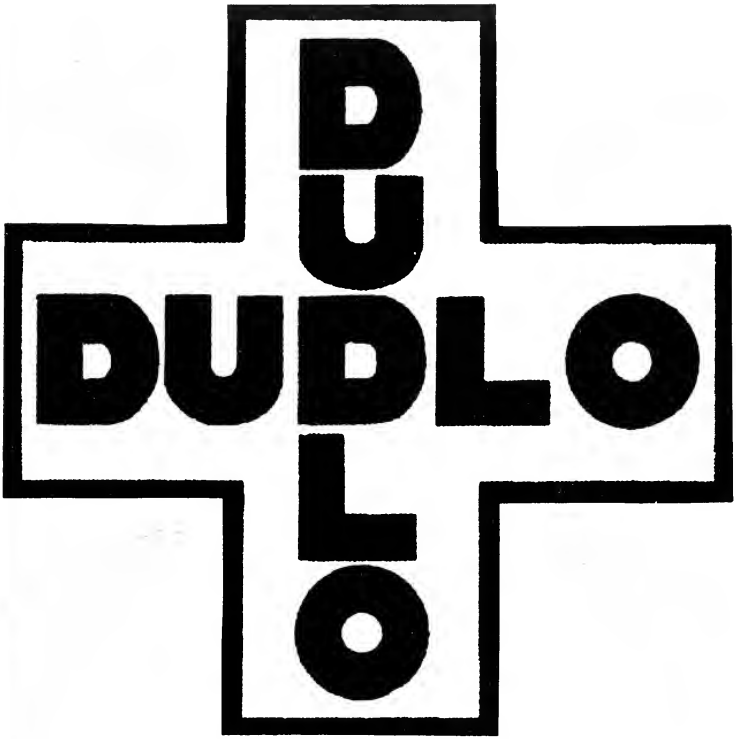
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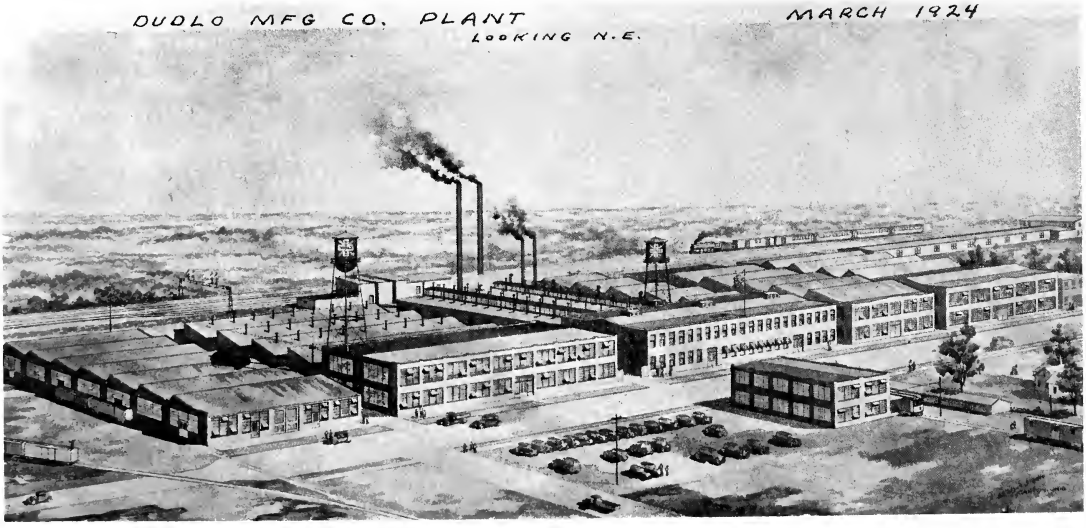
DUDLO MFG CO. PLANT
LOOKING N.E.
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History of The Dudlo Manufacturing Company

BY

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WIRE MILL MADE HISTORY AFTER A HUMBLE BEGINNING

Dudlo will long remain a part of Fort Wayne's contribution to an electrical magic that has transformed the world. It will persist after the last of its employees have been summoned beyond the curtain of time. Indeed it was Dudlo that made Fort Wayne the magnet wire capital of the world.

The beginning of this powerful industrial impact on the city was quite common place. It must have been the subject of conversation at the Mossman breakfast table. Perhaps it was said by some member of the family: "If George wants to tinker, let him tinker in Fort Wayne." Indeed the late W. E. Mossman built the first backyard barnlike home of Dudlo in Fort Wayne to further the burning interests of a son-in-law George A. Jacobs. "For the love of my daughter," he commented many years ago, "I wanted all my family in Fort Wayne with me."

It was this sentiment which led him to buy several lots on Wall Street not long after the turn of the century. Jacobs was in Cleveland, Ohio tinkering with an idea which in a few years would sweep Dudlo into

world commerce. His project would ultimately add a great complex to the industrial life of Fort Wayne.

George A. Jacobs was a native of Dudley, Massachusetts and a graduate of Worcester Polytechnic Institute. In 1906 he was a promising figure at Sherwin Williams, the great paint industry, when he conceived an idea which demanded attention.

In 1906 several large companies were already coating heavier wire with enamel. However, this veneer cracked and peeled in a manner most frustrating to both manufacturers and consumers. By this time the automobile industry was established and growing. It needed durably insulated fine wire to produce and carry the spark which gave life to gasoline engines. George A. Jacobs contemplated an enamel which would effectively insulate the finer strands of electrical wiring. For three years this indefatigable investigator devoted all the time he could spare to experimentation. The reward for his zeal was the production of a liquid mixture which made obsolete the tedious processes of winding fine wire with cotton fabric. This research was largely an exercise in observations based upon an almost endless series of trial and error.

Development of the enamel had been an experience fraught with an element of considerable danger because the mixture was highly inflammable. The application of heat to the enamel increased the hazard; the pungent and acrid fumes which emanated from the Jacobs ovens must have brought him much opprobrium from the residential neighborhood. In their finer stages, the enamel and the oven wire developed together. In 1910 Jacobs began production of enameled fine wire in small quantities; the process then moved out of backyard confinement.

Mossman, his son B. P. Mossman and Jacobs formed a partnership and rented a small building in Cleveland, Ohio. While this infant industry struggled

into enamel wire production, further development indicated increased facilities; the construction of two new enameling ovens began.

Products of the Cleveland enterprise met a discouraging response from the market. A number of hand-wrapped coils were produced which made no impact upon consumers. The future did not appear bright for Dudlo, now named for Dudley, Massachusetts and the state of Ohio.

What Mr. Mossman thought of this industrial infant in the Mossman family is now only conjecture. However, he did move the enterprise to Fort Wayne. It was housed in a newly-constructed shed 50 feet by 100 feet which appeared on one of the Wall Street lots. A cupola the full length of the building crowned the roof. It was one of the strangest industrial structures ever to appear in Fort Wayne. Its unusual appearance stimulated much comment. That building in July 1912 became the new home of the Dudlo. It was hemmed in so quickly by the expansion of the enterprise that it defied replacement. It is still occupied by the successor firm The Essex Wire Company. During the life of the Dudlo it was affectionately denominated "the enameling building."

Two grave mechanical errors dogged the success of Dudlo after it moved to Fort Wayne. Dudlo generated its own coal-gas for firing the ovens and employed a gas engine which turned generators for electrical power. Neither device was dependable. The gas generator delivered fuel of variable quality and often exploded disrupting production. The power plant too, was temperamental. Ultimately the little wire works switched to existing public utilities for its gas and electrical power. Production then became better stabilized. Meanwhile the market increasingly took cognizance of the new era in the processing of fine electrical wiring-enamel wire.

Originally the Dudlo enterprise required the services of about a dozen people. The firm bought fine wire of various sizes and applied the enamel coating. The dependence upon suppliers and the extreme simplicity of the operation indicated greater control of raw materials. Although small accounts were absorbing the production of Dudlo the genius of George A. Jacobs was not at rest. He foresaw the need for procedures which would combine independence from suppliers and enhanced profits. Soon Jacobs led his industry into the field of wire-drawing from copper rod.

The future of Dudlo now became evident to a few people. In 1914 the industry incorporated with W. E. Mossman as president, B. Paul Mossman as vice-president and Jacobs as secretary-treasurer and general manager. Jacobs was not one to relax in his office. He continually prowled the production lines, noting the performance of machinery; he made mental notes on needed improvements; he made the improvements indicated. In ten years the local industry became recognized as the world's greatest complex for wire-drawing and wire-enameling.

The pungent secret material which underlay the Dudlo industry, the wire enamel, was mixed in a great underground room and was pumped thence to the ovens. Only one person besides Jacobs knew the recipe for the mixture; the two of them always worked alone in the underground workshop. During the life of the company in Fort Wayne the knowledge of only two of the ingredients of the mixture leaked from the mixing room--high-flash naphtha and tung oil.

A spirit of comeraderie seeped down from what might be called the "inner circle" or management into all parts of the organization. The executives were young and were endowed with initiative and ambition. They argued and pounded on desk tops if need be to make a

point. If there had been a particularly trying day, one would often suggest: "Let us go up to Blue Lake for chicken." The executive staff relaxed there in fellowship. These gatherings often extended into the early hours of the morning.

The enameling ovens were a primary factor in production. They sensitively reflected red ink in the fiscal affairs of the company when their pulleys were idle. Dudlo operated around the clock; at its peak employment included 6,000 workers from Fort Wayne and nearby communities in Northeastern Indiana.

Jacobs accorded meticulous attention to equipment. He made the plant a production marvel. Likewise he carefully planned the training of employees. In a half day a farmer without previous factory experience could master the winding of a low tolerance coil. Workers who demonstrated proficiency were quickly reassigned to tasks requiring finer workmanship; Dudlo expanded as a well-regulated family.

Employee-welfare was always a desideratum on the part of management. Although actuaries knowledgeable in personnel relations warned against mutual benefit associations, this wired-together organization developed one and made it work. Jacobs introduced among other advanced techniques in plant equipment the dial telephone for inter-office communication. The latter was the first to be employed in Fort Wayne.

Jacobs foresaw the use of his product in wireless and radio and carefully planned his invasion of that market. He did not however properly evaluate the wire-demand potential of the automotive market. However Dudlo did expand into all fields where a want existed for enameled wire; it settled its problems in a day-to-day production.

Too Dudlo pioneered for the wire producing firms which were to follow it. In 1923, when the industry was moving toward the peak of its production,

a fire raged through the enameling room. Nothing of the sort had ever occurred before and it brought mechanical changes that were of benefit to the entire industry. The enameling ovens had vented into a duct which increased in size toward its opening through the wall. A jelly-like substance collected in the main vent pipe but it was ignored as a hazard. Suddenly flames raged up from the ovens and through the entire venting system spurred by the draft of a huge blower. When the flames died away the enameling room was a shambles. After looking at the scene of distruction Jacobs correctly predicted that production would be resumed in three days. Under his direction, sheet metal workers now vented each of the ovens through the roof. This system widely used makes all wire mills structurally recognizable today.

The wire mill was thus a new kind of production. It developed a fascination among the people who were a part of it which has never been disipated. A mill routine which stretched 600 feet of quarter inch copper rod into many miles of fine wire seemed the work of magic. As this process evolved at Dudlo the wire became so fine that the backside of the machines were placarded with white so the course of the strands could be watched more easily. The intensity and painstaking character involved a combination which developed pride among the workers who saw themselves as a part of the creation of the seemingly impossible. Delicate tensions, indeed had to be maintained in a machine which processed copper wire finer than a human hair.

During World War I a labor dispute caused Dudlo workers to leave their machines in masse. After a few weeks, these employees met and voted to return to their jobs, entirely without prejudice, so there might be no dangerous lag in their contribution to the war effort. This circumstance attested to the spirit of workers who pioneered in the wire industry in Fort Wayne.

COILS FOR FORD
AND GERMAN SUBMARINE BOAT DETECTION

Clamped in the coil box of the Model T. Ford lay the secret of Dudlo's almost fictional success. This small black box jolted the nation into a new economy. Henry Ford was reportedly surprised by his first experience with great public demand. George Jacobs was not so surprised but took the situation in its stride. He fortuitously devised a way to enamel-insulate small wire expressly for the automotive ignition field. Since each Ford car required a four coil box and frequent replacements Jacobs's dream, the Dudlo Manufacturing Company became the largest producer of magnet wire in the world. Thereafter Fort Wayne remained the center of magnet wire production.

Fate made Ford and Jacobs contemporaries. The genius of each of the two men combined to place them in tune with destiny. Ford worked in seclusion with a skilled Norwegian mechanic on the second floor of a Detroit factory building. Jacobs worked in a reeking backyard shed where he finally applied an enamel of his own formula to fine wire as a durable insulator.

Ford and his mechanic drafted the design for the Model T. car which was to place America on rubber tires. Jacobs was ready to supply the need for a vital ignition coil box. Neither knew what the other was doing.

Although the little black coil box was a mystery to most Model T. owners and to many auto mechanics as well, the coils themselves were the simplist and most lucrative production of Dudlo. After a half day of training, a novice could wind Ford coils with proficiency. This device preformed the magic of high-tension electric current needed to fire the "Tin Lizzie's" tough little engine.

Ford and Dudlo formed a happy industrial companionship long before the construction of the Rouge plant. Together they changed the transportation pattern of the world. From a meager beginning in Cleveland, Ohio, Dudlo was moved to Fort Wayne in 1912 and early the following year it began producing ignition coils for the Ford Motor Company. On August 16, 1916, Purchase Order No. 73,417 of the Ford Motor Company reached the desk at the Dudlo Manufacturing Company. This one order kept Dudlo busy from September 18 until the ensuing February 28. This avalanche of business from Ford constituted a vast growth problem although it never seemed to create the slightest worry from General Manager Jacobs. Unhurried by pressures he was never too busy to see any one; his patience was endless unless someone complained "it can't be done!"

More singular than the enamel wire which Dudlo gave to the world was the team work which evolved in the plant. Meanwhile people and buildings were added at an astonishing rate. Although seemingly engulfed in this expansion the original enameling department, nerve center of the plant was preserved unchanged.

From its earliest beginning Dudlo was alone in its field. Necessity thus compelled Dudlo to contrive and build its machinery. Jacobs, an empirical but scientific

worker always had capable people available for his needs. The production pattern was fortunate in that the Ford business could be used to screen out the greater skills needed in the plant.

Dudlo's history involves an encyclopedia of effort directed in many different directions; some 7,000 names belong in its success story. In the company magazine, the chief custodian was presented with the same deference as the first president, W. E. Mossman. Every individual employee was important. Dudlo became complex to the extent that present memories of former employees are closely associated with various buildings and departments. Thus it is that the story of Dudlo must come from persons who had a perspective of the operation as a whole.

During World War I the British government was confronted with the deadly menace of unrestricted German submarine boat warfare and consequent destruction of the shipping which supplied much of the food for the people of Britain. The fabrication of a submarine boat detector required much finer wire than had yet been manufactured. George Jacobs readily and unhesitatingly agreed to supply a ton of such wire to the British munitions board. Since this wire, smaller than a human hair, existed only in the mind of Jacobs the machinery for its previously unheard of production had first to be built. Jacobs and his co-workers at Dudlo undertook this Herculean task. The wire was accordingly produced and delivered six months after receipt of the order.

Prior to 1917, Dudlo had purchased its wire in varying sizes from suppliers and enameled and wound it to fit the diverse needs. In May 1917, Dudlo began drawing its own wire. It switched to the purchase of electrolytic copper in the form of quarter-inch rod. This was drawn down to the various sizes needed for Dudlo production. Before the copper rod was fed into

the mill, it was softened in annealing ovens and coated with tallow. During the drawing process the copper was bathed with a soap solution to provide further lubricant. The annealing was repeated as the wire was drawn finer and finer. Finished wire in various sizes then went to the enameling ovens. This revolutionary change in production required provision within the plant for supplying wire dies. In parallel with this added operation the plant now supplied its own wire dies to facilitate and make this production possible. Later this facet became the responsibility of a separate supplier--the diamond die industry which has since developed in nationally recognized proportion to wire production here. The rod mill used iron dies; for the subsequent operations diamond dies were used. Currently Fort Wayne is one of the largest markets for commercial diamonds in the world.

Not all copper is suitable for electrical purposes. After experimentation with copper from various sources the Dudlo came to rely chiefly upon copper from Great Falls, Montana. A smaller amount was purchased from mines in Arizona and Chile. Copper mined in nearby Michigan unfortunately is not suitable for electrical use.

By 1926 Dudlo had grown into twelve main departments. Many of the men endowed with top responsibility had been with the firm for several years. Jacobs had chosen and trained his staff carefully. The members of the executive staff were Warren V. Sweet, sales manager; Victor F. Rea, superintendent; Wendell C. Glass, master mechanic; George Horn, chief engineer; Roy M. Bates, production manager; Leo L. Bohne, purchasing agent; Emmet Spindler, office manager; George Bormuth, paymaster; Sam Cook, chief inspector; and Angela Baltes, manager of accounting. Rea, like Jacobs, was a graduate of Worcester (Mass.) Polytechnic Institute and followed the embryo industry to Fort Wayne from Cleveland.

Jacobs leaned heavily upon the considerable mechanical talents of Glass who was responsible for the development of machinery which became the envy of the entire wire industry. One of the earliest departments of Dudlo was a machine shop which produced the equipment needed to keep pace with Jacobs's imagination and vision. Rea and Glass later were to become instrumental in broadening the scope of the wire industry in Fort Wayne. As purchasing agent a daily responsibility was to make certain that at least ten railroad freight carloads of copper rod were moving between Great Falls and Fort Wayne. Should a mechanical failure of shipping error delay just one of those carloads of copper, Bohne was responsible for adjusting the difficulty as quickly as possible so that the required copper was moving again toward Fort Wayne.

The Dudlo inventory in the Ford plants was never permitted to drop below five days' supply. Never in the relations between Ford and Dudlo would the Fort Wayne mill be the cause of an assembly line shut down. One memorable occasion the Ford Motor Company phoned an alarm that only a few hours supply of coils was on hand. Bates hurried to the Highland Park plant in Detroit only to learn that Detroit had made an error. Ford still had a weeks' supply of the coils in stock.

Radio, telephone and the whirling world of electrical motors also made demands upon Dudlo production. Powell Crosley Jr., was among the visitors who came to Dudlo, as was Dr. Lee De Forest, already the central figure of a great radio empire. Crosley, whose capital was severely limited when he first negotiated with Dudlo, later became a leader in the radio industry. Magnovox, too, was among the early major customers of Dudlo before it expanded from Oakland, California to Fort Wayne. So was the Steinite Corporation of Chicago which attempted to move its properties to Fort Wayne.

At its peak, Dudlo had 105 or more large

accounts; including Delco-Remy, Westinghouse Electric, Atwater-Kent, Amrad Corporation, Allen Bradley, Emerson Electric, Master Electric of Dayton, Stromberg-Carlson, Wagner Electric of St. Louis Grebe Radio and Jefferson Electric. Dudlo supplied coils for telephone fabrication to Stromberg-Carlson. Bates is perhaps the only former affiliate of Dudlo who has records covering the complete scope of the great Dudlo operation. He estimates that between 1912 and 1927 the industry produced a minimum of 35,000,000 pounds of enameled wire. In 1920, the plant produced 2,553,822 pounds of wire of all kinds and shipped a total of 5,003,473 ignition coils to the Ford Motor Company. These alone were enough to fill 18 railroad cars. The week of November 12-17, 1923, Dudlo had 4,506,000 pounds of copper rod on order; there were 700,272 pounds of copper rod in transit and the plant had an inventory of 406,852 pounds. During that week, the plant consumed 371,442 pounds of copper rod and wound a total of 189,900 coils. The scrap resulting from this production amounted to only 1,530 pounds of copper. Minute amounts of copper rejected during the wire-drawing were trapped and salvaged, an indication of how meticulously production was controlled. At the peak of its operation, Dudlo had a total of 1,071 machines geared to production, distributed as follows: wire mill, 460; enameling department, 228; coil winding department, 295; braided insulation department, 63; tinning department, 4; fabric insulating department, 21.

Dudlo operated a branch in Newark, New Jersey and had sales offices in England, France, Chicago and St. Louis. A production unit (finishing) in the neighbor community of New Haven which served more adequately to tap the pool of feminine workers in eastern Allen County. Too, there was a Peru branch.

THE INVASION OF THE TINSEL MARKET

The Dudlo Manufacturing Company early gave Fort Wayne enduring prestige as the magnet wire capital of the world. It now moved into the production of tinsel. Those tiny gold and silver threads had lent much charm to the Yule tree. They had for a long time found their way into some of the finest decorative fabrics. A monopoly of craftsmanship had jealously guarded the production of tinsel since the sixteenth century. The art of making tinsel had developed in the ancient city of Lyons, France. There its secret was closely guarded for many years. Military costumes and brocades were enriched with golden threads of tinsel as early as the sixteenth century; the finely-drawn and plated metal also glorified the earliest memories of the Christmas tree.

Ultimately the Germans through research and deductive science learned the secrets of the French monopoly and produced more cheaply a fine gilded product although it did not equal the original in quality. Still the European tinsel industry continued to monopolize the market. In Germany tinsel production centered in and around the historic city of Nuremberg.

Late in the nineteenth century, Americans began experimenting with the production of tinsel with gradually increasing success. While Dudlo was producing wire which opened new horizons for electricity and electronics, world wide attention particularly in France and Germany, was directed to the development of its tinsel division. The Leonic Division of Dudlo, organized in 1916-17, which launched this new product was directed by Jay Boeshore, manager. The success was only gradual but in time Dudlo's Leonic division became recognized as a serious contender in the American market.

Tinsel which is called "Sahn" at the source of manufacture is a product of the electroplaters' and wire

drawers' art. Copper wire drawn to given demension was electroplated or gilded. It was drawn again to a very fine size and flattened between two highly polished rollers to a very thin silver or gold ribbon. The final product, tinsel, emerges only after being processed into various forms. Leonic utilized as its raw materials for plating pure gold and silver. It produced enormous amounts for other manufacturers. Leonic production, too produced tinsel threads utilized in millinery braids, upholstering, lamp shades, brocades, shoe cloth, draperies and garments; the effect of these could not be duplicated in any other manner. The Leonic division exemplified that diversification which later became so marked in the development of Fort Wayne industry as a whole.

Soon after the genesis of the Leonic division, a stepchild came to the Dudlo complex in the form of the Anylite Company. Its product was an electrical socket with a resistance unit which adjusted a lamp to the desired brightness. The socket was controlled by a pull-cord and the appliance was widely distributed during the period 1918-1927. Leonard Sykes, a native of Yorkshire, England directed the Anylite Company. His principal assistants were Moody Zent, factory superintendent; M. Bacon, sales manager and Rhea Hartman, bookkeeper.

An experimental division at Dudlo worked ahead of its regular production. Bates recalled that in the 1920's some special coils were produced for experimentation in a mysterious electrical field which later became known as "television." Indeed the products of the Fort Wayne wire mill were a boon to the development of many electrical industries including the electric meter, the telephone and the electric motor. They included large orders to a Lafayette firm which pioneered in the manufacture of electric meters. Dudlo was also a major producer of field coils for electric motors.

A detailed production inventory of thirty-four products which emerged from the Dudlo mill in regular production included the following: bare copper wire, enamel covered wire, single cotton covered bare wire, single cotton covered enameled wire, double cotton covered bare wire, double cotton covered enameled wire, single silk covered bare wire, single silk covered enameled wire, double silk covered bare wire, double silk covered enameled wire, single cotton-single silk covered bare wire, single cotton-single silk covered enameled wire, high frequency braided cable, high frequency twisted cable, cotton covered braided and twisted bare terminal wire, cotton and silk covered braided or twisted silver plated terminal wire, bare alloy resistance wire, enamel covered alloy resistance wire, tinned copper bare wire, twisted radio aerial wire (braided), silver-plated wire, brass wire (called gold wire), lahn, fancy tinsel products, automobile ignition coils, radio resistance coils, meter coils, motor field coils, cut-out coils, x-ray coils, transformer coils, electric controller coils, and miscellaneous coils.

A close inspection scrutinized the weight and electrical behavior of all wire. Two standards furnished important guide lines for inspection. Number 8 gauge ran 20 feet to the pound while the finer number 36 gauge stretched 13,210 feet per pound.

KEY FACTORY PERSONNEL AT THE DUDLO IN THE 1920's

In any consideration of the responsible management and leadership of the Dudlo it readily becomes evident that George Jacobs recruited for his purposes a group of men, each distinguished by his native ability and the pertinence of that ability to the job to be done.

Many of these men were trained in the plant to do their job. There was no pool of labor and experience upon which to draw in this pioneer industry. They were notably a youthful group. Utilization of their meager experience in other fields, their youthful exuberance, their emulation of their fellows and their determination to reach upward to new and hitherto unknown goals all found reflection in solid and almost unpredictable achievement. We can do little more here than catalog these competent persons and the stations they occupied.

Michael Flaig, general foreman of the enameling department was assisted by sub-foremen Charles Trott, Frank Cronkhite and Jacob Bahde.

Fred Chennouer task entailed considerable responsibility, mixing the enamel which fed the ovens. Only he and General Manager Jacobs, its inventor knew the formula.

Earl Lowery had charge of gas production during the early period when Dudlo manufactured its own gas for the enameling ovens. Later when the industry switched from its own production of gas to a supply furnished by a local public utility, Lowery still continued to direct the fuel service to the plant.

The wire mill was under the general foremanship of John Durr. Subordinate to Durr were the shift foremen William Albright and George Siler. William Baker was foreman of the die shop which supplied the diamond dies for the finer stages of wire processing. William Houser had charge of the annealing ovens which removed any temper remaining in the wire after it had gone through the stage of drawing. Due to the flammable vapors here, no smoking was tolerated. Herman Arber was chief of the winding department; his lieutenants were Louis Voors, Art Buckmaster, George Kierspe and M. R. Schmidt. Ed Snyder directed the experimental department. Mont Chaney, who was later associated with Inca, directed the Ford cut-out coil department.

Emil Sommers was general foreman of the coil finishing department. Forrest Nichols and Floorlady Anna Morris assisted him. The New Haven branch of the Dudlo did much of the coil finishing and packaging. Sometimes all of the production for the Ford Motor Company was shipped from that unit.

Rulo Cochran was general foreman of the tinning department where the wire was tinned to retain a rubber coating. Ray Tarman had charge of the fabric insulating department. James Griffith was foreman of a department which not only provided spools for the wire, but also disposed of salvage.

Wendell C. Glass, master mechanic of the industry directed the highly-creative mechanical department in which the plants' own machinery was built. Glass had a genius for creation and improvisation of mechanical contrivances. When a need arose for a non existent machine, Glass possessed uncanny ability to create the desired mechanism. Practically every specialized machine in the entire plant was the creation of Wendell Glass. He complemented the genius of George Jacobs. The latter worked ahead to the rising need and communicated with Glass. Clarence Schultz was the machine shop foreman.

Herbert L. Miller served as safety director for the wire mill; Arthur Stoll, as maintenance man, was responsible for keeping all machinery running.

Mechanical developments arose so rapidly at Dudlo that a yardman was required to handle the movement of new machinery into and about the plant. Plant expansion constantly required the construction of additional building to house new machinery and additional operations. Dudlo depended upon foundries to supply the heavier castings needed for the new machinery. Traffic created by and necessitated for these operations was the responsibility of Irwin Miller.

Walter S. Foster was employment manager and

director of the Welfare department; his staff included Emma Beck and Ward Horn. The peak of employment aggregated 7,000 workers around the clock. It was no small task to keep so many stations manned. Foster understood the labor market and possessed sage judgment in evaluating the capacity of prospective workers.

Earl Sunday was receiving clerk, Myron Wake had charge of miscellaneous stock and M. R. Snyder was responsible for the coil stock. Ben Turney was head trucker, William Hanselman served as shipping clerk assisted by Aubrey Stowell, traffic manager.

As in all industry the sales force operating in isolation from the workers, maintained a flow of orders which kept the plant busy. Some of the sales force later emerged into managerial activities in other industries and business. Warren V. Sweet served as general sales manager during the 1920's. Robert Whearley, later president of Rea Magnet Wire, Inc., supervised wire sales. William A. Mossman mapped the industry's sales promotion. S. Allen Jacobs, later president of the Inca Manufacturing Division, Phelps Dodge, Copper Products, directed sales engineering. The latter was a nephew of Dudlo's founder and general manager.

Sales representatives were Niles K. Wallen, Forrest Valentine and Otto Snyder. The latter functioned as a sales inspector. His responsibility involved all orders for experimental work. He saw to it that the orders were met smoothly, that specifications were met and that delivery was prompt.

INCENTIVES AT THE DUDLO

The constant mechanical and scientific changes at the Dudlo were closely paralleled by necessary adjustments on the part of the personnel. These human

contributions seem well nigh fabulous when viewed in relation to the primitive character of industry in that day. That the personnel was largely young either in years or perspective made these adjustments possible. These strange new industrial developments constituted a challenge and consequent adventure in each day's work.

That the remuneration of Dudlo workers was well above the norm for that day slackened the reins on incentives. This of course contributed to the growth and success of the industry.

George Jacobs possessed a restless mind and endless incentive. His equilibrium tolerated occasional storms of temper. There was however, no place in the great, intensive calm of the man for grudges. Piques quickly lost themselves in contemplation of the morrow. In this domain of men, machines and wire Jacobs was creative and articulate. Public gatherings never seemed to tap the Jacobs magnetism. While seemingly a weakness it only added to the deep reservoir of respect which he commanded in and out of the plant. Fred Phillips, a native of Warsaw, exemplified the spirit which pervaded much of the Dudlo organization. A man of great initiative he was employed in the inspection division of Dudlo. He found success in playing a "hunch" which could easily have terminated his career. Jacobs' vision of Dudlo's place in magnet wire production sometimes spurred him to dubious and critical sales contracts. One such deal was that described earlier which he had personally negotiated with the British Munitions Board during World War I. He alone evisaged the requisite ton of wire so fine that its production had scarcely been dreamed. Dudlo tooled to produce this wire finer than a hair for delivery in six months. The local plant even had to contrive and manufacture the machinery for the process.

Jacobs had made overtures to the Westinghouse Electric people for an opportunity to supply wire for a

new project at East Pittsburgh. He had not yet been successful when Phillips played his hunch.

One evening, Phillips came to Roy M. Bates, production manager: "Bates, I'm going to be out of the city tomorrow, and if Jacobs asks about me, just tell him I went to Pittsburgh."

Bates' eyebrows raised. "What's going on in Pittsburgh?"

"I'm going down there and get that order Jacobs has been after. I know the 'old man' will be mad, but don't tell him any more than you have to."

Bates looked at the floor and said all there was to be said: "I sure hope you know what you're doing!"

Sure enough, Phillips was gone the next day, and Jacobs came looking for him. From Bates he got an answer that disturbed him considerably: "Have you seen Fred Phillips today?" he asked the production manager.

"No--Phillips is in Pittsburgh today."

"Why did he have to go to Pittsburgh?" and this question was etched with adrenalin.

Bates tried to be indifferent. "I don't know, Mr. Jacobs, he did not say."

As Jacobs wheeled out of the office, his voice trailed behind:

"I wonder what business that young upstart has in Pittsburgh...." Reverberations of Jacobs' temper eventually extended to all parts of the Dudlo general offices. They created a bad hour for Phillips, when he returned.

Phillips was away a day. Bates was the first to learn that somehow, that bold young man from the inspection department had obtained the coveted order from Westinghouse. Phillips of course was more blithe than usual when he returned to the plant after a memorable day in Pittsburgh.

"I almost stopped Fred to tell him that he was in for a bad time with Jacobs," Bates recalled. "But for

some reason, I did not. Maybe it was because initiative like that did not need forewarning." Phillips soon received a call to Jacobs' office. There was a lot of loud talk, with Phillips just sitting across the desk and listening. Then he handed Jacobs the Westinghouse order. Someone who had ventured within earshot reported later that "Mr. Jacobs just melted."

Phillips became manager of Dudlo's Newark, New Jersey branch which served effectively in keeping abreast of the eastern wire market. The Newark operation was flexible. Phillips traveling extensively to promote sales and anticipate production needs of Dudlo customers. A winding department existed at this branch to hurry deliveries on rush orders until the Fort Wayne plant could move into production. This highly-effective liaison with the east kept Dudlo in readiness to supply eastern business and it prodded deeply into the markets of competing eastern mills.

In retrospect there have been years of conjecture about Phillips' venture. Bates, who was close to the pulse of the general office, commented: "Phillips would have been in real trouble without the psychological resources of that order, but I doubt that he would have been fired. He might have been moved down a few notches on the plant roster. I never knew of any key personnel being discharged." In the long history of Dudlo, this was just one exemplary incident. There were countless others and down through the years they caused people to become widely remembered as a part of the Dudlo family.

Another instance of high adventure was that of Miss Emma Beck, one of the earliest employees, who as head of women's employment endeared herself to the organization through her welfare work and recreational planning. In July, 1923, the REFLECTOR, a house organ printed in the Dudlo plant, carried this tribute to Miss Beck:

Miss Beck is one of our old familiars about the plant, being probably one of the best-known employees of the company. She came to work for us June 1, 1913, when the company was still in its infancy, having charge of the Finishing Department. There was at that time but one inspector, only five or six winding machines, three rewinding machines and three enameling machines housed in but a very small portion of the present factory quarter.

Since that time she has seen the most rapid expansion of the factory, to its present size. Since 1920 she has been connected with the Employment Office, and in this capacity has opportunity to be personally acquainted with most everybody coming into the factory.

She has been an active member of the Dudlo Girls' Club from the beginning, serving as club president during 1919, and has ever been an important factor in the welfare work of the company.

The editors of the REFLECTOR were sometimes frustrated since it was hard to distract people from their work. Bill Houser who supervised the plant's annealing ovens and who was photographed in deeply-wrinkled overalls said in an interview when asked what he thought of the future prospects of Dudlo, "Aw, I can't tell you that right now. I'll write you up a piece!"

The publication issued every two weeks, actually was staffed by Dudlo employees and Forrest C. Valentine, a member of the sales department, was editor. Other members of the original editorial staff were W. S. Foster, associate editor in charge of distribution; G. W. Spindler and Clyde Devaux, illustrations and cartoons and Emmett Spindler, who commented on all sports. Reporters serving the REFLECTOR were: Miss Beck, Mutual Benefit Association; Miss M. Allison, Girls' Club; Sam Cook, Men's Club; O. Smith, Winding Department; W. E. Mossman, Rewind and Inspection; R. E. Tarmon, Fabric Insulation; Miss L. Waffler, Finishing Department; Miss

R. Harshman, Anylite Division; E. Schultz, Wire Mill; H. Bahde, Enameling Department; T. Daugherty, Mechanical Department; A. Gerding, Stock Department; and L. Michael, General Offices.

This plant newspaper was breezy and had a professional tinge that was a tribute to Dudlo talent. It typified the strong backbone of Dudlo--self-sufficiency was the workday way, there.

DUDLO'S ORGANIZATION COMPLETELY SOCIAL

Somehow, a personal magnetism jumped from the endless wire at Fort Wayne's old Dudlo Manufacturing Company before the strands felt the first pulse of electric energy. Outside the factory this industrial get-togetherness found expression in the Dudlo Men's Club, the Dudlo Girls' Club, athletic programs, innumerable outings and as time went on, a Mutual Benefit Association.

The MBA dealt with the more serious social aspects, and when it started insurance men termed the program a dangerous financial venture. It did however prove highly successful. Perhaps its greatest asset was a deep trust in management. Dudlo folk were able to look back and laugh at themselves. The rapid growth of Dudlo contributed to this in great measure. And so, many of the personnel of the pioneer wire mill are still discussed today.

The late Victor F. Rea, plant superintendent, had cause for an unplanned Sunday visit to the Dudlo works. He had no credentials and a new man on the gate refused him entrance. Supt. Rea argued with the man within gentlemanly bounds. Finally he gave up and returned home. The next day, the incident at the gate became an item of official business. The new gateman received a pay increase.

The general office force often spent an evening of relaxation at Blue Lake after a particularly trying day. On one of these occasions the behavior of two men became a matter of deep concern as the evening wore on. As a final solution Mont Chaney and Louis Voors were helped into a waiting automobile. There was long and serious discussion during the long drive home involved the possible means of tucking them in bed without embarrassment to their families. The first stop was made at the Voors home after a desperate suggestion a few minutes earlier that they just deposit Louie on the front porch steps. When the car creaked to a stop, Voors and Chaney leaped nimbly from the

automobile, waved to their bewildered friends and chorused "so long, fellows, take care of yourselves!" The next day, word of their prank raced through the plant like wildfire. Their friends were relieved, if taken-in.

In April of 1924, Dudlo peeled ten years off its growth and laughed at the wages that were paid, how the soapy water leaked down into the finishing department from the second-floor wire mill and about the black and red wine that sometimes found its way into the plant.

It was done in the pages of the REFLECTOR, an appropriately-named factory newspaper which was staffed, not by professionals, but from the Dudlo industrial family itself. The author of this ten-year flashback was Sam Cook, chief inspector, recently deceased. The anecdote was entitled Ten Years Ago and continued as follows:

None of our girls wore bobbed hair. The Dudlo had only three buildings; Mr. Vic Rea wore overalls; we had red and black wine--sometimes; Mr. Forrest Valentine repaired testing machines; the boys in the winding room called Mr. Clarence Rieman "Whitey" and Mr. Somers "Irish"; we ran out of wire several nights a week at midnight;

Winders, finishers and inspectors all punched one clock; the generators were upstairs; Polly Scheiman took care of the night stock room and swept the floor; Mr. Sam Cook carried razor blades and pliers and helped the winders take "pull backs";

Miss Beck wore an apron and had glue on her hands; George Kierspe wound Ford coils; we had a repairman by the name of Clarence Schultz; Mr. Herman Arber was setting up the winding machines;

Men started to work for 17 1/2 cents an hour; George Spindler knew how to push a truck; we thought

we were putting out lots of work; Mr. Roy Bates took inventories; George Horn was a gay young fellow taking out girls from the stock department; the machine shop had two lathes and a drill press and three files;

Girls started to work for 10 cents an hour; Mr. Glass wore a greasy raincoat in the shops; there were no Dudlo social functions and clubs; we had no insurance and MBA; the wire mill had 10 machines on the second floor--and the soapy water ran down in the old finishing department; the enamel department made its own gas;

All winders had to rewind their defective coils; Miss Haddox took all of her girls home for supper two nights per year; "no parking" signs were unnecessary; Bill Hanselman did all the packing; Ed Snyder was cutting down pile-ups; the Democrats were in power; John Barleycorn was still wearing a checkered suit and red necktie.

Warren V. Sweet, who became assistant to the general manager, made an important decision in the early years of Dudlo. He switched from the Fort Wayne Electric Works to the new wire mill and purposely stayed home from a Fort Wayne Electric outing at Cedar Point, Ohio to be fresh for the new job. When Sweet took his marital vows in June of 1915, his wedding shirt was the only one free of Dudlo enamel stains.

Like any other enterprise, Dudlo had its moments of exhilaration and despair. One crisis was remembered by all when the Ford Motor Company, Dudlo's biggest single account, suddenly decided it could produce its own coils--little gadgets so essential to the perky Model T. The weight of this anxiety fell upon Sweet, who was delegated to begin negotiations with Ford. Sweet returned from Detroit to Fort Wayne with a million-dollar order; Ford had discarded the proposal of winding its own coils. Mrs. Sweet remembers

that her husband's hours at the plant were disturbing at first but very soon these were accepted as routine and the pervading spirit of Dudlo became a part of life; loyalty to the company and a warm, friendly feeling for the corps of workers developed.

Mrs. Sweet said, "The policy of the company seemed to be founded on that--I believe it must have been due to Mr. Mossman's love of his family which extended to that larger family of workers." The reference is to W. E. Mossman, president of Dudlo and the father-in-law of George A. Jacobs, who founded Dudlo in Ohio and then moved to the Wall Street site here which had been prepared by Mr. Mossman. Jacobs had invented the enamel, and later the ovens which gave it to the wire.

When it was time, laughter often echoed through the offices and the plant--much like the modern coffee break. On one of the paydays, the girls in the rewind department decided to haze the paymaster when he stalked in soberly, clutching a box filled with envelopes. The offended cashier hurried to Sweet's office and demanded that the department be discharged. Mr. Sweet was not one given to extravagant laughter. On this occasion he did laugh.

BOSSES 'RIGGED' A BASEBALL GAME

Since adventure and anxiety were a part of the daily routine at the old Dudlo Manufacturing Company it became natural to brush away the burdens of the day with social activity. Frequently Dudlo chartered two or three excursion trains at a time for outings at Rome City. A reservation charge for employees was refunded when they appeared to board the trains. At the close of each such outing, the Fort Wayne-bound trains were

scheduled for the greatest convenience of the excursionists.

The Dudlo Men's Club at one time had a membership of 2,000; it was the largest industrial organization of its kind in the State. Until Dudlo expansion reached the requirement of one new building a year, open areas beside the plant became favorite sites for baseball and other athletics. Key personnel joined in the fun--sometimes unwisely. They had organized two baseball teams, the Senators and the Giants. There were some good players, and some were not so good. As a result, the factory turned out largely to witness these exhibitions by the bosses. One game, in July of 1926, was thoroughly rigged. Jay Boeshore, manager of the Leonic (tinsel) division pitched for the Senators. He was carried to the pitcher's box on a stretcher, amid much fanfare, ostensibly to "conserve his strength." Before the game ended, Myron Wake, shortstop for the Senators, was carried off the field in the same manner with a broken ankle!

This did not dampen the presentation to Boeshore, who managed the Senators. He received as trophy a grotesque kettle, fabricated by someone in the plant. Victor F. Rea, the plant superintendent and a powerful man, covered second base for the Giants. A few years later, when Dudlo lost its identity, he formed the Rea Magnet Wire Company. The crowd was whooping it up when Wake started his slide into home plate, with Leo Bohne, catching, and Roy Bates, left fielding for the Senators, both at the bag for some reason, wound up in a tangle of arms and legs. Dudlo's newspaper, the REFLECTOR, accused Wake of inviting injury to get out of the game!

The lineups for this game, which left many of the "execs" limping around the plant for a few days, was as follows: The Giants: H. Arber, ss; Christ Hahn, c; Wendell Glass, p; Victor Rea, 2b; R. Tarmon, rf;

Mike Flaig, 1b; G. Spindler, 3b; W. Kestner, cf; Warren Sweet, lf. The Senators: Boeshore, p; Bohne, c; Foster, 1b; Horn, 2b; Wake, ss; Somers, ss; Spindler, 3b; Bates, lf; Roebel, cf and Stiverson, rf.

The REFLECTOR quipped through the game as follows:

Victor Rea may have been a whiz in the days of Pop Anson, but times have changed, if you know what we mean.

Ray Tarmon thought the game was a Turkish smoking contest and carried his three-foot pipe all during the performance.

Melvin Kestner surely doesn't inherit his baseball ability from his dad.

George Spindler didn't go so big at third base because they made him use an ordinary baseball glove instead of a landing net.

Roy Bates was a trifle muscle-bound from holding a pose too long while having his picture taken and as a result failed to function as well as he might.

The enameling department produces enough wire to encircle the globe three times every 24 hours, which is approximately the distance Mike Flaig would have to knock a ball to make a home run judging from his speed on the field.

By intense concentration Fuzzy Foster finally caught a ball in spite of the fact that there were several women in the vicinity. Emmett Spindler played a good game of tennis on third base.

Stiverson, running true to form, couldn't forget he was a detective and never caught a thing. Wendell Glass can't understand why he didn't get the cup because he hit more bats than Boeshore.

Herman Arber thought he was at Alpine fair where they get three smacks for a boatload of marks. He also thought the ball would go around his neck three

times and when it only went around twice--well, he wasn't ready.

Sweet played a wonderful game but we feel that he took advantage of the boys because he filled up on red pop before the game.

Bohne thought he was playing "hide the button" and hid the ball behind his chest protector.

Horn made a nice double play, catching Sweet sleeping between second and third base, but the truth is that the ball was knocked right at him and he either had to catch it or get hit between first and second base.

Boeshore pitched for the Senators. The Senators won. No, we can't explain it, either.

The score was 19-5.

Errors--everyone; two base hits--Horn, Spindler, Roebal; home run--Tarmon; double play--Horn, unassisted. Bases on balls--Off Boeshore, 1; Glass, 3; Struck out--by Boeshore, 7; by Glass, 7.

The firm of Gardner & Newman, commercial photographers at 1121 Broadway, was retained by Dudlo to record the game on film. Boeshore, who later became an executive at Rea Magnet Wire, recalled recently how the Leonic division made important contributions to millinery on Fifth Avenue, New York. He devised a way to spin silver lahn or tinsel around thread and this was used by Mrs. Maloy's millinery shop on Brackenridge Street to create outstanding hats. The shop, which employed about 125 women, produced expensive hats for Fifth Avenue and exclusive shops in Miami, Florida.

Production machinery often changed so rapidly at Dudlo that George A. Jacobs, founder and general manager, would not allow time for the preparation of detailed drawings. Boeshore demanded fine tolerances for the machines he needed in the Leonic Division and his first machine, after he came to Dudlo, was given a sparkling coat of paint. Someone warned that Jacobs

would not like this--but the work brought a compliment. On another occasion, Boeshore constructed a wooden model of a machine for a new process. Jacobs promptly bet him $20 that it wouldn't work. The machine was fabricated in metal and performed as planned. "I was so relieved myself that I never collected the $20, Boeshore chuckled."

DUDLO DESTINED TO SHARE ITS SKILLS

Dudlo's secrets of wire-making were preserved for just a wink of time when measured by the history of the industry, which dates back 400 years or more. In less than two decades, all of the ingenuity which contributed so much here to the exploitations of electricity and the development of electronics was destined to be shared. Primitive wire, comparable to modern rod, once was produced by hammering strips cut from a thin sheet of metal. Eventually the process of "drawing" wire was developed.

Some obscure housewife, bent over her bread dough, must have sparked the incentive which down through the years has developed into one of the world's major industries. Rod becomes wire through kneading process--each die moulding the metal to a finer dimension until it becomes finer than a human hair. An inventive mind applied the principle of the housewife's kneading fingers to the first crude die.

The first processes were attended by much frustration and failure. Ultimately a lubricant was discovered, quite by accident, which expedited this kneading of metal into the first coarse wire. An early German wire-maker, exasperated by failure, tossed his work out a window. It landed in the marshy soil behind an outhouse and the worker reached for new material. Some

days later an exacting superior found the discarded metal and as punishment for this waste, ordered the wire-maker to feed the sullied mess into the machine again. It behaved the best of all the metal that had been used! For some time after that, the children of the wire-makers surreptitiously carried little buckets of excrement to their elders in the mill. Further experimentation happily disclosed that stale, diluted beer would lubricate the metal being processed quite well!

Such simple secrets were guarded for nearly a century by the early German wire-makers. Jay Boeshore, former manager of Dudlo's Leonic division and later secretary-treasurer of Rea Magnet Wire Company has captured much of the fascination of wire-making and its evolution from dilligent research. Dudlo prepared its rod for kneading by a tallow bath, and during the "drawing" by a soap solution. At various periods during the wire-making process, the copper was heated in annealing ovens to build up its resiliency. The secret that conceived Dudlo, of course, was a formula for an enamel which could be baked onto the wire for insulation. George A. Jacobs, founder and general manager of Dudlo, was the inventor. He subsequently invented ovens to apply the insulation.

When Dudlo got into the wire-drawing business, it produced innovations in production design, too--each new development welcomed as happily as by the old German wire-makers! While the mill around him was turning out magnet wire, Boeshore developed processes and machinery which protected the gold and silver coatings of the wire after it was reduced to dimensions finer than cigarette tobacco.

The future of enameled wire didn't impress W. E. Mossman when he prevailed upon his son-in-law, Mr. Jacobs, to pursue his work in Fort Wayne. Yet he watched this new corridor for electrical power produce an industry of international scope during the years he

served as president of Dudlo Manufacturing Company. Windows of Boeshore's Leonic Division overlooked busy trackage of the Pennsylvania Railroad Company which Mr. Mossman crossed during frequent visits to the growing wire mill. Once the trains boomed into the city from the west at terrific speed. There was a standing order for any employee to leave work and escort Mr. Mossman across the busy railroad property once they spied him through a window.

This deference was exemplified by employee-relations. When gaps appeared in the Dudlo production line, the workers doubled up, if necessary, and thought nothing of it. No worker ever hesitated to express an idea for improvement of an operation. Key personnel encouraged suggestions all along the line. A surprising number of them were effective.

There is a story that some of the men at Jacobs's elbows once sought to refurnish his office, while he was out of the city. But this is legend, because Jacobs chose office space that would never invite him to lean back. It was restricted by two factory walls, and could not be enlarged without weakening the building itself. Jacobs did sanction a coat of white paint for the bricks. There was an old desk, several rickety chairs and a rack of sorts along the wall which held some books. Jacobs had a habit of scribbling notations on scraps of paper and promptly jettisoning them into a desk drawer. The very act of writing fixed the thoughts in his mind. Associates recall that the "file" drawer was just a jumble of paper scraps.

The general manager spent most of his time in the plant and collaborating with his master mechanic, Wendell C. Glass and other co-workers. He had a fetish about "selling" some of the wire customers himself. Jacobs relaxed best on the golf course.

Dudlo prepared its own dies for wire drawing and the skills developed in this area were to father a new

industry in Fort Wayne once the pioneer wire mill lost its identity. Dudlo even produced dies for other industry. The diemakers functioned so well that they developed an aura of obscurity about themselves. Roy M. Bates, former production manager, remembers that the production of dies was never a problem--the department was rather taken for granted. Except for the initial wire reduction, commercial diamonds became the heart of the wire die. They were carefully selected for weight and shape before being faced and mounted in metal. It was the diamond that resisted the pressure of the kneading operation which reduced the size of the wire down along the line. A process for more securely anchoring the diamonds in the dies was developed at Dudlo. When a diamond die became worn, it was tooled out to the next larger size and put to use again. Iron dies were used only in the initial reduction of the rod mill.

The workers' Mutual Benefit Association, organized in July of 1920--against the best advice of insurance people, was an early step toward personnel security. Original officers were Dean W. Davis, president; Catherine Wafer, vice-president; Emma Beck, secretary, James Aiken, treasurer and Dan Sunday, chairman of the relief committee. First directors of the MBA were Alma Hoffman and Clara Ehrman, Finishing Department; Catherine Wafer, Winding Department; William Houser, Wire Mill; Lorain Mitchell, Homer Osterman, M. R. Ellingwood, Enameling Department; Dan Sunday, Stock Department; Louis Voors, Arthur Yaple and Alfred Sephel of the Winding Department and Lem Coverdale of the Mechanical Department.

There was a three-fold program with graduating dues. The maximum dues were 25 cents a week which provided weekly benefits of $15 and $125 death benefit; 15 cents a week offered $9 weekly benefits and a death benefit of $75; 10 cents a week provided $6 weekly

benefits and a $50 death benefit. During three years of its existence, 1920, 1921, 1922, the MBA paid $10,484.28 in benefits to employees. Later it was underwritten as an insurance program.

The Dudlo Men's Club was organized in 1916 and Warren V. Sweet, later assistant to the general manager, was the first president. A year later the organization opened its own clubrooms at 714 W. Washington Blvd. The clubrooms were abandoned in 1919 to provide more funds for broadening activities. There were annual dinner meetings, outings, chautauqua programs, excursions and various other forms of entertainment for the membership which grew to over 2,000. The Dudlo Men's Club held annual meetings long after the wire mill closed. The Dudlo Girls' Club also was widely supported and conducted various activities for its members. Dudlo's service flag honoring men called by Uncle Sam during World War I was proudly and hopefully dedicated at a mass meeting of the club Sunday, May 5, 1918 in the clubrooms. The organization subsequently became active in the Liberty Loan drives and sponsored floats during the campaign parades.

A theater party was held at the Jefferson Theater in May, 1919 and afterward, the members were guests at a dinner in the Summit City Restaurant. That same year, the club was forced to abandon plans for an excursion to Cedar Point, Ohio because all available coaches of the Pennsylvania and Nickel Plate Railroads were in use, returning soldiers of World War I to their homes. They settled for a weekend excursion to Rome City on the Grand Rapids & Indiana Railroad. On the day after Christmas, 1924 Dudlo employees of five years or more honored General Manager Jacobs at a dinner, and he was presented one of 500 special anniversary watches produced by a Swiss manufacturer. The tribute was held in the ballroom of the Anthony Hotel. In three years, almost to the day, Dudlo Manufacturing Corporation was to

become involved in a merger which eventually silenced its machines. But as Dudlo died away new enterprise was born which gave Fort Wayne new distinction as the magnet wire capital of the world.

AN ILL ECONOMIC CONDITION HERALDED THE END OF DUDLO

By 1927 the Dudlo Manufacturing Corporation, with innovations in magnet wire and its production had unlocked many doors on electrical research and changed the timetable of electronic development. To what degree is incalculable; but this famous Fort Wayne industry, which in a day produced more than enough fine wire to bind the world, also must have helped remove barriers to man's conquest of space. In 1927, too, a dry, hot wind began blowing through the nation's halls of finance. It was a fearsome draft that whispered of economic disaster just ahead. There was vague, infectious talk of economic depression. Signs of the times seemed to point toward a dark road. A germ of mistrust later to erupt in panic began to steal across the country. There was no one to assure that the greatest thing to fear was fear itself.

The involvement of Dudlo in the $50 million merger of major wire producers was incubated, in part, by this dry, hot wind. It was reasonably interpreted as a strong bulwark against any stormy economic period. The industry would be strengthened by pooling its resources. Involved in this consolidation, one of the largest the country had ever witnessed, were Standard Underground Cable Company, Rome (N.Y.) Wire Company, Safety Cable Company, Sheet, Rod & Wire division of Baltimore Copper Smelting & Rolling Company and Dudlo. They merged entities known as the General Cable Corporation.

Announcement of the new industrial giant was made to Dudlo employees November 17, 1927. To many who had shared in the success of Dudlo down through the years, the news "came like word of a death in the family." That was a sentiment born of long and proud association with the pioneering and by then internationally-known industry. Everyone was assured that Dudlo would continue as always, but with increased economic strength. On December 8, 1927 the officers of General Cable Corporation were guests of the Dudlo staff during a formal inspection of the facilities at Fort Wayne; in the evening George A. Jacobs, Dudlo founder and general manager, hosted the delegation at dinner in the Keenan Hotel.

Those of Dudlo who had been pessimists were heartened a year later as ground was broken for a $75,000 expansion program. There was a flutter of personnel changes, too. On July 17, 1929 Jacobs, a vice-president of the new corporation and Wendell G. Glass, plant manager of the Dudlo Division of General Cable Corporation, resigned to organize a new wire mill--the INCA Manufacturing Company. The next development came in October of 1930 when General Cable closed the Dudlo office facilities here and moved this administrative and accounting phase to the East. It was formally announced, too, that Dudlo would thereafter be known as the Fort Wayne Plant, General Cable Corporation. On the same day Warren V. Sweet, a seventeen-year Dudlo man, resigned as vice-president of the Dudlo Division. He had moved up to the office of assistant general manager of Dudlo before the merger.

The resignation of Victor F. Rea, general manager of General Cable Corporation in Fort Wayne came June 28, 1933. He simultaneously announced the formation of a new industry--the Rea Magnet Wire Company. The plant which had been Dudlo suspended operations that year. Generally speaking, the machines were shut

down and the doors locked. Operations were removed to Rome, New York.

For a period of six years, available space in the former Dudlo buildings were used for warehousing by various companies. Essex Wire Corporation of Detroit absorbed 38,000 square feet of floor space in the old Dudlo property on October 20, 1936 and started the production of wire. Essex subsequently purchased and expanded through the property. Herman Arber, a Dudlo veteran who had served as plant superintendent for General Cable in Rome, New York returned to Fort Wayne to superintend in familiar haunts for Essex. And so it was that the death of Dudlo on paper actually released its influences to develop Fort Wayne as the magnet wire center of the world. Its place in the wire industry was filled by three other sources of production. Dudlo had left behind a great treasure--a pool of people skilled in the processes of wire-making.

A year before General Cable ceased operations here, the evidence of wire manufacturing skills the city had acquired came in a routine announcement from the United States Patent Office. Three inventors, all former Dudlo employees, were granted patents; George W. Kierspe for a wire-winding machine; Edward Snyder, a device for sealing electrical coils; Howard Shondell, a winding machine for sheet material and a second patent for a tension device was granted Snyder. The patent rights were assigned to General Cable.

Another industry took root in Fort Wayne as a result of the Dudlo merger--the manufacture of wire dies. When Dudlo was on its own, die-makers not only supplied the needs of the plant but produced dies commercially. This was never a big production item, but it proved invaluable to the community as a whole, later. General Cable chose to buy its dies, rather than become involved in the process of manufacture. The die-makers set up their own shops, and this meticulous

industry has flourished down to the present. There are seven such plants now. As a result, Fort Wayne is perhaps the largest consumer of commercial diamonds in the country.

Mr. Jacobs was the first president of INCA; Wendell Glass was vice-president in charge of manufacturing and George W. Spindler, secretary-treasurer. S. Allan Jacobs, now president of the INCA Manufacturing Division, Phelps Dodge Copper Products Corporation, and Harry M. Byers also were on the first board of directors. In 1930 INCA took over the S. & L. Company of Los Angeles, California as a branch and that year the INCA Manufacturing Company was consolidated with the National Electric Products Corporation of Pittsburgh and New York. In April of 1931 the National Electric Products Corporation, INCA and its Los Angeles branch became a part of the Phelps Dodge Copper Products Corporation, which dealt heavily in copper mining and smelting.

Victor F. Rea was the first president and general manager of Rea Magnet Wire; A. H. Perfect, vice-president; and Jay Boeshore, secretary-treasurer. Boeshore had managed the Dudlo Leonic Division, which produced the milti-purpose lahn or tinsel. On January 20, 1960, Rea Magnet Wire became a division of Aluminum Company of America, a firm which, like Dudlo, started with the inventive genius of one man.

Charles Martin Hall, the son of an Ohio clergyman, discovered an electrolytic process for the practical reduction of aluminum from its abundant oxide. He achieved this success just a few weeks before the same process was discovered by a Frenchman, Paul L. T. Heroult. Hall won the patent rights. Aluminum had been produced before, but its reduction was prohibitive because of the expense. In July and August of 1888 Hall and several associates formed the Pittsburgh Reduction Company for the production of aluminum, which in 1907 became the Aluminum Company of America. Hall,

a scholar and accomplished musician, never ceased to seek ways to improve and further reduce the cost of aluminum and its alloys until his death on December 27, 1914.

Four corporations now operate six wire mills in Fort Wayne and New Haven--Indiana Rod & Wire and INCA Manufacturing Divisions of Phelps Dodge Copper Wire Products Company; the Essex Wire Corporation which has spread through the former Dudlo property; Rea Magnet Wire Inc., a subsidiary of the Aluminum Company of America, which operates plants on Pontiac Street and the Adams Center Road and New Haven Wire & Cable, Inc. It is estimated that these industries affect directly or indirectly a minimum of 35,000 people in Fort Wayne and environs.

Fort Wayne's important cluster of wire-die makers include Ajax Industrial Supplies, Inc., 7605 Bluffton Road; Detroit Wire Die, Inc., 1104 Barthold Street; Fort Wayne Wire Die Inc., 2625 E. Pontiac Street; Hoosier Wire Die Inc., 3223 S. Lafayette Street; Indiana Wire Die Company, 314 E. Wallace Street; Luginbill Wire Die Company, Inc., 110 Parrot Road and U. S. Wire Die, Inc., New Haven.

The singular comradeship which flavored the workday has survived the pioneer Fort Wayne wire mill to the present. The Dudlo Men's Club was reactivated in January of 1936 and continued annual meetings for a number of years. During a meeting of 75 former Dudlo employees at the Turner Club, Sam Cook was elected president of the group; Louis Voors vice-president, and Walter Foster, secretary-treasurer. Several former presidents of the club were present, including Mont Chaney, Ward Horn, Christ Hahn and Ed Snyder. Foster and Voors also were former club presidents.

The spirit of Dudlo continued after revived meetings of the men's club finally ceased. The first annual reunion of former Dudlo employees was held in

TALKING IT OVER—Key personnel of former Dudlo are pictured at a recent dinner program. Standing, from left, Emmett Spindler, Samuel Cook, Walter Foster, Jay Wilkerson, Leo Bohne, Arthur Steele, Rulo Cochran, Jack Garver, Otto Schmidt and Jay Boeshore; seated—Wendell C. Glass, George Bormuth, Roy M. Bates, Howard Matthias, Richard Walker and Mont Chaney.

1958 with more than 100 present. These have continued, largely through the efforts of Mrs. Sevilla (DeRemer) Pabst. The fifth such gathering was held September 15 of last year in Pavilion 1, Foster Park.

The sixth reunion is scheduled to be held in Foster Park later this year. The passing of Dudlo was a transient personal tragedy to the many people who regarded the plant more deeply than a source of livelihood. In the light of what has happened down through the years, who can say that Dudlo ever really ceased to exist?