sup>2</sup> Finally, large amounts were spent for plant improvement; the new president spent as much money on new equipment in four years as Dumaine had in twenty-one years.<sup>3</sup>

The dissipation of working capital might not have been serious had Waltham's sales remained at the 1944 level, but such was not the case. The cutbacks of military procurement in 1945 were reflected in sales for that year. Reconversion problems plagued the company through 1946, and the recovery of sales in 1947 was more than matched by rising costs. The effect on net income is shown below:

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<sup>1</sup>For details on the reorganization, see Moody's Manual of Investments, 1945, p. 2321, and 1947, p. 2992.

<sup>2</sup>The author's computations indicate that the company retired 3,764 shares of 7% preferred at \$105 and 6,726 shares of 6% preferred at \$118 (including back dividends).

<sup>3</sup>See Table 19.



TABLE 18

WALTHAM SALES AND INCOME, 1945-1949

Year	Net Sales	Operating Income	Net Income
1944	\$11,682,714	\$1,400,579	\$ 489,142
1945	9,543,653	153,219	d. 203,276(a)
1946	9,790,270	d. 1,094,707	d. 411,412(a)
1947	11,233,117	d. 193,115	d. 390,115(a)
1948	8,242,797	d. 1,374,257	d.1,617,746
1949 (to June 25)	2,184,840	d. 400,550	212,465(b)

Notes: (a) After federal tax refunds of \$187,000 in 1945, \$1,065,000 in 1946, and \$92,247 in 1947.

(b) After crediting to income \$1,060,000 discount on loans of \$4,660,000 in settlement with creditor banks.

Source: Moody's Investors' Service, Inc., Moody's Manual of Investments, 1945-1950.

If one disregards the tax refunds and loan discount, a more accurate picture of the company's performance in the postwar period may be obtained. Between 1945 and June of 1949, with net sales of \$41 million, the company managed to incur operating losses of \$3 million and net losses of \$4 million. Since this dismal picture developed at a time when every other major producer of watches was enjoying a substantial increase in sales and sizeable profits, it is obvious that something was radically wrong at Waltham.

Guilden was unable to correct Waltham's production inefficiency. He did what he could to provide new equipment, but in the light of the obsolescence of existing machinery, this was inevitably "too little and too late". The major production problems were those connected with quality. Two

postwar movements were so poorly designed that they had to be withdrawn from production, but not until complaints from dealers and customers had further damaged Waltham's considerably tarnished prestige.<sup>1</sup> Difficulties arose continually from careless handling, faulty inspection and attempted shortcuts. The company received frequent criticism about dirty movements and movements placed in the wrong cases. On occasion, in order to meet rush orders, watches were shipped without any final inspection whatever.<sup>2</sup>

An important factor in Waltham's troubles was the post-war change in distribution policies. Prior to the war Waltham watches were sold through wholesalers to the retailers. This policy had the virtue of enabling Waltham to use a relatively small sales force. On occasion the wholesalers also performed the added function of forcing Waltham watches upon reluctant retailers by tying the sales of other, more desirable, merchandise and credit terms to orders for these watches.<sup>3</sup> Guilden, who had learned the watch business at Bulova, proceeded to introduce the Bulova policy of direct sales to retailers; in addition, the number of retail outlets was reduced from 25,000, to 5,000.<sup>4</sup> Had the company enjoyed

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<sup>1</sup>L. M. Hughes, "Who Killed Waltham?", Sales Management, April 15, 1950, p. 37.

<sup>2</sup>U. S. Senate Committee on Banking and Currency, subcommittee hearings "Loan to Waltham Watch Company", 81st Congress, 2d Sess. (1950), p. 163.

<sup>3</sup>U. S. Senate, hearings cited, p. 163.

<sup>4</sup>Hughes, op. cit., p. 38.

a strong position in the retail market, this policy might have succeeded. As it happened, Waltham's market position was weak, and the combination of jobbers' ill-will and loss of retail outlets simply intensified this weakness.

The principal factor in the discouraging sales picture, however, was that Waltham watches were no longer competitive with other leading brands in the eyes of the consumers. For a period of twenty years, Waltham's quality had been declining. Dumaine kept advertising to a minimum until World War II and then eliminated it altogether; other producers had pursued exactly the opposite policies. Guilden tried to remedy this situation. He announced that only movements with seventeen or more jewels would be produced and increased the company's advertising expenditures.<sup>1</sup> But even if the quality of Waltham watches had lived up to the claims of Waltham advertising, the situation would not have been different. The company's prestige had declined too far for even the best advertising and performance to produce immediate results.

History was repeating itself with amazing fidelity to the pattern of the post-World War I years. As sales resistance to Waltham products mounted, inventories climbed from a value of less than one million dollars at the end of 1945 to nearly three million dollars by the end of 1948. With working capital depleted by the advertising campaign, the expenses of reorganization and the purchase of equipment,

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<sup>1</sup>U. S. Senate, hearings cited, p. 162.

Guilden turned to the banks.<sup>1</sup> The banks cooperated handsomely, accepting \$2.5 million of Waltham's notes in 1946.<sup>2</sup> Subsequent borrowing raised this indebtedness to \$4.7 million by the fall of 1948.<sup>3</sup> In a period of four years, net current assets fell by ninety percent, from \$3.6 million to only \$405,000 by the end of 1948.<sup>4</sup> Since this latter figure was only about one-seventh the value of an inventory which the company could not move, Waltham was virtually insolvent. Mr. Guilden had noted the direction, and the velocity, of the wind. Throughout 1947 he had quietly been selling his holdings of Waltham securities, a task which was completed in the spring of 1948.<sup>5</sup>

The serious nature of the Waltham situation had become apparent by the fall of 1947, and the banks insisted upon a management survey by the industrial engineering firm of Rath and Strong.<sup>6</sup> As a result of this survey, I. E. Boucher, who had served as general manager since 1923, was dismissed in March of 1948. Paul Johnson, a production expert from Thompson Products of Cleveland, was hired as executive vice-president with broad powers to remedy conditions at the plant. In

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<sup>1</sup>The First National Bank, the Second National Bank and the State Street Trust Company, all of Boston, and the Central Hanover Bank and Trust Company of New York.

<sup>2</sup>Moody's Manual of Investments, 1947.

<sup>3</sup>U. S. Senate, hearings cited, pp. 50, 114.

<sup>4</sup>Moody's Manual of Investments, 1944-1948.

<sup>5</sup>L. M. Hughes, op. cit., p. 38.

<sup>6</sup>U. S. Senate, hearings cited, p. 159.

June, 1948, Guilden resigned as president, and Johnson was elected to succeed him.

Table 19 shows the sources and uses of funds during the period of Guilden's administration. Let us ignore the debentures, issued primarily in exchange for preferred stock (at a heavy penalty to the company). It then becomes evident that Waltham existed for four years chiefly upon the cash and government securities accumulated by Dumaine and the extension of short-term bank credit. When the liquid assets had been eaten up by operating losses and when the banks refused to finance any further increases in inventories and receivables, Waltham was bankrupt. In the process Guilden managed to reduce the stockholders' equity of \$6.5 million to a deficit of nearly \$1 million.

On September 30, 1948, the company applied for a ten-year loan of \$4.5 million from the Reconstruction Finance Corporation. The application was received adversely at all levels of the RFC, from the Boston office to the review committee. The reasons for rejection were "insufficiency of collateral, operating losses, the contemplated 'bail-out' of the banks, Waltham's unfavorable performance as compared to other companies in the industry, and the absence of definite, workable plans for recovery".<sup>1</sup> One of the strongest advocates of rejection was John J. Hagerty, manager of RFC's Boston Loan Agency.

On December 28 the company filed a petition for voluntary

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<sup>1</sup>Ibid., p. 3.

TABLE 19

## WALTHAM WATCH COMPANY

Sources and Applications of Funds  
(January 1, 1945, to December 31, 1948)

## Sources of funds:

Depreciation charged against income	\$ 415,661
Reduction in investments, charged against income, 1946	33,160
Reduction in cash balance at 1/1/44	379,632
U. S. Government securities sold	2,907,584
Employee pay deductions	105,110
Bank loans (notes payable)	4,310,000
Accruals (debenture interest & other)	587,292
Income adjustment	41,705
Debentures issued	3,881,040
Common stock	26,960
	<u>          </u>
Total sources of funds	<u>\$12,688,144</u>

## Applications of funds:

Net loss during period	\$ 2,215,997
Dividends	140,381
Accounts receivable (increase)	1,625,157
Inventories	1,675,003
Accounts payable (decrease)	327,462
Accrued taxes	1,244,939
Employee pay deductions	23,081
Additions to plant and equipment	1,034,629
Tax prepayments	93,235
Other assets	157,693
Retirement of preferred stock	3,610,690
Excess of face value of debentures issued over par value of 6% pfd. retired by exchange (1945)	512,320
Excess of cost of Class A common reacquired over paid-in value	9,490
Recapitalization expense (1945)	18,067
	<u>          </u>
Total applications of funds	<u>\$12,688,144</u>

Source: Supporting statements, Appendix III.

reorganization under the federal bankruptcy act. Judge George Sweeney, of the U. S. District Court in Boston, immediately turned the company over to three trustees: Jacob J. Kaplan, Daniel J. Lyne and C. Keefe Hurley, all Boston lawyers. And Mr. Cenerazzo, of the union, went to work.

Cenerazzo, who had been active in Washington for some years as a self-appointed lobbyist for the domestic watch industry, began a campaign for RFC approval of the loan. He saw Hagerty, the RFC directors, the Massachusetts congressional delegation and the Munitions Board. Senator Paul Douglas, a member of the subcommittee investigating the loan, admitted that even he, in a misguided moment, had sent a telegram to the RFC--"Strongly urge favorable action".<sup>1</sup> At this period in Waltham history, one begins to wonder whether Cenerazzo or the trustees were running the company.

The pressure was successful. A month after he had recommended that the loan be declined, Hagerty reversed himself and wired Chairman Harley Hise of the RFC, urging emergency loans to the company. He followed this up with a twenty-five page letter advising "full participation" in the Waltham situation.<sup>2</sup> In this letter, Harley suggested an initial loan of \$9 million and indicated that more money might be necessary at some later date.

Meanwhile the trustees of Waltham were experiencing great

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<sup>1</sup>Ibid., p. 23. The senator's telegram indicates that he thought Elgin was a branch plant of Waltham and would be closed if Waltham failed.

<sup>2</sup>Ibid., pp. 50-69. Hagerty's report is reprinted in full.

difficulty in trying to sell trustees' certificates in order to raise working capital. Although the RFC is specifically prohibited from lending to bankrupt firms, the directors agreed to purchase these certificates on January 4.<sup>1</sup> In the next few months, a total of \$1.8 million was extended to the company in this fashion. It was clear that the political pressure was having some effect.

Cenerazzo arranged a mass meeting of Waltham citizens on January 25. The hero turned out to be John J. Hagerty, who announced that the RFC was willing to consider a loan of \$6 million, provided that the company could raise another \$3 million in equity capital (\$1.5 million to be paid in before any RFC disbursements).<sup>2</sup> The directors of RFC had apparently accepted Hagerty's valuation of the company's assets at over \$9 million as a going concern or \$6.5 million in liquidation, although the RFC examiner, S. H. Petterson, had found a liquidation value of only \$3 million as a most hopeful maximum.<sup>3</sup>

The search for equity capital was in vain. Again Mr. Cenerazzo stepped into the breach, with a scheme for Waltham employees to subscribe for stock in the bankrupt concern out of their savings and loans from a local bank (to be repaid through a check-off of future wages). Some \$635,000 was

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<sup>1</sup>Ibid., p. 3.

<sup>2</sup>Ibid., p. 17. The official resolution (of February 18) actually required \$4.5 million of equity capital, of which \$2 million was to be paid in.

<sup>3</sup>Ibid., pp. 60, 85.



actually subscribed in this manner.<sup>1</sup> The irregularity of the proceedings enraged Johnson, who resigned his position as trustees' agent. A gentleman by the name of Van Epps followed Johnson for a few weeks, until he in turn was replaced on April 8, 1949, by none other than John J. Hagerty.

While still manager of the Boston Loan Agency, Hagerty had been unflagging in his efforts to push through an RFC loan. In order to lessen the danger of criticism that RFC was bailing out the banks, he persuaded the banks to write off slightly over \$1 million of the \$4.3 million still due as a "discount" for payment by July 15, 1949.<sup>2</sup> The directors of RFC were moving so slowly as to endanger this discount. So Mr. Hagerty called up "John, the New England Champ", more formally known as Representative John W. McCormack, Majority Leader of the House.<sup>3</sup> The good congressman arranged a meeting on March 28, attended by the directors of the RFC, the Massachusetts congressional delegation, the Waltham trustees, Hagerty and, of course, Cenerazzo. On March 31 a new loan proposal was announced.

The amended resolution approving the loan gave the trustees exactly what they had asked. The requirement that the company raise equity capital was rescinded. And the

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<sup>1</sup>"The Waltham Mess", *Fortune*, April 1949, p. 200. The SEC stopped this method of selling stock and required that the funds received be returned to the subscribers.

<sup>2</sup>The banks apparently decided that three-quarters of a loaf was better than none.

<sup>3</sup>U. S. Senate, hearings cited, pp. 92-97.

provision that only the trustees' certificates were to be refunded (\$1.7 million of which had been used to pay off the banks) was amended to permit an additional payment of \$1.4 million to the banks. In short, the banks were bailed out, losing only the amount of the discount. Disbursements under the loan were limited to \$4 million for debt repayment and working capital, with an additional \$2 million earmarked for the purchase of new machinery.

The appointment of Hagerty as trustees' agent reflected the hand of Mr. Cenerazzo.<sup>1</sup> Cenerazzo had approached Hagerty on the subject of a position with Waltham as early as December 28, 1948, but the latter gentleman was hesitant about giving up the security of his government position. Cenerazzo then suggested the name of Howard Schaffer, an Elgin vice-president, to the trustees, but Schaffer was not interested. On the way to the meeting of March 28, Cenerazzo again urged the trustees to offer the job to Hagerty. This time Hagerty accepted and came to work for Waltham, on April 8, at a salary of \$30,000 a year.<sup>2</sup>

In fairness to Hagerty, it must be admitted that he had inherited an over-sized headache. There was no prospect that the company would be released from receivership before the end of the summer (thus permitting use of the RFC loan), and the banks insisted upon repayment by July 15 if the discount

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<sup>1</sup>Ibid., pp. 27-32, 168.

<sup>2</sup>A fascinating sidelight in this connection is that on January 13, 1949 (after he had been approached by Cenerazzo) Hagerty recommended to the R.F.C. that the new president be paid \$40,000 a year plus a bonus (U.S. Senate, hearings cited, p. 68).

were to be granted. In addition, Hagerty feared that the RFC might refuse to make disbursements if the company's heavy inventory had not been moved by the time of reorganization. The result was the famous half-price sale which began on April 27, 1949.

Approximately 110,000 watches were sold through E. A. Filene, of Boston, and other department stores of the Federated chain. Waltham received an average price of \$17.44 apiece.<sup>1</sup> Thus the sale was a success in the sense that a large part of the inventory was liquidated, and nearly \$2 million was realized for payment to the banks and for working capital. From the long-run point of view, the sale was disastrous. Jewelers who had stocks of Waltham watches were forced to sell these at cost. In addition the sale seriously reduced the normal graduation-time demand for other watches in cities where Waltham watches were dumped. The result was an effective boycott of Waltham products by the retail jewelry trade.

Little progress was made during the summer of 1949, as Hagerty was unable to build up a management organization. The trustees turned the problem over to a consulting firm, Booz, Allen and Hamilton, which was finally (in August) able to secure three competent executives: Teviah Sachs, as sales manager, Gerald Walsh, as comptroller, and Lee Sherrod, as a production manager.<sup>2</sup> On September 23, 1949, the District

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<sup>1</sup>Ibid., p. 133.

<sup>2</sup>Ibid., p. 129.

Court declared the reorganization completed and turned the company over to its directors.<sup>1</sup> John Hagerty was retained as the new president. Four months later the company was back in bankruptcy.

There were at least three reasons for the failure of the company. The first, and primary one, was Hagerty's complete incompetence in his position. On October 5, 1949, the Loan Administration Branch of the RFC's Boston agency reported: "The magnitude and complexity of the task involved in rehabilitating this company is beyond the scope of the present president's comprehension and experience".<sup>2</sup> There was friction between Hagerty and his directors and friction between Hagerty and his subordinates. The author's personal opinion, based on very limited observation of the Waltham scene, is that Hagerty was afraid to delegate any authority but at the same time was afraid to make decisions himself. Consequently there was virtually no exercise of managerial direction at the plant.

In the second place, the effect of the half-price sale upon the firm's relationships with retailers now became evident. In the last half of 1949, production was based upon an estimate of selling 150,000 watches; in fact, only 17,000 of these were sold.<sup>3</sup> The result was that the inventory at

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<sup>1</sup>Ibid., p. 118.

<sup>2</sup>Ibid., p. 129.

<sup>3</sup>Ibid., p. 137.

the end of the year was even higher than it had been before the "excessive" inventory had been cleared in the half-price sale.

The third factor was the scarcity of working capital. Most of the proceeds from the liquidation of inventory had accrued to the benefit of the banks. In the fall of 1949, the RFC disbursed \$4 million of its loan. \$1.8 million of this was turned back to the RFC to refund the trustees' certificates which that agency had purchased during the receivership, and another \$600,000 was given to the trustees for payment of legal fees and other claims arising out of the reorganization.<sup>1</sup> Thus the company received cash in the amount of only \$1.6 million. This was not sufficient to finance the operations of the company and the accumulation of inventory at a time when sales were negligible.

The company applied for a second loan of \$3 million, on November 15, 1949.<sup>2</sup> The Waltham management believed that this would be granted, on the basis of an informal meeting with the RFC directors in October. Extensive plans were made for a large national advertising campaign throughout Waltham's "Centennial", and a new nineteen-jewel "leader" to retail at \$39.75 was introduced.<sup>3</sup> In addition, the company had started work on a \$500,000 Air Force order for aircraft panel clocks.<sup>4</sup>

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<sup>1</sup>Ibid., pp. 118-120.

<sup>2</sup>Ibid., p. 6.

<sup>3</sup>L. M. Hughes, op. cit., p. 30.

<sup>4</sup>Boston Herald, November 3, 1949.

Working capital for production, for advertising and for the extension of credit to retailers, however, hinged upon RFC approval of the second loan application. This approval was denied on February 3, 1950.

On the same day, the company filed another petition for reorganization under the United States Bankruptcy Act. The RFC immediately took possession of the plant on the grounds that default of the January interest payment made the company liable for the full \$4 million. The entire work force of 1,200 persons was laid off, and the plant was closed.

Walter Cenerazzo endeavoured to start the bandwagon of political pressure rolling, but in vain. A plea to President Truman elicited the response that the government could do nothing more for Waltham. (Cried Cenerazzo, "This is a cruel and inhuman statement!"<sup>1</sup>) Even another Waltham mass meeting at which the company's plight was blamed upon the Truman Administration, the RFC, the Swiss, Ira Guilden and Governor Paul A. Dever, failed to have any effect.<sup>2</sup>

Meanwhile the battle was shaping up on another front. After considerable deliberation, Judge Sweeney agreed to accept the second petition for reorganization. Once again, Messrs. Kaplan, Lyne and Hurley became trustees for the debtor, with instructions to formulate a plan for reorganization. The trustees's plan, accepted by the Court on June 30, 1950,

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<sup>1</sup>Ibid., February 9, 1950.

<sup>2</sup>Ibid., June 12, 1950

contained the following major provisions.<sup>1</sup>

The RFC loan was to be reduced by the repayment of \$2 million through liquidation of the inventory, and the remainder was to be extended as a long-term loan. Other creditors would be paid in full. Teviah Sachs, who had succeeded Hagerty in the presidency, would invest \$100,000 in the company, in return for 400,000 shares of common stock. The trustees believed that Sachs' investment plus existing cash assets of \$500,000 (which had been seized by the RFC) would be sufficient to process the inventory for sale. In turn, liquidation of the inventory would provide funds for the reorganization. Upon acceptance of this plan, Judge Sweeney authorized the trustees to take possession of Waltham's assets from the RFC, through an order on July 10, 1950.

The RFC opposed any attempt at reorganization, claiming that the company was insolvent and that any further operations would dissipate the collateral against the RFC's loan, so the court order was appealed. On August 7 the Court of Appeals (First Circuit) ordered the RFC to comply with Judge Sweeney's order while the appeal was pending. The RFC turned over the plant and inventory but refused to release Waltham's \$500,000 in cash. A week later, in an unprecedented action, Judge Sweeney found the RFC in contempt of court and fined the

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<sup>1</sup>In the Matter of the Waltham Watch Company, Debtor, Proceedings, U. S. District Court (Mass.), May 1, 1951, p. 10.

<sup>2</sup>Boston Herald, August 7, 1950.

corporation \$50,000.<sup>1</sup>

Despite the Court's action, the RFC persisted in its refusal to release the cash. Nevertheless the trustees were able to secure a loan from Sachs and advances from customers which made it possible to reopen the plant in September. A small work force was hired to ready the inventory for sale. On October 22, 1950, Waltham watches once again went on sale at half of their "regular" prices, primarily through department stores. This time the Waltham liquidation cut into the pre-Christmas sales peak of retail jewelers. The second liquidation was considerably more successful than the company had anticipated, probably because of the sharp rise in demand for consumers' durables which followed the outbreak of war in Korea. After meeting the costs of processing the inventory for sale, the firm netted \$2.6 million.<sup>2</sup>

The Circuit Court of Appeals, on December 21, 1950, affirmed Judge Sweeney's order of July 10. In the following month, the RFC and Waltham's trustees arrived at an agreement on the loan.<sup>3</sup> The \$500,000 held by the RFC was applied to the loan, and another \$2 million from the proceeds of the liquidation sale were paid by the company for interest, care of the property, and to reduce the principal of the loan to \$1.75 million. By July 1, 1951, the principal was reduced

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<sup>1</sup>U. S. District Court, Proceedings cited, p. 12.

<sup>2</sup>Ibid., p. 12.

<sup>3</sup>Ibid., p. 18.



to \$1.5 million, which amount was extended through 1960 at four percent interest, principal and interest to be paid in monthly installments of \$10,000.

The Sources and Applications of Funds Statement for the years 1949-1950 (Table 20 below) provides a summary of reorganization transactions, although the accounting methods used give an inflated picture of the actual cash flow.<sup>1</sup> Among the "sources of funds", over \$5 million (capital surplus and most of the new stock issue) represented the fact that debenture holders to whom the company owed \$4.25 million (including interest) were forced to accept in exchange less than \$1 million of the new \$1 par common, while the old stockholders with an equity of \$720,000 (on paper!) received \$33,423 of the new common. Another \$1 million consisted of an inventory write-up, at a time when anything over scrap value was questionable.

In short, the principal sources of funds were the collection of accounts receivable and the R.F.C. loan, which did little more than cover the operating losses during this period and bail out the creditor banks. Proceeds of the liquidation sales went to build up the company's cash balance, but even this is somewhat illusory. Nearly all of the \$3 million cash held by Waltham at the end of 1950 was obligated to the R.F.C. and the Reorganization Trustees; less

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<sup>1</sup>Reference to the supporting statements for 1949-1950 (Appendix III) is necessary to clarify the picture. Subsequent remarks concerning the company's finances are based on these statements.

than \$10,000 was available for use at management's discretion.

The reorganization of Waltham was finally approved by Judge Sweeney on July 27, 1951, and the company resumed normal operations. Since that time Waltham has been engaged primarily upon the production of jeweled aircraft clocks and other military timekeeping devices under government contracts. In 1952, for example, government contracts and subcontracts accounted for nearly \$3 million of the firm's \$5 million sales.<sup>1</sup>

The company has developed a line of civilian watches, based upon its own and imported movements. To date, however, distribution of Waltham watches in the retail trade does not appear very impressive.<sup>2</sup> Of possibly greater significance (for the long run) has been the establishment of an Instrument Division for research and development in the field of miniature scientific and aircraft instruments.

The ability of the Waltham Watch Company to regain a competitive position in the industry is still much in doubt. The effects of half a century of poor management are difficult to overcome. The decay of management after the death of Royal E. Robbins dropped Waltham from its pre-eminent position in the industry. And it led to reaction, personified by F. C. Dumaine. Dumaine's reputation as a "balance-sheet man", more concerned with the finances of a company than with

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<sup>1</sup>Waltham Watch Company, Annual Report, 1952.

<sup>2</sup>According to Teviah Sachs the company is still, in 1955, faced with the problem "of overcoming the harmful effect upon sales" of the liquidation sales of 1949 and 1950 (Waltham Watch Company, Annual Report, 1954, p. 3).

TABLE 20

WALTHAM WATCH COMPANY

Sources and Applications of Funds  
(January 1, 1949, to December 31, 1950)

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Sources of funds:

Depreciation charged against income	\$ 218,940
Accounts receivable	2,088,042
Reduction in inventories	235,720
Reduction in other assets	292,479
Maintenance of property by R.F.C.	65,004
Refund of federal taxes	65,892
R.F.C. loan	4,000,000
Liabilities rising out of 1949 and 1950 reorganizations	945,015
Capital surplus arising from reorganization at 9/23/49	3,918,402
New common stock issued	1,185,780
Capital surplus arising from cancellation of one share of stock	1
Adjustments to inventory and surplus reported at 6/25/49	<u>1,070,440</u>
Total sources of funds	<u><u>\$14,085,715</u></u>

Applications of funds:

Net losses during period	\$ 2,409,128
Increase in cash balance	2,904,387
Accounts payable	148,653
Bank notes payable (after discount of \$1,060,000)	3,250,000
Accruals (interest and other)	516,996
Additions to plant	180,515
Reserve for disputed claims	75,000
Retirement of 5% debentures	3,881,040
Cancellation of old common stock and capital surplus	<u>719,996</u>
Total applications of funds	<u><u>\$14,085,715</u></u>

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Source: Supporting statements, Appendix III.

its product, was clearly in evidence at Waltham. His administration was a financial blessing to the banks which had loaned money to the company and to Kidder, Peabody. Dumaine's refusal to "waste" money on research, machinery, styling and advertising, however, was hardly in the interest of the long-run health of the company. The firm managed to scrape through the depression on wage cuts and speedometer sales, and to prosper on military orders during World War II. But by the end of the war Waltham was far behind the other major firms in efficiency and in consumer acceptance, by virtue of its obsolete equipment, obsolete products and poor quality.

Ira Guilden's administration was characterized by mistakes which were compounded of a strange mixture of enthusiasm and a lack of executive ability. As an example, the company lost the Ford speedometer contract in 1947. Ford wished to have the speedometers restyled; Guilden is reported to have said that he was far too busy making fine watches to worry about automobile accessories.<sup>1</sup> He bought machinery and advertised, but apparently he ignored both quality control and cost control. As a result even the financial position of the company, the only worthwhile legacy of Dumaine, was destroyed.

The contradictory policies of the Reconstruction Finance Corporation, before and after the fall of 1949, have also contributed to Waltham's predicament. The RFC most certainly

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<sup>1</sup>U. S. Senate Committee on Finance, Hearings on H. R. 1211, 81st Congress, 1st Sess. (1949), p. 286.

should have insisted upon its original condition to the loan, namely that the company raise additional equity capital. It is true that this condition might have proved impossible to fulfill, in which case Waltham would have died and been decently interred early in 1950. As it was, the RFC's \$4 million, loaned under conditions palatable to the trustees and Mr. Generazzo, simply postponed the demise without offering any real hope for a cure. The refusal of the RFC to lend the money requested in November, 1949, was very nearly the final blow.<sup>1</sup> This action came at a time when competent executives had been hired, despite Mr. Hagerty, and the prospects of the company were brighter than they had been for years. Had additional working capital been provided at this time, the company could have avoided the second liquidation sale and might have had a fighting chance for survival.

Some of Teviah Sachs' accomplishments, and some of his problems, are illustrated in Table 21 below. The funds provided by earnings and depreciation charges, as well as most of the cash balance of January 1, 1951, have necessarily been applied to reduction of the RFC loan and other liabilities remaining from the reorganizations. Consequently Waltham is back in the short-term capital market, borrowing funds for working capital purposes. This is an ominous portent to

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<sup>1</sup>The RFC's about-face, with respect to its earlier leniency towards Waltham, undoubtedly resulted from the sharp criticism of RFC lending policies by Senator Fulbright's subcommittee of the Senate Banking Committee. The loan to Waltham, in particular, was severely attacked by the subcommittee in hearings on July 16, 1949, and on July 20 and 21, 1950.

anyone familiar with the company's past history.

Waltham's net earnings have declined in recent years-- from 1952's profit of \$162,800 to 1954's loss of \$210,436.<sup>1</sup> The employment record is also discouraging. At the end of 1951 the company had nearly seven hundred employees; this figure passed a thousand in the following year ("normal" employment is 2,500).<sup>2</sup> By the end of 1954, however, employment had been curtailed "in keeping with production requirements" to 350 people.<sup>3</sup> The reason for this is obvious: the company has been unable to re-enter the civilian market. In answer to a direct question, Mr. Sachs told the Tariff Commission, "We are not selling substantial quantities".<sup>4</sup> Cenerazzo was somewhat more graphic: "The number of American jeweled watches that he manufactures you can go ahead and put in this thermos jug, maybe six or seven times".<sup>5</sup>

The company's prospects at the present time are exceedingly slim. Military orders are barely keeping Waltham alive, and should military procurement taper off, the firm will be forced to face the test of civilian competition. Teviah Sachs shows more promise of being able to solve this problem than any of his predecessors of the past thirty years.

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<sup>1</sup>Waltham Watch Company, Annual Reports, 1952-1954.

<sup>2</sup>Waltham Watch Company, Annual Report, 1952, p. 6.

<sup>3</sup>Waltham Watch Company, Annual Report, 1954, p. 6.

<sup>4</sup>Stenographic transcript, "U.S. Tariff Commission Hearing on Watch Movements and Parts under section 332 of the Tariff Act of 1930 and section 7 of the Trade Agreements Act of 1951, as amended" (Washington, 1954), p. 126.

<sup>5</sup>Ibid., p. 155.

TABLE 21

WALTHAM WATCH COMPANY

Sources and Applications of Funds  
(January 1, 1951, to December 31, 1954)

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Sources of funds:

Net income	\$ 26,152
Depreciation charges	353,971
Reduction in cash balance at 1/1/51	2,608,633
Accounts payable (increase)	35,429
Bank loans (notes payable)	1,152,066
Accrual of liabilities	123,733
Proceeds from sale of common stock	<u>514,196</u>
Total sources of funds	<u>\$4,814,180</u>

Applications of funds:

Accounts receivable (increase)	\$ 286,054
Charges on defense contracts in process, less progress billings	308,592
Inventory (increase)	85,208
Plant and equipment	63,493
Deferred charges	49,550
Other assets	37,184
Paid to RFC (including principal and interest on loan and charge for care and preservation of property)	3,032,578
Liabilities arising out of 1949 and 1950 reorganizations	934,298
Costs of exchanging common stock for voting trust certificates	13,834
Purchase of own stock (cost)	<u>3,389</u>
Total applications of funds	<u>\$4,814,180</u>

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Source: Supporting statements, Appendix III.

In the light of the company's recent history, it will be a Herculean task to regain any significant place in the retail watch trade. Mr. Sachs can hardly be criticized if he fails; should he succeed, he deserves credit as the best executive in Waltham's history.

From the broader viewpoint of public welfare, Waltham's demise would hardly be catastrophic. Most of the firm's employees who have been laid off since 1948 have found a ready market for their talents in the growth of the electronics and other light industries in the vicinity of Waltham. The dislocation of labor provides no weighty argument for Waltham's continued existence. Neither does the protection of investors. Waltham's present stockholders must surely be cognizant of the fact that they are playing against long odds.

The desirability of maintaining the company's productive capacity at any positive cost to the economy as a whole is open to serious question. Clearly enough the consuming public has not missed Waltham watches in recent years, and the firm's relatively small volume of defense business during the Korean crisis could readily have been handled by other firms in the industry. In the event of a general mobilization for war, of course, Waltham might make some contribution. If this argument is used in Waltham's case, however, it should logically be extended to prevent the liquidation of any firm which operates manufacturing facilities of any sort.



## CHAPTER IX

### WATCHES AND TARIFFS

In the past the American watch industry has been the recipient of an impressive amount of public support, in the form of tariff protection, against foreign competition. As the domestic industry developed, and as the protectionist wing in Congress grew in power, the tariff on imported watches and parts was raised from the 7½% of 1842 to 25% by 1870, a level which was retained until 1897. The political influence of the industry was clearly demonstrated in the watch provisions of the Tariff Act of 1897. The Dingley Tariff retained the earlier 25% ad valorem rate on watches, but added a series of specific duties, ranging from 35¢ on movements with seven or fewer jewels to \$3.00 on movements with more than seventeen jewels. Cases and parts were dutiable at 40% ad valorem, although the old 25% rate on jewels was reduced to 10% (since the domestic industry then, as now, relied upon imported jewels). The protection thus granted to movements averaged about 60% ad valorem on watches in the zero to seven jewel class and 45% on those with more than seven jewels.<sup>1</sup>

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<sup>1</sup>Ad valorem equivalents of specific duties, referred to hereafter, have been computed from data on import values and duties paid, as reported in Foreign Commerce and Navigation of the United States.

The Payne-Aldrich Tariff of 1909 was written in the same key. The ad valorem rate was eliminated for watches with fifteen or fewer jewels, but specific rates were doubled, while the Dingley rates were kept for parts and movements with more than fifteen jewels. At this time the bulk of competition between the American and Swiss industries was in the seven to fifteen jewel category. The combination of high tariffs and American productive efficiency virtually eliminated Swiss watches from the domestic market. The trend in tariff protection was reversed in 1913, when the Underwood Tariff eliminated all specific duties on movements and replaced them with a flat schedule of 30% ad valorem, roughly one-half of the degree of protection which the domestic manufacturers had enjoyed under the Payne-Aldrich Tariff. At the same time, mechanization in the Swiss industry had reduced the average value of movements exported from that country. During the war American costs rose sharply. Waltham's average movement cost, for example, rose from \$3.75 to \$7.05.<sup>1</sup> Once again the domestic manufacturers journeyed to Washington, to plead their special interests in the drafting of the Fordney-McCumber Act of 1922.

The tariff of 1922 replaced ad valorem charges on movements with a schedule of eight specific duties, depending upon jewel counts and adjustments, which ranged from 75¢ for movements with less than seven jewels to \$10.75 for movements with more than seventeen jewels. On seventeen-jewel movements

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<sup>1</sup>C. W. Moore, Timing A Century (Cambridge, 1945) p. 327.

alone, the duties ranged from \$2.75 for an unadjusted movement to \$6.50 for a movement adjusted to temperature and five positions. The duties on cases and parts, except for jewels, were raised to 45% ad valorem. Throughout the period during which this tariff was in effect, duties on movements of all kinds averaged 53% of the foreign unit values of these movements, in contrast to the 30% rate established in 1913.

Still the Swiss competition increased. As a result of competition within the Swiss industry itself (discussed in Chapter VIII), average foreign unit values declined after 1924. More serious was the fact that the Swiss pressed their advantage in filling the demand for wristwatches by shipping smaller and smaller movements. In 1930 the domestic industry asked for and received the highest protection which it had ever enjoyed.

The Hawley-Smoot Tariff established a schedule of twenty-eight specific rates for movements with seventeen or fewer jewels. These basic rates, which varied directly with jewel count and inversely with the size of the movement, ranged from 75¢ for a non-jeweled movement more than 1½ inches wide to \$4.00 for a seventeen-jeweled movement which was 0.6 inches wide or smaller. In addition movements with more than seven jewels were subject to additional duties of 15¢ for each jewel in excess of seven. Adjustment to temperature was taxed at \$2.00, and position adjustments were taxed \$1.00 each. As an example, the duty on a "10/0" sized man's wristwatch movement (0.83 inches wide) containing seventeen jewels was \$5.00, if unadjusted, and \$10 if adjusted to temperature and three

positions. The \$10.75 duty on movements with more than seventeen jewels was retained. In the five-year period during which the rates of 1930 were effective, these specific duties amounted to 82.6% of the average unit values of all movements imported.

Soon after the passage of the Reciprocal Trade Agreements Act, an agreement was negotiated with Switzerland, effective February 15, 1936. Among the concessions granted by the United States was a reduction in the tariff rates upon imported watches and parts. The number of size classifications was reduced from seven to four, and rates were reduced in all size and jewel classifications. The additional duty on jewels in excess of seven was reduced from 15¢ to 9¢, and adjustment duties were reduced from \$1.00 to 50¢. The trade agreement rates (in effect until July 27, 1954) represented an overall reduction of about thirty percent of the 1930 rates, although not all classifications received the same reductions.<sup>1</sup>

Although domestic producers objected violently to the reductions, they did make certain gains through the agreement. The effective protection of the original rates was less than the apparent protection for jeweled watches as a result of the widespread (and perfectly legal) practice of "upjeweling". Under the Tariff Act of 1922, the proportion of movements with less than seven jewels increased from less than one-tenth to nearly two-thirds of all movements imported. Most of this

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<sup>1</sup>U. S. Department of Commerce, Postwar Watch Markets (Washington, 1950), p. 38.

increase consisted of "6-jewel" movements, with a brass disc replacing one of the cap jewels: the importer substituted a jewel for the disc and had a seven-jewel movement, thereby saving fifty cents a movement in duty. The Act of 1930 eliminated this particular practice by placing movements from two to seven jewels in the same classification, but it then became profitable to upjewel seven-jewel movements to fifteen or seventeen jewels. The duty differential between seven and fifteen-jewel movements amounted to \$2.00 and rose to \$3.00 for unadjusted seventeen-jewel movements, while the duty on jewels alone was less than half a cent apiece. In addition the high rates of duty under this tariff led to an enormous increase in smuggling, and thus the evasion of any duties on a number of movements which is said to have been as great in some years as the number of those legally imported. Under the trade agreement, the Swiss government undertook to eliminate both of these practices. Smuggling was virtually eliminated by a system of export controls and marking symbols, through which any exporter who engages in smuggling or sells to smugglers may be detected. And the Swiss industry agreed to refuse sales to any American importer who might be engaged in upjeweling.

The effects of the tariff reduction upon watch imports cannot be accurately estimated, since the tariff has been only one of many variables (including changes in Swiss unit values, national income, consumer acceptance of brands utilizing imported movements, and so forth) which have affected the volume of such imports. It is simply stating the obvious to

point out that the tariff is undoubtedly an important factor. The number of movements imported dropped by ninety percent from 1929 to 1933, while domestic production of jeweled movements dropped by only fifty-eight percent. Between 1935 and 1937, domestic production rose by seventy-one percent, and the number of units imported rose by one hundred and sixteen percent.<sup>1</sup> It is impossible to judge to what extent these fluctuations reflected the Hawley-Smoot Tariff and the subsequent reciprocal trade agreement and to what extent they represented the dislocation of international trade during the depression.

TABLE 22

AVERAGE FOREIGN UNIT VALUES AND AVERAGE DUTY  
ON IMPORTED WATCH MOVEMENTS, BY JEWEL COUNT.

	<u>1931-35</u>	<u>1936-40</u>
7-jewel movements:		
Average value	\$2.55	\$2.07
Average duty	2.12	1.27
Total	<u>\$4.67</u>	<u>\$3.34</u>
15-jewel movements:		
Average value	\$3.77	\$3.60
Average duty	2.78	2.03
Total	<u>\$6.55</u>	<u>\$5.63</u>
17-jewel movements:		
Average value	\$4.93	\$3.50
Average duty	3.94	2.33
Total	<u>\$8.97</u>	<u>\$5.81</u>

Source: Averages computed from import figures reported in Foreign Commerce and Navigation of the United States.

<sup>1</sup>Import data from annual volumes of Foreign Commerce and Navigation of the U.S.; domestic production from the U. S. Tariff Commission, Watches, (Washington, 1947), p. 77.

The price effects of the reciprocal trade agreement are indicated in Table 22. It should be noted that foreign unit values also reflect the devaluation of the dollar by forty percent in 1933 and the devaluation of the Swiss franc by thirty-five percent in 1936.

The trade agreement also served to stimulate the imports of full-jeweled (seventeen) movements. There is little difference between the production costs of seven and seventeen-jeweled movements of comparable quality, except for the cost of the jewels themselves--this difference at present is about 50¢.<sup>1</sup> Under the Hawley-Smoot Tariff, however, a \$3.00 differential in duties between movements of these two classes discouraged the importation of the higher-jeweled movements. Between 1933 and 1935, eleven percent of the movements imported contained seventeen jewels, while sixty-nine percent contained only seven. After the trade agreement had reduced this differential to \$1.80, the proportion of seventeen-jewel movements rose sharply, averaging forty-three percent from 1937 through 1940, while the seven-jewel movements accounted for only forty percent of the total.

The effects of wage and price inflation since 1940 considerably reduced the protection accorded to the domestic manufacturers. The pre-war wage differential of 30¢ to 40¢ an hour between the American and Swiss watch industries was compensated for by the tariff, even after the trade agreement.

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<sup>1</sup>Note in Table 22 that 15-jewel movements may actually cost more than 17-jewel movements, even though the latter will sell at higher retail prices.

The present wage differential of roughly \$1 an hour was not so compensated for while the specific rates of 1936 were still in effect.<sup>1</sup> As a result the domestic manufacturers have been exceedingly active in recent years in their efforts to secure greater protection. These efforts provide an interesting case study in the development of tariff and trade policy.

The development of a protective tariff upon any commodity must of necessity reflect the interests of the producers of that commodity. Wherever different commodities bear different rates of duty, the producers of each of those commodities have urged rates which they feel will reduce or remove the pressure of foreign competition. If these producers possess some political influence, their representatives in Congress will propose these rates when a tariff act is being drawn up. In the course of committee hearings (by the House Ways and Means Committee and the Senate Finance Committee) persons adversely affected by the proposed rates may register their objections. These may result in some downward scaling of the proposed rates, providing the objectors also have some political influence. Differences between the House and Senate committee views will be settled by conference, and eventually the compromise rates will appear as paragraphs in a tariff bill reported out of the committees to their respective branches of the legislature. After extended floor debates over the bill, paragraph by paragraph, between the protectionists and

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<sup>1</sup>The problem of wage and cost differentials will be discussed in more detail in the following chapter.



anti-protectionists, Congress enacts a tariff law.

There are two serious shortcomings to political tariff-making. In the first place, the members of Congress lack the detailed technical knowledge of individual commodities necessary to establish rates, whether the object of the tariff be revenue or protection. The Tariff Commission, presumably the advisers in such matters, lack both the funds and the personnel to counsel Congress properly.<sup>1</sup> Consequently, if the industry representatives can make their cases sound convincing enough to the committees, their rate proposals will usually be accepted with little modification.

In the second place, the tariff provides an unparalleled opportunity for "log-rolling". Each Representative and Senator realizes that his brethren, like himself, must keep constituents happy in order to be reelected. He will "go along with" the tariff proposals of his cohorts, unless these will arouse strong opposition in his own state or district. The gentlemen from West Virginia will support the high tariffs on watches proposed by the gentlemen from Pennsylvania and Illinois, in the knowledge that the latter will in turn support high tariffs on pottery. Since the public at large is seldom vocal, the public interest may be safely ignored. The result

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<sup>1</sup>Professor Schattschneider points out that the Commission was able to investigate 74 commodities between June, 1930, and December, 1932, with a force of 300 employees and funds of \$2.5 million. He estimates that study of the whole list of 3,221 items would have required 13,000 employees and \$100 million. E. E. Schattschneider, Politics, Pressures and the Tariff (New York, 1935), pp. 24, 25.

is that "in tariff making, perhaps more than in any other kind of legislation, Congress writes bills which no one intended. . . . The very tendencies that have made the legislation bad have, however, made it politically invincible."<sup>1</sup>

The watch paragraph (Paragraph 367) of the Tariff Act of 1930 illustrates the tariff-making process. During the House hearings in January 1929, Taylor Strawn (president of Elgin) represented the domestic manufactures.<sup>2</sup> He argued that the rates established in 1922 had failed to protect the domestic firms, since domestic output had remained relatively stable, while imports had doubled; that the Swiss were evading the tariff as it was; and that unless relief was secured, the American industry would be destroyed. Mr. Strawn suggested that the \$10.75 rate for movements with more than seventeen jewels be retained, and asked for a modest increase "of three hundred to four hundred percent" in the lower rates.<sup>3</sup> The importers, represented by a New York lawyer named Emil Zolla, pointed to the excellent profit records of the domestic firms and suggested some small reductions in the 1922 rates.

H. R. 2667, passed on May 28, 1929, contained a series of "base rates" for two to seven-jewel watches which ranged from \$1.25 for the largest movements to \$2.50 for the smallest sizes. Watches with one or no jewels were dutiable at forty

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<sup>1</sup>Ibid., pp. 13, 283.

<sup>2</sup>U.S. House of Representatives, Committee on Ways and Means, Hearings on the Tariff Readjustment, 1929, 70th Congress, 2d Sess. (1929), Vol. III, pp. 2348-2404.

<sup>3</sup>Ibid., p. 2357.

percent less than these rates. Movements with over seven jewels were assessed an additional duty of 20¢ for each jewel in excess of seven, while adjustments were dutiable at \$1 each. The rate for parts was sixty-five percent ad valorem. Two clauses, however, caused especial consternation among the importers. Any movement one or more inches wide which contained fifteen or more jewels carried a mandatory adjustment rate of \$3.<sup>1</sup> Further, any "subassembly" (two or more parts joined together) would carry the full duty of the complete movement in which it could be utilized--i.e., a pinion mounted on its arbor, worth a few cents, would carry the same duty as a complete movement.

These provisions split the solid front among the importers. One group, interested primarily in high quality movements, followed George J. Gruen, while Arde Bulova assumed the leadership of a second group. Gruen approached Strawn, and in Gruen's own words, "We arrived at a gentleman's agreement as to what we thought we could exist under."<sup>2</sup> Strawn then offered a compromise proposal to the Senate Finance Committee; this became the basis of the proposed Senate amendments

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<sup>1</sup> Thus the duty on a 15-jewel movement one inch wide would rise from \$2.00 (1922 rate) to \$6.35--i.e., a base rate of \$1.75 plus \$1.60 for eight extra jewels and \$3.00 for adjustments.

<sup>2</sup> U. S. Senate Committee on Finance, Hearings On H. R. 2667, 71st Congress, 1st Sess. (1929), Vol. III, p. 723.

to Paragraph 367.<sup>1</sup> In return, Gruen, representing a "majority of the importers" supported the proposed rates as equitable and reasonable.<sup>2</sup> Basically the compromise proposal represented an increase over the House rates on movements containing up to eleven jewels and some reductions on higher quality movements. More important to the Gruen group, however, the mandatory adjustment duty on movements with fifteen or more jewels was eliminated, and the rate on subassemblies was reduced to 3¢ for each part contained therein (balance assemblies, with thirty to forty separate parts were given a rate of 50¢).

Out of the conferences between the Senate and House committees emerged the Tariff Act of 1930, and the basic duties on watches, movements and parts under discussion today. These rates were reduced, as stated above, by some thirty percent through the reciprocal trade agreement with Switzerland. While domestic producers objected to these concessions at the time, their major efforts to secure additional protection have taken place in the years since 1945.

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<sup>1</sup>Strictly speaking, the official Senate amendment to Paragraph 367 was a retention of the 1922 duties. Passage of this amendment was neatly engineered (November 13, 1929) by Senator Alben Barkley, leading the foes of higher tariffs. The final appearance of the paragraph suggests, however, that the Senate conferees were guided by the Gruen-Strawn compromise rather than by the official Senate amendment.

<sup>2</sup>Gruen's representation was challenged in Senate debate. Bulova, however, had recently been charged by customs authorities with importing complete movements as "watch parts" in order to evade duties. Thus Senate protectionists were able to argue that a majority of "honest" importers supported the legislation, while the "crooked" importers opposed it.

During World War II domestic facilities for producing watch movements were devoted completely to military production. Thus the civilian market for watches was filled almost entirely (except for prewar inventories) by imports from Switzerland. The number of jeweled movements imported rose from four million in 1941 to 7.6 million in 1943.<sup>1</sup>

The domestic firms were quick to seize an opportunity to improve their positions in the postwar market. They pointed out: (a) that because of their absence from civilian markets during the war years, their brand names no longer meant much to consumers; (b) unlike the situation with other durable goods, Swiss imports had filled the domestic demand so no backlogs existed; (c) because of their patriotic (albeit highly profitable) services to the nation, they deserved an opportunity to regain their former civilian market. Armed with this weighty argument, they advanced upon the State Department with the request that that agency negotiate an agreement with Switzerland to limit the number of movements entering the United States to three million a year, under the assumption that the domestic market could absorb five million watches and the domestic industry could produce two million.<sup>2</sup>

The State Department listened to the domestic firms with some sympathy and agreed to exchange notes with the Swiss

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<sup>1</sup>U. S. Department of Commerce, Postwar Watch Markets (Washington, 1950), p. 28.

<sup>2</sup>"Statement of Winthrop G. Brown, Committee for Reciprocity Information, Department of State" in U.S. Senate Committee on Finance, Hearings on H. R. 1211, 81st Congress, 1st Session (1949), p. 838.

Government. Fortunately for American consumers, State took a more optimistic view of the postwar watch market and negotiated on the assumption that this market would absorb some ten million watches annually. Although the 1936 trade agreement specifically binds the United States against establishing quantitative restrictions on Swiss watches, Switzerland agreed to limit direct exports for 1946 and the first three months of 1947 to annual quota of 7.7 million units.<sup>1</sup>

Subsequent attempts by the domestic manufacturers to secure an extension of the quota agreement were unsuccessful. The State Department took the position that inasmuch as the domestic firms were still unable to fill all of their orders from customers, imports could hardly be considered as "interfering with the ready marketing" of domestic watches. It is interesting to speculate on what might have happened to watch prices had the domestic firms' original request been granted; fewer than five million watches would have been offered to a market which actually purchased some ten million a year.

Since the failure to extend the quota, Elgin, Hamilton

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<sup>1</sup>Ibid., p. 839. It should be noted that American imports of Swiss watches and movements in 1946 exceeded the quota, giving the domestic firms an opportunity to attack the "perfidious" Swiss. There were two reasons for this: (a) a number of small clock movements, (less than 1.77 inches wide) came into the U.S. as "watch" movements, and (b) imports from third countries--i.e., indirect imports--were considerable. It seems evident that large quantities of watches were shipped to "third countries" prior to April 22, 1946, when the quota agreement was signed. After this date, the Swiss government undertook to prevent indirect imports. Thus, the true effect of the agreement is not seen until 1947, when imports did drop sharply, to 7.8 million from the more than nine million of 1946.

and Waltham have been seeking an upward revision of tariff rates. Until 1950 they were blocked by the fact that the agreement with Switzerland contained no "escape clause"; i.e., the entire agreement would have to be cancelled and renegotiated in order to raise the tariff upon imported jeweled movements. The first goal of the domestic producers, therefore, was the insertion of an escape clause into the agreement. At every Congressional hearing concerned with the reciprocal trade agreements program, representatives of the industry claimed that they had been "seriously" injured and that without an escape clause no relief was possible. The "serious injury" argument may be noted in passing: from 1931-35, prior to the trade agreement, the domestic firms supplied half of the average annual consumption of 1.5 million movements, while from 1946-50 the domestic firms had only a quarter of the average annual market of 9.1 million movements.<sup>1</sup> After all, said the president of Elgin, "Would you say that a little boy whose growth had been stunted by infantile paralysis, but who is still alive, had not been hurt?"<sup>2</sup>

At every hearing, Congressional critics of the trade agreements program questioned State Department witnesses about the absence of such an escape clause to protect the jeweled watch industry. Under this pressure State notified the Swiss

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<sup>1</sup>U.S. Tariff Commission, Watches, Movements and Parts, Report to the President on Escape-Clause Investigation No. 26 (Washington, 1954), Table 12.

<sup>2</sup>U.S. Senate Committee on Finance, Hearings on H.R. 1211, 81st Congress, 1st Sess. (1949), p. 595.

government (in August 1950) that the trade agreement would be cancelled unless an escape clause could be inserted; Switzerland reluctantly accepted the escape clause in October 1950.<sup>1</sup>

Soon thereafter (February 13, 1951) the domestic firms filed an application with the Tariff Commission for a restoration of the 1930 rates. The Commission held public hearings in May, conducted a field survey during the summer, and then proceeded to deliberate for some months while both the domestic producers and the assemblers waited anxiously for a decision. Finally, on June 14, 1952, the Commission transmitted its findings and recommendations to President Truman.<sup>2</sup> Three Commissioners (Brossard, Durand and Gregg) found that the volume of imports had seriously injured the domestic watch industry, while the other three (Ryder, McGill and Edminster) found no evidence of serious injury. Vice-Chairman Edminster felt, however, that there was "a threat" of serious injury. Consequently, he concurred in the recommendation of Brossard, Durand and Gregg that the trade agreement rates upon watch movements be immediately "increased by 50 percent but in no case to exceed the rates originally imposed under the Tariff Act of 1930."<sup>3</sup>

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<sup>1</sup>Testimony of Dean Acheson, Secretary of State, U.S. House Committee on Ways and Means, Hearings on H.R. 1612, 82d Congress, 1st Sess. (1951), p. 21.

<sup>2</sup>U.S. Tariff Commission, Watches, Watch Movements, Watch Parts, and Watchcases, Report to the President on the Investigation Under Section 7 of the Trade Agreements Extension Act of 1951 (Washington, 1952).

<sup>3</sup>Ibid., p. 7.



Brossard, Durand and Gregg used some highly original (and remarkably transparent) reasoning to prove what they wanted to prove--"serious injury" to the domestic jeweled watch producers. Foreign movements with more than seventeen jewels are virtually excluded from the domestic market by the \$10.75 duty. Hence, these gentlemen decided that competition exists only in the range of movements with seventeen or fewer jewels. Here they found that the "share" of the domestic firms in the total market had fallen from thirty-six percent in 1946-40 to only eighteen percent in 1951. This constitutes "serious injury". The data used by the three Commissioners to establish their case is shown in Table 23.

TABLE 23

DOMESTIC JWELED WATCH PRODUCTION AND COMPETING IMPORTS

	1936-40	1946-50	1951
Domestic:			
17 jewels or less	1,457,000	1,441,000	1,824,000
Over 17 jewels	221,000	1,034,000	1,337,000
Total	1,678,000	2,475,000	3,161,000
Competing imports (a)	2,507,000	6,719,000	7,879,000

Note (a): The "competing import" figure is less than total imports containing two or more jewels, since some of the latter compete with cheap pin-lever watches rather than with watches of quality. The Commission's estimate of "non-competing" imports (among those containing two or more jewels) was five percent for 1936-40, eight percent for 1946-50, and ten percent for 1951.

Source: U. S. Tariff Commission, Watches, Watch Movements, Watch Parts and Watchcases (Washington, 1952), p. 17a.

Commissioners Ryder and McGill, dissenting, were unable to find either injury or threat of injury.<sup>1</sup> They pointed out

<sup>1</sup>Ibid., pp. 25-28c.

that the domestic firms had taken advantage of the excellent market for quality watches to expand considerably their output of movements with over seventeen jewels (which the majority refused to consider as pertinent). Including these movements, one finds that the domestic firms' share of the market dropped from forty to thirty percent, but only because the market expanded more rapidly than did domestic production. Since domestic production had risen by nearly ninety percent, while the trade agreement was in force, and since both employment and profits in the domestic industry were high, Ryder and McGill were at somewhat of a loss to understand what their brethren meant by "serious injury".

Two months after this report, President Truman rejected the Commission's recommendations in no uncertain terms. His reaction to the "share doctrine", in particular, deserves some notice:<sup>1</sup>

"Serious injury, by any definition, means a loss to someone. Declining production, lower employment, lower wages, lower returns or losses in capital invested--any of these things might indicate some degree of injury. But the share doctrine goes much further. In fact, it finds that serious injury exists when the domestic industry fails to gain something it never had, even though the industry may be prospering by all of the customary standards of levels of production, profits, wages and employment."

The Tariff Commission hearing appeared to have represented the last major effort of the domestic firms to secure an increase in protective duties. A final, weak gasp was

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<sup>1</sup>White House Press Secretary's news release (mimeographed) of the President's letter to the chairmen of the Senate Finance and House Ways and Means Committees, dated August 14, 1952.

heard in the early part of 1953 when Representatives Donohue (of Massachusetts) and Curtis (of Nebraska) introduced similar bills which ordered President Eisenhower to immediately put into effect the Tariff Commission's recommendations with respect to the jeweled watch industry.<sup>1</sup> Both of these bills died a natural death in the legislative hopper. As neither of the congressmen made any serious attempt to secure passage of his bill, it may be safely assumed that these bills were nothing but political sops to constituents at Waltham and at Elgin's Lincoln, Nebraska plant.

The domestic firms, in the summer of 1953, seemed resigned to their fate. This attitude of resignation was clearly indicated in the 1953 House hearings on extension of the reciprocal trade agreements program. James G. Shennan (president of Elgin) criticized President Truman's action as an impairment of the nation's defenses. But, said he, "Insofar as our companies are concerned, we are determined to find a way to meet our own problems".<sup>2</sup> Even Walter Cenerazzo, the loudest (if one of the least accurate) pleaders of the industry's cause, threw in the towel. After making his usual impassioned speech for protection of the "American way of life", Mr. Cenerazzo concluded sadly with "...this is my Waterloo speech before this committee. I feel that I have failed in my mission in

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<sup>1</sup>H.R. 3369 and H.R. 3162, 83d Congress, 1st Session.

<sup>2</sup>U.S. House of Representatives Committee on Ways and Means, Hearings on H. R. 4294, 83d Congress, 1st Sess. (1953), p. 460.

life, which is to preserve an American jeweled watch industry, but I feel honorably that I have done the best I could".<sup>1</sup>

It was, however, too soon to murmur, "Requiescat in pace". On September 1, 1953, Waltham, Elgin and Hamilton filed a new application for a Tariff Commission investigation, undoubtedly hoping that a Republican President would be more disposed to accept the Commission's recommendations.

Public hearings in February, 1954, covered much the same ground as the 1951 hearings. A majority of the Commission had found in 1951 that "the forces now dominant in the watch trade are such that, if present tariff rates are not increased, domestic watch manufacturers will undoubtedly find themselves ...obliged to reduce their aggregate absolute output of watch movements".<sup>2</sup> In 1954, J. Bradley Colburn, counsel for the domestic petitioners, assured the Commission, "Unhappily statements by four members of the Commission have proved to be grim but accurate prophecy".<sup>3</sup> The assemblers argued (with some merit) that the domestic producers had never enjoyed greater prosperity: "If Swiss imports were having such a harmful effect upon their business as they have indicated, they could not have made the financial progress which the

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<sup>1</sup>Ibid., p. 457.

<sup>2</sup>U. S. Tariff Commission, Watches, Watch Movements, Watch Parts and Watchcases (1952), p. 21.

<sup>3</sup>Stenographic transcript, "Hearing on Watch Movements and Parts under section 332 of the Tariff Act of 1930 and section 7 of the Trade Agreements Act of 1951, as amended" (Washington, 1954), p. 20.

figures from their own financial reports portray".<sup>1</sup> And Mr. Cenerazzo changed his battleground from Waterloo to "Custer's Last Stand".

Again the Commission recommended that the trade agreement rates on watch movements be increased by fifty percent. Three Commissioners (Brossard, Talbot, and Schreiber) found serious injury to the domestic industry, evidenced by a decline in the production of jeweled movements since 1951, declining employment in the manufacture of watch movements, a continued decline in the share of the market supplied by domestic production, and a decline in the ratio of profits to sales.<sup>2</sup> Commissioner Edminster concurred in the finding of serious injury, while rejecting the "share-of-market" argument.<sup>3</sup> Commissioners Ryder and McGill argued that neither serious injury nor a threat thereof justified any tariff increases.<sup>4</sup>

Tables 24 and 25 are self-evident indications of the principal reasons for the majority's position. One additional finding of the majority deserves mention. Injury to the domestic producers was found to arise from the fact that imports (of "unknown" brands) are regularly being sold at

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<sup>1</sup>U. S. Tariff Commission Escape-Clause Investigation No. 26, Brief in Behalf of the American Watch Association, Inc. (Washington, 1954), p. 25.

<sup>2</sup>U.S. Tariff Commission, Watches, Movements and Parts, (1954), pp. 7-20.

<sup>3</sup>Ibid., pp. 21-30.

<sup>4</sup>Ibid., pp. 31-45.

"prices which reflect low aggregate markups".<sup>1</sup> The idea of tariff protection to equate retail prices of imported products sold at low markups with those of domestic products sold at higher markups is indeed a novel approach!

TABLE 24

DOMESTIC JEWELLED WATCH PRODUCTION AND COMPETING IMPORTS

	<u>1951</u>	<u>1952</u>	<u>1953</u>
Domestic:			
17-jewels or less	1,876,000	1,554,000	1,149,000
Over 17-jewels	1,286,000	879,000	1,216,000
Total	<u>3,162,000</u>	<u>2,433,000</u>	<u>2,365,000</u>
Competing imports	7,884,000	7,757,000	8,919,000

Source: U.S. Tariff Commission, Watches, Movements, and Parts, Report to the President (Washington, 1954), Tables 7 and 11.

TABLE 25

EMPLOYMENT IN PLANTS PRODUCING JEWELLED-LEVER WATCHES

<u>Year</u>	<u>Watches, parts, and service</u>	<u>Other products (a)</u>	<u>Total</u>
1948	10,349	99	10,448
1949	10,043	84	10,127
1950	7,761	50	7,811
1951	8,847	1,073	9,920
1952	7,147	2,808	9,955
1953	6,588	4,174	10,732
April, 1954	4,242	5,512	9,754

Note (a): Does not include labor in plants making cases and attachments.

Source: U. S. Tariff Commission, Watches Movements and Parts, Report to the President (Washington, 1954) Table 15.

<sup>1</sup>Ibid., p. 16.

Commissioners Ryder and McGill presented an able refutation of the majority position. They pointed out that the 1951-53 drop in production was not significant; estimated sales of domestic watches were 2.7 million in 1951 and 1952 and 2.6 million in 1953.<sup>1</sup> In other words, production cut-backs reflected attempts to reduce inventories (which had been accumulated in anticipation of full-scale mobilization shortages). In this respect the watch industry's experience parallels that of other consumers' durables industries.

Ryder and McGill viewed the decline in employment on watches and parts as a voluntary diversification of labor to the production of defense items and other civilian products not previously made by this industry. Overall employment in the industry rose, as a result of this new business, by thirty-seven percent from 1950-53. Such diversification could add to the stability of the industry, to the benefit of both employees and stockholders.<sup>2</sup> Answering the argument that the ratio of profit to sales has declined in recent years, Ryder and McGill pointed out that the ratio of profits to net worth in the years 1951-53 was as high as ever.<sup>3</sup>

The domestic producers had another stroke of good fortune while the President was considering the Tariff Commission's recommendations. A subcommittee of the Senate

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<sup>1</sup>Ibid., p. 35.

<sup>2</sup>Ibid., p. 37.

<sup>3</sup>Ibid., p. 40.

Committee on Armed Services conducted hearings on the essentiality of the watch and clock industry (June 30 to July 2, 1954). The subcommittee reported that "an abundance of expert testimony... was in almost unanimous agreement that the pool of skilled workers of the American watch and clock industry is essential to the security of our country in time of war."<sup>1</sup>

The near unanimity of "experts" referred to was undoubtedly measured on the basis of a head count. Seventeen witnesses testified orally for essentiality. These included seven presidents or vice-presidents of domestic watch and clock companies, two lobbyists for these companies, Walter Cenerazzo, and several government "experts" ranging from Lothair Teetor, Assistant Secretary of Commerce, to Senator Eva Bowring, of Nebraska. The only witness to question essentiality was Millard Tydings, representing the assemblers and importers.

The subcommittee, and later the President, were apparently deeply impressed by two other studies of the defense essentiality of the industry, one by the Department of Defense and the other by the Office of Defense Mobilization. Now the Defense Department study actually concluded that the jeweled watch industry was not essential.<sup>2</sup> This study, however, was

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<sup>1</sup>U. S. Senate Committee on Armed Services, "Essentiality of the American Watch and Clock Industry", Report of Preparedness Subcommittee No. 6, 83d Congress, 2d Sess. (1954).

<sup>2</sup>U. S. Department of Defense, Department of Defense Report on the Essentiality of the Jeweled Watch Industry, April 26, 1954 (adjusted for declassification February 28, 1955).



still classified as "Secret" at the time of the subcommittee hearings. Consequently, Thomas Pike (Assistant Secretary of Defense) was not challenged when he conveyed a clear impression to the subcommittee that Defense considered the jeweled watch industry to be essential.<sup>1</sup> Going even beyond this, Pike (presumably speaking for the Defense Department) warned the subcommittee that increased imports of jeweled watches, based solely upon lower Swiss wage rates, threaten to destroy the mobilization potential of the domestic industry: "Obviously this situation would be extremely serious to our military effort."<sup>2</sup>

The Office of Defense Mobilization's report held that the jeweled watch industry was essential. This report glosses over the question of military essentiality and rests its findings primarily upon "defense-supporting" requirements --i.e., jeweled watches for hospital nurses, coal miners, and air raid wardens.<sup>3</sup> Since this report was not classified, Arthur S. Flemming, Director of ODM, had no hesitation about asking himself two questions for the benefit of the subcommittee:<sup>4</sup>

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<sup>1</sup>U. S. Senate Committee on Armed Services, Hearings before Preparedness Subcommittee No. 6, 83d Congress, 2d Sess. (1954), pp. 38-44.

<sup>2</sup>Ibid., p. 39.

<sup>3</sup>Interdepartmental Committee on the Jeweled Watch Industry, The Essentiality to National Security of the American Jeweled Watch Industry, Report to the Director of the Office of Defense Mobilization, June 30, 1954, pp. 15-19.

<sup>4</sup>U. S. Senate Committee on Armed Services, subcommittee hearings cited, p. 34.

"Is the preservation of the skills of the American jeweled watch industry essential to the national security? My answer to that question is unqualifiedly 'Yes'. There is no doubt in my mind ... that that question should and must be answered in the affirmative.

The second question is this: Is production and employment in the industry at such levels as seriously to threaten preservation of those skills? And on the basis of the evidence that has been presented to me, there is no question in my mind at all but that that question must also be answered in the affirmative."

In short, as far as the public knew, the Defense Department considered the jeweled watch industry essential to national defense, and threatened by imports. The ODM found the jeweled watch industry essential to national defense, and threatened by imports. Preparedness Subcommittee No. 6 found the jeweled watch industry essential to national defense, and threatened by imports. Faced with this impressive body of evidence, President Eisenhower clearly perceived his duty to the nation.<sup>1</sup> The fifty percent increase in duties recommended by the Tariff Commission was declared immediately effective by a presidential proclamation of July 27, 1954.

The next question which arises is whether the domestic producers will be satisfied with this increase in rates.

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<sup>1</sup>There may be other explanations that "considerations of national security" for the President's action. Senator Leverett Saltonstall, Chairman of the Armed Services Committee, was facing a close fight for reelection. According to Professor Harry Hawkins, of Tufts College, prevalent opinion in government circles holds that the tariff increase was a clear and direct means of aiding Saltonstall. Professor Hawkins' views were given to the author by Dr. C. P. Kindleberger, letter of March 7, 1955. It may also be noted that both Republican members of Preparedness Subcommittee No. 6, Senators Duff (Pennsylvania) and Cooper (Kentucky), represented states which contain plants of domestic watch companies.

During the 1951 Tariff Commission hearings, Chairman Ryder commented to J. Bradley Colburn, counsel for the domestic firms: "It's not very clear, Mr. Colburn, what the companies you represent are seeking".<sup>1</sup> Colburn's reply is instructive: "We believe that we require an increase in the rates in effect in the Tariff Act of 1930. We believe, however, possibly the full extent of this Commission's authority...is to cancel the existing concessions, and that, in our view, would remove the existing legal impediment to seek further relief...".<sup>2</sup>

The "further relief" referred to by Mr. Colburn represents the true goal of the American jeweled watch industry. This is the application of the famous (or infamous) "scientific" tariff. The rallying cry of the domestic firms at every hearing in recent years has been "Equality at the border!". As James G. Shennan has said, "The American jeweled watch industry is not seeking an advantage in the American market. Gentlemen, we ask only for equality at the border of the United States: we ask for realistic duties which will equalize the cost of a movement to the importer with the cost of a comparable movement made in America by American labor."<sup>3</sup> To which Teviah Sachs (of Waltham) adds, "This is the sportsmanlike, American way of doing things".<sup>4</sup> In short, the

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<sup>1</sup>Stenographic transcript, "U.S. Tariff Commission hearing on Watches and Parts under the escape clause of the Trade Agreement with Switzerland" (Washington, 1951), p. 51.

<sup>2</sup>Op. cit., pp. 51, 52.

<sup>3</sup>U.S. Congress, House Ways and Means Committee, Hearings on H.R. 1211, (Washington, 1949), p. 487.

<sup>4</sup>Tariff Commission transcript cited, p. 326.

domestic producers boldly welcome any competition--unless, of course, that competition be based upon "unfair" advantages in production costs.

A final problem is the effect of higher tariffs upon the American consumer. Let no one think that the industry does not have the consumer's interest in mind. According to the testimony before the Tariff Commission, higher tariffs would result in lower prices to consumers, since the domestic industry could expand and thus reduce its costs of production.<sup>1</sup> Millard Tydings (counsel for the assemblers) wanted to know why the domestic industry did not expand and cut its costs under the present duties. This question was so obviously ridiculous to the business men present that it went unanswered.

The example presented by the jeweled watch industry in its efforts to secure higher duties is an interesting and an instructive one. For some years now the spokesmen for this industry have been saying, "We agree wholeheartedly with the basic objectives of the reciprocal trade agreements program, but--this industry is a special case for which an exception should be granted." And the spokesmen for a whole host of other industries--manufacturers of fountain pens, bicycles, wooden clothespins, pottery, knitted gloves, little boys' marbles, toy balloons, and dozens of other products--have been using exactly the same arguments.

In each of these cases, relating to a particular industry, these spokesmen have received sympathetic hearings on

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<sup>1</sup>Ibid., p. 70.

Capitol Hill. This is to be expected from gentlemen like Daniel Reed, who firmly believes that "American payrolls which support the schools and churches of our fine country" are being threatened by a flood of imports. Besides the protagonists of protectionism, however, any committee member faced by witnesses for a domestic industry which employs his constituents must express publicly his belief that such an industry really does deserve additional protection. This raises an interesting question as to future policy: Does the recent increase in watch tariffs presage a return to protectionism?

The position of the Eisenhower administration, which must take the lead on trade policy, is hopelessly ambiguous. This Administration has seized upon the slogan "Trade, Not Aid", but every cabinet member appearing before Congress to support this slogan has emphasized that the President has no intention of permitting domestic firms to be forced out of business by "unfair import" competition.

In 1953 President Eisenhower asked for and received a one-year extension of the Trade Agreements Act of 1951, so that he could "study" (through the Randall Commission) the overall problem of foreign trade policy. On the basis of this study, the President requested (in 1954) a three-year extension of the act, with the authority to negotiate further reductions not to exceed five percent a year. No great effort was made to secure favorable action by Congress. Instead, the President settled for another one-year extension. He expressed his belief, during a press conference, that Congress

should also have some time for "study".<sup>1</sup>

Again in 1955 the President submitted his request for a three-year extension, embodied in H.R. 1 of the Eighty-Fourth Congress, First Session. Mr. Eisenhower's hopes must have been raised, with respect to the trade program, by the fact that this Congress has been organized by the Democratic Party. Unhappily, at this writing (April 1955) H.R. 1 is in serious difficulty.

Contrary to everyone's expectations, H.R. 1 met a hostile reception in the House of Representatives. Preliminary maneuvers on the bill were more instructive than the 295-110 vote by which it finally passed the House.<sup>2</sup> The House first rejected (by a vote of 207 to 178) a "closed debate" motion which was designed to prevent crippling floor amendments to the original bill. Only after a personal plea (and some cloakroom pressure) by the Speaker of the House, Sam Rayburn, did the House reverse itself and adopt the closed debate rule by a one-vote margin (193-192). Next, a recommittal motion offered by Representative Daniel Reed was defeated (206-199), but only after the personal intervention of President Eisenhower.<sup>3</sup>

The most significant portent in this voting is that the

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<sup>1</sup>New York Times, June 11, 1954.

<sup>2</sup>Details from the New York Times (February 18 and 19, 1955).

<sup>3</sup>According to the New York Times (February 19, 1955), the President first offered to accept a compromise, presumably one which would reduce his authority to reject recommendations of the Tariff Commission on peril point and escape-clause actions. He did not intervene in behalf of the original bill until Congressman Reed rejected any compromises at all.

"Solid South", long the stronghold of free trade sentiment, has now split on the tariff issue. As a result of the heavy migration of industry (particularly textiles), Southern congressmen now find themselves beset by the same pressures for protection as their Northern colleagues. On the key second vote for a closed debate rule, thirty-one of the fifty Democratic representatives voting from the "Old South" rejected Rayburn's leadership.<sup>1</sup>

If the position of the Administration on foreign trade policy is ambiguous, the position of Congress is equally uncertain. The reciprocal trade agreements program passed the acid test of legislative approval on ten occasions between 1934 and 1954. With the growing reluctance of Congress to support further reductions in trade barriers and the trend in the South towards protectionism, it is possible that a completely new tariff act will be sought in the near future. Since the basic Tariff Act of 1930 has already been in effect for twenty-five years (a record surpassed only by the Tariff Act of 1789), such a move should not be unexpected. Many of the industries (including watchmaking) which secured specific duties under the Hawley-Smoot Act would also support a new act, on the grounds that inflation has made even the high 1930 duties obsolete.<sup>2</sup>

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<sup>1</sup>The author includes the states of Virginia, North Carolina, South Carolina, Georgia, Mississippi, and Alabama.

<sup>2</sup>Thus the jeweled watch manufacturers point out on every occasion that the 1930 specific duties on jeweled movements gave them the "equivalent" of 83% ad valorem protection from 1931-1935, while the same duties today would amount to only about 50% ad valorem.

For some years those legislators who support freer trade have been able to vote upon an overall reciprocal trade agreement program, without reference to particular industries in which their constituents might be interested. In other words, a congressman from Illinois, Pennsylvania or Massachusetts could vote for a trade agreements act "in the national interest" and then blame the President for reducing watch duties.

Should a completely new tariff act be proposed, this "refuge in generalities" would disappear. Paragraph by paragraph the new act would be constructed, and bold indeed would be the congressman from a watch-producing state who refused to consider the domestic industry in rewriting Paragraph 367. Even if he should believe in free trade, his desire for reelection would make him realize that "the watch industry is an exceptional case".

As this process is repeated for commodity after commodity, and as log is rolled after log, the result could well be an act which will equal or surpass in protectionism the Tariff of 1930. This result can only be avoided if those organizations which have supported "Trade not Aid"--ranging from the C.I.O. to the United States Chamber of Commerce, from the Typewriter Manufacturers Export Association to the League of Women Voters--can convince the public (and hence Congress) that the importance of international trade overrides the special interests of domestic industry groups.



## CHAPTER X

### PUBLIC POLICY AND THE JEWELLED WATCH INDUSTRY

The collapse of the Waltham Watch Company has aroused a strong public interest in the future survival of the American jeweled watch industry. Swiss competition can hardly be blamed for this collapse; the managerial conditions which ruined Waltham would have prevented the company from competing for long against only Hamilton, Elgin and Bulova. Nevertheless, the issue has been discussed in Congress largely upon the basis of Swiss competition. Most of the members of the Senate and House committees which have held hearings on tariff measures appear to have felt that this competition has been most unfair to the American firms. The Waltham Watch Company has become, to the protectionist wing of Congress, Exhibit Number One to prove the folly of permitting foreign peasants to compete with good, honest American workmen. It is in this context that the domestic jeweled watch industry acquires significance.

Three domestic manufacturers, Elgin, Hamilton and Waltham, have argued in recent years that they have been severely hurt by Swiss penetration of the domestic market--indicated by the fact that the domestic firms supplied more than half of this market in the years from 1931 to 1935 (while the Hawley-Smoot Tariff was in effect) and have

supplied only about one-quarter of the market since World War II. The reasons for this penetration, according to the domestic manufacturers, have been the money-wage advantages enjoyed by Switzerland, the cartelized organization of the Swiss industry, and the fact that the domestic industry has not been accorded the tariff protection which it "deserves".

Table 26 indicates the relative shares of the domestic jeweled watch market supplied by domestic production and by imported movements. The percentages shown are based upon domestic output and "competing imports", a term which deserves some explanation. Imported movements in the "0-1 jewel" category compete with domestic pin-lever watches rather than with jeweled watches. In recent years some pin-lever movements have entered with two or more jewels (i.e., the "jeweled" watches one sees in drugstores). In addition many imported "watch" movements (less than 1.77 inches wide) are destined for use in small clocks. The Tariff Commission has subtracted from total imports with two or more jewels the proportion estimated to be "non-competitive" in order to arrive at figures for imported movements which compete directly with domestic jeweled movements.<sup>1</sup>

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<sup>1</sup>U. S. Tariff Commission, Watches, Watch Movements, Watch Parts and Watchcases, Report to the President on the Investigation Under Section 7 of the Trade Agreements Extension Act of 1951 (Washington, 1952), p. 89.

TABLE 26

SHARES OF THE AMERICAN JEWELLED WATCH MARKET  
SUPPLIED BY DOMESTIC PRODUCTION AND BY IMPORTS

Year	Apparent Consumption (1,000 units)	Percent of Total	
		Domestic Movements	Imported Movements
Average annual:			
1926-30	4,567	39%	61%
1931-35	1,473	53	47
1936-40	4,161	40	60
1941-45	7,805	20	80
1946-50	9,103	26	74
Annual:			
1951	10,977	28	72
1952	10,069	23	77
1953	11,173	20	80

Source: U. S. Tariff Commission, Watches, Movements, and Parts (1954), Report to the President on Escape Clause Investigation No. 26 (Washington, 1954), Table 12.

The data in Table 26 hardly supports the "loss of markets" argument of the domestic producers. Between 1931 and 1935 the Hawley-Smoot Tariff rates encouraged smuggling on a large scale, which is not indicated in the table. It has been estimated that the number of smuggled movements was between one and two million a year during this period.<sup>1</sup> Even if the lower of these figures exaggerates the true volume, the domestic manufacturers supplied much less than half of the market in those years. If an allowance is made for

<sup>1</sup>Stenographic transcript, "U.S. Tariff Commission hearing on Watches and Parts under the escape clause of the Trade Agreement with Switzerland" (Washington, 1951), p. 809.

smuggling, it may be seen that the "normal" pattern for the fifteen years prior to World War II shows that roughly forty percent of the market was supplied by domestic production and sixty percent by imported movements.

During the war the entire domestic production of watches by Waltham, Elgin, Hamilton and Bulova was taken by the armed forces. Only inventories in the hands of jewelers and the companies themselves (of pre-war movements not suited to military use) were available to the civilian market. At the same time, roughly half of the output of the major assemblers was also taken by the government.<sup>1</sup> The gap between civilian supplies and demand was partially filled by increased imports of a wide variety of little-known brands, many of which were poor in quality and over-priced.

In the years since the war, the market for the poorer quality brands has been very weak.<sup>2</sup> The major advertised brands, both domestically produced and assembled, have

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<sup>1</sup>By order of the War Production Board (Order L-323, issued in September 1943) no watches produced with imported movements could be offered for sale before an inventory had been submitted to the WPB. Only those watches which the government did not require for its own uses could be released to the civilian market.

<sup>2</sup>The domestic firms have consistently argued that cut-price sales of Swiss watches are putting them out of business. During the 1951 escape clause hearings, they offered in evidence a waterproof 17-jewel Swiss watch which had been on sale at \$12.95. Mr. S. Ralph Lazrus, of Benrus, answered this effectively (transcript cited, p. 1135). He pointed out that Benrus had had excellent sales of a waterproof retailing at \$45. Mr. Lazrus--a highly excitable man--said, in effect: "People want the branded merchandise. These cut-price boys aren't driving me out of business. Those watches are being dumped at ten or twelve dollars because I'm driving them out of business."

usually been selling as rapidly as they could be produced. Periods of "soft" watch markets (e.g., early 1950 and 1954) have been periods when there was a general weakness in the demand for consumers' durable goods, and in such periods the nationally-advertised watches have been less seriously hurt than the unadvertised brands.

Consequently, the statement that the domestic producers have suffered a "relative" loss of their share of the market is seriously misleading. Elgin and Hamilton alone in recent years have been producing larger quantities of watches than did the entire domestic industry during the 1920's. Unit sales of watches in recent years, however, have been more than double the sales in the previous peak years of 1929 and 1937. The declining percentage of the total market supplied by domestic production (from forty percent to less than thirty percent) simply reflects the fact that the market has expanded more rapidly than has domestic capacity. The real question, of course, is whether the domestic producers might have expanded capacity to a greater extent had there been less competition from Switzerland.

There is no gainsaying the fact that Switzerland possesses certain advantages in competing in the American watch market. It should be noted that this competition is primarily upon the basis of movement manufacture. The vast majority of "Swiss" watches sold in the United States are cased and distributed by American firms which face the same problems in these spheres as do the domestic movement manufacturers. The Swiss advantages are of two types: the whole

nature of the Swiss industry, which contributes heavily to the success of the assemblers in the non-price competition which characterizes the retail market, and secondly, a money-wage structure substantially lower than the American wage structure (at current exchange rates), which gives the assemblers certain cost advantages in movement manufacture.

The importance of non-price competition, through the creation of fashion appeal and styling, cannot be too heavily stressed. The Swiss industry introduced wristwatches while the American firms were making pocket watches. By the time the American firms were making wristwatches, the Swiss were making them in smaller sizes which made the American products seem unfashionably clumsy. When the American firms mastered the techniques of producing small movements, the Swiss brought out rectangular "baguettes". Elgin and Hamilton have caught up with these styles, and the Swiss have turned to the development of novelty cocktail watches, self-winding watches, and so forth. In each case of changing styles, the Swiss have taken the lead, and the domestic producers have been in the position of "catching up". In the words of one writer, "The maneuver resembled an international game of tag in which the American industry was 'it'."<sup>1</sup>

The relative backwardness of the American firms in this field of innovation, which is at present a key to competitive success, illustrates a major disadvantage of large-scale, integrated plants in this industry. The Swiss industry, made

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<sup>1</sup>"Hamilton Watch", Fortune, January 1947, p. 104.

up for the most part of very small firms, is exceedingly flexible, and hence changes in movements required for style changes are readily made. It is said that 1,500 different "calibers" (sizes and shapes of movements) are regularly produced in Switzerland.<sup>1</sup> This statement is not inconsistent with the earlier discussion (Chapter VII) of the standardization of watch parts as practiced in Switzerland. Any given standard part or assembly--such as main wheel, or a pinion, or a balance assembly, of a given size--may be used in the production of several hundred different movement styles. The American industry, which requires standardization of the complete movement for long production runs, probably does not produce three dozen different movements.

Style innovations, therefore, can be easily introduced upon a small scale in Switzerland, where watches can be produced economically in small quantities. An order for a hundred dozen movements, for example, might be a month's output for the typical Swiss firm, while it would represent less than two hours' production at Elgin. Elgin estimates that merely changing the style of cases or dials costs, on the average, \$11,000 a model, or nearly half a million dollars a year.<sup>2</sup> If any of these changes involves design and tooling up for a new movement, the cost is considerably greater. Understandably, large-scale plants are reluctant to initiate such

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<sup>1</sup>"Tools and Materials Used in the Watchmaking Industry", Swiss Industry and Trade, October, 1946, p. 21.

<sup>2</sup>"Elgin Bows to the Times", Business Week, September 15, 1951, p. 147.

changes unless the market seems assured.

The major assemblers, such as Bulova and Gruen, face many of the same problems in style changes as do the purely domestic manufacturers, since their styling and casing facilities are no different. These firms are seldom style innovators, any more than Hamilton or Elgin. Such changes are almost invariably introduced by the smaller firms and copied by the large domestic assemblers if the changes appear to be successful. Nevertheless, the assemblers are in much closer contact with developments in the Swiss industry than are the domestic movement manufacturers, and they are in a better position to make changes more rapidly--by utilizing Swiss productive capacity--than can the latter firms.

Indeed, this lethargy in style innovation is not confined to large-scale American producers. Even in Switzerland those firms which have integrated vertically more than the typical Swiss firm tend to be followers rather than leaders. According to Roland Gsell, of the American Watch Association: "They have a hard time following styles and trends. Their overhead goes up. Economically speaking, they have a harder time to fight the others who can buy, like automobile manufacturers in this country do, parts here and there".<sup>1</sup>

Mr. Gsell's statement raises another question apart from that of style leadership; the question is whether or not vertical integration (as in the American industry) detracts from productive efficiency. Professor Stigler has conveniently

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<sup>1</sup>U. S. Tariff Commission, transcript cited, p. 814.



summarized the theoretical aspects of this question.<sup>1</sup> He suggests that the firm be considered as conducting a series of production operations, corresponding to a series of intermediate products each of which has its own average cost curve. The usual average cost curve of the final product may then be viewed as the sum of the cost curves of the separate intermediate products. It would be most unusual if each of these intermediate processes reached the point of decreasing returns at outputs corresponding to a given output of the final product. In other words, the average cost of the final product starts to rise when the rising unit costs of those processes which have been pushed past the point of decreasing returns overcome the falling unit costs of other processes which are still within the range of increasing returns.

Therefore, two alternatives appear for firms within the "final product" industry. One is that certain firms may choose to concentrate upon those processes subject to increasing returns, becoming suppliers of intermediate products to the others. The second alternative, conversely, is that those firms which decide to continue producing the final product may abandon processes subject to increasing returns to the "specialists", thereby availing themselves of external economies of scale.<sup>2</sup>

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<sup>1</sup>George J. Stigler, "The Division of Labor is Limited by the Extent of the Market", Journal of Political Economy, Vol. LIX No. 3, June 1951, pp. 185-193.

<sup>2</sup>This is not original with Stigler. Thirty-odd years ago J. M. Clark wrote: "Over against the maxim: 'Do it yourself', stands another, expounded by economists from Adam Smith down. Its modern form is: 'If you want a thing cheaply done, hire a specialist who does that thing for half the world and on a mammoth scale'." Economics of Overhead Costs (Chicago, 1923), p. 140.

Why, then, does vertical integration appear in many industries? Stigler answers this by stating that vertically-integrated firms appear to be characteristic of industries limited by the extent of their markets to relatively small-scale production rather than those industries whose markets permit large-scale production.<sup>1</sup> In the case of small industries, the functions subject to increasing returns are themselves of too small a scale to support separate firms or industries.

At first glance, it appears that the jeweled watch industry offers an excellent example of Professor Stigler's thesis. It has been mentioned in earlier chapters that watchmaking is not a continuous-process industry. In the modern American plant a number of separate production processes are carried on simultaneously, with the product of each process, i.e., a particular part, being carried to a final assembly department. There is no engineering reason why these separate functions should not be performed by separate plants, as they are in Switzerland, except that the domestic industry's scale of production is too small to support such a development of specialization. With an annual rate of output eight or nine times that of the American

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<sup>1</sup>This reasoning appears to apply to the jeweled watch industry. On the other hand the general validity of Stigler's position would be hard to prove. Stigler himself cites the TNEC central-office data, but these hardly prove his point. The TNEC figures relate only to multi-plant operations and bypass the fact that many large industries accomplish vertical integration within large single plants. See The Structure of Industry, TNEC Monograph No. 27, 76th Congress, 3d Sess. (1941), Part II, Chapter VIII.

industry, the Swiss can, in Stigler's terms, "afford specialization".

The development of watchmaking machinery is a case in point. The American firms make practically all of their special-purpose machinery. The reason for this, as expressed by T. A. Potter, is that "there are many of the machine-tool people in this country that do not want to make that type of machinery because the volume of it is not great enough."<sup>1</sup> The Swiss, in contrast, are able to draw upon the facilities of specialized watch machine manufacturers. There are two advantages to this. In the first place, if the American industry is operating at capacity, machinery for replacement or expansion purposes can only be produced by diverting skilled labor and engineering talent from the production of watches--which makes it more difficult to keep up with the Swiss in the field of horological innovation. In the second place, the Swiss have the advantage of being able to concentrate their machine designing facilities upon the problem of new and improved horological machinery. In the words of J. G. Shennan, "There are a great many more people in Switzerland who devote their entire time and thought and energy to developing special machinery for these purposes...and the Swiss are good engineers, and very clever machine builders, and they have built fine machinery".<sup>2</sup>

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<sup>1</sup>U. S. House Ways and Means Committee, Hearings on the Operation of the Trade Agreements Act, 80th Congress, 1st Sess. (1947), p. 966.

<sup>2</sup>U.S. Senate Finance Committee, Hearings on H.R. 1211, 81st Congress, 1st Sess. (1949), p. 608.

There are many other examples of this sort. Each of the domestic firms makes its own springs, even down to the alloying of spring steel.<sup>1</sup> In Switzerland the firms which make watch springs make nothing else. Each American firm maintains its own research department, while the Swiss industry is able to support a large laboratory for Horological Research at the University of Neuchâtel. With no American universities engaged in the training of horological technicians and engineers, the domestic firms must undertake this training themselves.<sup>2</sup> Swiss producers can draw upon the graduates of seven cantonal schools of watchmaking and the horological engineering curricula of two major universities (Neuchatel and Zurich).

There are some advantages to the firm in integration. If the firm's output is large enough to permit production of some component on an optimum scale, the firm may integrate in order to absorb the supplier's profit. This is an "advantage", of course, only to the extent that overall profits are increased sufficiently to justify the capital investment required for integration.

Another advantage to the firm, if not to the economy, is

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<sup>1</sup>The Hamilton Watch Company, for example, operates a "miniature steel mill" with a capacity of half a ton a year.

<sup>2</sup>H.T. Partridge, a distinguished Boston jeweler, has long argued that the domestic firms should use the funds they now spend on lobbying for higher tariffs to establish a chair of horological engineering at Massachusetts Institute of Technology (U.S. Senate Committee on Finance, Hearings on H. R. 1211, 81st Congress, 1st Sess., 1949, pp. 346-353). In answer, James G. Shennan has pointed out that there are not enough job opportunities in the American industry to justify specialized college training (ibid., p. 602).

the opportunity which occasionally arises for monopolistic exploitation of some innovation. The best example of this is Elgin's promotion of the "Durapower" mainspring, based upon an alloy developed by the company itself. If every watchmaker secured his springs from some common supplier, such an opportunity would not exist.

The most important advantage of integration, however, is the fact that both the rates and quality of parts production can be more closely controlled by the firm which engages in every function than by one which carries on only the process of assembly. Indeed, the manufacturing tolerances permissible in watch parts are so small that one would not expect the assembly line techniques developed by Elgin and Hamilton in recent years to be practical except in an integrated plant.

The problem of coordinating the various production processes is less pressing in Switzerland because of the geographic localization of the industry. The extremes of the Jura watch producing area, Geneva and Schafhausen, are less than two hundred miles apart. Most of the activity takes place, moreover, in an area around La Chaux-de-Fcunds and Bienne which would be encompassed by a circle with a radius of a dozen miles. Thus communication and transportation are relatively simple matters.

In the case of the American industry, geographically dispersed as it is, coordination of the activities of a number of specialized parts suppliers would be a task of considerable magnitude. The complaints of the domestic assemblers illustrate this point. Movements which arrive from

Switzerland do not fit the cases on hand, dials must frequently be replaced, and so forth. In the words of S. Ralph Lazrus: "We have not got a controlled production. We are in the laps of the gods from week to week."<sup>1</sup>

Practically no empirical data are available with which to judge the comparative efficiencies of the Swiss and American forms of industrial organization. Labor is the principal factor of production, with labor costs amounting to roughly eighty percent of total cost. Thus one would expect that labor productivity (in terms of output per unit of labor employed in the industry as a whole) would be higher in Switzerland if there were any marked technological advantages in the "division of labor" among separate firms. On the basis of the limited data available, it appears that such advantages do exist.

The United States Tariff Commission has reported jeweled watch output and employment (on watches and parts) for the years 1946-1953.<sup>2</sup> M. Jean-Jacques Bolli, Secretary of the Swiss Watch Chamber, has made available to the author the Chamber's estimates of Swiss output and employment for the years 1950-1952.<sup>3</sup>

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<sup>1</sup>U.S. Tariff Commission, transcript cited, p. 1165.

<sup>2</sup>U.S. Tariff Commission, Watches, Movements and Parts, Report to the President on Escape-Clause Investigation No. 26 (1954), Tables 6, 15.

<sup>3</sup>Letter of October 22, 1953. M. Bolli's data are:

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Year	Factory Employment	Movement Exports (1,000 pieces)
1950	47,013	24,226
1951	54,060	33,549
1952	58,350	33,263

Several adjustments must be made to the Swiss data for comparability with American statistics. Output is not reported directly; the Swiss rule of thumb is that output equals exports plus five percent. Employment figures underestimate actual employment in one respect. As they are based upon factory returns, these figures omit homeworkers and the employees of over a thousand firms employing fewer than seven employees each. These omissions are perhaps twenty percent of the official statistics.<sup>1</sup> On the other hand, the Swiss employment category includes workers in a number of occupations not included in American figures (see Chapter VII, Table 14); on the 1948 basis, these amount to twenty-five percent of total employment. Finally, the resultant output and employment figures reflect both jeweled-lever and pin-lever (Roskopf) watch production. It is estimated that fifteen percent of watch movement employment and twenty-five percent of output is in the Roskopf field.<sup>2</sup>

These adjustments have been made by the author to the Swiss data.<sup>3</sup> The resulting figures, which afford some basis

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<sup>1</sup>Author's estimate, verified by Mr. L. Probst of the Legation of Switzerland.

<sup>2</sup>Estimate suggested by M. Bolli.

<sup>3</sup>The author has increased the Swiss export figures by five percent to arrive at an output figure and reduced the total by 25% to eliminate pin-lever production. The employment figures in Table 27 are 76.5% of the Swiss factory returns figures. I.e., the author has inflated the official data by 20% to include homeworkers and employees of small firms; this figure has been reduced by 25% to exclude workers engaged in manufacturing cases, bearing jewels and other materials not included in American statistics; finally, the resultant figure of workers employed in movement manufacture has been reduced by 15% to exclude employment on pin-lever movements.

for comparing productivity in the American and Swiss industries, are shown in Table 27 below.

TABLE 27

## OUTPUT AND EMPLOYMENT IN JEWELLED-LEVER WATCH MANUFACTURING

Year	United States		Switzerland	
	Employment	Output (1,000)	Employment	Output (1,000)
1950	7,761	2,480	36,034	19,078
1951	8,847	3,162	41,356	26,419
1952	7,147	2,433	44,638	26,195
Average	7,918	2,692	40,676	23,897

Source: Swiss data supplied by the Swiss Watch Chamber, adjusted by the author (see text); U. S. data from U. S. Tariff Commission, Watches, Movements, and Parts (1954), Tables 6, 15.

The figures above indicate that the Swiss have produced, in recent years, an average of 8.9 times as many jeweled movements with only 5.1 times the labor force of the American industry. In part the Swiss advantage reflects a normal work week of forty-eight hours, in contrast to the American forty-hour week. If Swiss output figures are further adjusted downward by one-sixth to reflect this difference, it appears that the average Swiss worker (on the basis of a forty-hour week) is about forty percent more efficient than the average American worker.

Any comparison of this sort is open to serious question. Wide margins of error exist in the estimates of Swiss output and employment comparable to that of the American industry. Even if this were not true, the problem of comparable quality would remain. Swiss output runs the gamut of quality, from



the poorest to the finest jeweled watches in the world. The products of the American industry cluster more uniformly about the "middle" ranges of quality. One cannot tell whether the average quality of Swiss movements is below or above that of American output. Thus there is the possibility that superior Swiss productivity is illusory.

Despite this uncertainty, it appears that a case can be made for Professor Stigler's thesis that vertical disintegration of the larger scale industry may result in a higher level of productive efficiency. Cost-wise this case is weakened by the Swiss Collective Agreement's provision for a minimum gross margin of twenty-five percent in the selling prices of all component parts for movements.<sup>1</sup> Pyramiding of this margin at successive stages of production probably absorbs any financial benefits which Swiss movement assemblers might otherwise expect from the higher technical efficiency of their industry.

Whether the productive efficiencies of the two industries are different or similar, there is an impressive difference between the money costs of movements produced in Switzerland and those produced in the United States. The size of this differential has been vehemently argued in recent years. Since neither the domestic manufacturers or the assemblers have been willing to divulge detailed costs, no accurate comparison may be made. Nevertheless, some rough estimates may be attempted from the information available.

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<sup>1</sup>A. H. Stuart, "Swiss Watch Industry's Drive", Foreign Commerce Weekly, August 29, 1949, p. 5.

From 1946 through 1953, average annual foreign unit values of imported seventeen-jewel movements ranged from \$6.03 (1950) to \$6.91 (1953).<sup>1</sup> \$6.50 may be taken as a convenient figure for a typical movement utilized by the major assemblers.<sup>2</sup> Allowing at least 50¢ a movement for transportation, the landed cost of such a movement would be \$7.00, exclusive of duty.<sup>3</sup> Before the recent tariff increases (July 27, 1954), the duty would have averaged \$2.40, so that our movement would cost the assembler roughly \$9.40.

A similar estimate may be made for the domestic manufacturers by dividing production costs by the estimated number of units sold. In 1950 the total unit sales of Elgin and Hamilton were slightly less than two million.<sup>4</sup> Elgin produced between 1.4 and 1.5 million of these, and Hamilton produced between 0.5 and 0.6 million.<sup>5</sup> "Cost of goods sold"

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<sup>1</sup>U. S. Tariff Commission, op. cit., Table 5.

<sup>2</sup>The average unit values of movements imported by Bulova, Gruen, and Benrus appear to be very close to the average values for all 17-jewel movements imported. See U. S. Tariff Commission, Watches, War Changes in Industry Series Report No. 20 (Washington, 1947), pp. 101, 106.

<sup>3</sup>The Tariff Commission estimated that transportation costs averaged 30¢ a movement in 1939 (op. cit., p. 105).

<sup>4</sup>U. S. Tariff Commission Investigation No. 4 Under Executive Order 10082 (1951), Brief in Behalf of the American Watch Association, Inc., p. 35.

<sup>5</sup>The Tariff Commission estimates 1950 consumption at 9.3 million movements (Watches, Watch Movements, Watch Parts and Watchcases, Table 15). Hamilton in 1950 accounted for roughly six percent of total unit sales of jeweled watches (Hamilton Watch Company v. Benrus Watch Company, 114 F. Supp. 307). The Elgin estimate is the difference between 2,000,000 and the Hamilton estimate.

figures (from the 1950 reports of the two companies) have been adjusted downward by five percent in the following table, on the basis of a Tariff Commission estimate that watch sales alone amounted to ninety-five percent of total sales in 1950.<sup>3</sup>

TABLE 28  
ESTIMATED COSTS FOR COMPLETE WATCHES  
ELGIN AND HAMILTON, 1950

	Elgin	Hamilton
Cost of goods sold:	\$19,879,000	\$13,325,000
Estimated unit sales:	1.4-1.5 million	0.5-0.6 million
Estimated unit costs:	\$13.30-\$14.20	\$22.10-\$26.70

Thus Hamilton, which sells exclusively in the retail price ranges above fifty dollars, produced watches for some figure between \$22 and \$27. Elgin, which covers a lower price range, had production costs of about \$14 for the average complete watch. Since this average is weighted by the output of watches in the higher price ranges (in which cases, bracelets and gift cartons may cost more than the movement itself), it is evident that Elgin's cheaper products must cost substantially less than fourteen dollars. After subtracting the cost of casing and packaging, it may be estimated that Elgin is producing watch movements at a unit cost of eight or nine dollars, or for one to two dollars more than the landed cost of comparable Swiss movements (before duty).

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<sup>1</sup>U. S. Tariff Commission, op. cit., p. 69.

There is some support for this statement. The president of Elgin has placed the differential between Elgin's costs and the foreign unit values of comparable movements at "from two to five dollars", depending upon the quality of particular movements compared.<sup>1</sup> The treasurer of Bulova has testified that Bulova's cost for domestically-produced movements averaged \$9.50 in 1949.<sup>2</sup> Walter Cenerazzo has frequently stated that Waltham's unit costs after World War II were about \$13 a movement. However, in a 1948 meeting with Waltham's directors, Cenerazzo argued that with greater standardization of parts and less waste of labor and materials, these costs could be reduced at least four dollars a movement.<sup>3</sup>

A final pertinent illustration of domestic costs occurred more recently. In 1953 Benrus purchased "substantial quantities" of 21-jewel movements from a domestic producer (Elgin, Hamilton or Waltham) at a price of about ten dollars each.<sup>4</sup> According to a statement authorized by the president of Benrus, "this was definitely a regular sale with profit and was in no way a distress operation".<sup>5</sup> In short, a figure between

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<sup>1</sup>U.S. Senate Committee on Finance, Hearings on H.R. 1211 (1949), p. 607.

<sup>2</sup>Ibid., p. 570.

<sup>3</sup>U.S. Senate Committee on Banking and Currency, subcommittee hearings, Loan to Waltham Watch Company, 81st Congress, 2d Sess. (1950), p. 161.

<sup>4</sup>U.S. Tariff Commission Investigation No. 26, Brief in Behalf of the American Watch Association, Inc. (Washington, 1954), p. 42.

<sup>5</sup>Letter to the author (April 19, 1954) from Mr. Win Nathanson, Win Nathanson & Associates (public relations counsel to the American Watch Association).

eight and nine dollars as the average cost of domestically produced movements appears realistic.

The differential of one to two dollars between the landed cost of an imported movement and the production costs of a comparable domestic movement indicates a much larger gap between Swiss and American costs. Swiss export prices have been fixed to provide a minimum gross margin of thirty percent above production costs for finished movements.<sup>1</sup> Hence a \$6.50 Swiss movement costs no more than \$5.00 to produce. The difference between the costs for movements of similar quality, then, is in the neighborhood of three to four dollars.

Apart from any considerations of technological efficiency, the Swiss industry enjoys an important advantage through lower money wage scales, in a world in which international exchange rates may be taken as parameters. Before World War I, while American mechanized production competed with a Swiss industry just emerging from a period of hand craftsmanship, relative money wages were unimportant. Swiss technological progress has eliminated any American advantage on this score, and money wage rates have become a crucial factor.

Comparative average hourly earnings are shown in Table 29.<sup>2</sup> In both countries the wartime demand for precision

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<sup>1</sup>U.S. v. The Watchmakers of Switzerland Information Center, Inc., et al., U.S. District Court (S.D.N.Y.), Civil Action No. 96-170, Filed October 19, 1954: Complaint, Paragraph 32.

<sup>2</sup>The International Labour Office reports Swiss earnings by three classes of labor: skilled men, semi-skilled and unskilled men, and women. The author has computed average hourly earnings for the industry by combining the averages reported for each group, weighted by the number of persons in each class relative to the total 1953 I.L.O. sample. Percentages of the total in each class were: skilled men--28%, semi-skilled and unskilled men--22%, women--50%.

craftsmen and the postwar inflation have been reflected in rising wages. Hourly earnings rose by 128 percent in Switzerland and 184 percent in the United States between 1939 and 1953. The result has been a considerable increase in the money cost differential in watch movement production between the two countries.

TABLE 29

AVERAGE HOURLY EARNINGS (U.S. DOLLARS) IN WATCH MANUFACTURING, UNITED STATES AND SWITZERLAND

Year	United States	Switzerland	Differential
1939	\$0.62	\$0.28	\$0.34
1946	1.11	0.52	0.59
1947	1.22	0.53	0.69
1948	1.34	0.56	0.78
1949	1.39	0.58	0.81
1950	1.54	0.58	0.96
1951	1.63	0.60	1.03
1952	1.70	0.63	1.07
1953	1.76	0.64	1.12

Sources: U. S. data from U. S. Tariff Commission, Watches, Movements, and Parts (1954), Table 15. Swiss data from International Labour Office, Yearbook of Labor Statistics, 1949-50 ed., p. 202, 1954 ed., p. 217.

The relationship between the wage differential and the movement cost differential depends, of course, upon the number of man-hours of labor embodied in a watch movement. This figure is another of the innumerable "trade secrets" of the industry. J. G. Shennan, speaking for the domestic manufacturers, had admitted only that "it is less than eight hours".<sup>1</sup>

<sup>1</sup>U. S. House Ways and Means Committee, Hearings on H.R. 1211, 81st Congress, 1st Sess. (1949), p. 507.

Abraham Carnow, speaking for the assemblers, has asserted that in 1948 Bulova produced slightly over a million movements with 2,000 employees engaged only in movement manufacture.<sup>1</sup> If these employees worked forty hours a week, Bulova's labor time per movement would be four hours. According to a government watch industry specialist, the figures "kicked around the industry" range from three and one-half to five hours.<sup>2</sup>

If one takes a figure of four hours' labor per movement and a wage differential of one dollar an hour, it is clear that the differential between Swiss and American production costs can be explained satisfactorily by the wage differences between the two countries.<sup>3</sup> On the other hand, the Swiss have utilized a large share of the benefits from lower wages, and higher labor productivity, to maintain a rigid pattern of minimum profits in all sectors of their industry. It is the author's position that these profit margins, transportation costs, and the existing tariff structure were sufficient to balance any differences between Swiss and American costs of production, even before the tariff increase of July 1954.

Regardless of any advantages the Swiss may enjoy, it is

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<sup>1</sup>Ibid., pp. 645, 650.

<sup>2</sup>J. C. Burritt, U. S. Tariff Commission, interview.

<sup>3</sup>The fact that the wage differential can explain the production cost differential for finished movements reinforces the author's earlier assumption that superior Swiss productivity with respect to component parts has been largely absorbed by the profit margins of the parts suppliers.

difficult to prove that injury has resulted to the domestic firms, either from the Swiss industry itself or from the reduction of duties by the American government in 1936. Waltham's troubles appear to stem from a succession of chief executives, prior to 1950, who were either incompetent or who were primarily interested in operations more appropriate to a dairyman than to a watchmaker. Both Elgin and Hamilton have consistently shown respectable profits in recent years.<sup>1</sup> During the years covered by the reduced trade agreement, duties, the combined jeweled watch sales of these two firms rose from \$15 million (1936 to \$61 million (1953)).<sup>2</sup> This evidence hardly supports any finding of "serious injury" from the 1936 concessions upon which the President could base his withdrawal of these concessions in 1954.

There is only one argument for protection of the industry, but in a bellicose world this argument is a powerful one: the essentiality of the jeweled watch industry to national defense. The question which needs to be answered is, "How successfully can the defense criterion be applied to the jeweled watch industry?" Two government studies support the position that this industry is essential to defense. These were the studies upon which President Eisenhower relied to justify his 1954 increase in watch tariffs.<sup>3</sup>

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<sup>1</sup>See Chapter V, Table 9.

<sup>2</sup>Sales figures from Moody's Manual of Investments. 1953 combined sales (\$90 million) reduced by 32 percent to eliminate sales of products other than jeweled watches (U.S. Tariff Commission, Watches, Movements, and Parts, p. 13).

<sup>3</sup>Transcript of the President's press conference of July 28, 1954 (New York Times, July 29, 1954).



After rejecting the Tariff Commission's recommendations respecting the watch industry in 1952, President Truman asked the chairman of the National Security Resources Board to head an interdepartmental committee (with representatives from the Departments of Commerce, Defense and Labor) appointed to investigate the essentiality of the watch industry. This committee reported:<sup>1</sup>

The study makes it clear that precision jeweled watch movements are essential to the security of the nation in wartime...The products of the jeweled watch industry, namely jeweled clocks, jeweled watches, chronographs and chronometers, have a very high essentiality rating and are uniquely produced by firms in this branch of the clock and watch industry.

The committee specifically rejected the "standby-facilities" approach to guarantee wartime capacity with the argument that the skills required for watchmaking can only be maintained by "the actual put-through of watch and clock movements or the parts of such movements".

In July 1953, President Eisenhower appointed a second interdepartmental committee, with representatives from the Office of Defense Mobilization and the Departments of Defense, Commerce, Labor, State, and the Treasury, to review the problem. This committee concurred in the essentiality decision of the earlier committee. But where the Truman committee concluded that 1952 production levels in the industry were sufficient to maintain an adequate mobilization base, the

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<sup>1</sup>Press release (mimeographed) of unclassified excerpts from the memorandum by Jack Gorrie, Chairman, NSRD, to John R. Steelman, Assistant to the President, January 12, 1953.

Eisenhower committee found in 1954:<sup>1</sup>

The levels of production and employment in the industry are now below the levels which would enable the industry to expand quickly and effectively to meet the requirements of full mobilization. The downward trends of production and employment in the industry are likely to continue, thereby further impairing the industry's base of critical facilities and skills, unless the Government acts to create conditions favorable to higher levels of production and employment in the industry.

The domestic manufacturers thus rest their case for consideration as an essential industry upon two bases, the skills of their labor force and the products which they produce. The argument of "labor skill" must be handled with care. T. A. Potter (then president of Elgin) wrote in 1947, "We have taken out of manufacturing operations the skills that once characterized the industry's skilled trades. Only a few factory operations remain in the realm of mechanical artistry."<sup>2</sup> In other words, mechanization has resulted in the deskilling of the vast majority of factory operations. Individuals with the mechanical aptitudes for precision work can be trained in a few weeks to perform these operations.

The Department of Labor conducted a survey of the 10,400 persons employed by the jeweled watch industry in September 1952.<sup>3</sup> The occupational distribution of these individuals

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<sup>1</sup>Interdepartmental Committee on the Jeweled Watch Industry, The Essentiality to National Security of the American Jeweled Watch Industry, Report to the Director of the Office of Defense Mobilization, June 30, 1954, p. 28.

<sup>2</sup>T. A. Potter, "It's Management's Job to Fight Economic Quackery", Factory Management and Maintenance, May, 1947. p. 84.

<sup>3</sup>Eugene P. Spector, "Employment Trends in the Watch and Clock Industry", Monthly Labor Review, June 1953, p. 618.

is shown in Table 30 below. The Department concluded that about twenty-five percent of these people were in "critical" jobs requiring at least two years of training.

In the author's opinion, the Department of Labor has seriously exaggerated the number of "critical" personnel; the Department's figure apparently includes horological supervisory personnel, scientific and technical people and the skilled horological workers. It would appear that many of these jobs could be filled by persons outside of the industry at present, either with no special training in problems peculiar to the industry or with a minimum of such training. Among the scientific personnel, for example, metallurgists with alloys experience and chemists with lubricating oils experience could readily adapt their training to the special problems in these fields met in horology.

A similar situation prevails with respect to the "skilled horological workers". Of some 350 tool and diemakers employed by the industry, only about sixty are horological "specialists". Fewer than a thousand persons are employed as adjusters, inspectors, assemblers and watchmakers. Outside of the industry, there exists a pool of some fifty thousand watch repairmen who are qualified to fill these positions.<sup>1</sup> On this subject the occupational analysts of the Department of Labor have long held that watch repairmen require a greater knowledge of horological principles and the construction of

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<sup>1</sup>U.S. House Ways and Means Committee, Hearings on H.R. 4294, 83d Congress, 1st Sess. (1953), p. 1873.

timepieces than do skilled workers within the watch industry proper.<sup>1</sup>

The author feels that the following occupations might be difficult to fill with trained personnel from outside the jeweled watch industry in a relatively short time (say, three months): horological supervisory personnel, tool-and-diemaker "specialists", some machine tool technicians (those with training, frequently secured in Switzerland, on specialized machinery) and modelmakers. The total would not amount to more than five percent of the personnel presently employed in the industry. And in a reasonable length of time, say, one to two years, persons with some basic training either within or without the industry, could be trained to fill all of these positions. Supervisory personnel could be developed, general tool-and-diemakers could become specialists, and so forth. In short, the unique skills "essential to national defense" which are supposed to justify increased tariff protection for the jeweled watch industry do not appear to exist.

Do the productive capacities of the domestic manufacturers afford a better basis for the protection argument? All of the

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<sup>1</sup>"CLOCK AND WATCH REPAIRMEN repair and adjust timepieces, inserting new main or hair-springs, resetting pivots, truing up balance wheels, changing the position of the hair-spring or pendulum adjustment. They grind down, reshape and polish old parts and fabricate new parts on a small lathe, using a wide variety of hand cutting tools, including reamers, scrapers and cutters, and polishing and dressing wheels...CLOCK AND WATCH REPAIRMEN frequently shape and grind their own lathe-cutting and hand tools." U. S. Employment Service, "Occupations Related to Clock and Watch Repairmen", Job Family Series No. O-88, January 1944, p. 7.

TABLE 30

OCCUPATIONAL DISTRIBUTION OF WORKERS EMPLOYED  
IN THE JEWELLED WATCH INDUSTRY, SEPTEMBER 1952

Classification	Percentages of Total	
Administrative and supervisory:		5.4%
Horological	4.2%	
Key managerial	0.5%	
Foremen	3.7	
Other	1.2	
Professional and technical		2.9
Scientists	0.3	
Engineers	1.5	
Technicians	0.4	
Draftsmen	0.6	
Others	0.1	
Skilled workers:		19.9
Horological		17.6
Machine shop	8.4	
Setup men	3.4	
Tool & Diemakers:		
"General"	2.7	
"Specialists"	0.6	
Machine tool technicians	0.5	
Machinists	1.2	
Assemblers and inspectors	4.7	
Adjusters	2.4	
Watchmakers	1.2	
Modelmakers	0.2	
Others	0.7	
Non-horological	2.3	
Semi-skilled workers:		20.2
Horological	16.6	
Non-horological	3.6	
Less-skilled workers:		43.1
Horological	29.2	
Non-horological	13.9	
Other employees		8.5
Total		100.0%

Source: U. S. Department of Labor, Monthly Labor Review, June 1953, p. 619.

domestic firms have published long lists of the vital war materials which they claim to have produced--ranging from rifle parts through time fuzes and aircraft instruments to jeweled watch and chronometer movements.<sup>1</sup> The impression has somehow been created that mobilization requirements for these materials could not be filled without the participation of the jeweled watch industry.

The Department of Commerce (sic!) claims that essential military production (timepieces, fuzes and related devices), in the event of full mobilization for war, will require an employment level in the jeweled watch industry of at least 11,260 persons.<sup>2</sup> Commerce estimates that essential civilian requirements of jeweled watches (for hospital personnel, coal miners, defense-plant workers, and so forth) will total at least three million movements a year.<sup>3</sup> If these are to be produced domestically, another 8,800 workers will be required at the 1951 employment-output ratio. And Commerce warns us that "in planning for future emergencies, no reliance can be placed on foreign sources for precision timepieces."<sup>4</sup>

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<sup>1</sup>During World War II, prime contracts to the four domestic producers of jeweled watches totalled \$157 million, of which \$87 million were for jeweled timepieces not produced outside this industry at that time. Based on figures for individual companies reported in Civilian Production Administration, Major War Supply Contracts, June 1940-September 1946 (Washington, no date).

<sup>2</sup>U.S. Senate Committee on Armed Services, Preparedness Subcommittee No. 6, Hearings on the Essentiality of the Domestic Horological Industry, 83d Congress, 2d Sess. (1954), p. 49.

<sup>3</sup>ODM report cited, pp. 18, 19.

<sup>4</sup>Ibid., p. 19.

The Department of Defense, an agency which presumably is better qualified to judge defense requirements than Commerce, paints a vastly different picture. In connection with the 1954 ODM study, the Defense Department undertook a careful investigation of the role which the jeweled watch industry might be expected to fill during a three-year mobilization period. "This was one of the most complete studies ever made of end item full mobilization requirements for a single industry."<sup>1</sup>

According to the Defense Department, World War II experience (when peak three-year deliveries totalled over three million jeweled movements) was weighted by "overprocurement and unnecessary issue of watches".<sup>2</sup> At present total requirements for jeweled watches, clocks and chronometers over a three-year mobilization period would be less than 700,000 movements.<sup>3</sup> In short, the report concludes that "these requirements to the Department of Defense are nominal".<sup>4</sup>

Even if defense requirements for jeweled movements are "nominal", perhaps the "unique skills" of the jeweled watch industry are essential for a satisfactory level of time fuze production, as claimed by the Department of Commerce. "Not so", says the Department of Defense. Survey teams which

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<sup>1</sup>Ibid., p. 3.

<sup>2</sup>U.S. Department of Defense, Department of Defense Report on the Essentiality of the Jeweled Watch Industry, April 26, 1954 (adjusted for declassification February 28, 1955), p. 3.

<sup>3</sup>Ibid., p. 2.

<sup>4</sup>Ibid., p. 5.

visited all of the jeweled watch companies and twenty-seven other firms supplying military timing mechanisms reported:<sup>1</sup>

There is no particular item or product which is not being made or procured outside of the jeweled watch industry...if it were desirable to single out one item in the mechanical time fuze program for which the jeweled watch industry is most insistent that it qualifies as a single source producer, it would be the escapement spring used in most types of mechanical time fuze mechanisms. This spring is closely related to the hair springs used in watches... However, sources outside the jeweled watch industry have produced this part. It may be generally stated that the balance of the components, including the pinions, gears, and plates, are readily within the production capabilities of most of the facilities engaged in clock or watch manufacturing and many instrument manufacturers. Sources such as Eastman-Kodak, King-Seeley, or Eclipse Machine, have consistently produced satisfactory mechanical time fuzes for the Department of Defense.

An interesting sidelight on the flexibility of American industry may be mentioned, in connection with the "sources outside of the jeweled watch industry" which have produced escapement springs. One of the best of these sources during the Korean War was the Windsor Manufacturing Company--a small New Jersey firm whose principal products are ping-pong balls.<sup>2</sup>

The Defense Department has indicated the quantitative importance of the jeweled watch industry's role in meeting full mobilization needs for all timing devices used in the ammunition program. "Only 11 percent of the total mobilization requirement planned with industry is with the jeweled watch industry."<sup>3</sup> In summary, Defense's position with respect

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<sup>1</sup>Ibid., p. 5.

<sup>2</sup>Preparedness Subcommittee No. 6, Hearings cited, p. 177.

<sup>3</sup>Department of Defense, report cited, p. 4.



to the jeweled watch firms may be accurately paraphrased in the following terms. The jeweled watch industry has superb facilities for manufacturing small parts to close tolerances. It's nice to have this capacity around, but it can hardly be considered "essential".

A further point to be noted in connection with defense essentiality is that the American industry is seriously weak in one respect. Virtually the entire supply of jewel bearings used in domestic movements is imported from Switzerland. Obviously, any wartime interruption in the supply of imported movements would be accompanied by a cessation of jewel bearing imports. Two firms (Bulova and Elgin) produced some jewel bearings during World War II, aided by heavy government subsidies. The output of bearings in the sizes and quality required for watches reached some 3.5 million in 1944 (versus requirements of 70 million).<sup>1</sup> The cost was prohibitive, and since access to Swiss supplies remained open, the program was eliminated late in that year.<sup>2</sup>

The present attack on this problem is twofold. In 1948 the Munitions Board ordered the immediate stockpiling of watch jewel bearings, among other critical items which could not be supplied by domestic capacity.<sup>3</sup> No information has

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<sup>1</sup>U.S. Tariff Commission, Watches, p. 129.

<sup>2</sup>The lowest cost achieved was 25¢ a jewel, against a price of about 4¢ a jewel for Swiss products. The chief obstacle to the program was that American workers refused to remain on the tedious jobs involved in jewel-making (ibid., p. 128, and Preparedness Subcommittee No. 6, Hearings, p. 76.

<sup>3</sup>Munitions Board Circular No. 53 (September 23, 1948), reprinted in U.S. Senate Finance Committee, Hearings on H.R. 1211, 81st Congress, 1st. Sess. (1949), p. 863.

been released as to the extent to which this program has been carried out.

A more sophisticated approach was introduced in 1952. The North Dakota Indian Affairs Commission persuaded the federal government that Chippewa Indians on that state's Turtle Mountain Reservation possess certain natural aptitudes for jewel-making. A project to utilize this labor was initiated in October 1952, when the Bulova Watch Company received a contract to establish and operate a plant for the government. The target is a production goal of nine million jewels a year; estimated costs at this level will be 20¢ a jewel.<sup>1</sup>

Naturally, since Chippewa wage rates (about \$35 a week) are higher than Swiss wages, "a move has been made to establish a high protective tariff for the industry".<sup>2</sup> One may safely predict that Elgin, Hamilton and Waltham will be in the forefront of the battle against this particular tariff. One may also predict that the domestic industry will not become self-sufficient in jewel bearing production in the foreseeable future.

Despite the evidence against the essentiality argument, the present Administration and Congress are apparently convinced that the jeweled watch industry is vital to national defense. Hence, future public policy will be decided on this basis. At this point the question of domestic capacity becomes important.

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<sup>1</sup>New York Times, October 8, 1952, p. 33.

<sup>2</sup>Ibid., August 4, 1952, p. 17.

Peak domestic production to date has been the 3.2 million movements of 1951.<sup>1</sup> The author's own estimate of the present capacity of the industry is about 3.6 million movements, shown by individual companies in Table 31.

TABLE 31  
ESTIMATED ANNUAL CAPACITY OF JEWELLED WATCH FIRMS

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Elgin	1,600,000	movements
Bulova	1,100,000	"
Hamilton	600,000	"
Waltham	300,000	"

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Estimates as to what capacity should be for defense purposes vary widely.<sup>2</sup> The Defense Department believes, as stated above, that jeweled military timepiece needs can be filled with an annual production of less than 300,000 movements a year. The Department of Commerce, on the other hand, insists upon annual peacetime production levels of three million movements a year.<sup>3</sup> The Interdepartmental Committee compromised on an annual level of two million movements in the

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<sup>1</sup>This "guesstimate" is based upon various disconnected reports on employment, daily outputs, and so forth, of the individual companies and upon information developed in the transcripts of the two Tariff Commission escape-clause hearings.

<sup>2</sup>The author prefers to rely upon capacity rather than upon the annual production levels stressed by various government agencies concerned with the problem. Public references to the 1951-54 decline in actual production levels, made by industry leaders and government officials, overlook the fact that during this period the industry was in large measure engaged in fulfilling its mobilization functions.

<sup>3</sup>ODM report cited, p. 28.

1954 report.<sup>1</sup> This figure is the one accepted by President Eisenhower.<sup>2</sup> It is clear, however, that all of these estimates are well within the present capacity of the industry.

The Interdepartmental Committee suggested six alternative policies which might be considered to maintain this capacity: (1) advanced procurement of military timepieces, (2) preferential procurement of other products, such as fuzes, from the jeweled watch industry, (3) tariff relief, (4) import quotas, (5) subsidies to domestic producers, (6) advancement of horological techniques.<sup>3</sup>

Advanced procurement of military timepieces in the quantities required for defense would be a minor palliative to the domestic industry. Furthermore, even this degree of support could be continued only if the defense establishment could be persuaded to destroy its stockpiles periodically. Preferential procurement of other products such as time fuzes would clearly be an act of discrimination against firms outside of the jeweled watch industry which are equally qualified to produce these products.

Further tariff relief and import quotas appear to be the most dangerous methods which might be used to support the domestic industry. In the first place, such measures might be detrimental to the long-run welfare of the industry.<sup>4</sup>

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<sup>1</sup>Ibid., p. 28.

<sup>2</sup>Press conference cited, New York Times, July 28, 1954.

<sup>3</sup>ODM report cited, pp. 25-27.

<sup>4</sup>Ibid., p. 26.

One of the principal difficulties with this proposal is that it would remove one of the main factors which has encouraged the domestic industry to improve its productive efficiency, that is, the need to try to meet foreign competition. If the formula assured American industry of a share of the American market, the need to cut costs, improve the quality of the product, and remain alive to technological advances would be very much reduced.

In the second place, these methods would be deeply resented by Switzerland, whose watch industry occupies a position in her economy analagous to that of the automobile industry in the United States. In the present state of the world, the United States needs to keep its friends. This country can ill afford the consequences of another wave of anti-American feeling such as those which swept Switzerland after the passage of the Hawley-Smoot Tariff and after President Eisenhower's 1954 increase in watch duties.<sup>1</sup>

Subsidization of domestic production is another solution to the problem of maintaining an adequate mobilization base. This method would be less expensive to the economy and in terms of international relations than would higher tariffs. There is strong support in Washington at present for the subsidization approach.<sup>2</sup> Before subsidizing the jeweled watch manufacturers, however, one should recognize that this

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<sup>1</sup>The 1954 reaction was not confined to Switzerland. According to the Secretary of State, the President's action "was interpreted by other countries as indicating a trend here to build up duties rather than to maintain the present level or lower them". (U.S. House Ways and Means Committee, Hearings on H.R. 1, 84th Congress, 1st Sess., 1955, p. 72).

<sup>2</sup>Secretary of Commerce Sinclair Weeks and his Assistant Secretary, Lothair Teetor, are enthusiastic supporters of this approach (Wall Street Journal, February 21, 1955).

particular industry, on the evidence presented to date, has no more valid a claim to special treatment than a sizeable sector of American industry generally.

The best solution to the industry's problems would require no governmental intervention at all.<sup>1</sup> This is an extension of research to improve existing horological products and to develop new ones and diversification of the industry's output beyond the confines of jeweled watches proper. A most hopeful sign for the future is that all four domestic producers appear to be moving in this direction. There is an ever-growing need for miniature scientific, industrial and military instruments, and the watch industry is especially well-qualified to help fill this need. At the same time, diversification of this sort should provide the employment and profit possibilities necessary to maintain the industry's precision capacity at satisfactory levels.

In short, the jeweled watch industry already possesses within itself the ability to meet any future defense demands which can be predicted at present. Apart from defense considerations, no other reasons exist to "do something" for the domestic manufacturers. The public should not be required to pay for the past mistakes of Waltham's managements, and both Elgin and Hamilton have shown that they are able to meet competition vigorously and successfully. And on balance, the advantages of competition from the Swiss industry have been

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<sup>1</sup>The ODM report cited (p. 27) suggests that the Government might participate in the establishment of one or more centralized horological research and training institutes.

considerable to the American economy.

There appears to be a clear opposition of interests between the assemblers and the domestic manufacturers. As a result, collusion among the firms has been prevented, and competition (albeit monopolistic competition) has been preserved. Should the importers and assemblers be eliminated from the market, it is quite possible that the four domestic producers could arrive at some tacit understanding upon such questions as the volume of production, "fair" competitive practices, and market prices--especially since three of these firms have had some past experience in the methods of collusion.

This past experience is instructive. In the years from 1890 to World War I, while the industry was dominated by Elgin and Waltham and competition from Switzerland was non-existent, the industry stagnated. Profits were excessive, technological progress and efficiency lagged, and innovation in the quality of the product was negligible. The appearance of Swiss competition in the 1920's and its intensification more recently have revitalized the American industry. Research to develop new or improved production methods and improvements in the quality of domestic products have become essential to survival.

In meeting the challenge from Switzerland, domestic productivity has been raised considerably--some forty percent since 1936.<sup>1</sup> Domestic seventeen-jewel watches are now sold in the price ranges in which only seven jewel watches were available thirty years ago, and quality apart from jewel count

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<sup>1</sup>ODM report cited, p. 13.

is incomparably higher. To summarize in a single sentence, both the public and domestic industry itself have been well served by the competition from Swiss imports; any policies which seriously reduce this competition will be adverse to the interests of the American economy.



## APPENDIX I. A NOTE ON WATCH PRICES

A major problem which arises in any study of the jeweled watch industry is the question of product prices. Some index of watch prices would be most desirable in connection with the study of demand (Chapter IV). A measure of the flexibility of these prices would be of value in any analysis of the competitive structure of the industry (Chapter VI). There appears to be no method of solving this problem for most of the period under consideration.

Aside from isolated "guesstimates" for a few years (cited in Chapter IV), there are no sources from which average retail prices can be determined. Neither the volume nor the value of jeweled watches annually sold at retail can be estimated with any accuracy. Even the price lists of the major manufacturers are unavailable. Only one company (Hamilton) publishes a catalog for distribution to its retailers.<sup>1</sup> Advertisements which appear in national magazines (usually in mid-May and early December) picture only a small portion of the product line of each company, and since different models tend to appear in successive advertisements, no trends may be discerned from this approach.

It would be possible to estimate average retail prices

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<sup>1</sup>Retailers make their choices of models offered by the other companies from catalogs and samples retained by the sales forces of the manufacturers.

from some measure of average factory unit values except for two factors. In the first place, it would be dangerous to assume in the years since 1949 that retailers have adhered to the markups suggested by the manufacturers (roughly 100 percent). Discount houses appear to have secured an ever-increasing share of the market in this period. In the second place, the data on factory unit values is woefully incomplete. Census of manufactures figures on number and value of products shipped by jeweled watch manufacturers are available on a biennial basis from 1929 to 1939. Only one census, that of 1947, has been taken since 1939. The Annual Surveys of Manufactures conducted by the Bureau of the Census from 1949 on report, estimated dollar volumes of watches shipped; among watches with imported movements, however, no distinction is made between jeweled and non-jeweled movements. And no surveys of the number of movements produced or shipped have been made since 1947.<sup>1</sup>

Even the Census data which are available exhibit occasional discrepancies. Average unit realized value in 1935 (\$14.24), for example, was some forty percent higher than the values in 1935 (\$10.23) and 1937 (\$10.70) for no reason apparent in the reported data. Again, the 1947 Census of Manufactures, reported a total of 5.1 million watches shipped with imported jeweled movements. On the other hand, the Tariff Commission reported that 9.0 million of these movements were imported in

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<sup>1</sup>U. S. Bureau of the Census, Annual Survey of Manufactures: 1952 (Washington, 1953), p. 197.

1946 and 7.3 million in 1947.<sup>1</sup> It is evident from the import statistics that the 1947 Census did not adequately cover the importing and assembling sector of the jeweled watch industry.

Direct inquiries to each of the "Big Six" manufacturers with respect to average prices were fruitless. No firm was willing to give information of this nature, apart from a few isolated examples of particular models whose prices in most cases were either unchanged or slightly higher than 1946 prices. It is impossible to measure quantitatively how the overall price structures of these companies have changed from year to year through the introduction of new models. In short, "the watch price problem" appears to be insoluble in the light of data presently available.

## APPENDIX II. MACHINERY LEASING POLICY OF MACHOR, S.A.

The conditions under which the Swiss watch industry permits horological machinery to be exported for use by foreign watch manufacturers are illustrated by following selected provisions from the leases signed by Machor, S.A., and the Waltham Watch Company, as reported by the United States District Court (Massachusetts) in 1949:

The Lessee and the Swiss watch industry, which is represented for this particular purpose by the Lessor, agree to abstain from using any unfair trade practices toward one another, but this is not to be construed as restricting the trade liberties of the parties or preventing their rights to "loyal competition."

The Lessee agrees to complete as watches or watch movements, either in its own workshops or under its own responsibility, all "ebauches" or separate parts of watch movements which the Lessee manufactures. The term "movement" is defined as the watch without the case. The term "ebauche" is defined as the parts making up the watch movement, exclusive of the regulating parts, mainspring, hands and dial. The Lessee further agrees not to deal either directly or indirectly in unassembled movements or any "chablons." The term "chablons" is defined as the unassembled set of all or a portion of the parts making up a watch movement, exclusive of the dial, hands and case. "Separate parts" is defined as applying to any part of a watch.

The foregoing is not to be construed as prohibiting the sale of repair watch materials by the Lessee. It may deal in such materials, without restriction as to quantity or customers.

However, the Lessee agrees not to import or purchase ebauches or chablons. If the Lessee does not produce certain separate parts for its own use and is unable to obtain them from American manufactures, it agrees to endeavor to purchase these, in the first instance, from conventional suppliers in Switzerland before approaching other foreign producers, all technical conditions, price, quality and delivery being equal.

The Lessee agrees not to copy or let anyone copy the machine and to make no important change or addition without the written consent of the Lessor. The machine is to be insured against fire and damage by water at the Lessee's expense.

In the event that the Lessee fails to live up to its obligations the Lessor may, after the first warning, cancel the lease. In the event of such cancellation all other lease agreements entered into with the Lessee are cancelled as well as the deliveries of all other watch materials by Swiss suppliers. In addition to damages, the Lessor has the right to payment of a "conventional penalty" in the event of any violation, equal to three times the amount of the rent of the period during which the violation continues.

The Lessor has the right to inspect the machine and tools and the premises of the Lessee to ascertain whether the terms of the agreement are complied with.

If any of the conditions of the agreement are contrary to the law of the United States of America or the Commonwealth of Massachusetts they are deemed to be ineffective but if the effect of the application of this provision is to require modifications of the agreement which the Lessor considers essential, the Lessor has the right to cancel the agreement immediately without incurring any obligation for damages.

Any litigation arising out of the agreement is subject to decision according to Swiss law in the Court of Justice for Trade of Bienne, Switzerland. The agreement is in two texts, French and English, which are declared to be of equal value. It is, however, provided that the Swiss watch terminology prevails.

Source: In the Matter of Waltham Watch Company, Debtor,  
U.S. District Court (Mass.), Proceedings No. 70629 (1949),  
pp. 18, 19.

### APPENDIX III. SELECTED FINANCIAL DATA, WALTHAM WATCH COMPANY

This appendix contains the financial statements from which the Sources and Applications of Funds statements used in Chapter VIII were computed. Comparative balance sheets, surplus reconciliations, and analyses of changes in working capital are included.

There are four sets of such statements. The first set (February 9, 1923, to December 31, 1944) covers the administration of F. C. Dumaine. The second (January 1, 1945, to December 31, 1948) illustrates the financial course of the company under Ira Guilden. The third set (January 1, 1949, to December 31, 1950) should serve to clarify the discussion of Waltham's reorganization proceedings during this period. The last set (January 1, 1951, to December 31, 1954) shows the recent financial history of the company.

It might have been desirable to use a somewhat different dating for these periods. Dumaine actually turned the company over to Guilden in June 1944; similarly, Guilden resigned in June 1948. Since the company's published reports are on a calendar year basis, these terms could not be exactly indicated. It appears, however, that Dumaine's policies were effective through 1944, and Guilden's through 1948. Consequently, the periods chosen are adequately representative of the chief executives involved.

WALTHAM WATCH COMPANY

Comparative Balance Sheets  
February 9, 1923, and December 31, 1944

<u>Assets:</u>	<u>2/9/23</u>	<u>12/31/44</u>
Cash	\$ 574,522	\$ 613,638
U. S. Government securities		2,907,584
Other quick assets	249,900	
Accounts receivable	1,446,628	832,984
Inventories	4,000,000	1,059,614
Employee pay deductions		105,110
Total current assets	<u>\$6,271,050</u>	<u>\$5,518,930</u>
Plant and equipment	\$ 4,338,860	\$4,509,924
Less reserve for depreciation		3,034,158
Net plant and equipment	<u>\$ 4,338,050</u>	<u>\$1,475,766</u>
Patents, trademarks, etc.	2,790,000	1,350,000
Postwar tax refund		84,979
Investment		33,161
Deferred charges		15,917
Other assets		42,074
Total assets	<u><u>\$13,400,000</u></u>	<u><u>\$8,520,827</u></u>
 <u>Liabilities:</u> 		
Accounts payable	\$ 239,937	\$ 532,345
Accrued taxes		1,309,179
Employee pay deductions		105,110
Total current liabilities	<u>\$ 239,937</u>	<u>\$1,946,634</u>
6% mortgage bonds	\$ 3,000,000	
6% debentures	3,000,000	
Other liabilities	260,063	
Contingency reserve		50,000
Total liabilities	<u>\$ 6,500,000</u>	<u>\$1,996,634</u>

WALTHAM WATCH COMPANY

Comparative Balance Sheets  
February 9, 1923, and December 31, 1944

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<u>Net Worth</u>	<u>2/9/23</u>	<u>12/31/44</u>
7% prior preferred stock	\$ 1,700,000	\$ 377,730
6% preferred stock	5,000,000	3,234,260
Common stock and capital surplus	200,000	708,341
Earned surplus		<u>2,220,467</u>
Capital stock and surplus	\$ 6,900,000	\$6,540,799
Less treasury stock		<u>16,606</u>
Net worth	<u>\$ 6,900,000</u>	<u>\$6,524,193</u>
Total liabilities & net worth	<u>\$13,400,000</u>	<u>\$8,520,827</u>

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Sources: February 9, 1923, balance sheet from C. W. Moore, Timing a Century, (Cambridge, 1945), p. 310. December 31, 1944, balance sheet from Moody's Investors' Service, Inc., Moody's Manual of Investments, 1945.



## WALTHAM WATCH COMPANY

Reconciliation of Surplus  
February 9, 1923, to December 31, 1944

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Common stock and surplus, February 9, 1923		\$	200,000
Add:			
Net earnings, 1923-1944			6,197,800
Securities discount adjustment			243,542
Other income			<u>1,454,613</u>
		\$	<u>8,095,955</u>
Less:			
Dividends paid			
Preferred	\$3,009,549		
Class A common	1,224,660		
Class B common	<u>83,648</u>	\$	<u>4,317,857</u>
Patents, trademarks, etc., written off against surplus (1927-1944)			940,090
Contingency reserve (1944)			50,000
Segregation of common stock and capital surplus from earned surplus (1936)			<u>567,541</u>
		\$	<u>5,875,488</u>
Earned surplus, December 31, 1944		\$	<u>2,220,467</u>
Common stock and capital surplus, 12/31/36		\$	567,541
Credited to common stock and capital surplus, 1937-1944			<u>140,800</u>
Common stock and capital surplus, 12/31/44		\$	<u>708,341</u>

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Sources: C. W. Moore, Timing A Century (Cambridge, 1945), Chapter XII, Appendix F; Moody's Investors' Service, Inc., Moody's Manual of Investments, 1924-1945.

WALTHAM WATCH COMPANY

Changes in Working Capital  
February 9, 1923, to December 31, 1944

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Increases in working capital:

Increases in current assets:

Cash	\$ 39,116
Other quick assets	2,657,684
Employee pay deductions	<u>105,110</u>

\$2,801,910

Decreases in working capital:

Decreases in current assets:

Accounts receivable	\$ 613,644
(a) Inventories	421,406

Increases in current liabilities:

Accounts payable	292,408
Accrued taxes	1,309,179
Employee pay deductions	<u>105,110</u>

\$2,741,747

Net increase in working capital

\$ 60,163

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Note (a): Reduction in inventories per balance sheet of \$2,940,386 less \$2,518,980 obsolescent and over-valued inventory (at 2/9/23) written off against earnings in the period 1923 to 1926.

Sources: C. W. Moore, Timing A Century (Cambridge, 1945), Chapter XII, Appendix F; Moody's Investors' Service, Inc., Moody's Manual of Investments, 1924-1945.

## WALTHAM WATCH COMPANY

Comparative Balance Sheets  
December 31, 1944, and December 31, 1948

<u>Assets:</u>	<u>12/31/44</u>	<u>12/31/48</u>
Cash	\$ 613,638	\$ 234,006
U. S. Government securities	2,907,584	
Notes and accounts receivable	832,984	2,458,141
Inventory	1,059,614	
Employee pay deductions	105,110	
<b>Total current assets</b>	<b><u>\$5,518,931</u></b>	<b><u>\$5,426,764</u></b>
Plant and equipment	\$4,509,924	\$5,451,741
Less reserve for depreciation	3,034,158	3,449,819
Net plant and equipment	<u>\$1,475,766</u>	<u>\$2,001,922</u>
Patents, trademarks, etc.	\$1,350,000	\$ 270,000
Machinery construction advances		92,812
Postwar tax refund	84,979	178,214
Investment	33,161	1
Deferred charges	15,917	126,103
Other assets	42,074	89,581
<b>Total assets</b>	<b><u>\$8,520,827</u></b>	<b><u>\$8,185,397</u></b>
 <u>Liabilities:</u>		
Accounts payable	\$ 532,345	\$ 204,883
Notes payable		4,310,000
Accrued debenture interest		226,483
Accrued taxes	1,309,179	64,240
Employee pay deductions	105,110	82,029
Other accruals		360,809
<b>Total current liabilities</b>	<b><u>\$1,946,634</u></b>	<b><u>\$5,248,444</u></b>
Contingency reserve	\$ 50,000	
5% income debentures, 1975		<u>\$3,881,040</u>
<b>Total liabilities</b>	<b><u>\$1,996,634</u></b>	<b><u>\$9,129,484</u></b>

WALTHAM WATCH COMPANY

Comparative Balance Sheets  
December 31, 1944, and December 31, 1948

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<u>Net Worth:</u>	<u>12/31/44</u>	<u>12/31/48</u>
7% prior preferred	\$ 377,730	
6% preferred	3,234,260	
Common stock and capital surplus	708,341	\$ 720,004
Earned surplus	<u>2,220,467</u>	<u>(1,664,083)</u>
Capital stock and surplus	\$6,540,799	(\$ 944,079)
Less treasury stock	<u>16,606</u>	<u>8</u>
Net worth	<u>\$6,524,193</u>	<u>(\$ 944,087)</u>
Total liabilities & net worth	<u>\$8,520,827</u>	<u>\$8,185,397</u>

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Source: Moody's Investors' Service, Inc., Moody's Manual of Investments, 1945 and 1949.

WALTHAM WATCH COMPANY

Reconciliation of Earned Surplus  
January 1, 1945, to December 31, 1948

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Earned surplus, January 1, 1945	\$2,220,467
Add:	
Contingency reserve credit	50,000
Income adjustment	<u>41,705</u>
	<u>\$2,312,172</u>
Less:	
Net loss for period	\$2,215,997
Intangible items written off against surplus	1,080,000
Preferred stock dividends	140,381
Excess of par value of debentures issued over par value of 6% pfd. retired by exchange (1945)	512,320
Excess of cost of Class A common reacquired over paid-in value	9,490
Recapitalization expense	<u>18,067</u>
	<u>\$3,976,255</u>
Earned deficit, December 31, 1948	<u>(\$1,664,083)</u>

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Source: Waltham Watch Company balance sheets and income statements reported by Moody's Investors' Service, Inc., Moody's Manual of Investments, 1945-1949.

WALTHAM WATCH COMPANY

Changes in Working Capital  
January 1, 1945, to December 31, 1948

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Increases in working capital:

Increases in current assets:	
Accounts receivable	\$1,625,157
Inventories	1,675,003
Decreases in current liabilities:	
Accounts payable	327,462
Accrued taxes	1,244,939
Employee pay deductions	<u>23,081</u>
	\$4,895,642

Decreases in working capital:

Decreases in current assets:	
Cash	\$ 379,632
U. S. Government securities	2,907,584
Employee pay deductions	105,110
Increases in current liabilities:	
Notes payable	4,310,000
Accrued debenture interest	226,483
Other accruals	<u>360,809</u>
	<u>\$8,289,618</u>
Net decrease in working capital	<u><u>\$3,393,976</u></u>

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Source: Comparative balance sheets, December 31, 1944,  
and December 31, 1948.

## WALTHAM WATCH COMPANY

Comparative Balance Sheets  
December 31, 1948, and December 31, 1950

<u>Assets</u>	<u>12/31/48</u>	<u>12/31/50</u>
Cash and cash items	\$ 234,006	\$3,138,393
Notes and accounts rec., net	2,458,141	370,099
Inventories	<u>2,734,617</u>	<u>2,498,897</u>
Total current assets	<u>\$5,426,764</u>	<u>\$6,007,389</u>
Plant and equipment	\$5,451,741	\$5,660,720
Less reserve for depreciation	3,449,819	3,668,759
Net plant and equipment	<u>\$2,001,922</u>	<u>\$1,991,961</u>
Patents, trademarks, etc.	\$ 270,000	1
Machinery construction advances	92,812	64,348
Deferred charges	126,103	68,308
Other assets	<u>267,796</u>	<u>33,112</u>
Total assets	<u><u>\$8,185,397</u></u>	<u><u>\$8,165,119</u></u>
 <u>Liabilities</u> 		
Accounts payable	\$ 204,883	\$ 56,230
Notes payable	4,310,000	
Due RFC for care and preservation of property		65,004
Accrued interest	226,483	163,507
Other accrued liabilities	<u>507,078</u>	<u>53,058</u>
Total current liabilities	<u>\$5,248,444</u>	<u>\$ 337,799</u>
5% debentures, due 1975	\$3,881,040	
RFC loan payable		\$4,000,000
Liabilities to be discharged by 1949 Reorganization Trustees		231,292
Other liabilities incurred prior to February 3, 1950		315,935
Reserve for claims against 1950 Reorganization Trustees		<u>397,788</u>
Total liabilities	<u><u>\$9,129,484</u></u>	<u><u>\$5,282,814</u></u>

WALTHAM WATCH COMPANY

Comparative Balance Sheets  
December 31, 1948, and December 31, 1950

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<u>Net Worth</u>	<u>12/31/48</u>	<u>12/31/50</u>
Common stock and capital surplus, 12/31/48, less treasury stock	\$ 719,996	
Common stock, 12/31/50		\$1,185,780
Capital surplus, 12/31/50		2,752,036
Earned deficit	( 1,664,083)	(1,055,511)
Total net worth	( <u>\$ 944,087</u> )	<u>\$2,882,305</u>
Total liabilities and net worth	<u>\$8,185,397</u>	<u>\$8,165,119</u>

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Sources: December 31, 1948, balance sheet from Moody's Investors' Service, Inc., Moody's Manual of Investments, 1949. December 31, 1950, balance sheet from Waltham Watch Company report to the Securities and Exchange Commission, SEC Docket Section, File 1-3527-2.



WALTHAM WATCH COMPANY

Reconciliation of Capital Surplus  
January 1, 1949, to December 31, 1950

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Common stock and capital surplus (less Treasury Stock), January 1, 1949		\$ 719,996
Less cancellation of old common stock at 9/23/49		<u>719,996</u>
Capital surplus arising from cancellation of 5% income debentures at 9/23/49:		
Debentures outstanding	\$3,881,040	
Accrued debenture interest	<u>372,154</u>	
	\$4,253,194	
Less: Unamortized deb. issue expense	51,105	
Shares of new common (\$1 par) issued to debenture holders	<u>970,260</u>	\$3,231,829
Capital surplus arising from can- cellation of old common shares:		
Stated value of old common stock and capital surplus	\$ 719,996	
Less new common stock issued in exchange	<u>33,423</u>	<u>686,573</u>
		\$3,918,402
Less earned deficit at 9/23/49 transferred to capital surplus		<u>1,166,367</u>
Capital surplus, December 31, 1950		<u><u>\$2,752,035</u></u>

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Source: Waltham Watch Company reports to the Securities and Exchange Commission, SEC Docket Section, File 1-3527-2.

WALTHAM WATCH COMPANY

Reconciliation of Earned Surplus  
January 1, 1949, to December 31, 1950

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Earned deficit, January 1, 1949			( <u>\$1,664,083</u> )
Add:			
Refund of federal taxes		65,892	
(a)Discount granted on bank loans		1,060,000	
(b)Adjustment to previous statement of assets and liabilities		1,070,440	
Deficit at 9/23/49 transferred to capital surplus		<u>1,166,367</u>	
			<u>\$1,698,616</u>
Less:			
Losses during period			
1949	\$1,979,093		
1950	<u>430,035</u>		\$2,409,128
Amortization of patents, trademarks, etc.		269,999	
Reserve for disputed claims		<u>75,000</u>	
			<u>\$2,754,127</u>
Earned deficit, December 31, 1950			( <u>\$1,055,511</u> )

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Notes: (a) The company has treated this item as an income adjustment (resulting in a 1949 net loss of \$919,093). The author shows the discount as a surplus adjustment, on the grounds that this gives a more accurate picture of 1949 operations.

(b) This item reflects an upward revaluation of the inventory figures reported by the Reorganization Trustees on June 25, 1949.

Source: Waltham Watch Company reports to the Securities and Exchange Commission, SEC Docket Section, File 1-3527-2.

WALTHAM WATCH COMPANY

Changes in Working Capital  
January 1, 1949, to December 31, 1950

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Increases in working capital:

Increases in current assets:

(a) Cash \$2,904,387

Decreases in current liabilities:

Accounts payable 148,653  
Notes payable 4,310,000  
Accrued interest 62,976  
Other accruals 454,020

\$7,880,036

Decreases in working capital:

Decreases in current assets:

Notes and accounts receivable \$2,088,042  
Inventories 235,720

Increases in current liabilities:

Due RFC for care and preservation  
of property 65,004

\$2,388,766

Net increase in working capital

\$5,491,270

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Note: (a) A word of caution is indicated relative to the \$3,138,393 cash shown at 12/31/50. Of this amount \$2,807,821 was assigned to the RFC, \$36,939 was segregated in special tax deposits and \$284,289 was reserved for claims against the 1949 Reorganization Trustees and Trustees' costs of administration. Only \$9,344 was available for use at the company's discretion. Thus the increase in working capital shown may be somewhat misleading if one thinks of working capital (in the usual sense) as net liquid assets available to support current operations.

Source: Comparative balance sheets, December 31, 1948, and December 31, 1950.

## WALTHAM WATCH COMPANY

Comparative Balance Sheets  
December 31, 1950, and December 31, 1954

<u>Assets</u>	<u>12/31/50</u>	<u>12/31/54</u>
Cash and cash items	\$3,138,006	\$ 529,760
Notes and accounts receivable	370,099	656,153
Accumulated charges on defense contracts, less progress billings		308,592
Inventory	<u>2,498,897</u>	<u>2,584,105</u>
Total current assets	<u>\$6,007,389</u>	<u>\$4,078,610</u>
Plant and equipment	\$5,660,720	\$5,595,425
Less reserve for depreciation	3,668,759	3,829,593
Net plant and equipment	<u>\$1,991,961</u>	<u>\$1,765,832</u>
Patent, trademarks, etc.	\$ 1	\$ 1
Machinery construction advances	64,348	
Deferred charges	68,308	117,858
Other assets	<u>33,112</u>	<u>70,296</u>
Total assets	<u>\$8,165,119</u>	<u>\$6,032,597</u>
 <u>Liabilities</u> 		
Accounts payable	\$ 56,230	\$ 91,659
Notes payable, bank		1,152,066
Due RFC for care and preservation of property	65,004	
Accrued interest on RFC loan	163,507	
Due RFC (1955 loan installments)		72,971
Other accrued liabilities	<u>53,058</u>	<u>187,508</u>
Total current liabilities	<u>\$ 337,799</u>	<u>\$1,504,204</u>
RFC loan payable	\$4,000,000	\$1,122,962
Liabilities to be discharged by 1949 Reorganization Trustees	231,292	
Other liabilities incurred prior to February 3, 1950	315,935	
Reserve for claims against 1950 Reorganization Trustees	<u>397,788</u>	
Total liabilities	<u>\$5,282,814</u>	<u>\$2,627,166</u>

## WALTHAM WATCH COMPANY

Comparative Balance Sheets  
 December 31, 1950, and December 31, 1954

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<u>Net Worth:</u>	<u>12/31/50</u>	<u>12/31/54</u>
Common stock	\$1,185,780	\$1,993,726
Capital surplus	2,752,036	1,400,721
Earned surplus	<u>(1,055,511)</u>	<u>14,373</u>
Capital stock and surplus	\$2,882,305	\$3,408,820
Less treasury stock (1,696 shares at cost)	<u>                    </u>	<u>3,389</u>
Net worth	<u>\$2,882,305</u>	<u>\$3,405,431</u>
Total liabilities & net worth	<u>\$8,165,119</u>	<u>\$6,032,597</u>

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Sources: December 31, 1950, balance sheet from Waltham Watch Company report to the Securities and Exchange Commission, SEC Docket Section, File 1-3527-2. December 31, 1954, balance sheet from Waltham Watch Company, Annual Report, 1954, pp. 8, 9.

WALTHAM WATCH COMPANY

Reconciliation of Surplus  
January 1, 1951 to December 31, 1954

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Capital Surplus

Capital surplus, January 1, 1951	\$2,752,036
Add:	
Premium on sales of 6,250 shares of common stock	<u>6,250</u>
	\$2,758,286
Less:	
Excess of par over amount received for 400,000 shares common stock	300,000
Deficit (at 1/1/52) transferred to capital surplus	1,043,732
Costs of exchanging common stock for voting trust certificates	<u>13,834</u>
Capital surplus, December 31, 1954	<u>\$1,400,720</u>

Earned Surplus

Earned deficit, January 1, 1951	(\$1,055,511)
Add:	
Net income, 1/1/51 to 12/31/54	<u>26,152</u>
	(\$1,029,359)
Less:	
Deficit (at 1/1/52) trans- ferred to capital surplus	<u>1,043,732</u>
Earned surplus, December 31, 1954	<u>\$ 14,373</u>

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Source: Waltham Watch Company, Annual Reports, 1951-1954.

WALTHAM WATCH COMPANY

Changes in Working Capital  
January 1, 1951, to December 31, 1954

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Increases in working capital:

Increases in current assets:	
Notes and accounts receivable, net	\$ 286,054
Charges on defense contracts in process, less progress billings	308,592
Inventory	85,208
Decreases in current liabilities:	
Due RFC for care and preservation of property (at 12/31/50)	65,004
Accrued interest on RFC loan (at 12/31/50)	<u>163,507</u>
	<u>\$ 908,365</u>

Decreases in working capital:

Decreases in current assets:	
Cash and cash items	\$2,608,633
Increases in current liabilities:	
Accounts payable	35,429
Notes payable, bank	1,152,066
Due RFC (1955 loan installments)	72,971
Other accrued liabilities	<u>134,450</u>
	<u>\$4,003,549</u>
Net reduction in working capital	<u>\$3,095,184</u>

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Source: Comparative balance sheets, December 31, 1950, and December 31, 1954.

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