

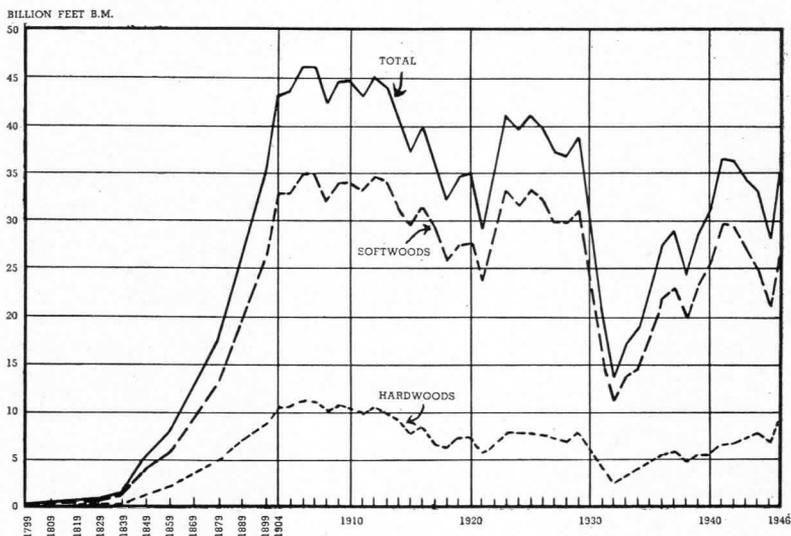
Forestry Education for Industrial Career Opportunities

BY R. C. FRAUNBERGER

THE FOREST products industry offers golden career opportunities for the right type of men with the proper kind of forestry education. In reviewing the first half century of forestry development in America, one of the most significant accomplishments has been the gradual realization by the forest products industry that good forestry "pays off." The promotion of the "tree farm" program, which is only about ten years old, is a manifestation of this trend. An entrepreneur must measure success mostly in dollars, and private forestry ventures have proven successful in most cases. Early foresters in general lacked the background and educational training to understand the businessman's viewpoint, so minimized their chances of industrial career possibilities. In fact, Fritz' put it boldly that "no other group (foresters) has so completely antagonized the industry with which it must work and to which it has tried to sell its services." There is very little wonder why the forest products industry was slow to accept forestry and foresters. Foresters did not talk the businessman's language. Foresters were prepared primarily for employment in governmental agencies and were not trained in business. A gradual transition is taking place. Foresters are being better fitted for industrial careers, and industry is beginning to see that foresters as well as forestry, will "pay off." There is still a long way to go, however, before there is a complete reconciliation. Forestry education is compelled to change with the times to meet these new objectives if its product is to be sold to industry.

Business men were apt to consider a forester as a composite "preacher-professor-policeman" rolled into one. At a time when lumbermen were worried about where to sell their wooden products, foresters were preaching about a timber famine. What a paradox that was to the lumberman! Lumber production and per capita consumption, as shown in Charts I and II, have been on the downtrend since about 1908, or from almost the beginning of forestry education in America. Do you wonder why the lumberman was antagonized? There have been rather violent cyclical fluctuations, but the general secular trend has been downward. Business has been lost to substitutes while the conservationists cried "Save that tree." Of course the business man was, and still is,

CHART I
Lumber Production 1799-1946
(Source: U.S.D.A. Misc. Pub. No. 669)



a little apathetic, by not being willing to invest as much money as he should for wood technological research. Perhaps this is one reason why net income or deficit curves show that the lumber industry has done more poorly than all manufacturing industries as shown on Chart III. Lumbermen worried about meeting interest on timber bonds and many years did not even earn depreciation, while the foresters urged them to go into debt still farther. When you study Chart III and Tables I and II you realize why the lumberman hesitated to take on more debt. Early foresters carried on a much needed and successful propaganda campaign for forest conservation, convincing every one except the lumbermen who were perhaps the hardest group to convince. They were not convinced because the forester did not use economic arguments to fullest advantage. Why? Because the average forester did not understand business and economics well enough to use such arguments to his advantage.

Most forest products businesses are closely held family companies with a preponderance of small units.³ The forester had a double hurdle to jump in seeking an industrial employment opportunity. First it was difficult to break into a closely held family company, and secondly, usually these small businesses could not afford a full time forester, as such, even if they wanted one. The employment market was with the government, so the forestry

CHART II
Lumber Per Capita Consumption 1859-1949
(Source: NLMA, **Lumber Industry Facts, 1950**)

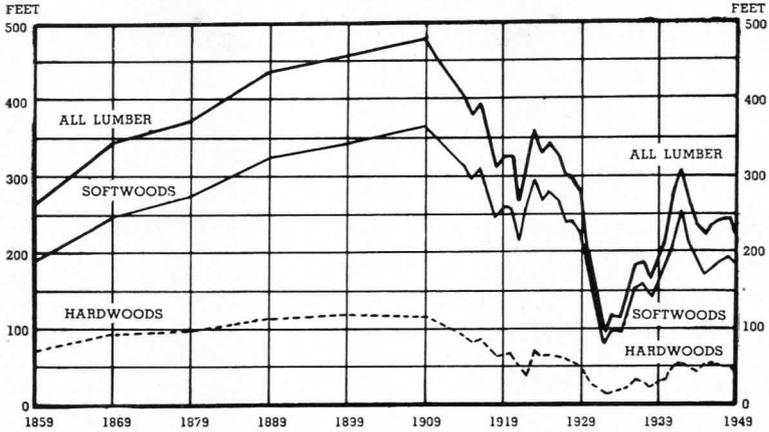
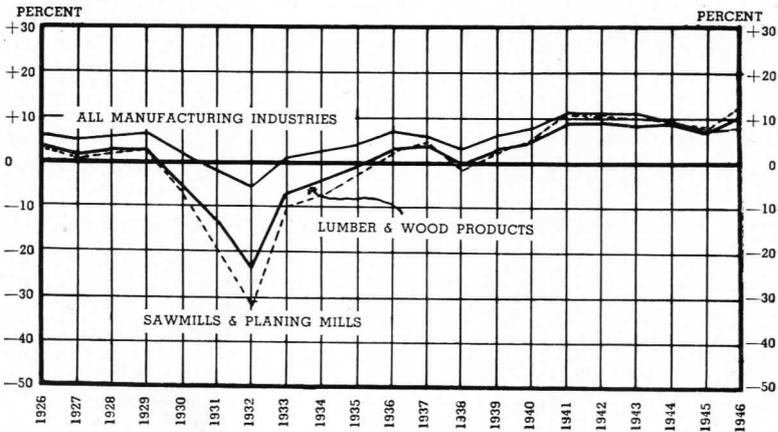


CHART III
Lumber Industry—Net Income or Deficit 1926-1946*
*Source: National Lumber Manufacturers Association **Lumber Facts 1950**,
Washington, D. C.



schools prepared students to government specifications where they could market their product. Forest management and silviculture once greatly overshadowed utilization. Forest utilization may some day over-top management and silviculture. Dean Illick⁴ stated that "foresters should serve wherever wood serves." The basis for industrial employment of foresters has broadened to in-

TABLE I
Ratio of Net Profit to Invested Capital
(After Taxes)

All Manufacturing Industries			Lumber and Wood Products				
Invested Capital	Compiled Net Profit	% Net Profit to Invested Capital	Invested Capital	Compiled Net Profit	% Net Profit to Invested Capital		
(Thousand Dollars)			(Thousand Dollars)				
1929.....	52,694,030	3,861,719	7.33	1929.....	2,608,717	53,677	2.06
1930.....	52,122,235	1,299,393	1.02	1930.....	2,450,732	33,967	1.39
1931.....	47,639,793	—472,082	—0.99	1931.....	2,065,221	—172,093	—8.33
1932.....	45,976,062	—1,567,896	—3.57	1932.....	1,907,009	—195,495	—10.25
1933.....	45,341,034	294,233	0.68	1933.....	1,798,182	—69,353	—3.86
1934.....	38,151,046	1,155,186	3.03	1934.....	1,613,021	—48,214	—2.99
1935.....	37,611,200	2,138,959	5.69	1935.....	1,534,683	—11,520	—0.75
1936.....	38,466,878	3,049,216	7.93	1936.....	1,523,368	42,521	2.79
1937.....	41,239,283	3,044,784	7.38	1937.....	1,557,972	53,535	3.44
1938.....	41,260,417	1,243,204	3.01	1938.....	1,742,979	—5,292	—0.30
1939.....	42,438,363	2,941,714	6.93	1939.....	1,738,813	47,137	2.71
1940.....	44,163,088	4,083,989	9.25	1940.....	1,747,727	90,045	5.15
1941.....	48,397,558	5,428,602	11.22	1941.....	1,815,524	168,844	9.30
1942.....	55,071,742	5,395,159	9.80	1942.....	1,836,417	143,837	7.83
1943.....	60,687,658	5,998,121	9.88	1943.....	1,858,742	125,291	6.74
1944.....	63,070,585	5,435,263	8.62	1944.....	1,900,745	134,174	7.06
1945.....	64,150,496	4,115,331	6.42	1945.....	1,918,456	121,805	6.35
1946.....	67,589,869	6,965,448	10.31	1946.....	2,241,255	314,683	14.04

Source: U. S. Bureau of Internal Revenue.

clude all phases of wood technology, production, and sales. A paper company executive who was educated abroad, where foresters are held in higher esteem, commented to the writer that because forestry had not gained industrial prestige in America until recently, that it had not attracted the better students. He felt, however, that the tide had turned with the industrial recognition of forestry. The better forestry schools are now enrolling students comparable to engineering and business administration students where the higher "IQ" men have traditionally been attracted. In the industrial world, foresters are now competing with engineers and business administration majors for executive positions. Through his knowledge of wood, the forester should have an advantage in the forest products industry, but he lagged behind because he did not understand business and engineering. Present day forestry curricula must include these to properly prepare the student for an industrial career.

A few early foresters did manage to find opportunities in industrial work, mostly in the pulp and paper industry, and with some very large lumber manufacturing concerns who could afford what smaller firms thought were luxuries. A few foresters did well in trade association work and helped to create good will toward the forestry profession. Probably the greatest stimulus for industrial employment came when the pulp and paper industry began its development in the South about twenty years ago. The

TABLE II
Ratio of Net Income or Deficit to Gross Income—All Manufacturing Industries and Lumber and Wood Products Industries, 1920-1946

	All Manufacturing Industries			Lumber and Wood Products ¹		
	Gross Income (thousand)	Net Income (thousand)	Ratio Per-cent	Gross Income (thousand)	Net Income (thousand)	Ratio Per-cent
1920	\$56,649,233	\$3,282,278	5.79	\$5,312,036	\$294,100	8.88
1921	38,441,924	121,045 (D)	— .31	1,846,982	49,709 (D)	—2.69
1922	44,683,242	2,641,007	5.91	2,402,317	159,714	6.65
1923	56,220,709	3,570,887	6.35	2,974,803	266,463	8.96
1924	53,911,165	2,763,472	5.13	2,834,803	121,115	4.27
1925	60,829,782	3,701,102	6.08	2,967,517	147,200	4.96
1926	62,494,797	3,708,103	5.93	3,068,811	103,776	3.38
1927	63,722,879	3,087,594	4.85	2,804,288	31,113	1.11
1928	67,272,929	3,793,215	5.63	2,842,184	70,704	2.49
1929	72,132,044	4,405,772	6.11	2,794,778	67,113	2.40
1930	60,900,278	1,117,664	1.84	1,987,578	116,635 (D)	—5.87
1931	44,033,291	822,970 (D)	—1.87	1,347,840	184,142 (D)	—13.66
1932	31,976,483	1,806,354 (D)	—5.65	853,960	207,118 (D)	—24.25
1933	35,150,775	204,046	.58	993,961	72,590 (D)	—7.30
1934	41,092,950	979,915	2.38	1,095,403	49,498 (D)	—4.52
1935	47,897,792	1,816,447	3.79	1,318,388	15,660 (D)	—1.19
1936	56,954,828	3,701,538	6.50	1,748,257	48,891	2.80
1937	62,456,608	3,703,121	5.93	1,930,096	67,929	3.52
1938	51,128,412	1,589,514	3.11	1,784,917	3,009 (D)	— .17
1939 ²	58,306,370	3,567,756	6.12	2,157,157	60,865	2.82
1940	66,990,782	5,306,540	7.92	2,488,141	121,678	4.89
1941	93,442,070	10,429,414	11.16	3,326,293	297,055	8.93
1942	119,440,882	13,650,102	11.43	3,629,911	331,424	9.13
1943	146,379,404	16,581,896	11.33	3,628,496	310,407	8.55
1944	154,215,393	14,850,939	9.63	3,664,738	319,672	8.72
1945	141,283,963	10,250,217	7.26	3,481,900	249,987	7.18
1946	139,421,558	11,693,964	8.39	4,867,173	506,190	10.40
5 years, 1921-25	254,086,822	12,555,423	4.94	13,026,422	644,783	4.95
5 years, 1926-30	326,522,927	15,959,659	4.89	13,498,139	156,071	1.16
5 years, 1931-35	200,151,291	3,711,084	.19	5,609,552	529,008 (D)	—9.43
5 years, 1936-40	295,837,000	17,868,469	6.04	10,108,568	296,354	2.93
5 years, 1941-45	654,761,712	65,762,568	10.04	17,731,338	1,508,545	8.51

¹While the minor industries included in this group are not exactly identical over the 27-year period the differences are so slight that they do not affect the comparability for general purposes. The principal industries included are sawmill, planing mill, and furniture.

²Series revised in 1939. Differences between later data and previous data due to inclusion of tax exempt interest.
Source: U. S. Bureau of Internal Revenue.

very life blood of a pulp mill is wood raw material—the “dirt forester’s” stock and trade. In the South it was easy to convince the top management of paper companies that they must have adequate wood raw material and that foresters could produce it for them. They were willing to make the timberland investments required, and willing to employ foresters to acquire and manage these timberlands. Management knew it had to protect its investment in plants and equipment by owning ample forest lands to furnish a large part of its wood raw material requirements. Large sums of money are being spent to educate the general public that good forestry “pays off.” This helps to insure adequate wood supply by reducing forest fires and increasing proper forest management practices. It did not take professional forestry education or profound economics training to see these things. It was just common sense and straight thinking. To the business man it

was elementary. For the forester it was the beginning of the era of golden career opportunity created for him by the business man. From "dirt forestry" some foresters moved into wood procurement and other executive capacities where they have proven their worth. The forester's training is likely to warp his thinking so that he overstates the "Supplieside" of the economic equation, and understates the "Demandside." The writer has coined the phrase "Supply-siditis"⁵ for this disease. Do not let yourself be indoctrinated with it or later the disease may take its toll.

A recent study by Brown⁶ on the experience of some 600 graduates in forest utilization is interesting. The following table shows their occupational status to June 1950.

	<i>Percent</i>
Lumber Manufacture	11
Woodworking Industries	10
Education and Research	10
Wholesale Lumber	10
Retail Lumber	9
Logging	6
Veneers, Plywood and Adhesives	5
Timber Treatments	3
Lumber and Forest Products Associations	2
Unrelated fields	12
Miscellaneous	22
Total.....	100

Miscellaneous includes lumber inspectors, chemists with forest products concerns, various technical work with the U. S. Forest Service, consulting work in the field of forest products, employment with various state services concerned with forest products, construction work not related to retail lumber merchandising, laboratory technicians with private industry, federal housing agencies, the wood flour business, specialists in foreign fields such as Brazil, Switzerland, Africa, Sweden, Canada, the Philippines, and India, wood piling inspectors, owner-controlled forest products businesses not otherwise classified, pulp and paper concerns, forest extension specialists in forest products, the export lumber business, fiberboard manufacturing, sales of miscellaneous wood products not included in other classifications, with rubber companies in both domestic and foreign trade, engineering services connected with forest products, credit investigators of lumber companies, lumber and forest products importing concerns, and lumber purchasing agents. This study tends to show that "foresters serve where wood serves." These men have found opportunities through the breadth of the forest products industries in fields other than in "dirt forestry."

There are three principal doors to career opportunities in the forest products industry. The first opens into "dirt forestry" or the production of wood raw material up through harvesting or logging. This has been the traditional approach. The second and third doors open to "forest utilization," made up of research and development at one door and processing and selling wood products at the other. It is the writer's opinion that the second and third doors will open up more career possibilities than the first door will. Beyond these three doors, at the pinnacle of the industrial personnel pyramid, is top management. The opportunities are there. The question is—how to avail yourself of these career opportunities? At the outset it is necessary to have the proper perspective and decide upon specific goals.

As a student, it is most difficult to have the proper perspective—to see the "forests for the trees." The writer went through this period. Perhaps the Great Depression of the 1930's helped to distort the writer's perspective, while the Korean War at present, undoubtedly, is distorting the outlook of students of today in another way, just as World War II did for others a few years ago. In the depression years, the main concern was to earn a living. Uncle Sam paid the highest wages, so it was natural for most foresters to follow the course of least resistance, or more money, by going into Civil Service and *security*. *Security* was a much over-used word, but wasn't it natural that it was? Uncle Sam offered this *security*. Today the industrialist abhors the word *security*, but thrills to the word *opportunity*. It would be well to remember this, even if no other point in this discussion sinks home. Probably thought of having to enter military service eventually, is likely to color the present day student's thinking, but should it? The writer, as a veteran himself, looks at this philosophically. There always have been wars and probably there always will be wars. Each individual must prepare himself for the future regardless of wars, depressions, and other interferences—just as though they did not exist or would never happen. If you decide on an industrial career, then follow through with it and prepare yourself to enter through one of the three doors previously mentioned. The education and in some cases the early industrial careers, of many veterans of World War II were interrupted by war, but most of them managed to come through perhaps better off for it—by now taking things more seriously. Very few students or recent graduates have given serious thought to their ultimate goals. In fact, very few persons have, but it might be well to study the problem. Aside from deciding which door of the three career opportunities you wish to enter, you must decide where you are going to try to go after you get your foot

in the door. The rungs on the ladder are junior executive, senior executive and top management. What do you want from your working career? Professional prestige? Job satisfaction? Power? Wealth? A well adjusted personality?

It is realized that a simple answer is difficult. Perhaps you want some of each to a greater or lesser degree. How do you get what you want? First, you must decide what you want and then chart a course of action to try to accomplish the goal. Any industrial organization is in the shape of a pyramid. Employment opportunities for recent graduates are at the lower levels where experiences must be gained gradually. This is at the bottom of the executive ladder where apprenticeship begins—in the ranks. As experience is gained, opportunities will present themselves on the next higher level, if you are prepared to accept the responsibility and can make good. Recently some firms are going so far as to appraise the type of wife the aspiring executive has. They feel she can be a valuable asset or a liability.⁷ The important thing is the proper perspective. Where are you going? Any of the three doors opens to top management possibilities. Isn't that your ultimate goal?

The college student is concerned with the proper preparation to get his foot in the door at the lowest level. These days a college degree is necessary, even to get as far as the door to an industrial forestry career. To get his foot in the door he must have been above average in his grades, show leadership ability through campus activities, reliability, drive, proper attitude, ambition and a pleasing personality.

For the past two years the writer has served as Chairman, Committee on Education, Northeast Section, Forest Products Research Society. The committee consists of four members from the forest products industries and four faculty members from forestry schools in the Northeast. The group has studied what assets industry wants in a prospective employee, and what the schools should do to mold the student so that he acquires these assets. The committee found that industry wants, above all, employees who can think straight. Minds that are disciplined to gather facts in a scientific manner and then weigh them to come to logical conclusions. Minds that understand economics and business as well as forestry and wood technological details.⁸ High emphasis was placed on being "shop broken"—having been exposed to industrial work either through a summer's employment or at other times prior to graduation. The problem of the proper curricular details is being studied. Industry recommends, but schools are usually slow to change. There is still somewhat of a gulf between "pure" forestry and the type of training that industry

wants in prospective employees. Evidence of this is manifested in the present requirements for membership in the Society of American Foresters which makes it difficult for a man to be eligible for Society membership if he has the type of training industry requires. Carl Rishell brought this out in his address before the Society at Biloxi, Mississippi, in December, 1951.

Members of the Committee from industry recommended that forestry school curricula be modified to include more business and engineering courses. The easiest place to acquire the language of a business man is in school through courses in economics and business administration. Engineering courses are essential to the understanding of the industrial process. The properly prepared student should have some understanding of industrial engineering. It is realized forestry curricula are now overloaded, but wouldn't it be desirable to make modifications or compromises to insure the forestry graduate of being able to better compete with engineers and business administration graduates? The two latter have the disadvantage of not knowing wood technology. If the forester can gain a few of the assets of the engineer and business administrator, then shouldn't he be equal or even better?

After he gets inside one of industry's doors, he must show that he has the proper attitude, be able to get along well with people, and give more than is required. One outstanding executive used the following axioms to determine whether or not to promote an employee:

1. Is he able to do more work with less supervision?
2. Has he increased production, sales, or profits?
3. Has he decreased costs?
4. Has he acquired knowledge or training in his spare time that will enable him to assume greater responsibilities?
5. Is he well adjusted? Does he get along well with his superiors and his subordinates?
6. Can he get the best out of his organization?

If your ultimate goal is to aspire to executive responsibility and authority, and the rewards that go with them, then shouldn't you find out what makes a good executive? Shouldn't schools also include such data? It is essential in trying to climb the executive ladder. The University of Chicago's Committee⁹ on Human Development lists the following characteristics of a good executive:

1. The good executive has a strong desire for successive personal achievements.
2. The good executive must constantly move upward.

3. The good executive must advance socially.
4. The good executive respects authority.
5. The good executive is decisive.
6. The good executive is assertive.
7. The good executive constantly fights fear of failure.
8. The good executive is practical.
9. The good executive is grown up.¹⁰

Supplemental to academic training it has been recommended that student groups be exposed to executive thinking and experience through lectures by prominent forest products industry executives. Many outstanding executives have volunteered time and effort to visit forestry schools occasionally to give a part of themselves for the benefit of the students. In addition to this, many firms have offered to give summer employment to students so that they may become "shop broken." Many labor organizations have also endorsed this as they believe that embryonic future industry executives should experience laboring work side by side with trade union members. They feel that this experience may help younger men in realizing labor's problems in later life when they assume executive responsibility.

Career opportunities in the forest products industries stand ready for those who are interested and ambitious. As Russell Conwell of *Acres of Diamonds* fame stated "God gives us the chance, the improvement of it we give ourselves."

FOOTNOTES

- ¹ Fritz, Emanuel, "Some Characteristics of the American Lumber Industry," *Yale Forest School News*, Vol. XXXIX No. 1, New Haven, Conn. January 1951, p.1.
- ² Fraunberger, R. C., "Some Economic Aspects of Private Forestry," *Journal of Forestry*, Vol. 48, No. 7, July, 1950.
- ³ "Association Influences on Lumber Industry Economics," *Journal of Forestry*, Vol. 50, No. 3, March, 1952.
- ⁴ Illick, Dean Joseph S., *What Kind of Men are Foresters*, pamphlet, New York State College of Forestry, Syracuse, N. Y.
- ⁵ Fraunberger, R. C., "Supply-siditis," *Wood Technology News*, Vol. 2, No. 1, Ann Arbor, Mich., January 1951, pp. 9-11.
- ⁶ Brown, Nelson C., "Employment in the Field of Forest Utilization," mimeographed, New York State College of Forestry, Syracuse, N. Y.
- ⁷ Whyte, William H., "The Corporation and the Wife," *Fortune Magazine*, Part I October, Part II November, 1951. See *The Management Review*, American Management Association, N. Y., November 1951 for a digest of the above articles.
- ⁸ Fraunberger, R. C., "Condensed Report of Committee on Training Men for the Forest Products Industries," *Proceedings of the Northeast Section, Forest Products Research Society*, November, 1950, pp. 1-5, section 5.
- ⁹ Henry, Dr. William E., *Personnel Series*, Number 120, American Management Association, 1948, N. Y. Also see Kienzle, George J., and Dare, Edward H., *Climbing the Executive Ladder*, McGraw-Hill, N. Y. 1950, chapter 2, pp. 19-31 "The Executive Personality," and Laird, Donald and Laird, Eleanor C., *Sizing Up People*, McGraw-Hill, N. Y. 1951.
- ¹⁰ Another recent excellent article is "Five Tips for Picking Young Executives," *The Management Review*, American Management Association N. Y. December 1951, pp. 729-730 digested from Harriet Bruce Moore's article in *Commerce*, October 1951, p. 20:5.

OUR AUTHOR

Mr. Fraunberger has been Vice-President and General Manager of Southeastern Industries, Inc. for several years. He graduated from the University of Michigan in 1935, and has A.B., B.S. in Forestry, and M.B.A. degrees. After graduation he spent several years with the Forest Service in the Lake States, New England, and the Southwest. He left the Forest Service to attend the University of Chicago School of Business, and was employed by several plywood industries before joining the Navy in 1943 as gunnery officer. He was appointed Officer-in-Charge, Industrial Engineering, Container's Division, Navy Bureau of Supplies and Accounts at Washington, D. C. When placed on inactive duty, he joined the Philco Corporation, which controls Southeastern.

He has had printed, in trade and professional journals, several articles on lumber industry economics. His book, *Lumber Trade Associations, Their Economic and Social Significance*, will soon be off the presses. He has been prominent in lumber trade associations, and is an active member of several professional societies.