

THE BUDD COMPANY

JAMES H. McNEAL, JR.
CHAIRMAN AND CHIEF EXECUTIVE OFFICER

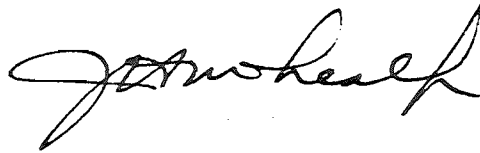
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As part of our year long celebration of our 75th anniversary, we are very pleased to offer you your personal copy of "Ideas That Move America...The Budd Company at 75." We hope you will share this book with your family and friends.

For the long-time employee, it contains many previously unpublished facts about our founder and the early pioneers. For the newer employee, it reveals our rich heritage in the automotive industry and why we will continue to be successful in our core businesses. We have used world and national events, as background, in the telling of our story for perspective and understanding.

Let me thank each of you for the contributions you have made in making Budd not only a survivor, but a great company, and offer you a challenge to keep us moving ahead in positive and profitable directions for at least the next 75 years.

Cordially,

A handwritten signature in black ink, appearing to read "James H. McNeal, Jr.", written in a cursive style.

Ideas That Move America . . . The Budd Company at 75

Vincent R. Courtenay

Published by
The Budd Company
Troy, Michigan
November, 1986
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PREFACE

About this book . . .

Author

Ideas That Move America . . . The Budd Company at 75 was written for The Budd Company by Vincent R. Courtenay. An author, film writer and communications consultant, Mr. Courtenay specializes in the automotive industry. His career also includes service as senior creative writer at Henry Ford Museum and Greenfield Village; Managing Editor of the Dearborn Press; Detroit and Washington Correspondent, McGraw-Hill World News; Special Correspondent, Time; Business and Financial Editor of The Detroit News.

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In compiling this history, the author drew upon a bibliography of more than 15,000 pages, contained in over 100 individual publications. Some of the major references used in compiling the manuscript include:

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Consultation and Review of Text

The idea for developing a 75-year history of The Budd Company came from *Paul O. Sichert, Jr.*, Vice President, Public Affairs. Mr. Sichert also recommended that the official history be presented in a general historical setting that illustrated some of the environmental, cultural and economic aspects of the times.

Donald W. Manning, Secretary of The Budd Company, provided important assistance in reviewing and editing the text, and in providing counsel relative to many technical details. His experience in various management and executive roles with The Budd Company give him invaluable background, and his assistance greatly improved the final version of the text.

James H. McNeal, Jr., Chairman and Chief Executive Officer of The Budd Company, also contributed to this book, by giving early drafts his critical review, and generally supporting the entire project.

James D. Glaspie, Vice President of Sales, also reviewed the text and contributed to its accuracy.

Paul Flancaum and other members of *The Budd Company staff* contributed their thoughts to this text, as did many former employees who were good enough to provide illustrations and personal commentary.

Troy, Michigan
November, 1986

FOREWORD

When an individual reaches the fiftieth birthday, that's an accomplishment. When he or she celebrates a seventy-fifth anniversary, that's a milestone. Frankly, to have survived deserves acclaim, but to have done that with flexibility, vigor, and imagination means that there is something special, something extraordinary about Budd people.

We started planning this book in the early months of 1986, and it became apparent that our history — the events, actions, and reactions could only be properly understood in the light of historic and economic events that were taking place. "Ideas that Move America" is really three books in one — a historic document, the Budd story, and a picture book.

Our information sources were the official copy records, annual reports, the "Buddgette," newspaper and magazine articles, etc., and in some rare instances, personal recalls.

Many have been very generous in providing us with additional historical material and photos, all of which have added an extra dimension to this volume.

Seventy-five years from now, when someone reads the litany of our efforts, they may find them quaint or even simple, but let it be understood that there was a man, Edward Gowen Budd, who started it all, for all of us.

November 1986
Troy, Michigan

Paul Sichert
Vice President, Public Affairs
The Budd Company

THE FOUNDING. . . 1912



Edward Gowen Budd, founder of The Budd Company, at age 49. Published in the first issue of the Buddette, July 1919.

In sketching the 75-year history of The Budd Company, we could take an academic approach and simply string together key dates in the Company's development, and cross reference them to major recorded events that impacted the nation and the world. We could do that, but if we did, we would soon know why auto pioneer Henry Ford had sourly quipped that "History is the bunk."

An academic chronology of carefully dated significant events does little to shed light on the way things were, and how people felt and thought, or why they did what they did . . . which is the real mission of history. Nor do such chronologies do historic justice when they simply proclaim that "In this month, on this day, in this year, such and such an event took place."

Most events of significance do not occur in a single day, but evolve over great periods of time, and on a certain day exhibit themselves in a manner which lends itself to historic chronology. To say that a war started on a certain day, and ended on another at a precise hour when certain documents were signed gives us only a legal description of the event. Obviously, the war would have had its genesis long before declarations were issued, and would have been lost or won long before the signing of armistice documents. And it might not have necessarily ended in the battle field, but in the hearts and minds of men involved, who decided to withdraw from it.

Having said all that, we cannot now simply turn to June of 1912, and say that on a certain day, a skilled machinist and industrial executive named Edward Gowen Budd founded the company which was to evolve into The Budd Company. His Edward G. Budd Manufacturing Company had probably existed in his mind for many years, before he broke from his employer and assembled his skilled team of manufacturing specialists. He in fact brought 13 select men from the company he had left. The fact that he did so, and that they were men of considerable talent and worth, underscores that the real die for The Budd Company was cast long before it ever received a corporate charter.

A company is not just a legal entity. It is a group of people allied in a certain cause, who operate together fol-

lowing certain principles of conduct, and who gain more from applying their efforts than the pay check, or bonus, or other benefits of material substance. There is great intrinsic value in being part of a company and applying one's skills along with the extremely high skills of others; to work with them in producing product or service that is clearly outstanding and of value to society.

The fact that this is true is made obvious in that when one does not work with highly competent peers and produce outstanding goods or perform a high level service that is significant to society and worthy of one's time and effort . . . he or she is not very happy at all, even if the remuneration is relatively high.

That is how and why Edward Budd, the skilled machinist and industrial supervisor who had the facility for melding teams of experts together and pursuing an overall business goal, and Joseph Ledwinka, a highly skilled mechanical engineer equally competent in product and industrial engineering, and 12 other metalworking trade specialists came together.

They were all employed at the Hale & Kilburn Company in Philadelphia, the production operations of which were managed by Edward Budd. Hale & Kilburn made passenger railcar components, especially seating, and these men had visions for another kind of product which would surpass rail if those of suitable talent involved themselves sufficiently in its advancement. The product, of course, was the automobile. An automobile with an all-steel body. Until that time, car bodies were made of wood, since they were still produced by the same carriage industry that had existed in America since its early colonization — and in the European nations for centuries before that. Those that had metal skins were of wooden frame. The metal was not used structurally, but only cosmetically.

Edward Budd had served a five-year apprenticeship in a general machine shop after graduating from high school, and worked 10 hours a day to learn his trade. He also augmented this with correspondence courses in engineering mathematics, and by attending night school classes.

In an early position with the American Pulley Company, he had designed a new type of pulley which could be fabricated entirely from sheet steel which was formed in presses.

Until then, pulleys consisted of a cast wheel and bearings set in a massive wooden block. Pulleys were and still are extremely important to industry. They form the leverage point from which cranes exert their force to erect buildings, to load and unload steel, to haul all manner of heavy load . . . to do so many major tasks that they are quite important in the growing world . . . even if the general public never gives a thought to them.

The Budd-designed pulley was much lighter in weight than those of its era, easy to manufacture at low cost and in high volumes, and practically indestructible through normal usage. This product had a major impact upon the business of his employer, and also helped advance the art of forming lightweight products from steel.

Edward Budd had left that company to join Hale & Kilburn because they offered him something very substantial, in addition to excellent pay. They had made railway car seats from wood throughout the company's existence, and were interested in having Edward Budd convert this process to steel. They knew that steel framed seating could be quickly and uniformly fabricated, and be lighter in weight than the wooden seats they had been building. Wood was a material that had to be hand crafted. Steel, on the other hand, lent itself to high speed machine production.

Successful men are often credited with having what used to be called in the 1912 era, "The vision" . . . although many unsuccessful men may have it, too. "The vision" meant that they could see almost at a glance the practicality and potential in things, and immediately identify those that will receive wide usage and benefit the public. They could as readily see the shortcomings in things that are already available, and which will become impractical and fall in popularity as better products take their place.

Budd's "vision" with die formed sheet steel saw advantages in the material that many others did not. In addition to lending itself to rapid machine processing techniques, steel had sufficient strength and controllable characteristics to make it an excellent structural material. With proper forming and joining techniques it could offer distinct advantages in product styling, with considerable aesthetic appeal. The fact that many others could not see this probably reflected the absence of the forming and joining methods

which Edward Budd envisioned in his mind.

Sheet steel was used decoratively in 1912. It was die formed into ceiling and wall panels, simulating brick or stone. Homes and public buildings were lavishly decorated with steel ceilings. Who would ever think of using steel structurally to build automobiles? Edward Budd, Joseph Ledwinka, and the 12 other colleagues he brought with him from Hale & Kilburn.

Budd himself did not know engines, and therefore had little interest in applying his skills as a full-fledged automaker. Yet, like those he brought with him from Hale & Kilburn, he saw this new transportation mode as one of vast potential — so vast that even many of those then engaged in automobile manufacture could not imagine just how substantial that fledgling industry would become. Nor could the senior executives of Hale & Kilburn. Even after Edward Budd successfully brought an order for automotive body panels into the plant, and produced these profitably and well for the Hupp Motor Company, they still would not give automobile body manufacturing serious consideration.

Budd would never fault them for their lack of “vision.” In fact, he complimented them years later for their sound business stance. After all, the automotive industry had really only become one of serious promise just nine years before in 1903, when Henry Ford began production at his Ford Motor Company in Highland Park, Michigan. There were already more than 100 different automakers in the field. Those who did not know their business well, or did not have the prudence to ally themselves with men who knew it better, went out of business with considerable regularity. There were more than 40 different automobile manufacturers in Michigan alone, and nearly that many in neighboring Indiana.

Indeed, in the year before, all the automakers in the nation had produced just 200,000 cars . . . only one car for every 700 citizens. And the automakers not only used wood extensively in the bodies, the larger companies owned vast hardwood forest reserves, to ensure that they would never run out of this vital raw material. It was a cheap raw material, bought at a few dollars per acre. The expense of wood, relative to steel, was in the many phases of labor to take it to its final form, and the great length of time it took to

process and assemble parts into finished vehicles. The gluing, planing, staining, varnishing ran into weeks. So long as this pattern prevailed, economies of scale and the potential for mass production would never be realized.

On the other hand, a steel automobile body could be produced and wholesaled at approximately \$45, and yield a reasonable level of profit for the maker. Yet, even if a company engaged in the novel business of producing steel auto bodies and components could capture a gigantic 10 percent of the entire American automobile market, the sales potential was just \$900,000 . . . and Hale & Kilburn executives saw little chance for anyone producing as many as 20,000 automotive bodies in competition against the skilled carriage makers who predominated in that business.

Edward Budd invested his life's savings in Budd Manufacturing, and left behind him a very financially comfortable position. He was 42 years old.

In looking back several decades, or even a few, it is a popular failing to assume that the times were much simpler than those of contemporary years, and opportunities for personal success more abundant and easier to pursue. To assume that complexities similar to those of modern life did not exist . . . that one could get things done with less strain and effort . . . that one could make his mark and fortune quickly and without undue innovative thought, simply by focusing upon the great spectrum of inventions and processes that have since come into the world, and, while not existing then, seemed such natural additions to it . . . to assume any of these things is as erroneous as assuming that the future, too, will be less complex than the present day.

We do that, though, and even talk about “the good old days” . . . when things were supposedly easier . . . or lament that, “Those were the days!” It surely was not easier to succeed or even to pursue business back in 1912. Telephones were rudimentary. There was no radio. Important communications were handled by telegram, which involved in those years signalling the receiving station by Morse code. It took two weeks for a first class letter to travel from an eastern state to the west coast. There surely was no air mail. There were barely any airplanes worthy of that name. It had been just six years since the Wright Brothers made their first historic flight in a heavier-than-air powered aero-

plane. Many communities, in fact, were inaccessible by road, and the mails were even longer in arriving.

There were no computers, and a company with a simple mechanical adding machine was one with an advanced and valuable piece of office equipment in hand. All banking was done with paper, meaning the actual checks and documents had to move from bank to clearing house to bank, and be hand recorded. There was very little consumer credit, save in the housing markets. Banks did not back the purchase of household goods, suits of clothes, and certainly not automobiles . . . except to customers who had gilt-edged assets of their own to pledge against the loan.

For all of this, it must be admitted that there was one exception that definitely made 1912 a simpler time than that experienced in 1913 and all the years beyond. Nineteen Hundred and Twelve was the last year in which Americans did not have to be concerned about federal income tax. That would come into existence in 1913, and create an enormous source of revenue for the federal government, as well as armies of educated specialists called certified public accountants and tax attorneys . . . and make our business machine and computer industries grow strongly in the years beyond . . . it would also bolster the output of our paper industry, too, which has cranked out the required forms, receipts and other documents for this business in volumes sufficient to paper the entire world — and then some.

Budd Manufacturing's founders began operations in a small rented building, utilizing a single press. They secured orders to produce touring car bodies, fenders and other components for both the Oakland Motor Company and Garford Motors, and did quite well. With a very small staff and minimum of invested capital, it did not take much to keep the new company afloat . . . but it managed to take everything that Budd Manufacturing had financially, so that it was dependent on the cash flow from the business within the first year of operations. The founders had not overestimated the potential of the automotive industry. New car production shot up in 1912 to 350,000 units — a 60 percent increase over the number of cars produced in 1911. It sounds simple to say as much today.

Were those simple, peaceful, easy times, for such amazing industrial growth to occur in? What historically signifi-

cant events can we cross reference with the founding of The Budd Company, to better locate it in the history of the world?

It was still the era of Theodore Roosevelt, for although Woodrow Wilson had won the 1912 federal election, the lame duck Teddy Roosevelt was still colorfully in charge at The White House. He had, in fact, been wounded by a would-be assassin's bullet that very year.

American Marines had landed in Cuba to stabilize that nation, which was still in disarray from the Spanish-American war. A British explorer named Robert Falcon Scott had trekked to the South Pole, and perished on the trek back. There was much saber rattling over a variety of issues in the European nations, and Britain's fleet was posturing in the North Sea. The world's largest luxury passenger liner struck an iceberg in the North Atlantic and sank with a loss of 1,500 lives. She was called the Titanic.

In truth, America was still a rural nation with a scant sprinkling of large cities. Major highways of any length were unpaved, rutted roads. They had been constructed for horse and wagon . . . not horseless carriages. Paved streets were found only in the cities and larger towns, and they were cobblestoned streets, or even streets paved with wooden blocks. While such larger communities burned gas lights and electric lights . . . rural America burned coal oil lanterns and candles, and would for another two decades until President Franklin D. Roosevelt, whose success would even eclipse his famous relative who retired from public life in 1912, would found the Rural Electrification Agency to bring electric power to America's villages and farmlands.

Yet that's where Americans lived in 1912 . . . on the farms and in the little towns peppered throughout the 47 states. There had been only 46 states the year before, but New Mexico entered the Union the same year Edward Budd set up shop.

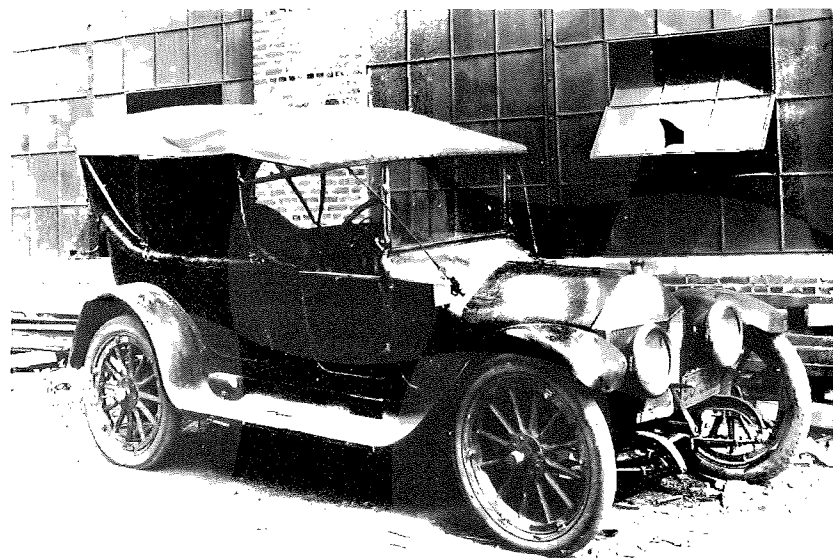
Many of America's little towns weren't connected by road — to anywhere, let alone to each other. They depended upon the railways and the railway telegraph service to stay in touch with the rest of the nation. There was still a rough edge on much of the country . . . rougher as one proceeded West. Cowpokes and townfolk in the wheatbelt and the cattlebelt still carried guns as they went about their

business . . . ladies packed derringers or diminutive revolvers in their purses . . . and all of this with good reason. The West was certainly far from tame. Butch Cassidy and the Sundance Kid had just stopped robbing passenger trains a couple of years earlier.

And yet . . . there was great refinement in the country, too; many men and women of sterling character and diamond hard conviction about right and wrong, who were vitally interested in raising the condition of their nation and the lot of their fellow men and women. These are the kind of people who forged a great nation, and forge it still. Western outlaws and the other disreputable characters who have colored America's history through the years, never did a thing for their nation's development, except blemish and retard it and provide amusement for otherwise bored people who followed their sordid exploits in disbelief.

Edward Budd and his colleagues were men of sterling character. The company they would develop would reflect this. They would always treat employees with equality, and follow a practice of promoting workers to fill management jobs as the company expanded. They would develop many progressive industrial practices for the benefit of all, including the nation's first industrial medical facilities staffed by fulltime physicians, company-paid life insurance for all employees, employee training programs, early forms of what are now called employee involvement groups, company-sponsored programs with financial institutions to assist employees to obtain good housing . . . and a long progression of such things.

They would even enter into unprofitable lines of business when the automobile industry nosedived and caused great unemployment, and they would do this not to boost their company's profits, but to try to maintain the teams of workers who made up that company.



First plant of the Edward G. Budd Manufacturing Company (Top) was located at Tioga and Aramingo, Philadelphia, 1912. — *Courtesy George Newton*. The Oakland all-steel touring car body (Bottom) was primary product of first plant.

EARLY SUCCESSES . . . 1913-1915

A year later, Budd Manufacturing was swimming in orders, and forced to move to larger quarters. Assembly was handled on two rented floors of the Boggs Mill at I and Ontario Streets in Philadelphia. Machine and press operations were housed in a galvanized steel outbuilding, with sheet steel stockpiled under a circus tent on a nearby lot. The Oakland was the "milk cow" account which really sustained the company, but the Garford business had grown substantially, too. The fledgling company was also producing body components for Buick, Willys Overland, Ford, and others.

To join the steel components securely with maximum structural integrity, the Budd team had imported newly developed acetylene welding equipment from France, and were the first to use the acetylene process in American industry. They were also working hard on various electric welding methods, developing their own equipment to serve their unique purpose. No other company was in the business of making steel auto bodies. All processes and equipment had to be developed from concept . . . which meant "invented." Many of these inventions were patented, as was the design and the process assembly methods specified for the all steel bodied car. Budd Manufacturing obtained a patent on the steel body concept, and on the equipment and processes required to build it.

All of this is being presented much too easily. In interviews and speeches in later years, all of those with the company in its formative years would recall how absolutely hectic they had been. Nearly every process was a new process, and anyone with the slightest manufacturing experience knows that new processes, no matter how well conceived and designed, seldom flow smoothly. There was trouble to shoot down virtually every hour of every day in every operation. Steel quality varied, and the company could then exert little influence on its suppliers to abide by its demanding specifications. And even shipping was a headache. The completed bodies and components had to be loaded into freight cars and shipped some 700 miles to the plants in Michigan. Indeed, Edward Budd, Joseph Ledwin-ka and the others who had founded the company often

stayed within the plant around the clock, cat napping at their desks or benches when fatigue overcame them.

These were not men simply making a living, but men on a crusade. In addition to wrestling with product design problems, material quality problems, transportation, they were always wrestling with new ways to form and fasten the metal, and experimenting with the metal itself, to seek ways to improve its strength and malleability. They also did a great deal of innovative die work, and press development work. They established criteria for whole new generations of sheet steel forming equipment, and for industrial handling equipment. It greatly improved product quality and increased the productivity of their operations.

One of the early problems they wrestled with was the high cost of steel . . . a problem the company and its industry would always face. The first steel automobile bodies required steel sheet stock approximately 7 feet wide by 13 feet long. The high cost of such huge sheets in those times made them unfeasible for automotive body use. Budd Manufacturing devised methods for flash welding sheets of half that width, with a clean, high strength joint. The sheets were seized in electrode jaws of two huge welders. Electric current was applied as the edges of the two sheets were moved flush against each other under pressure. Current level and contact timing were crucial. Fusion of the steel caused a great flash of light, and it was permanently joined with the strength and characteristics of a single, huge sheet.

It must always be remembered that many entrepreneurs in the automotive business were financiers first, and not men of practical experience or engineering ability. Many companies did not succeed. One that didn't was Budd Manufacturing's second largest customer, Garford Motors. Garford went into receivership, leaving hundreds of thousands of dollars of orders in process with Budd, and hundreds of thousands owing for product already delivered. Budd Manufacturing had grown so fast that in 1913 it already had 400 workers on the payroll . . . many of whom were dependent for their livelihood on the Garford business.

Edward Budd went directly to John N. Willys, the principal shareholder of Garford, and implored him to make a partial settlement to keep his own company from going under. Willys gave him a check for \$100,000, which Budd

gave to an employee to "run with to the bank," and the Budd Manufacturing weekly payroll was met with just a few hours to spare.

Budd's eloquent presentation on behalf of his workers and Budd Manufacturing netted him much more than a check, however. That presentation with Willys created a relationship that would last for many years, for the good of both Budd Manufacturing and Willys Overland.

That same year, Studebaker acquired the assets of the defunct Garford Motors, and soon became a primary Budd customer, and would be until Studebaker withdrew from the automobile manufacturing business.

Of singular importance in 1914 was another major meeting, although without success in the one described above, it would not have been of great benefit. John and Horace Dodge had decided to start their own automotive company, and the hearts of Budd management quickened. The Dodge brothers had considerable background in machining and metalworking, and since they were forming a brand new company they had no reason to be prejudiced in favor of wooden automobile bodies. Horace Dodge, moreover, had been a senior executive with Ford Motor Company, which was then the largest and most successful automobile manufacturer in America.

The Dodge brothers embraced the all-steel car body concept, but their only misgiving was whether or not Budd Manufacturing could deliver them on time in the huge quantities they anticipated.

Initial orders from Dodge Brothers totalled roughly 5,000 touring cars, and a like number of fender sets. The bodies wholesaled at \$42 each, and the fenders at \$2 per set. In addition to this, the Dodges agreed to pay for up to \$25,000 of Budd's tooling costs. The 1915 Dodge all-steel bodied touring car was a dramatic success. Budd Manufacturing was to design and produce all of the car bodies ever used by the Dodges throughout their lifetimes.

Now, with 600 employees on the payroll, Budd Manufacturing moved again to larger quarters at Stokely and Hunting Park Avenue in Philadelphia. Until then, the company had been producing 100 bodies per day. The new facilities increased capacity to 500 per day . . . and production soared to those levels almost instantly. It was an amazing feat.

Each day, 500 steel automobile bodies, fenders and other components left the Philadelphia plant for the Dodge Brothers in Highland Park, Michigan and for other major Budd customers, including Ford.

Within a year's time, such output would be doubled. By 1916, the Edward G. Budd Manufacturing Company had more than 2,000 workers on the payroll — a threefold increase over the year before. Moreover, the company was aggressively looking for an additional 1,500 workers to handle projected production increases. In November, 1916, employees celebrated completion of the 100,000th Dodge touring car body . . . less than two years after receiving the initial orders.

The young company, despite its phenomenal growth in just four years, was very tightly knit, and progressive in its policies. The ideals and philosophies of the founders would be handed down through the years as employee ranks swelled, and expanded and enunciated by new workers who came into the company as it progressed. Budd was one of the first manufacturing companies in America to employ women on a regular basis at regular pay rates in jobs equal to those performed by men, and in fact one of the company's first hires after its founding was a woman. A young widow with an infant child stepped into the newly opened office and captured everyone's attention with her perfectly enunciated words and exuberant delivery. She needed to support her child, and would do what she could to fit in, she declared. When asked what she thought she would like to do that would be of benefit, she said that she would run the company phones, which she believed to be a vital task, since the phone system was the primary medium for contacting customers. Her name was Laura Zimmerman, and at the company's 25th Anniversary in 1937, Edward Budd would single her out for praise.

So intent was Budd Manufacturing's management on maintaining employee morale, and presenting company policy and goals to its workers that they began publishing a weekly newsmagazine in 1916, called the Buddgette. This also made Budd Manufacturing one of the first companies in the world to initiate an employee communications program, a major step to cohesive labor-management associations, yet one which many companies of 2,000 or more

employees had not done as late as the mid-1980's.

A picture caption commemorating the 100,000th Dodge touring car body gives an insight into the Budd production philosophy and work habits of the Budd production teams:

"Just as from an automatic machine, the bodies pass through and out from our fourth floor Assembly Department. Everybody knows what to do, and no move is made without cause or result. This week the 100,000th touring car body passes through. Good work! Keep it up until you turn out Body # 1,000,000!"

And they would build 1 million all-steel car bodies . . . within the next five years . . . despite a year spent in defense work during the Great War of 1914-1918.

Budd Manufacturing also had an athletic association that was very active and represented all departments, its own symphony orchestra, a company sponsored thrift savings club at a Philadelphia bank, where accounts could be opened with a single penny if need be, and all depositors earned interest at a rate of 3 percent per annum.

The company also had hot food canteens in every department, providing workers with nutritious hot meals, soups, sandwiches, beverages, at very nominal rates.

Budd Manufacturing had its own medical department, too, and fulltime doctor. He was the first fulltime industrial physician in America, and entered this career not of his own volition, but at the urging and appeal of Edward Budd. Dr. Edwin H. McIlvain had been in private practice near the Budd plant, when he was summoned to examine a worker who had fallen into a deep sleep, and could not be aroused. The young doctor diagnosed the man's malady as a form of epilepsy, and Edward Budd was astounded at this, for the man seemed fit and hearty in all other respects. He told the doctor that companies should have their own medical departments, and examine all new employees to make sure they're matched to the right kind of work. Had Budd management known of the worker's condition, they would have assigned him to duties where his seizures posed no especially strong threat to his safety. Moreover, he now wondered what kind of work he should assign the man, now that he knew of his condition. Clearly, it was a decision an industrialist could not make, and only one that an industrial physician could make.

He convinced the young doctor that matching workers to jobs that best suited them physically and temperamentally was of vital importance to them and their coworkers. Then, too, Budd Manufacturing offered great opportunities for launching preventive medicine programs, as opposed to the handling of routine first aid work. Instead of a small house call practice, the doctor would have a modern hospital and be charged with the preventive and remedial health care of more than 2,000 workers. The young doctor did not foresee it, but thirty years later, his company hospital would be caring for 20,000 workers, and he would expand it and launch a special rehabilitation clinic to help retrain wounded World War II veterans for active working roles. He wrote a regular health column in each issue of the *Buddgette*, covering medical problems from hernia to hepatitis . . . from back strain, to eye strain . . . and he would write enough popularized medical advice and health care articles to fill several volumes.

So tightly knit was the Budd Manufacturing team that there was even a special one-day shutdown called the Edward G. Budd Day . . . a "splicing of the mainbrace," when all employees and their families joined Budd and his managers in a colossal picnic and outing. He chartered steamships to take them down the Delaware River to Augustin Beach Park . . . thousands of them.

The company already had its first slogans: "If it's not steel, it is not modern" . . . "Everybody wants Budd All-Steel Bodies" . . .

But everybody didn't. Some of the early automakers had invested heavily in standing timber. Their vast hardwood reserves would provide the raw material for wooden structural automobile body parts well into the 1920's. To offset the claims of all steel body proponents, which were legitimate, some of the established companies favoring wood launched their own campaigns decrying steel.

But for the economic considerations of the hardwood reserve investments, and ownership positions in some of the carriage manufacturing houses, the entire industry would have adapted the all steel body much more rapidly, and Budd Manufacturing would have grown ten times as fast as it did.

Nonetheless, Budd Manufacturing was not waiting for the rest of the world to catch up. Having a motherlode order with the Dodge Brothers that had bloomed from some 5,000 touring car bodies in 1915 to ten times that quantity in another year or so was a rags to riches success story that would have made many entrepreneurs complacent and content to sit back and count the checks as they poured in.

But the players on the Budd team were out to revolutionize the automotive industry . . . not just in America, but throughout the world. They were taking the all-steel car concept forward as fast as they could develop the necessary forming and fastening technology. Moreover, they had to also wrestle with ways to increase production without raising product costs, to maintain a high standard of quality, despite very high volume production, and to assure Dodge Brothers, Ford Motor Company and others, that Budd Manufacturing was a reliable source of supply, and always would be.

Meanwhile, Edward Budd and Joseph Ledwinka and their associates also kept their eye on the future, and designed products which would appeal in that future. They had, as we have said, "the vision," and knew that by 1915 they had only taken a few steps toward their product and process goals. They convinced Dodge Brothers to take the pressed sheet steel car to the next logical stage of development — a steel roofed car which would increase driver and passenger safety by improving vehicle integral strength and enhancing driver and passenger vision. They developed a pressed steel roof which attached only at the windshield, A-pillars and the rear upper body of the touring cars. This one-piece all-steel top, applied in 1916, was the world's first pillarless hardtop — a design innovation that would surface again and become the rage in the late 1950's through to the 1970's. It had no center pillars, and gave driver and passengers an unobstructed view in all directions.

The Dodge brothers could not know it, but the steel "hardtop" was only a transitional design to pave the way for a truly amazing new body style . . . the all-enclosed steel sedan. They produced and presented the prototype to the Dodges in 1917, and received an enthusiastic reception. The forming technology necessary to achieve this had been

a staggering new task.

The touring car body alone had 2,000 different components, and the enclosed sedan increased the number of parts. Moreover, it required the development of parts with even greater strength, for the entire structure was designed to handle rollover crashes without major structural failure. Budd Manufacturing continued to improve both its oxygen-acetylene welding techniques, and to develop new electric resistance welding equipment that would join the components with amazing strength.

The Dodge brothers were not the only automakers achieving phenomenal success in this early era, of course. Henry Ford had the largest company in the industry, and its share of market was increasing year by year. An innovative marketer, Ford offered the industry's first incentive rebate in 1915: \$50 off on the purchase of any Model T. This was because Ford had passed its sales targets and sold 300,000 Model T's between August, 1914 and August, 1915. Total Ford production since 1903 now reached the 1 million mark. In 1916, Ford Motor Company would purchase a vast corridor of land running along the Rouge River in Dearborn, Michigan, and would build the highly integrated Rouge Industrial Complex there.

Nineteen Hundred and Sixteen turned out to be a wonderful year for the automotive industry generally, and for Budd Manufacturing in particular. In fact, a sister operation, the Budd Wheel Company was formed, and knew instant success. Having taken the all-steel automobile body through to the enclosed sedan stage, the Budd team extended the all-steel theme to the car's wheels as well. While most cars rode on wooden spoke wheels, the Budd Wheel Company was now producing all-steel wire spoked wheels.

It was the year in which President Wilson signed the Federal Aid Road Act for establishing a national highway system. This Act forced all the states to form highway departments to build roads to convey the U.S. mail to all communities. The federal government would pay half the costs.

It was also the year in which Charles Nash resigned from General Motors and formed Nash Motor Company from the remains of the failed Thomas P. Jeffrey Company. Nash would be an excellent Budd customer for several decades.

It was also the year in which man first flew the Atlantic.

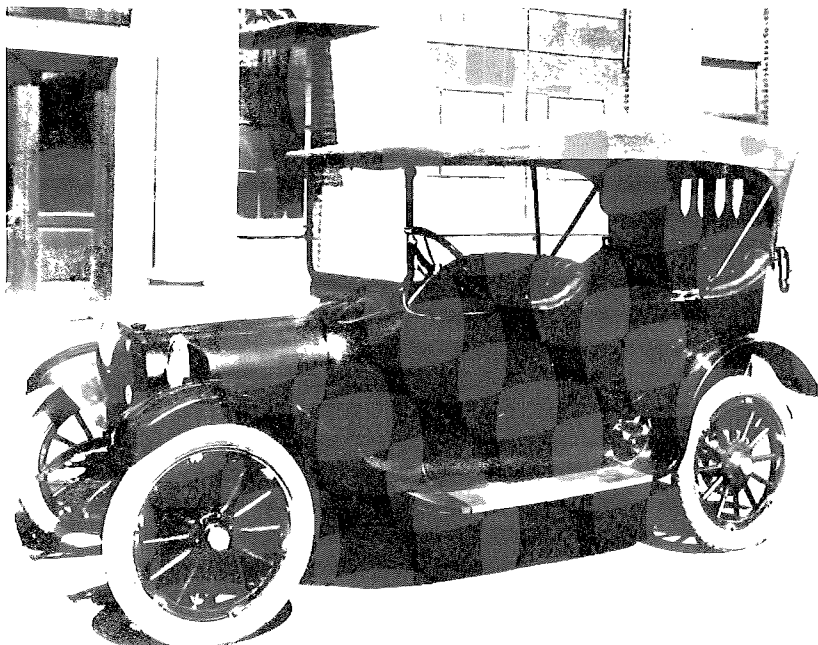
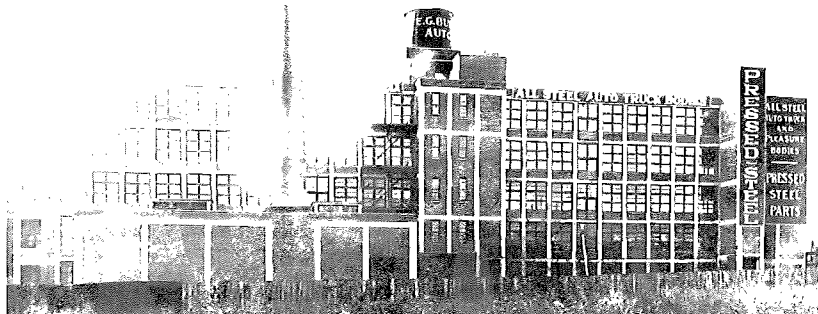
An easterly crossing was made from Newfoundland to Ireland in a multiengine plane, by Royal Flying Corps officers John W. Alcock and Arthur W. Brown of Great Britain.

While women could not yet vote in federal elections, they could be voted into federal office, and in 1916 Jeanette Rankin of Montana became the first Congresswoman.

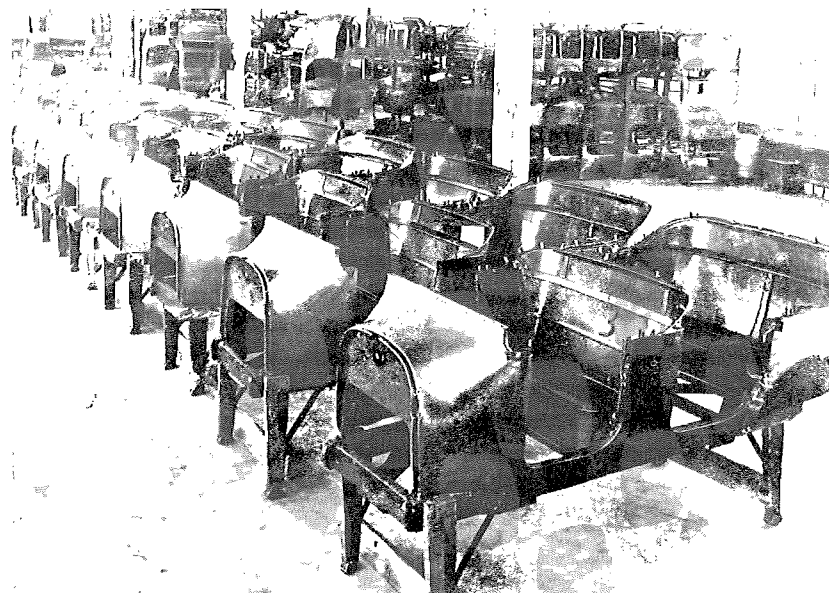
Automobile production broke the 1 million mark by a long lead; some 1.6 million cars were manufactured in America — twice the production volume of the year before.

It should be noted that industrialists like Edward Budd and others were driven by certain altruistic principles, and not merely in pursuit of profit. Henry Ford, for instance, organized a team of industrialists, scholars and statesmen, and chartered a "Peace ship" which they sailed to Europe in an effort to end the Great War which had been raging since 1914. Ford believed that his negotiators could act as intermediaries, uncover the various issues and find ways to resolve them. The mission came to naught, although they did indeed meet with leading statesmen from all the involved nations.

Edward Budd suggested his own altruistic leanings in an article he wrote in the December 1916 issue of the *Buddgette*. He stressed to all employees that, "You are not working *for* someone, but *with* the Edward G. Budd Manufacturing Company." He went on to expound on the importance of cooperation between all workers. A man who would not tolerate managers or foremen talking down to shop floor workers or flaunting authority, Budd wrote that he wanted every worker to speak out on all issues, to present his or her view on the best way to get the job done. He had started on the shop floor himself. His plan was to elevate promising workers to supervisory and management ranks as the company grew. The Edward G. Budd Manufacturing Company did this enthusiastically for nearly fifty years, and thereafter, too, to the extent that it could.



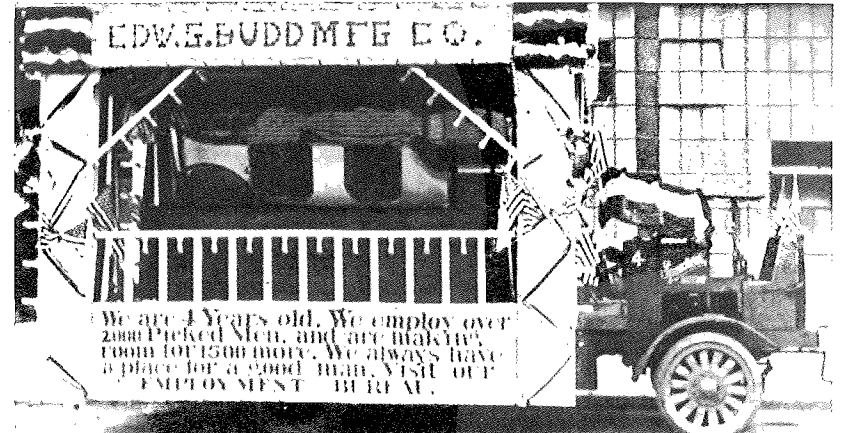
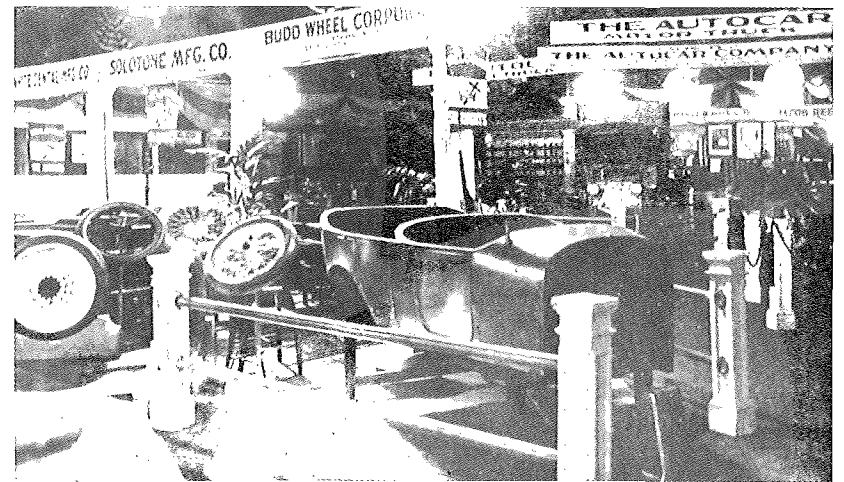
Budd's second plant (Top) at I and Ontario Streets, Philadelphia, produced the 1915 model Dodge touring car (Bottom, outside Budd plant). — *Budd Photo.*



Dodge touring cars in production at Budd's I and Ontario plant in Philadelphia, 1916. — *Courtesy, Automobile Quarterly.*



Fabricating steel-wire spoked wheels at Philadelphia plant in 1916. — *Budd Photo.*



Budd steel-wire spoked wheels and all-steel touring car body on display at Philadelphia trade show, 1919 (Top). Budd used float (Bottom) in 1916 Philadelphia parade to attract new workers. It demonstrated acetylene welding methods. — *Budd Photos.*

THE GREAT WAR ERA

Historians record periods of war as "eras," to reflect the social, political and economic changes that occur in such periods. They surely do not do it to glamorize this unattractive and inane consequence of clashing national or group interests.

Budd workers had been going off to war almost as soon as the company was founded. Some served in the Texas campaigns against Mexican bandits and raiders in 1915 and 1916. And in 1917-1918, many would serve with the American Expeditionary Force in Europe. An entire company of the Second Pennsylvania Artillery was made up of Budd employees.

Despite America's entry into the Great War, the momentum of automotive sales increased in the early months of the year, and a new national production level of 1.75 million cars was achieved.

The Edward G. Budd Manufacturing Company converted to defense production within a few weeks. Dies were developed to form steel helmets for the "doughboys," and these were produced at a rate of 25,000 per day. The company also manufactured shell casings, cast artillery wheels, and other ordnance material. The War Department selected the Dodge touring car as the official U.S. Army staff car, so it was production as usual on the Dodge all steel bodies, fenders and other components.

When Edward Budd closed his plant so that workers could demonstrate in a display of patriotism, he told them:

"While all of us cannot go to the front, we do not feel there is any doubt in the public mind about our patriotism. In our uniform of overalls and jumpers, in the industrial plants, we are all recruits of Uncle Sam."

War Department representatives asked the Budd Wheel Company if it could produce an all-steel disc-type wheel to replace the wire spoke wheels on the Dodge touring cars. Spoke wheels were easily damaged on the rough roads at the front, and in other areas where they were employed. Budd Manufacturing developed new dies, and Budd Wheel soon began producing the company's first all-steel disc wheels. These were applied to the command staff car used by General Pershing, who headed up the American Expedi-

tionary Force. The driver of that car, incidentally, was a soldier named Edward Rickenbaker. In a few months time, Rickenbaker would become noted as an outstanding American fighter plane pilot. He would later form Eastern Airlines, and head that company for several years.

Even though Edward Budd was nearly exhausted, as he wrestled with the problems of converting to defense production, he was not so taxed that he failed to address a problem that he found particularly perplexing. The war had increased the number of deaths afflicting the families of Budd workers. Edward Budd was greatly concerned about the impact of an employee's death upon a worker's family; particularly the financial impact.

He sent a memorandum to all employees, describing the situation as he envisioned it. If a wage earner died, everyone wanted to give assistance to the surviving family, he wrote, but this is often construed as charity, and adds to the emotional grief of the family.

He had decided, he advised all employees, to provide free life insurance for everyone, with a maximum benefit of \$1,000 for those who had served at least four years, and a lesser amount for those who had been with the company for a shorter period. And so he did.

The federal government imposed a special luxury tax on automobiles late in 1917, and this served to discourage purchases and hold production in check. With all the auto companies converting to defense, the tax probably was not necessary. Total new car production fell by almost 50 percent.

The women of 1917-1918, who still swept along as they walked, in the profuse, ground touching dresses styled in an earlier century, swept no less gracefully into the shops of the two Budd companies to take up responsible jobs vacated by those who had gone to war. The war ended in November of 1918, and Budd Manufacturing and Budd Wheel returned to peacetime production as quickly as they had converted to defense. They added a new product, too. At Budd Manufacturing, a press department that formerly manufactured ammunition, began forming plow shares from heavy sheet steel.

PRELUDE TO THE ROARING TWENTIES

And now, in 1919 . . . hemlines of American women still swished the ground, but they'd soon be cut above the knees . . . and the transition would not be gradual, but dramatic! The twenties were towering monumentally in the future, and all of vision could see them, and wanted to rush in headlong and realize the promise of a new kind of personal fulfillment . . . in a liberated world that was also blessed with great material abundance . . .

But there was much unemployment in the land . . . and inflation . . . for the federal government was cranking out money in unprecedented volume, far in excess of goods and service which could be purchased, and the price of things shot upward to soak up the abundant and cheapened money. However, wages did not respond accordingly.

For all of that, automobile production went back up to the 1.7 million level, and the Ford Motor Company — an excellent Budd customer — was accounting for a full third of national production. Another good customer, Studebaker, got out of the wooden carriage business and concentrated its efforts on automobiles with steel bodies or steel components, which was also to the great advantage of the two Budd companies.

The early part of 1919 was marked by strikes for higher wages — but not at Budd Manufacturing or Budd Wheel — and shortages of raw materials and fabricated parts . . . and by mid-year, consumer demand far outstripped industry's capacity to produce.

The two Budd companies were now huge in comparison to other automotive supply companies, and Budd Manufacturing was in fact all-powerful, since it held worldwide patents on the all-steel car body, and on the processes by which it could be produced. No automaker anywhere in the world could begin producing steel bodied cars, without infringing on the Budd patents.

Yet the managers of Budd Manufacturing did not hold their technological secrets for ransom. To the contrary, the Budd teams bent over backwards to help major U.S. automakers adapt and utilize the Budd technology successfully. They were satisfied to be able to participate in the production of steel bodies and components, and to develop the

tooling and fixtures required for steel body assembly. They wanted the all-steel car body to become the standard for the world, and it was clear to them that this would not occur unless the automakers became proficient in the Budd technologies.

Some business historians and financial writers have suggested this policy was a mistake; that Budd should have followed a strict licensing policy and extracted sizeable royalties from all manufacturers who used its methods. But they do so from hindsight, and without appreciation for the times. Even though the all-steel car body was superior from virtually every standpoint to the wood and steel composite cars, the latter predominated, and would do so well into the 1920's. It was not until 1925 that the American market was equally divided between all-steel and wood-steel composite car bodies.

Despite the benefits of using steel that are so very obvious today, and the equally obvious structural and production disadvantages of wood, the balance between the two back then was a very fine one. Since the steel car body patents were all encompassing, there is little doubt that Budd Manufacturing could have charged extremely high royalties to its licensees. Yet to the extent these high royalty costs would have offset the economic advantages of steel, conversion of the industry to all-steel bodies could have been retarded.

The men of Budd plied their craft and engineering expertise with high ideal, and wanted the products of their invention to prevail for the benefit of all. These were the kind of men who knew that no matter how much money one could make, its impact upon the spirit would have a very hollow ring, if the intrinsic reward of self accomplishment and meaningful social contribution were not also experienced. Indeed, Budd's policy of charging only a nominal fee — if any were charged at all — and its willingness to work with its customers at all stages of product design and production, had their own long range rewards. This close cooperation between Budd and the leading automakers of America and Europe resulted in strong business and personal relationships that have been perpetuated through to this very day . . . even if the authors of these policies have long since departed.

Budd Manufacturing was content to share in the production of automobile bodies and components, along with its customers, and to produce the dies and other tools which they would employ in the production process.

The results of the success of this policy were clearly evident in July, 1919, just seven years after the founding of the Edward G. Budd Manufacturing Company. Chief engineer Joseph Ledwinka described the firm's position quantitatively, and with his engineer's skill.

The plant at Philadelphia, he recorded in a special report, had over 15 acres of floorspace, and its 80,000 window panes alone would cover three full acres.

Budd Manufacturing had processed nearly 20,000 tons of steel since its founding . . . enough sheet steel to cover another 8,500 acres . . . which would be a very big sized ranch. Among other products, Budd had produced 600,000 all-steel car bodies . . . enough to stretch more than 1,000 miles — from Boston to Chicago.

In a year's time, the Philadelphia plant would receive 3,000 train car loads of raw material, and ship 7,000 car loads of finished product. A full trainload left the plant every day of the week.

When sheet steel arrived at the plant, it was carefully inspected on both sides and stamped "Good Side," on the one of best quality. The huge sheets were then cut to press blank size on rotary shears, which sliced through as easily as they pass through paper. Ledwinka calculated the combined cutting rate of the shears at 60 miles of steel per hour. The steel blanks were conveyed to the presses for forming, and there were 200 of them operating at maximum output, which ranged in capacity from 15-to-700 tons.

After forming, the sheet metal components were joined by welding; especially by Budd's own innovative electric welding methods. There were 235 electric welding machines in operation, many of which were custom-designed and built by Budd engineers and mechanics. These machines used some 40 tons of copper every year for electrodes and transformer parts.

Acetylene welding still played a big role, too, although it would become much less significant in future years. The company had converted 500 tons of carbide to acetylene gas since 1912, and burned some 4.3 million cubic feet of acety-

lene and 5 million cubic feet of oxygen.

If Budd Manufacturing's product and plant engineering drawings were laid end to end — they would form a carpet 25 miles long with a single year's output.

Ledwinka did not mention that production was now based on an endless conveyor material handling system, which kept parts in continuous process flow. He also neglected to detail the number of workers employed by Budd that year, which is estimated in retrospect to have been around 4,000. And some of these were women, too. Not just the women of the office force like Laura Zimmerman, who now headed up a large staff of telephone operators, but women who worked in the press shops and other departments as well.

There were more than enough women employed to keep two baseball teams fully staffed. Their jerseys identified them as the Edward G. Budd All-She Baseball Teams.

The company also took its old thrift savings program a big step forward, and organized its own employee building and loan association . . . a company sponsored bank; similar to the savings and loan companies that now flourish all over the nation.

Edward Budd grew concerned about the training of his workers as 1919 progressed, and publicly objected to growing public misapprehensions that products made in Europe were superior to those produced in the United States. He not only objected, he bristled at the thought, for no European automaker could yet build steel bodied cars that even approached his own steel car bodies in quality — and never would, until Budd engineers and workers showed them how.

Edward Budd told his employees through a personally written article in the Buddette that he favored a return to an apprentice training system similar to that which existed at the turn of the century. It had provided a hard, but thorough learning experience for tradesmen and future managers, including Budd himself.

Since that time, though, promising employees were being trained for senior jobs in manufacturing by being given work experience in a variety of departments on a rotating basis, gaining some overview of all the operations, but no specific strong grounding in any of them. Such programs

lacked the depth required to produce good workers or good managers, he believed.

"It is a matter of years before one of us can become skillful in a single art," he wrote in his article, "and a smattering is more dangerous than no information at all". . . . He went on to explain that a worker with a smattering of knowledge and skill would "produce poor products at high cost," and would not be able to fulfill higher management roles when called upon to do so.

Four year apprenticeship programs were organized for machinists, pattern makers, electricians and other skilled tradesmen. Each apprentice would spend five hours every week in the classroom, learning machine shop mathematics, engineering drawing, industrial history, civics, English and economics . . .

Edward G. Budd, Jr., son of the founder and destined to succeed his father as chief executive officer, successfully completed a four year machine shop apprenticeship. He did this after receiving a four year degree from Wesleyan College.

How tightly knit were the Budd manufacturing teams in this remarkable year, which would precipitate America into the fabulous 1920's? A Budd worker hinted at this when he composed a verse and sent it to the Buddette magazine for publication:

"Best in the Country,
United and True,
Dependable, Upright
Deserving clear through,
Say, I'm glad I belong to this bunch . . .
What say you?"

And Edward Budd was proud, too. So proud that he decided to take Budd technology to Europe, and plant seeds to convert that continent's cars to the all-steel body concept. He also wanted to bring some European technology home with him. He had heard of a steel disc wheel manufactured by Michelin that seemed to be superior to his own product in design, and wanted to study it and its manufacture and perhaps receive permission to adapt a similar design to his own production requirements in America.

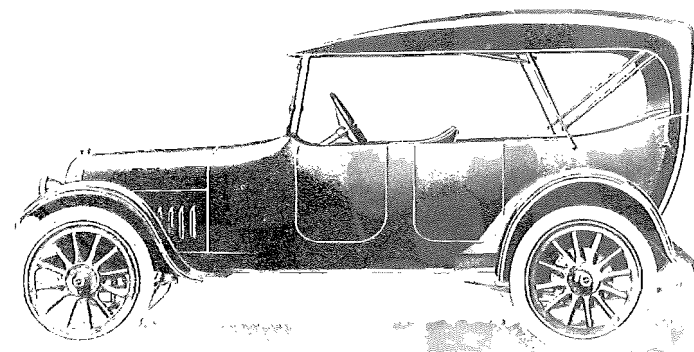
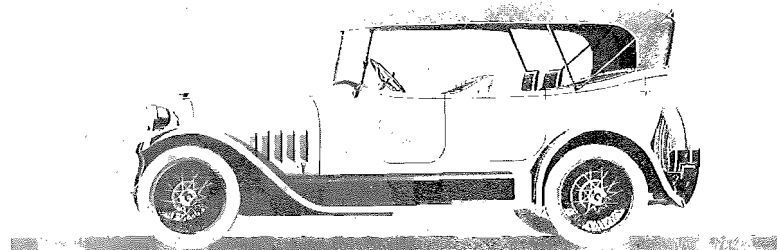
Before he left, however, he employed cinematographers to make an extensive movie that showed the Budd manu-

facturing methods. He did not think those who had not visited his plants could comprehend their high productivity, since they had never seen anything like them on the continent. This was the first known use of an industrial film for marketing purposes, and it was to prove very successful. Budd's engineers and sales executives made presentations to Andre Citroen in France, to officials of Morris Motors in England, and to various German car firms. None could resist, but negotiations would be protracted.

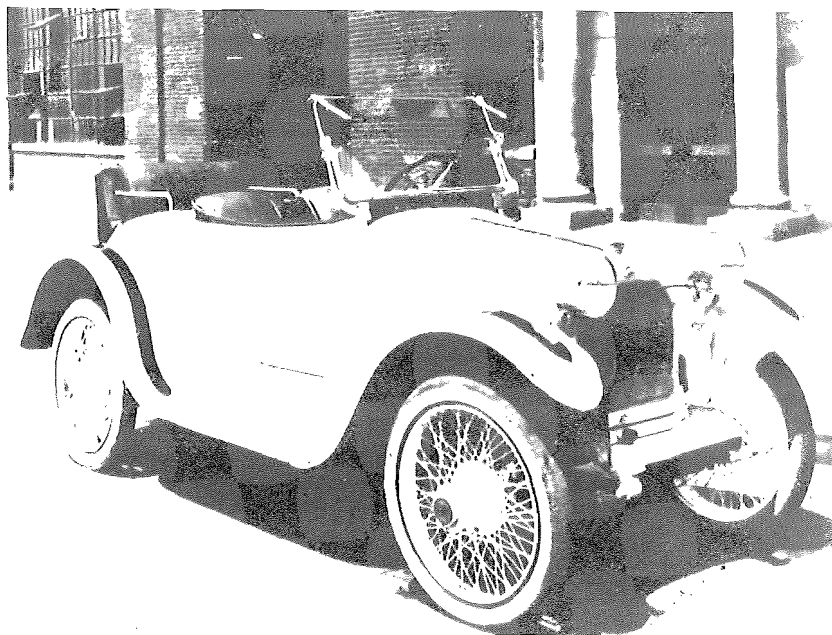
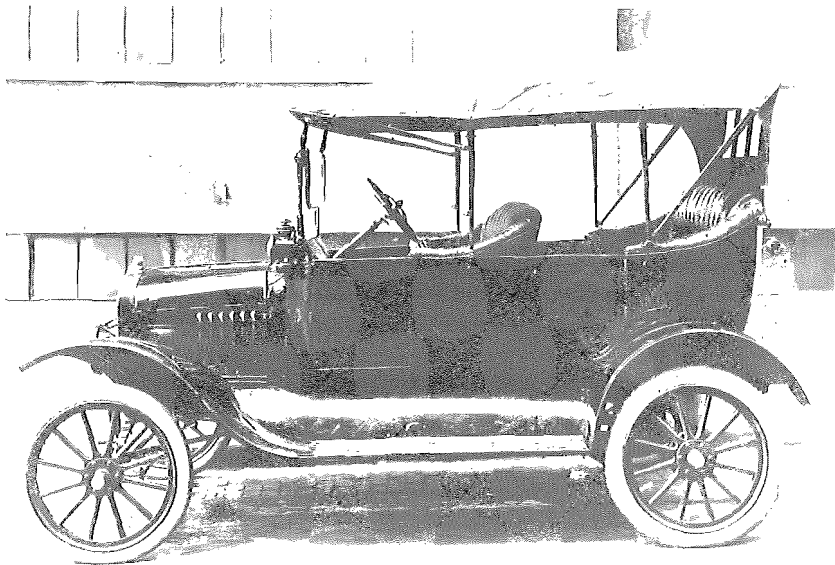
The Budd team did study the Michelin steel disc wheel, examine Michelin production methods, and were successful in obtaining a license to produce a Michelin-type wheel in the United States. It was superior to other steel disc wheels in design because the gauge of the disc was tapered, being thickest at the hub and growing increasingly thin as it flared out toward the rim. Naturally enough, Budd Wheel engineers saw ways to perfect this design, and to improve the manufacturing methods.

Budd began producing the all-steel enclosed sedan it had designed before the Great War, and delivered a few of these to Dodge Brothers. Budd Wheel was producing both wire spoke and steel disc wheels. Budd engineers and designers were working on very advanced steel body designs. Industrial engineers were hard at work on advanced new equipment, press modifications, and an extensive array of worker safety guards and other devices.

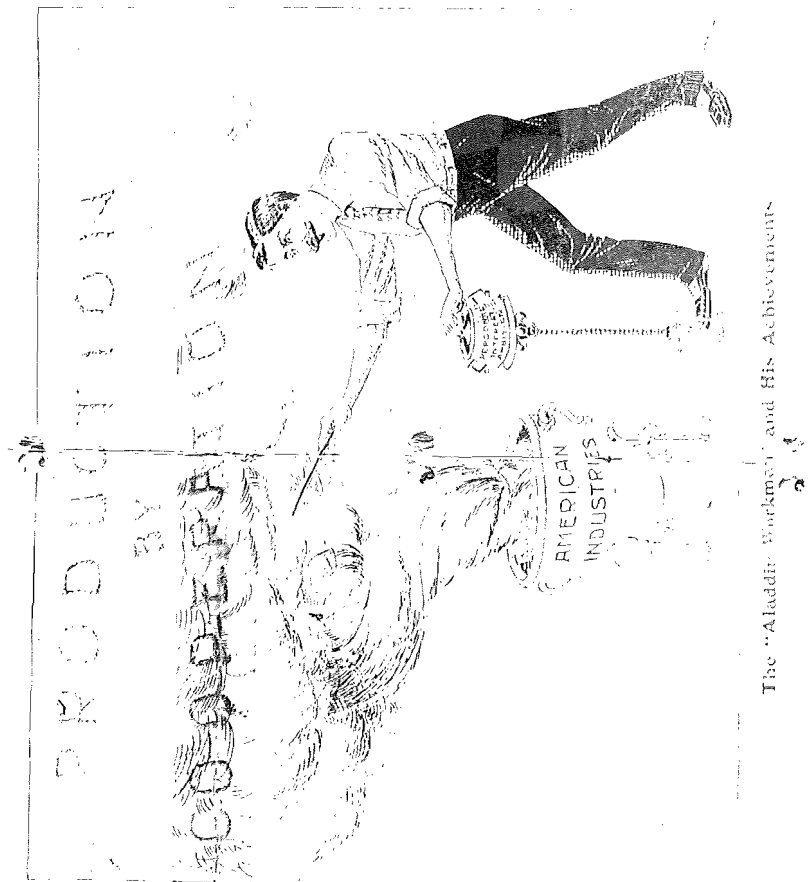
And now . . . Edward G. Budd and the members of the two Budd companies seemed to be saying . . . "Come on 1920 . . . The Budd team is ready for you!"



Budd designed automotive bodies for its customers well into the 1930's. Shown are engineering renderings for 1919 Oakland and 1919 Studebaker. — *Budd Archives*.



All-steel bodies for Ford touring car (Top) and Willys Overland roadster (Bottom) were high volume products in 1919. — *Budd Photos.*



The "Aladdin" Workman and His Achievements

Cartoon from a 1920 issue of the *Budgetette* underscores philosophy of Edward Budd that cooperation between all members of the company was essential to efficient production.

A DECADE OF ROARING ENERGY . . .

1920-1929

Women's skirts above the knee? You bet! And why not? They had much to kick their heels about. Congress enacted the 19th Amendment to the Constitution in 1920, enabling American women to vote in all local, state and federal elections. Now they spoke out more boldly, and their new assertiveness helped stimulate America's men into action. The days became absolutely dynamic.

The cars became absolutely wonderful: Big, classey, gutsy, opulent! They also became more powerful — very, very fast. Congress had also passed the 20th Amendment to the Constitution outlawing the manufacture and sale of alcoholic beverages.

In some respects this helped support a niche market for high powered, high speed automobile engines — cars used to transport illegal liquor and those who trafficked in it over the nation's highways — and similar cars for special law enforcement units to pursue the perpetrators.

Yet this decade which would roar and kick the nation's economy to near stratospheric heights . . . would start out with weak economic health . . . and end with a massive economic stroke!

One Budd manager explained what was happening in a little monograph prepared for fellow employees. The nation's money supply had grown some 71 percent between 1913 and 1918, he pointed out. However, the Gross National Product, which includes the dollar value of all services performed at a cost and all goods sold, had grown a little less than 10 percent in the same period. Since there was a 61 percent increase in money in excess of trade, there was a proportionate decrease of 61 percent in the spending power of the dollar. Since the supply of money in circulation is used only for procuring goods and services, it followed that the cost of these things increased by 61 percent in the same period — an average inflation rate of 15 percent per year. Prices were so high when 1920 rolled around that people flat out stopped buying.

The Budd company store in Philadelphia began selling clothing at cost, and buying up large volumes of fruit and vegetables at wholesale for resale at discount prices to all

employees.

Budd Manufacturing had also begun providing "Americanization classes" early in the year to help teach employees to read and write English, and to learn the nation's history and governmental structure.

But by October of 1920, the gathering recession forced the company's first major work force layoff. It had not been anticipated.

"The abrupt curtailment of business after years of constant expansion" had been a severe blow, Edward Budd reported to his employees. "The public has quit buying in anticipation of lower prices."

While this had necessitated layoffs, he said, ". . . all those laid off will get their jobs back, even if they're employed somewhere else meanwhile . . . We will try to complete dies early for the new models and try to develop new models to take up the slack and make us ready for the recovery."

Edward Budd did not say things lightly, or merely to appease or attain other political effect. What he said he would do, he did. While production was temporarily hamstrung by an economy marked by severe inflation, his research teams were hard at work on exciting new steel car concepts in the "secret" design department. Budd Manufacturing and Budd Wheel would both be ready to capitalize on the economic upturn.

Every effort was made to keep workers on the job. Projects were pushed forward to keep machinists and die makers busy on developing the new dies and fixtures — even though there was no way of knowing when economic conditions would improve and reignite the smoldering new car market.

One of the major programs at Budd, and at most of the principal automakers, was a concentration on reducing product costs. Moreover, the program sought to increase quality at the same time. It was very hard and very basic, but economies were gained in streamlined production methods, in product design, in more careful procurement of raw materials . . . and costs did indeed come down at the same time products were improved. Despite the recession of 1920, close to 2 million cars were manufactured. However, most sales had occurred in the first half of the year, and

very few thereafter. Total annual production was at a new record, yet in the latter months of the year, hundreds of thousands of workers were unemployed, and World War One veterans were selling apples on the streets of the major cities. Automotive sales figures for any one-year period can lead to very erroneous assumptions about how good or bad a year it had been for the nation. Auto sales had hit an all time high, but 1920 was a rotten year, and in some of the large cities, unemployed veterans groups marched on their city halls, demanding relief from a harrowing period in which they had no income, and prices had risen out of sight.

It was not until mid-1921 that the economy showed signs of recovery. Prices had begun to fall, including the prices of cars, and consumers who were employed started purchasing once again. The economy picked up, and Budd began recalling laid off workers. Automobile sales picked up substantially, even though the economically recessed portion of the year caused auto production to be off by some 500,000 units from the level attained in 1920. But that was the end of that! Now America was really in the era of the automobile. While sales were off sharply for the year, the weekly sales rates from autumn on were setting new records, and growing stronger with a heady consistency. The horse and buggy had no place in the 1920's! Americans wanted mobility! And they wanted ownership of assets . . . a piece of the national production!

Tens of thousands of young Americans had served in France during the war years . . . Poor boys from the rural hinterlands had rubbed elbows with students from Yale and Harvard, and buddied up with workers from the big cities like New York, Philadelphia, Detroit, Pittsburgh . . . They had gotten to know the style of these more affluent men, and they were resigned to emulate them and bring themselves higher up on the social scale after it was over "over there."

"How you gonna keep 'em down on the farm, after they've seen Par-ree?" a popular song asked of the whole nation. It was a song sung in music halls and in clubs and meeting places, and it resounded from gramophones in tens of thousands of homes, and was a fantastic seller in sheet music . . . there was no radio in America yet . . . but it was surely coming, for public radio had already been introduced in England.

"How you gonna keep 'em down on the farm?" . . . You couldn't! Nobody could! The cities swelled with workers or would-be workers from the rural areas . . . with immigrants from abroad, rushing to America any way that they could to escape an even worse recession afflicting the European nations. No agrarian or mostly agricultural nation now, this America! Now it was industry! Mass production, highly mechanized industry . . . and the driver and catalyst of most of it was the American automobile industry! It would never have grown beyond its 1922 size and strength, but for the ability to build cars with steel bodies and step away from the wooden carriage processes that had been handed down from the era of the horse. The handcrafted wooden bodies could never have been developed in the astounding numbers that the industry would soon attain.

Budd Manufacturing added a new building to the Hunting Park, Philadelphia complex to increase capacity, and the company was serving virtually every major U.S. automaker that would survive through to the 1980's . . . and some that would not, too. Now . . . Americans of all walks of life took hold of the day . . . their day! They worked hard and they played hard, and demanded their part of the new era of industrialization . . . the new era of mass produced consumer products . . . the new era of opportunity for both men and women.

Warren G. Harding, 29th President of the United States, rode down Pennsylvania Avenue on inauguration day in an open touring car . . . all before him who had followed that illustrious route had done so in horse and carriage . . . But now, the automobile was the vehicle of state, and would be forever . . . And the public wanted to ride in automobiles, too. It was a busy public, an ambitious public, an exuberant public.

American car production shot up from the 1921 level of 1.5 million to 2.3 million in 1922 . . . and that was just for starters. In 1923, production soared to 3.6 million cars, and stayed close to or well above that level right through to 1929, when it peaked at a phenomenal 4.5 million. Auto production would not reach that record high level again for another 20 years.

The steel body sedan developed for Dodge was produced in heavy volumes during 1920 and 1921, and in 1922, Budd

Manufacturing gave Dodge the world's first two-door coupe . . . complete with rumble seat, and added new fun to the sport of motoring. These all steel enclosed cars were being sold in an era when 90 percent of new cars had open touring bodies, and nearly all of them were wood and steel composites. How did the all-steel cars fare? Dodge hit record production levels in 1923 and sold its millionth car since starting in business in 1914. National new car production for the year would total 2.3 million units. Ford Motor Company would produce nearly half of these, and Budd was a major supplier of bodies, wheels and other components. Budd also continued to produce steel bodies for the Oakland.

Also in 1922, Budd designed and produced steel bodies for Hudson-Essex, which had decided to switch from composite to all-steel bodies. This association would continue until the merging of Hudson into American Motors, and then onward through to the present day.

There was no stopping the Budd team now! Budd bodies were on Dodge, Essex, Hudson, Ford, Willys, Studebaker and Chalmers cars, and Budd Wheels were enjoying equal success. Budd Wheel produced more than 200 sets of wire wheels daily for the Willys four door sedan, and Budd steel disc wheels were standard on the Elgin, Studebaker, Dodge, Willys Overland and Chalmers.

Budd engineers were working on super sleek sedan styles for the years ahead, and a new "unibody" concept in which body and chassis would be formed as an integral structural unit — and all the automakers the world over would eventually use the unibody concept. They were also working on dual disc wheels for trucks, steel truck bodies, new types of braking systems, and . . . despite the claims of many other manufacturers.

The rate of car and truck production soared month by month. There was no question about the soundness of the automobile industry now. It was no longer considered a "sport" business for flash in the pan entrepreneurs, as it had been a decade earlier. The industry was already America's biggest manufacturing employer. New companies were being formed to get into this thriving and mushrooming business.

But not everyone could be a winner. The Lincoln Motor Company went into receivership in 1922, and was bought up by Ford Motor Company. Henry Leland, a former Cadillac president, had formed Lincoln just five years before in 1917.

Walter P. Chrysler designed the first Chrysler, which was built by the Maxwell Chalmers Company in 1923, and he would form Chrysler Corporation in 1925 as Maxwell Chalmers went through a financial reorganization.

Of little significance to the western world . . . probably not even known in the western world . . . was the fact that, in 1920, a Japanese company called Toyo Cork Kogyo was also formed, and would become the Toyo Kogyo automotive company before the end of the decade. Who would have cared, even if they had known? Japan wasn't an industrial nation. It was agrarian and less developed than any nation in Europe.

And in America, it was a virtual automotive gold rush! In 1923, new car production hit 3.6 million units! The Budd companies were expanding so rapidly they were having trouble finding employees. Like the major manufacturing employers of that era, the Budd plant complex in Philadelphia stood like a mighty castle in the heart of an extensive residential section . . . a community made up of the homes of its workers, which had evolved and enveloped the industrial site as the ranks of the workers increased. Budd Manufacturing began to report neighborhood and general community news in its weekly Buddette magazine, since the surrounding neighborhoods were made up of Budd employees, and those who supported them in the retail business and other service industries.

In 1924, Budd Manufacturing licensed Andre Citroen of France to produce all-steel car bodies, and to use the Budd production methods. Budd engineers assisted with the design of the 1925 Citroen, which featured advanced aerodynamic styling and unibody construction. Budd also produced all of the dies, procured the presses, and built the fixtures for the new Citroen plant. They set up the mechanized production line, designed and installed the electric welding machines, and trained the workers. In its first year of production, Citroen was able to increase production

from a rate of 50 cars per day under the old wood and steel composite technology, to 500 a day using the Budd methods. In later years, Andre Citroen would state unequivocally that his decision to become a Budd licensee had been the real basis for the long range success of his company.

The following year, Budd Manufacturing would become a joint partner with Morris Motors of England in a company called the Pressed Steel Company of Great Britain. Pressed Steel would be equipped and started by Budd, just as the Citroen operation had been, and would handle production of all-steel car bodies for virtually all of England's automakers. Indeed, these were to range the diminutive Morris minor — the world's first minicar — to the renowned and super sleek Rolls Royce. Now that's class!

Pressed Steel would also be one of the world's first "Just In Time" assembly operations. It was purposefully located adjacent to the Morris Motors plant at Cowley, England, so that it could produce and deliver steel bodies and components on a daily basis in line with Morris' production schedules.

It was only one of the first JIT operations because Budd Manufacturing had another one underway in the United States at the same time. In 1925, the Liberty Motor Car Company of Detroit went into receivership, and Budd acquired the 86 acre plant complex on Charlevoix and Conner in Southeast Detroit.

A portion of these facilities would be used to house the Budd Wheel Company, which was transferred from Philadelphia that year to be close to its primary customers. The remainder would be used for automobile body making, with bodies trucked to Dodge Brothers, Ford Motor Company and other Detroit area customers on a daily basis. Moreover, the Charlevoix plant would permit Budd Manufacturing to ship the bodies in a more advanced state of production, adding another \$125 in product value to every unit produced.

Budd Manufacturing also helped develop the body for the sleekest, sharpest sedan on the road that year, the Dodge Arrow. It was the first streamlined unibody car in the world, with body and chassis integrated in a single unit, and roof so low the average man could rest his chin upon it. It was America's first truly streamlined car, and so revolu-

tionary that Budd engineers had to modify and tone down the styling in order to get it to sell. As advanced as people were in the mid-1920's, they were still not quite ready for a car that was more than a decade ahead of the rest in superb styling.

In 1926, Budd also formed a company in Germany, Ambi-Budd Press Works. The company had the same mission as Pressed Steel of Great Britain: to produce all-steel bodies . . . but for the automakers of Germany. Again, Budd provided dies and other tooling, laid out the plants, worked on product designs. The company was an instant success, and began supplying leading companies like Porche, BMW, Storch and others. It would remain the largest independent steel automotive body producer in Europe, through to its nationalization by the German Government just prior to World War II.

Budd Manufacturing not only licensed its overseas affiliates on very liberal terms, with only a nominal royalty fee charged per body produced, the Budd team also gave its customers consultation on a regular basis. Budd collected royalties from all companies using its patented methods, and derived direct profit from its European joint ventures. By the end of 1926, Budd had granted licenses to Citroen, Peugeot, Fiat, Opel, Mercedes and S.I.M.C.A.

The combined Budd work force had now grown to approximately 10,000, with about 40 percent employed in the new plants in Detroit. The two Budd companies now operated more than 600 major presses, and the Philadelphia plant alone was consuming more than 1,000 tons of sheet steel each day. Budd Manufacturing was the largest sheet steel using company in America!

Morale was extremely high in the plants. Employee cooperation was still being stressed. Employees were represented by their own organization, which met regularly with a management committee to discuss production methods, ways to improve processes, to improve the job . . . similar to the way in which the Budd Involvement Groups of the 1980's would function. The Budd Building and Loan Association was doing a booming business in financing employee homes.

In 1924, George Gershwin had composed *Rhapsody in Blue*, and sheet music and recordings were selling in phe-

nominal volumes, and millions of Americans were twisting their tongues and lips in frustration, trying to whistle the widely varying melody. It was a melody of the times: exciting and vibrant, reaching out for greater amplitude and expression, encircling back on itself in melancholy lament as each new thrust toward greater strength was thwarted. While gaining much less attention than Gershwin's music, a German physicist named Albert Einstein had published a paper entitled *The Mathematical Theory of Relativity*, and thus laid the foundation for a new physics, and also for what would be called the Atomic Age. In 1925, Nellie Ross became the first woman governor of Wyoming . . . and the first woman state governor ever, in the history of the United States. F. Scott Fitzgerald had given America the classic novel *The Great Gatsby*, and its insights into the world of the super affluent whetted the appetites of readers for an even greater share of the fabulous American pie. In 1926, America's first full length talkie film, *The Jazz Singer*, was released, and Richard Byrd flew over the South Pole in a Ford Trimotor airplane, manufactured by Ford Motor Company at Dearborn, Michigan.

Henry Ford would do truly wonderful things in the few years in which his company was involved in aviation. The Trimotor was, for awhile, the mainstay of America's commuter airlines. His airport at Dearborn was equipped with the world's first radio compass system, using radio direction equipment developed by Ford's own engineers. He also built America's first airport hotel, The Dearborn Inn, which flourishes to this day.

The economy would falter and the stock market would tumble a little in 1927, causing automobile production to slip from a level of 3.8 million cars produced in 1926, to some 3 million.

In response, Budd Manufacturing would beef up its own marketing programs to try to increase penetration with the automakers.

One promotion involved rigging a Dodge sedan with a wooden platform on its roof, then walking a one ton elephant onto the platform. This was done at Coney Island, and while the elephant stood nonchallantly on the car's steel roof, Budd engineers opened and closed its doors free-

ly to show that the enormous weight and stresses had not caused the structure to spring out of true.

That same year, American aviator Charles S. Lindbergh would become the first person in history to fly solo across the Atlantic, and he would do this in a small monoplane called the Spirit of St. Louis. The next year, in 1928, the economic crisis seemed to have been but a glitch, and automotive production shot to 3.8 million new cars . . . recovering almost to the single unit exactly what had been given up the year before.

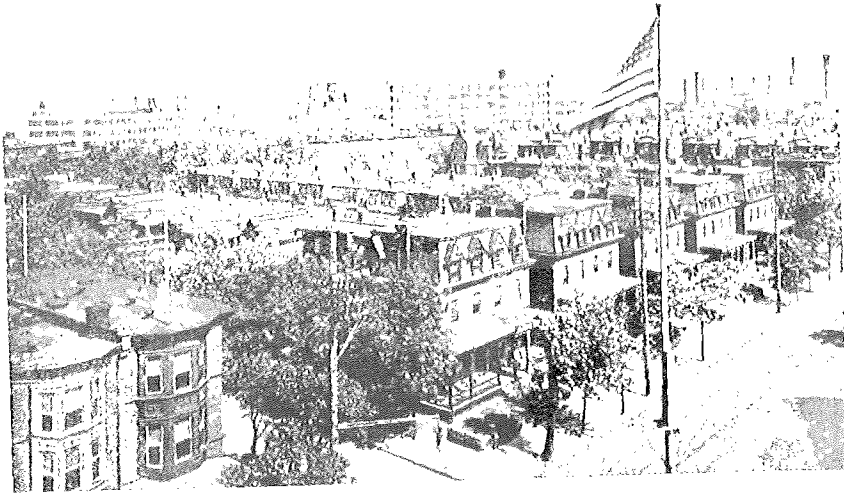
The next year, the economy was booming so loudly that it was almost frightening. Before year-end, more than 4.5 million new cars would be produced. There had been a hint of investor uneasiness and economic uncertainty in the last few months of 1928, though. Consumer sales had reflected this. New car sales grew sluggish, so did sales of other big ticket items. Yet nobody was deterred by this glitch. Since the company did not sell directly to consumers, it relied much upon the forecasts and the orders of its own customers to forecast consumer market trends. And orders had never been stronger.

Budd Manufacturing launched a widescale employment drive in December of 1928. Employment of new workers would continue at record high levels well into the spring. The company had helped with the successful launch of a sporty roadster body for Ford, and was working ambitiously on a new family of streamlined cars that would debut in the future. Budd had already designed and built the prototype of a low silhouette sedan called the Ruxton, which was nicknamed the "Alligator," because of its elongated nose and extremely low roofline. This powerful, elegant car would never go into full production. Several automakers would negotiate to get the rights to produce it, but the financial crisis of 1929 would wipe out chances for all newly introduced cars.

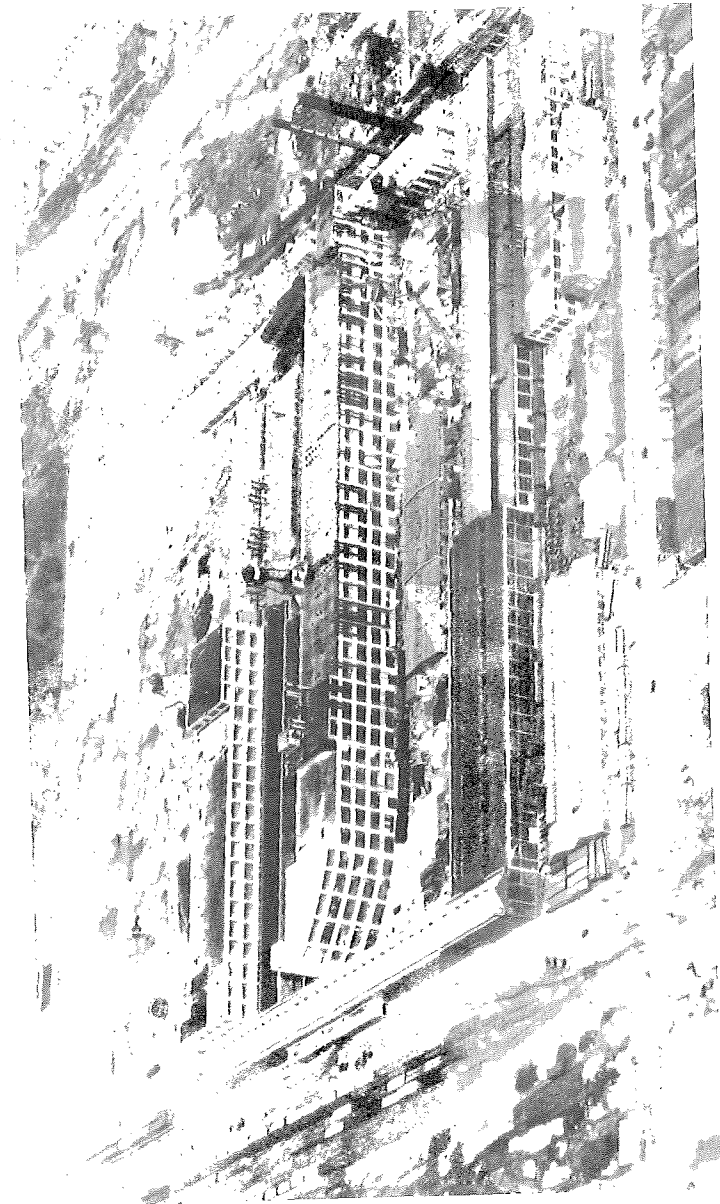
In November, 1929, the major stock markets in America collapsed. Panic selling sent stock prices crashing to depths so low that many companies lost most of their trading value overnight. Billions of dollars in real assets could be picked up for a pittance by investors willing to purchase the greatly discounted stock. The failure of one company hit investors very hard, so that they had to offset the loss of income or

loss of balance in their portfolios by selling off stock from other companies, and when they tried to do this, they found that it, too was plunging in price. Everyone tried to bail out at the highest possible level, and each hour of the trading day, prices plummeted drastically all across the board. Many securities were held by corporations themselves.

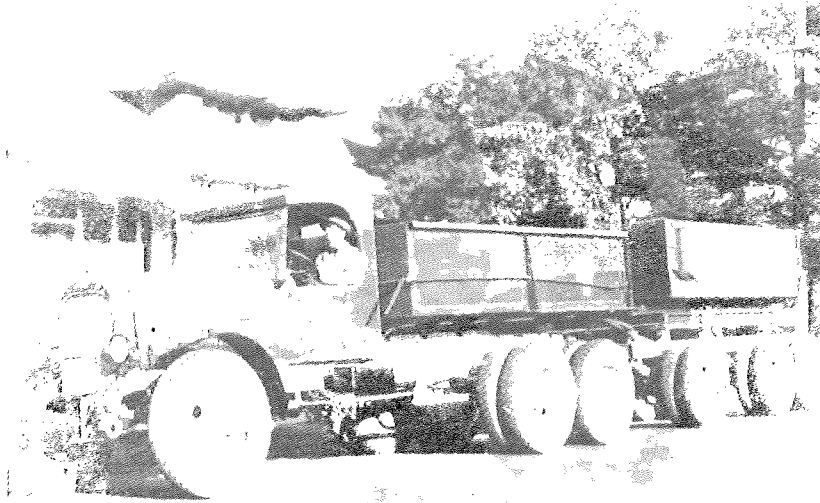
They would own controlling interests in firms affiliated with themselves; firms that supplied raw materials, that transported their goods, and firms in different industries altogether that seemed to be good investments for income and appreciation. When the major company holding these stocks began to hurt for cash — which was almost right away — it began to sell off some of its holdings. Again, it found its paper holdings plummeting in value as the days went on, plummeting to depths far below the book value of the assets involved. They did right to call the phenomenon of 1929 the "Crash." The whole decade of the 1920's crashed . . . Crashed like the wood and steel composite car Budd engineers had pushed off a cliff to show its poor construction . . . Crashed when the nation's economy was traveling under the fullest head of steam it had ever built up, and when heads were lighter and happier than they had ever been before. It was the gloomiest season that America would ever experience . . . it was a cold, frightful season that would last through four pain-filled years. While they would shave their work forces to the barest numbers, the major automakers would also shave their own costs, by enhancing productive capabilities in all possible ways. They would be hard at work on economically priced cars, for the day in which the economy would turn around again. It would take Herculean efforts by private industry and the government alike. The crash of 1929 precipitated financial crises all over Europe, and indeed the Great Depression afflicted the whole western world.



Budd Philadelphia plant complex stands out like medieval castle surrounded by homes of workers in this 1920 scene. — *Buddette Photo*.

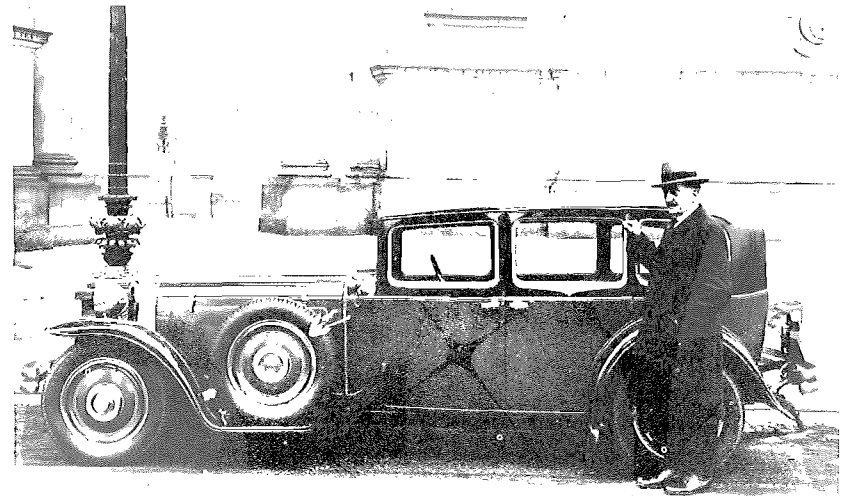


Aerial photo of Budd Detroit plant complex undergoing expansion in 1927, two years after property had been purchased from the old Liberty Motor Company. Foreground building (extreme right) resembling Philadelphia's Independence Hall was former Liberty headquarters. It was Budd Detroit headquarters, then served until 1985 as headquarters of the Wheel and Brake Division. — *Budd Archives*.



They Grow 'Em Big in California

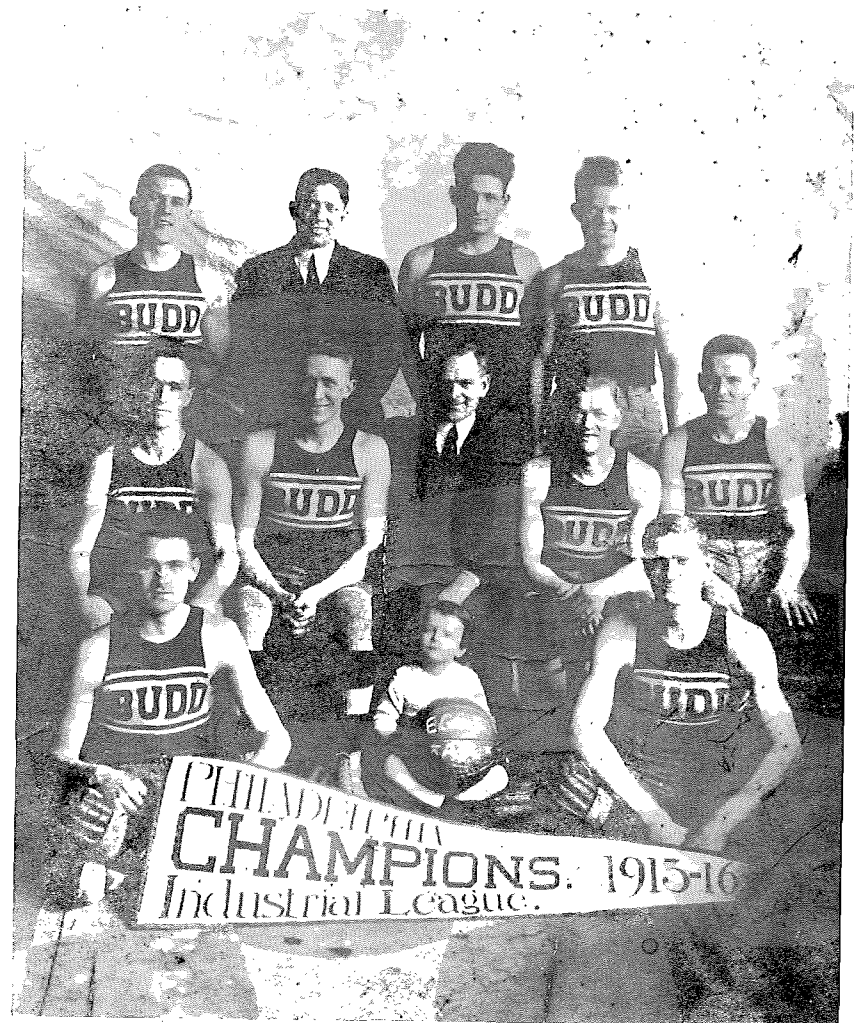
The Budd Wheel Company introduced America's first dual disc wheels for trucks in the late 1920's. This Kimball 22-wheeler tractor-trailer rig used 10 sets of Budd dual steel disc wheels for the trailer and rear driving axles, and a pair of Budd steel disc "singles" on the steering axle. — *Buddette*.



Chief Engineer Joseph Ledwinka poses with the Ruxton he and his team designed in late 1920's (Top). In December, 1928, Budd was hiring workers at a rate of 150 per day (Bottom). Nobody could anticipate the Great Depression was coming almost 12 months to the day after this photo was taken. — *Buddette*.

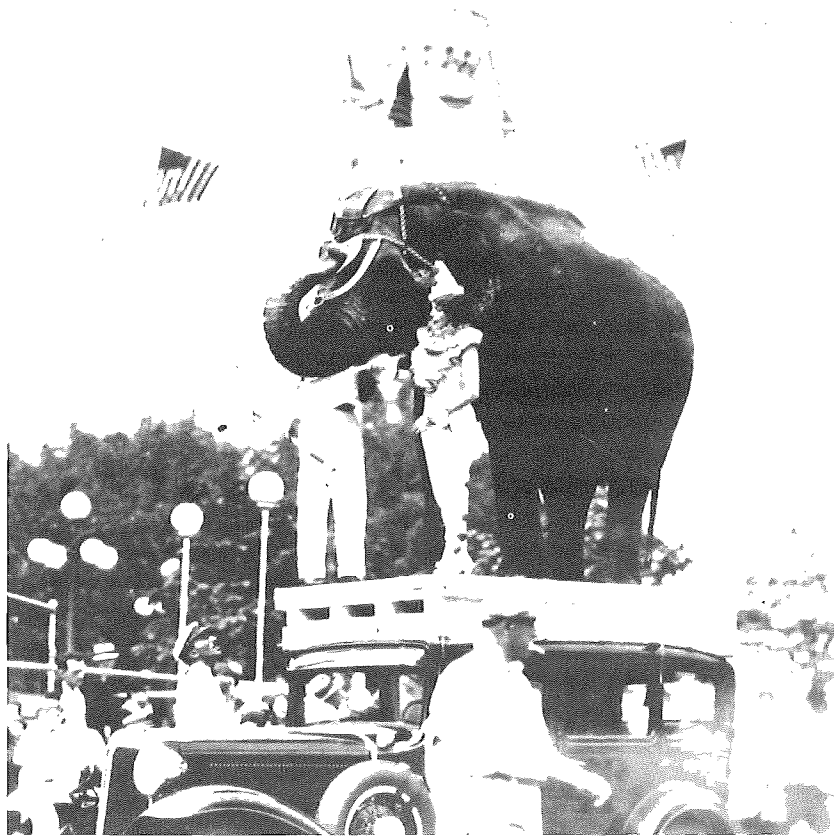


Budd Women's Office Basketball Team, Hunting Park, 1929. From left, Helen Park, Lydia Miller (sister of Laura Zimmerman, first woman hired by Budd), Elizabeth Winton (who married Dr. Edwin McLivain, first Budd physician), Mildred Brown, Frances Souter, Dorothy Foulds and Sophie Hik. — *Courtesy Laura Giniff.*



Budd Men's Basketball Team, 1916. Unfortunately, the players in this vintage photograph are not identified. — *Courtesy Laura Giniff.*

FIGHTING THE GREAT DEPRESSION . . . 1929-1933



Promoting strength of the all-steel body at Coney Island in the late 1920's. With an elephant on the roof of this Dodge sedan, Budd engineers repeatedly opened and closed doors to show the force of the elephant's great weight had not changed the car's engineered fit tolerances. — *Budd Archives*. (Many thanks to retired Budd employees who sent in duplicate copies of this photograph).

As a simple measure of the effects of the first year of the Great Depression, 1930 new car production suffices. New car production was slashed by 1.8 million units, a one year decline of approximately 40 percent. While a total of 2.8 million new cars were sold, industry had geared for nearly twice that volume. Automakers laid off more than half their workforce on a permanent basis during the first twelve months. Supplier companies like Budd Manufacturing and Budd Wheel were forced to follow suit. Sales had been cut drastically.

Edward Budd and his closest associates foresaw that the depression would be one of considerable length. Every industry in America was bleeding from the wounds it inflicted. Hundreds of companies, many of them very substantial, had gone out of business. Banks were teetering on failure, too. There was no investment capital available, and, indeed, there seemed little to invest in or for . . . Except in the eyes of those who met regularly with Edward Budd in his office and the company boardroom.

Edward Budd considered all members of his companies equal. The 10,000 workers he employed *were* his companies. To lose a good portion of them because of economic hard times was to lose a good part of what he had labored for for the past 17 years, and above all else, he was not a man used to losing anything that he himself had earned. He formulated a strategy to try to hold as many members of the Budd team in place as possible.

Cynics of the present day may well scoff and suggest that whatever new strategy Budd managers embarked upon was one of self interest, aimed at keeping profits flowing . . . That new profit sources were the focus, whether that meant keeping workers, or letting them go wholesale . . .

And recorded history can refute that in a moment. Company correspondence makes repeated reference to Edward Budd's concern for preserving jobs, and this was the basis of his strategy. Those still surviving today can recall that saving jobs was his overriding concern, and that his secondary purpose was to attempt to create an entirely new industry that would help lift the nation out of the devastating

depression.

Edward Budd was to lecture at the Harvard Graduate School of Business on this in later years. He then told the graduate students and faculty that America's economy had been lifted from terrible doldrums at the turn of the 19th century when new processes were developed for producing what he termed "quick steel." The new steel has a structural nature that enabled it to be cut in less than a third of the time it took to cut the older forms of steel. Since it could be processed much faster, the new metal added a considerable productivity gain to metal fabricating operations. This made fabricated steel products cheaper to produce, and extended the application of steel to a wide range of industries that had previously used wood or other materials.

Widespread application of steel in new areas of fabrication led to instant demand for tools to cut it, shape it, finish and weld or rivet it. The tool industry resurged under this demand, and expanded, for the tools were new product additions to the nation's storehouse. Because of the advent of quick steel, tens of thousands found new employment, and partly because of this the nation had recovered economically.

The next really major development in the steel industry had occurred just six years before, when American mills began rolling sheet steel in continuous process. This was first done at a hot sheet continuous rolling mill in Ashland, Kentucky. Edward Budd had seen the process at the outset, and it virtually took his breath away. Here was a long river of steel stretching before him some 1,500 feet, glowing red like a new sun. From that point on, steel users like the two Budd companies could buy their steel in huge coils, and trim it to the desired size within their own plants. This made steel more accessible from an initial cost standpoint. It also reduced handling cost to and within the plant.

And now . . . there was a new steel on the market. An amazing lightweight alloy steel popularly called "stainless steel," which was highly resistant to corrosion. Budd Manufacturing launched an all out, all encompassing research and development effort to apply this new steel structurally in a variety of products. While they would not save the nation with their efforts, they would save several thousand Budd jobs during the next three-year period.

One of the first applications was not in automobiles, but in the aviation industry. The Budd researchers theorized that this lightweight steel was highly suited to aircraft, and they ran advertisements in the engineering and scientific journals trying to entice customers. They got one straight away.

The American Aeronautical Corporation of Port Washington, Long Island was at that time building the Savoie Marchetti seaplane primarily from wood. They contracted with Budd Manufacturing to build one from stainless steel. Budd signed the contract in 1931, and had the aircraft flying within a ten-month period. It was successful in every respect, even though the market for two seater seaplanes in 1932 did not encourage its continued production. That stainless steel seaplane is permanently displayed today outside the venerable Franklin Institute in Philadelphia.

Even before this contract was received, Budd engineers were applying stainless steel to maritime vessel components, and the Budd Navy Department was formed. Budd was soon developing and producing stainless steel masts and hatches for the navy, and this work would continue on through World War II.

Naturally enough, since Edward Budd and the key employees who had founded Budd Manufacturing with him had all come from Hale & Kilburn — which produced seats and other components for railway passenger cars — the Budd research teams gave considerable focus to railcars, too. But instead of looking merely at seating, or other interior components, they theorized that they could build a new type of streamlined, lightweight train out of stainless steel. Its light weight and aerodynamic qualities would enable the train to achieve new levels of high speed.

As one might suspect, the railroads suffered at least as much as other companies during the Depression, for their freight hauling business was slashed to nearly nothing, and passenger service in most cases was so slim that it was not profitable. One cannot develop an entirely new type of train, and sell it to a company that is barely getting by . . . unless, of course, it is sold at a near giveaway price, and its acquisition cannot be resisted. That the railcar business was launched only on a breakeven basis underscores the altruistic objectives of Budd's managers: To keep the company as

whole as possible, and to keep as many workers productively employed as was possible.

Ironically, the stainless steel streamliners Budd Manufacturing was to build, were so outstanding in appearance and in operation that they became the symbol for modern times and progress, and because Budd put its name upon them, the public associated Budd more with trains than with automobiles or trucks. While the automotive business would never account for less than 80 percent of Budd's total sales, and the profits from automotive operations would time and again underwrite losses incurred in the railcar business, Budd's skill and strength in building automobile bodies were screened from general view. Budd Manufacturing, and to a lesser extent, Budd Wheel, operated as silent suppliers, and let their automaker customers take full credit for the revolutionary new automobile bodies that Budd helped produce.

Budd engineers developed a sophisticated new welding process for joining the stainless steel. The Budd "Shotweld" process carefully controlled the amount of current applied to the metal, and the actual split second timing of the weld. This kept thermal energy focused directly on the spot welding point, and kept it from spreading beyond that point and weakening the steel. At the outset of the Budd experiments with stainless steel, the commodity was extremely expensive, and cost as much as 60 cents per pound. That was four times the price of regular steel. As Edward Budd began to apply it in large volumes, he was able to get the mills to reduce the cost considerably, and his efforts at applying it in place of regular sheet steel caused several other manufacturers to follow suit.

From 1931 through 1935, Budd Manufacturing produced four of these famous streamliners: The Burlington Pioneer Zephyr, which travelled between Omaha and Kansas City and was the world's first diesel powered stainless steel passenger train; the Twin Zephyr, which operated out of Minneapolis-St. Paul; the Mark Twain Zephyr, which ran from St. Louis to Burlington, Iowa, and the Flying Yankee, which operated out of Boston.

The stainless steel passenger railcars for these trains were made up of some 15,000 stainless steel components. The body panels were welded together. Edward Budd would

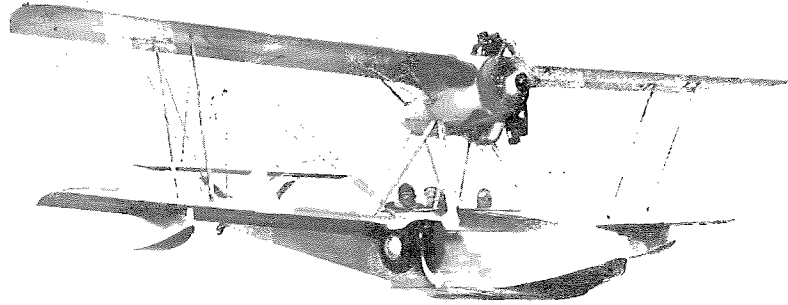
later remark that the company spent \$2 million more than it took in on stainless steel work during the Depression years.

While trains were flashy, and kept Budd workers working, those employed in automotive operations had not been sitting still . . . even though national automotive production had declined drastically in each of the first three years of the Depression. The 1930 drop to a level of 2.8 million had been devastating enough. In 1931, sales were off another 800,000 and production was less than 2 million units. Production was nearly cut in half in 1932, when just 1.1 million automobiles were produced. That was the lowest output level (save for the War year of 1918) since 1915.

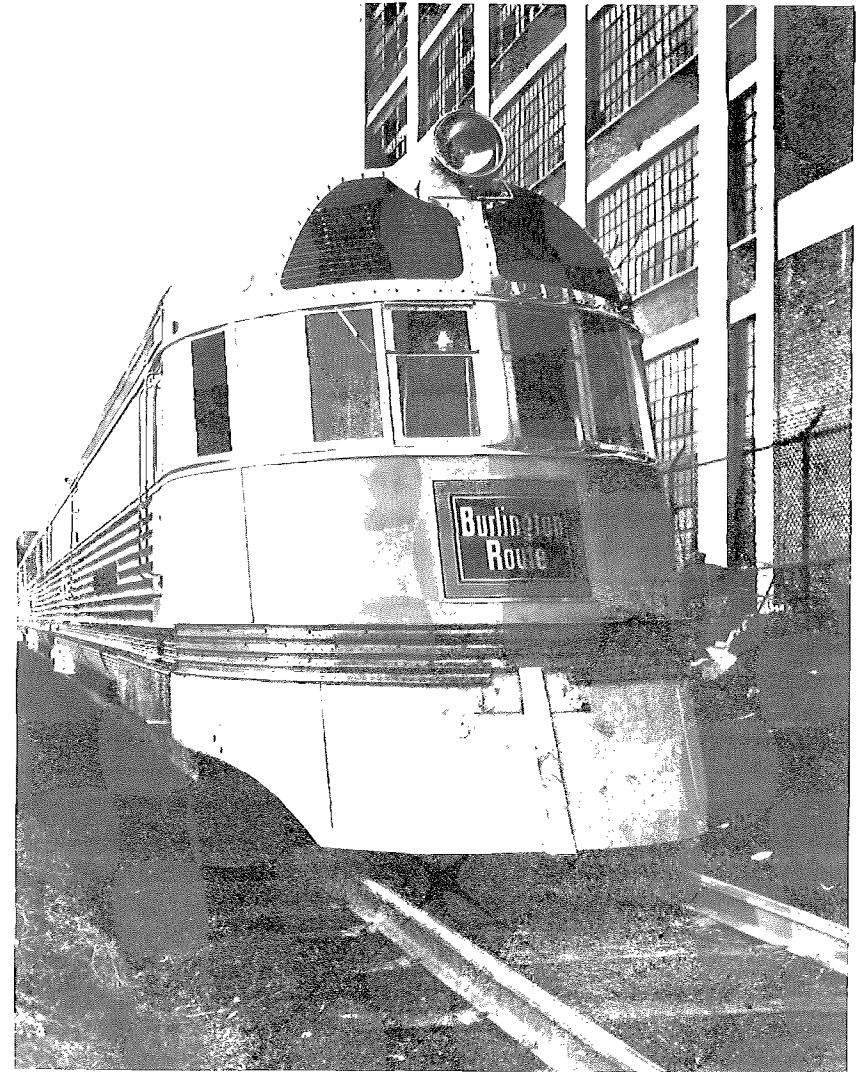
However, Budd had the good fortune to serve some of the best and strongest automakers in America, and continued to do business with them without interruption . . . even though it was on a greatly reduced scale. And Budd kept up its own automotive development work just as though there were no Great Depression, and when the economic tide began to turn for the better in 1934, a whole array of new product was ready for the automakers.

The economy began to recover feebly in 1933, gaining strength as the year pressed on. By year-end, the automakers had produced 1.5 million cars — still an abysmal showing, but 50 percent more than had been produced in the previous year.

That was the year in which Franklin D. Roosevelt took over the reins of government as the 32nd President of the United States, and began to implement his "New Deal" program for improving the economy and safeguarding the personal financial futures of all Americans. It was also the year in which the prohibition laws were repealed, and the year in which there was new hope that the worst of the hard times were over. And so they were.

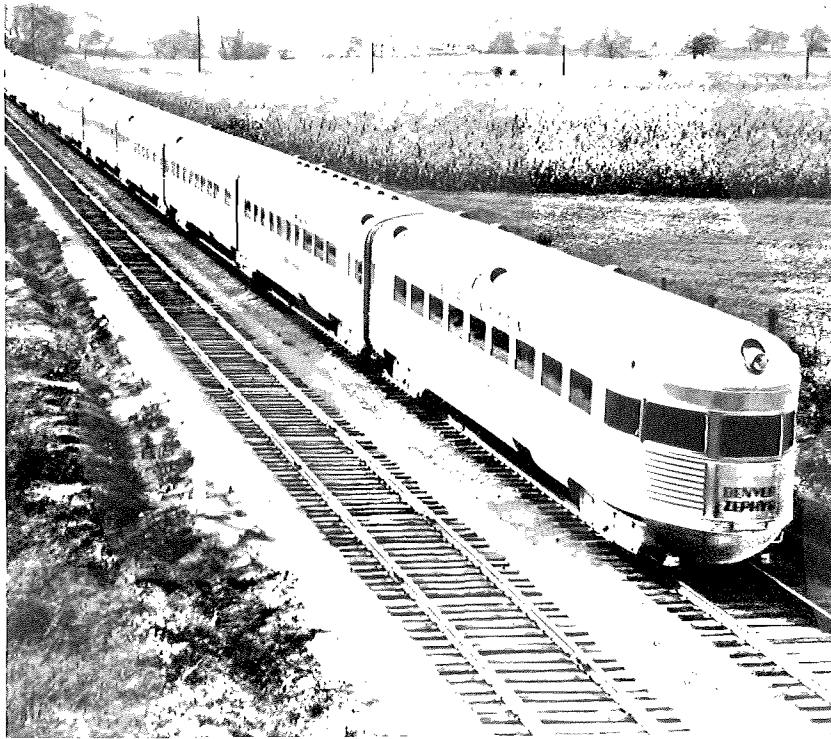


Budd built Savoie Marchetti stainless steel seaplane for Long Island Aeronautical Corporation in 1931-32. The plane was flight tested and flown many hours. It is on permanent exhibit outside the Franklin Institute in Philadelphia. — *Courtesy George Newton.*



Budd's Burlington Pioneer Zephyr of 1934 was world's first diesel-powered stainless steel streamliner train. It travelled more than 3 million miles during the next 28 years. — *Courtesy William Uhlmann.*

THE STREAMLINED ERA . . . 1934-1941



Another famous Budd streamliner, the 1936 Denver Zephyr, shown from rear. Last car is the Silver Flash parlor car. — *Courtesy William Uhlmann.*

Budd Manufacturing had been working on futuristic cars throughout the Depression years. In 1929 and 1930, the company developed a special experimental front-wheel drive car . . . a world first. As economic recovery continued in 1934, this new design became the front-wheel drive Citroën, the world's first front-wheel drive production car. Like the Budd experimental car, the body was of unitized construction.

Budd had also worked very hard to perfect new methods for contouring metal and new aerodynamic styling techniques. These were used to design and produce the classic streamlined 1934 Chrysler Airflow . . . a revolutionary new type of body design . . . marvelled at all over the nation; but not a spectacular seller. Budd also helped produce the body for the 1935 Lincoln Zephyr.

In 1934, national new car production had risen to 2 million units — a 30 percent increase over 1933, and it was fairly clear to all that the Great Depression was ending. Auto sales continued to increase at the same pace throughout 1935, again increasing by a spectacular 30 percent to finish the year at the 3.3 million mark. The Great Depression was over. The Budd companies had recalled all of their workers. Budd Manufacturing and Budd Wheel were supplying body components and wheels to virtually all of the major automakers, and the plants were humming at near full employment levels.

The major automakers had also been working hard to develop new products for the recovery years, and Reo, Chrysler and DeSoto all introduced automatic transmissions in 1934. Pierce had optimistically introduced its opulent and thoroughly classic Silver Arrow grand touring sedan in 1932 — a very high priced limited production car, and the year before that a diminutive Japanese company called Nissan produced its first Datsun. It was a copy of the British Austin 7, and smiled at condescendingly by those in the West who knew of its existence.

Chief Engineer Joseph Ledwinka, who had been an automotive engineer almost as long as the great Henry Ford, was in his glory in the mid-1930's. He was so exuberant about the new shape and styling of the cars of the era that

he composed a verse on aerodynamic design, and reflected that every vehicle that moved was taking on the shape of the fish.

Such styling changes were pervasive in Europe as well as America, thanks in part, to the Budd influence. In 1936, Dr. Porsche built a prototype Volkswagen sedan and convertible for the German government, and Ledwinka and others at Budd Manufacturing and Ambi-Budd had contributed to the design. That same year, Budd Manufacturing was hard at work on designs and tooling for the new streamlined beetle backed Ford sedans and coupes which would replace the boxy B-4 sedan models in later 1936. Budd Manufacturing and Ambi-Budd had also contributed strongly to the design of the Opel Kadet, which was introduced by General Motors in Europe in 1936. Ambi-Budd produced the body.

While Budd levied only a token royalty fee on its various licensees, the company still guarded its patented processes and designs vehemently. In 1937, Renault brought out a car called the Juvaquatre, which was a "knock off" copy of the 1936 Opel Kadet. Since Budd and not General Motors had rights to the body design and manufacturing processes, Budd sued Renault for infringement on its patents. This was done in Germany, and Renault was forced to pay Ambi-Budd royalties.

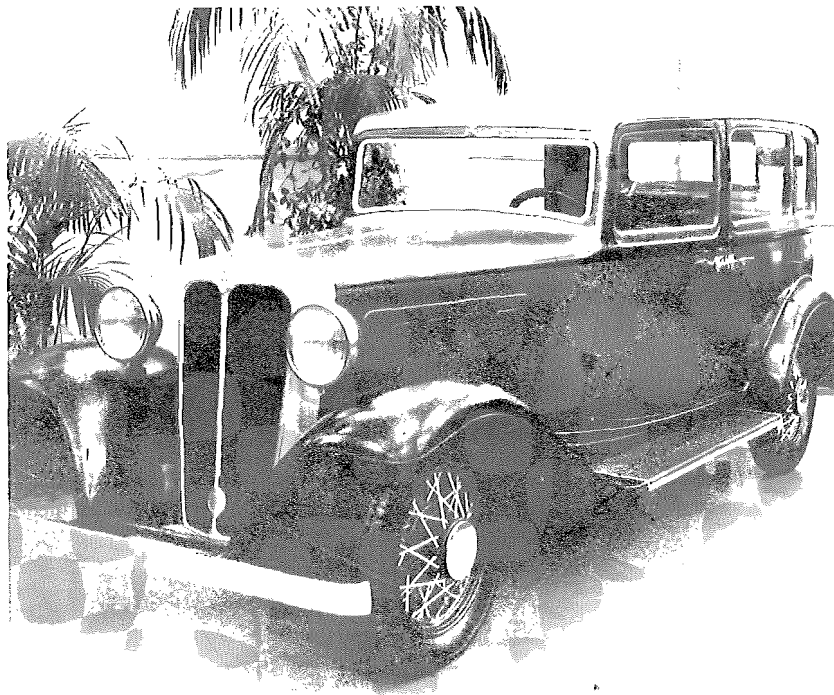
Back in America, Studebakers were also taking on smooth, aerodynamic lines under the Budd influence. Indeed, by 1937, the Studebaker sedans and coupes had attained a lavish streamlined look, befitting the new era of aerodynamic design.

Car production continued to grow at a sustained rate, reaching 3.7 million units in 1936 and nearly 4 million in 1937. Unfortunately, the economy recessed again in 1938, and American auto sales plummeted by nearly 50 percent! That same year, Volkswagen began building what was then the world's largest automobile plant housed under a single roof, and when the American economy began its rebound in 1938, preproduction versions of the Volkswagen "Beetles" were touring the United States.

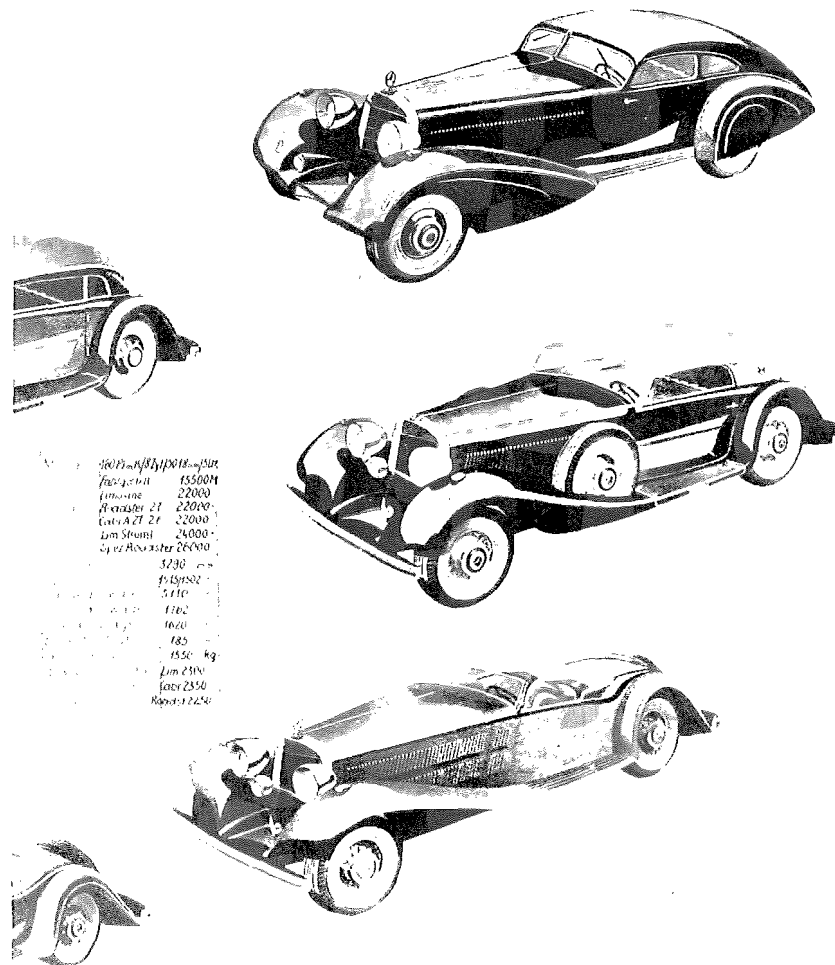
The 1938-39 recession was short lived, and national auto production grew to nearly 3 million units again in 1939 and would stay above 3.7 million units through to Pearl Harbor

Day in 1941. Europe was embroiled in war, and Ambi-Budd had long since become nationalized. Ominously, in 1940, the U.S. Army evaluated prototypes for a new quarter-ton four wheel drive utility vehicle which would eventually be called the Jeep. Candidate Jeeps tested that year were designed and built by the American Bantam Company, Willys Overland and Ford. During the next few years, the automakers would produce 600,000 of them, along with hundreds of thousands of medium and heavy duty trucks. Ford would produce B-24 Liberator bombers for the U.S. Army Air Corps. General Motors would produce tanks and landing craft. Nobody would produce passenger cars.

Before Pearl Harbor Day, though, Budd would develop the most advanced unitized steel body car then built . . . the torpedo styled 1942 Nash sedan. It would only just squeeze into production before the manufacture of cars for civilian use was prohibited.



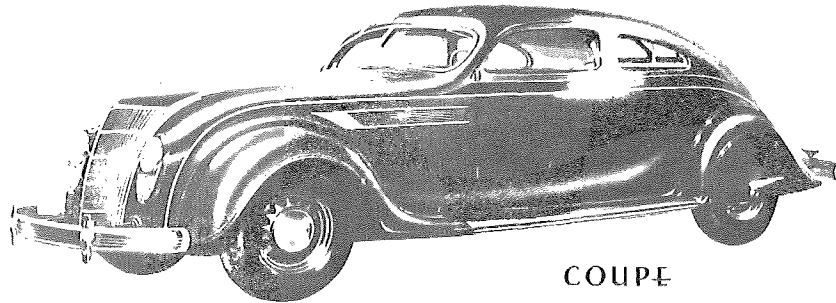
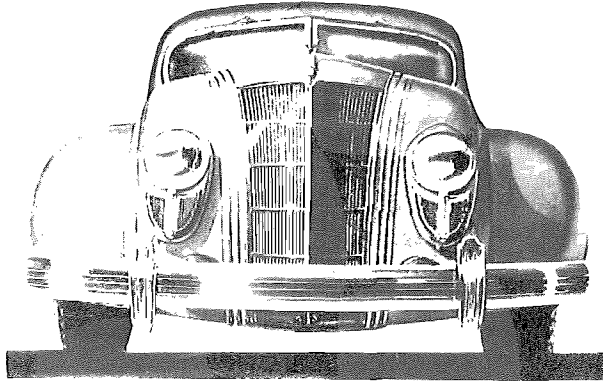
During the years of the Great Depression, Budd kept developing prototype cars, such as this Citroën front-wheel drive model. This was done to keep workers employed, and to ready the company for the return of economic growth. This car went into production at Citroën's plant in France shortly after the Depression ended. — *Budd Archives*.



1930 Buick Wildcat 18-24-30
 Packard 18-24-30 15500M
 Lincoln 22000
 Packard 21 22000
 Packard 21 22000
 Packard 24 24000
 Packard 26 26000
 Packard 28 28000
 Packard 30 30000
 Packard 32 32000
 Packard 34 34000
 Packard 36 36000
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Auto Social Prestige
 International Automobile
 Mercedes-Benz 190 500K

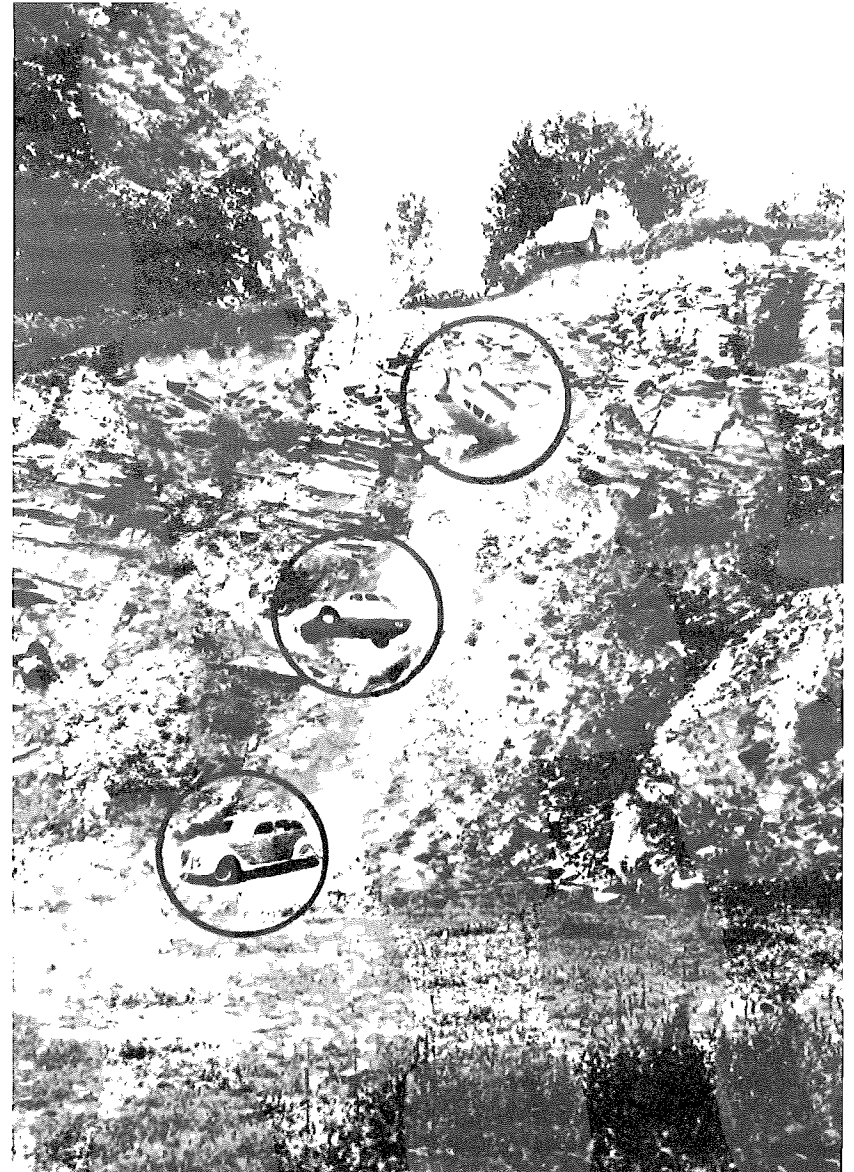
One of several 1935 model Mercedes-Benz body designs by the Ambi-Budd Press Works of Berlin. This was "top of the line" limousine-type body with short (Kurtz) rear end. There were six "Kurtz" models, with top price of around 22,000 Marks. — *Berlin International Auto Show Presentation Book, 1935*. — *Courtesy William Uhlmann*.



COUPE

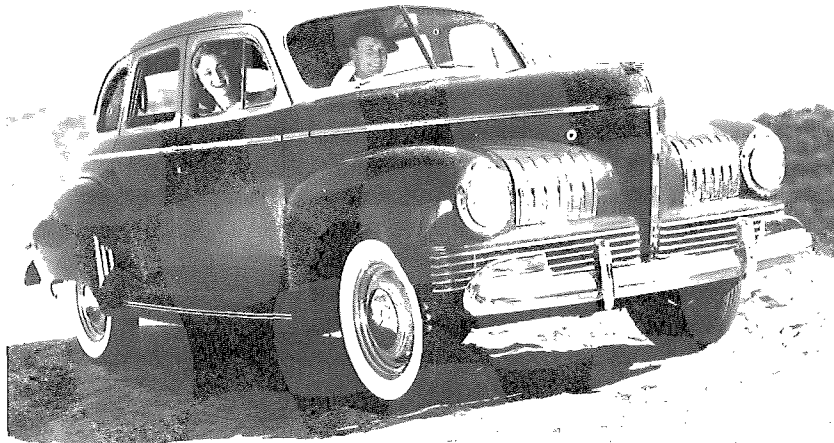
Chrysler AIRFLOWS FOR 1935

The famous Chrysler Airflow of 1935. Heralded by automotive historians for its advanced aerodynamic styling, the Airflow was actually a streamlined "safety car." It had interior reinforcing rails that encapsulated passengers the way the protective frames of modern highspeed race cars do. This was one of the first North American car bodies produced by — but *not* designed by Budd. — *New York Auto Show Presentation Book, 1935.*



Demonstrating strength of Chrysler Airflow. To further promote the all-steel car body, Budd published multiple exposure photo sequence in its ads, showing an Airflow tumbling end-over-end down a cliff, and coming to rest unscathed. — *Budd Archives.*

FROM PEACE TO WAR, TO PEACE AGAIN . . . 1941-1946



As early as 1939, Budd was displaying this mock-up model (Top) of the streamlined unibody sedan under development for Nash. It went into production (Bottom) in 1941, and then again in 1945 because World War II intervened. — *Budd Photos.*

At the height of its new success, with the most streamlined, efficient, cost effective cars yet built, the American automotive industry had to respond to the new demands of World War II. Budd turned its full production to defense work as soon as America was in it, and was producing war material just eight days after the invasion of Pearl Harbor! Out went the sleek automobile bodies, fenders, doors, trunk lids, chassis frames . . . in came a tremendous lineup of non-automotive products. In came munitions . . . eight inch and 340 millimeter shells . . . Bazooka rocket bombs . . . smokestacks and stainless steel masts for U.S. Navy destroyers . . . galvanized carbon steel hatches for naval and Coast Guard vessels . . . manifold systems for the new twin fuselage P-38 fighter-bombers . . . tooling and jigs used in production of the B-24 Liberator bomber, being built by Ford Motor Company in Romulus, Michigan . . .

The company also produced many varieties of wheels for military use, as well as army truck body components, chassis and other vehicular parts.

Women again returned in large numbers to the shop floor, as they had done in the Great War of 1914-1918. They worked hard and efficiently, and accounted for more than half the personnel in many Budd departments. The Bazooka rocket department was made up of more than 90 percent women.

By February, 1942 — less than three months after America entered the War, 4,400 Budd employees were already in service, and 5,500 women joined the company. Before war's end, some 6,600 Budd employees would be in uniform at the same time — enough to form six infantry battalions if they all served in the same units. But they did not. Budd servicemen were in every service, and in every theater of operation: Foot soldiers, tank troopers, artillery gunners, Marines, bomber and fighter pilots, navigators, sailors, submariners, Coast Guardsmen . . .

Their places on the Budd teams in Philadelphia and Detroit were filled by . . . The women they left behind! Now American women could show their importance, their equality, their skill and fortitude . . . without the slightest ques-

tion. They had won the right to vote just twenty years before, and now were operating half the nation's arsenal . . . and half the nation's industry. It was a fete more significant than any historian had yet recorded. America could certainly not have been successful in the 1940's, but for the willingness of women to step in and put their shoulders to the wheel! American industry would have operated at half capacity, instead of all-out capacity.

All of the products produced by Budd reflected the companies' skill at forming and joining metals — including highly specialized alloy metals developed to Budd's own specifications. Stainless steel masts for the Navy were not new products, only now the company would produce them in much greater numbers. Budd Manufacturing had operated a Navy department since the middle of the Great Depression in 1932, and stainless steel masts had been part of its output. Smokestacks were a new and demanding complex structure. During the War years, the company would also build a wide range of high strength, light weight, non corrosive hatches, scuttles, manhole structures and covers and other products for more than 40,000 landing craft, over 500 destroyers, and 1,000 cargo ships . . .

The stainless steel fabricating industry that Budd had launched during the Depression had indeed brought forth the stainless steel streamlined passenger train industry. Budd engineers had also touched on the aviation industry when the company developed the all-stainless steel Savoie Marchettis seaplane. None of that experience had been wasted. While aircraft had surely not sold well in the Depression years, the Budd team had succeeded in perfecting methods to form and assemble wing ribs and skin them over with stainless steel sheeting, and to produce a self-supporting monocoque-type fuselage section.

Now the Budd engineers undertook another aviation project; one that was colossal in scope. They designed an all stainless steel twin engine cargo plane . . . a plane such as the world had never seen before. Nicknamed the "Conestoga," the huge ship featured a large rear hatch which swung away to permit vehicles to be driven up a ramp into the fuselage. It was the forerunner of a type of cargo aircraft which would become known as the flying boxcar, although that aircraft would have a much different fuselage structure.

The Conestoga was the first large airplane in the world with two separate, self supporting wings. Until that time, all large aircraft had single-piece wings which passed through the fuselage section.

While many men and women were away at war and women handled half the production jobs in the Budd plants, new product concepts, and new lifestyle concepts were percolating in American minds . . . concepts to be applied in the projected "post war era." Many new things had come with defense production: New synthetic fibers, plastics, plexiglass, alloy steels, drugs, vitamin supplements, communications equipment, advanced jet propulsion engines, rocket engines, radar . . . all of these things could be turned to peace as surely as Budd would once again convert part of its munitions department to the production of plow shares, which it did within weeks of the end of the war.

Even before the war ended, the Budd companies were planning for the return of their war veteran workers. Edward Budd stood tall in May of 1945, when he told his employees — all 20,000 of them, now! — that every effort must be made to open the doors wide for returning servicemen.

"The change from producing munitions to producing automobile bodies . . . is a tremendous piece of work," he told a mass meeting of Budd employees in Philadelphia. "It will take some months to complete, and the expenditure of millions of dollars. At every step in the program, our first consideration will be to continue employment of all of those who so successfully served our country during the war . . ." He made it clear that this policy would not apply only to the able bodied, but to all former Budd employees. "The wounded and distressed veterans . . . They are still our men!" he avowed. Budd would find work for all of them, whether badly wounded physically, or distressed psychologically.

The Budd Manufacturing dispensary was expanded by 30 percent to provide special facilities for wounded or psychologically afflicted veterans. Physical therapy equipment was installed. In addition to treatment programs and facilities, the dispensary was also equipped with a rehabilitation unit. Machines were set up, and training given to handicapped veterans to teach them to operate the equipment in a safe,

non-working environment, and find what the best role for that worker would be in the Budd organization. Such rehabilitation training and physiotherapy treatment was provided at regular fulltime wage rates.

The dispensary was still being operated by Dr. McIlvain, whom Edward Budd had convinced to join the Company in 1915, although now, with a work force of 20,000 to care for, he was assisted by other physicians and medical personnel. It is to Edward Budd's credit that he convinced McIlvain to become America's first fulltime industrial physician, and gives testimony to the man's unquestionable concern for the well being of all Budd workers.

In his eyes, workers, managers, supervisors, executives, were all players of the same team. He never changed that view, not even when his work force elected to become unionized in 1933. He personally thought his own benevolent policies could serve them better than those inspired by an organized union, but he respected their intelligence and choice, and allowed that they were in a much better position to make judgements about their own working conditions and future than he himself was.

In July of 1945, while the Budd Field Plant in Philadelphia was still producing shells for the army, the company announced that it would convert the 24.5 acre assembly facility totally to railcar production, as soon as war production ended. The plant, soon to become known as Red Lion, was then being leased from the federal government. Before year's end, it would produce the first stainless steel passenger railcar built by Budd since 1941. By October, the Red Lion plant had increased employment by 600, despite just coming out of the booming years of defense production. Total employment at year end was a record 2,000 workers.

Budd corporate management had allocated an initial \$15 million for plant expansion, conversion, and equipment improvement, and would increase this investment markedly as the peacetime programs unfolded. In August, 1945, a new materials distribution center was under construction in Philadelphia, to store and handle all steel requirements for the Philadelphia plants. This was no insignificant move. Budd management correctly forecast that steel would come into periodic short supply in the post war years, and that it was prudent to have a special facility for storing a huge cache of

it as a hedge against shortages.

Many other changes were taking place in the basic plant structure. The Philadelphia plant buildings were being linked by huge overhead conveyor bridges, which interconnected major production operations and moved parts in a continuous flow from facility to facility.

Budd's war contracts ended in November of 1945, when the last destroyer smokestack was assembled and shipped off to the Navy. By then, Budd had already ordered 111 new presses which would be installed by March of 1946. These included several triple action units with huge 96-inch beds. More than a third of the presses ordered were so large that they required construction of special foundations.

Also in November of 1945, the former Bazooka rocket department in Hunting Park was laid out as a jig assembly area, and plant conversion occurred with amazing speed. By the end of December, the new department was producing assembly jigs which would be used by Ford Motor Company in 19 domestic and nine foreign plants. These jigs would virtually handle the assembly of complete bodies, hoods, fenders, doors for all of the 1947 model Ford cars. The first set of assembly jigs for the 1947 models would be shipped to the Ford Rouge plant in Dearborn in February, 1946 — just six weeks after the new jig and fixture department began operations.

This was just part of the largest retooling program in Budd's history — perhaps in any company's history. At Hunting Park, a total of 2,000 new jigs were being built for Studebaker, Chevrolet, Nash, Ford and Lincoln . . . Jigs for inspection, welding, drilling punching, assembling . . . every conceivable kind of jig or fixture essential to car body production.

Budd had staffed up with more than 1,800 machinists, and now had one of the world's largest tooling operations at Hunting Park. In addition to producing jigs and fixtures, this new Mechanical Division was hard at work building dies for Budd's new presses — dies that weighed up to 60 tons — and this same kind of work was being done for Budd's extensive cadre of automotive customers as well.

The American public was hungry for new cars! Much money had been earned and saved during the war. Even the low paid servicemen had pay saved up after their overseas

service. During 1945, the automakers cranked out 700,000 new cars in the last half of the year, from the same plants that were still producing tanks, aircraft, military trucks. In 1946, their first full post war production year, they delivered 2.1 million cars — an increase of 1.4 million units — and the public snapped them up hungrily, too.

While this was a time for national euphoria, Budd's management was not overly euphoric. They knew their industry well, and knew the national industrial base and economy well, too. They planned for every contingency that might impact and retard or stop production, but knew there were some things that they could do very little about except hope.

In May of 1946, the nation experienced its first post war coal strike, and Budd production was promptly halted. Since the plants generated their own electrical power requirements from coal, they had to shut down almost immediately. Nearly 10,000 Budd workers were temporarily put out of work. Auto production was severely interrupted for all major customers, even those that had sizeable coal reserves and were not as immediately affected by the coal strike. Ford Motor Company, plagued with pervasive shortages of parts, shut down U.S. production entirely.

Budd management cringed at the first of what they suspected would be many outside labor problems that could impact the company's production, and that of the entire automotive industry. Moreover, they were becoming more aware that, as a consumer driven industry of colossal proportion, any misfunction in the overall economic system would have a titanic impact upon it. In future years, of course, it would also be subject for awhile to near devastating impacts of excessive governmental regulations, to distortions in the global fuel supply, and it would experience a new kind of global economic scenario that could not then even be imagined.

Budd management, now veterans in this new industry, also knew that its sales were cyclical, since they were so closely related to the nation's economic health, the feelings of security and well being among the nation's workers, the availability of money and of credit. They knew they were also cyclical because they were subject to the impact of feeder industry labor disputes, which would occur at the

end of nearly every labor contract in the coal, steel, rail and trucking industries. These latter forces not only retarded sales, they had a crippling effect on profitability. In the case of steel, for instance, companies like Budd would have to pay significant premiums on the spot markets during periods of short supply when their regular steel suppliers could not adequately service them. In addition, this expensive steel could prove to be of spotty quality, which would lead to reworking of products, production shutdowns, customer rejection . . .

All of these considerations were causing key Budd executives to worry about putting all of their eggs in the automotive basket. The company was in the railcar business . . . perhaps it should be in other ones, too. Such thoughts were only fomenting, but they would surface again more emphatically in the aftermath of yet another war. In retrospect, they never need have worried at all. The automotive business would always be Budd's primary pursuit.

In July of 1946, with the first post war coal strike now behind them, Budd management took steps to merge the Edward G. Budd Manufacturing Company and the Budd Wheel Company into a single corporation named The Budd Company. The new Company was born, at a time when its total workforce exceeded 15,000 workers.

And now, Budd was really ready to get down to business. By August, the Company had an all out recruiting drive, and was hiring new employees at a record pace. More than 150 new workers were employed each day. By year-end, the Company would exceed 20,000 workers . . . and these would be supporting a dependant population three times that size.

While the 1946 model cars had been warmed over versions of those in production at the end of 1941, there would be a notable exception when the 1947 models debuted in the fall. Studebaker had developed a revolutionary post war body style. Budd engineers, modelmakers, die makers, machinists, had been hard at work developing the tools to form its streamlined body panels and other parts, and the fixtures for assembling them. They were shipping the body components to Studebaker's plant in South Bend, Indiana on a daily basis.

This futuristic body style piqued the imagination of consumers all over America! This was more like it. This was

what they wanted. The Studebaker featured similar nose and tail silhouette, so that many wags — including those who had never laid eyes on the car — avowed that it was impossible to tell if it was coming toward you or moving away. The sleek sedan featured a turret roof, the neat so-called “green house” which was to become an industry standard, since it offered maximum driver and passenger visibility and had its own esthetic qualities. The nose of this remarkable car was highly aeronautical. The hood tapered neatly to a unique kind of grille — one that was new and exciting. The nose jutted out from the front fenders like an aircraft nose, and the center of the grille featured a huge chrome hub, reminiscent of an airplane propellor’s spinner. In future years, this theme would be overdone by others. But in 1946, it was just the thing.

During the depression years, little more than a decade earlier, the Budd teams had struggled to develop the stainless steel industry they thought would pump up the national economy. Their efforts had kept many Budd employees working. The Company had spent \$2 million in excess of revenues from its stainless steel efforts.

During that time, Budd engineers, starting from nothing, built stainless steel airplanes and launched the stainless steel streamlined passenger train industry. Budd researchers and designers had also worked on revolutionary new types of automotive bodies, and others in the Company had spent a great deal of effort in promoting their wares to customers and the general public.

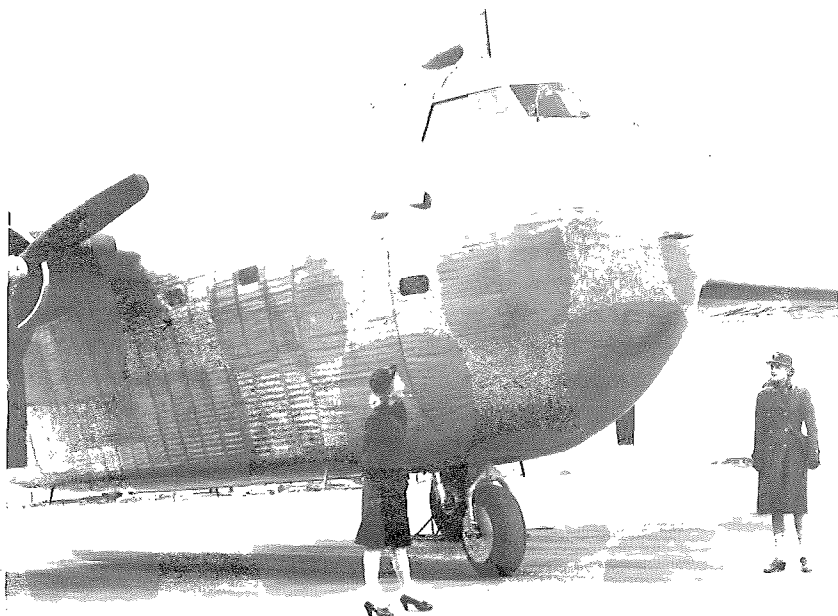
Two years after the Great Depression ended, on the occasion of the 25th anniversary of the Company’s charter, Budd Manufacturing and Budd Wheel were amazingly successful, and among the strongest manufacturing companies in America. Their products were being shipped to virtually every major American automaker, and to the overseas affiliates of those customers as well. At that time, Edward Budd had told a meeting of 500 select employees:

“This organization has always been a great adventure, but there is great sport ahead. We have built an organization that is incomparable and we have got our stride. The volume and variety of the business will grow, and so must each of us grow.”

He had been absolutely right. There had been great

“sport” ahead, and the Company and its employees did indeed grow. Employment had never been higher, nor production volumes so full in November, 1946 . . . when Edward Gowen Budd died at age 75.

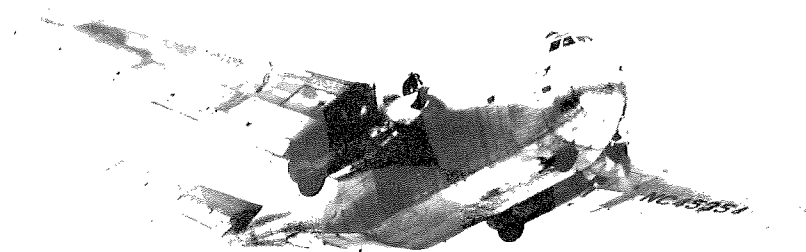
He was succeeded by his son, Edward Gowen Budd, Jr., who had been executive vice president, and was elected president.



Budd's stainless steel Conestoga RB-1 Naval cargo plane gets an admiring inspection from Naval WREN and Army WAC at Budd Field Plant (later renamed Red Lion) in 1944. — Budd Archives.

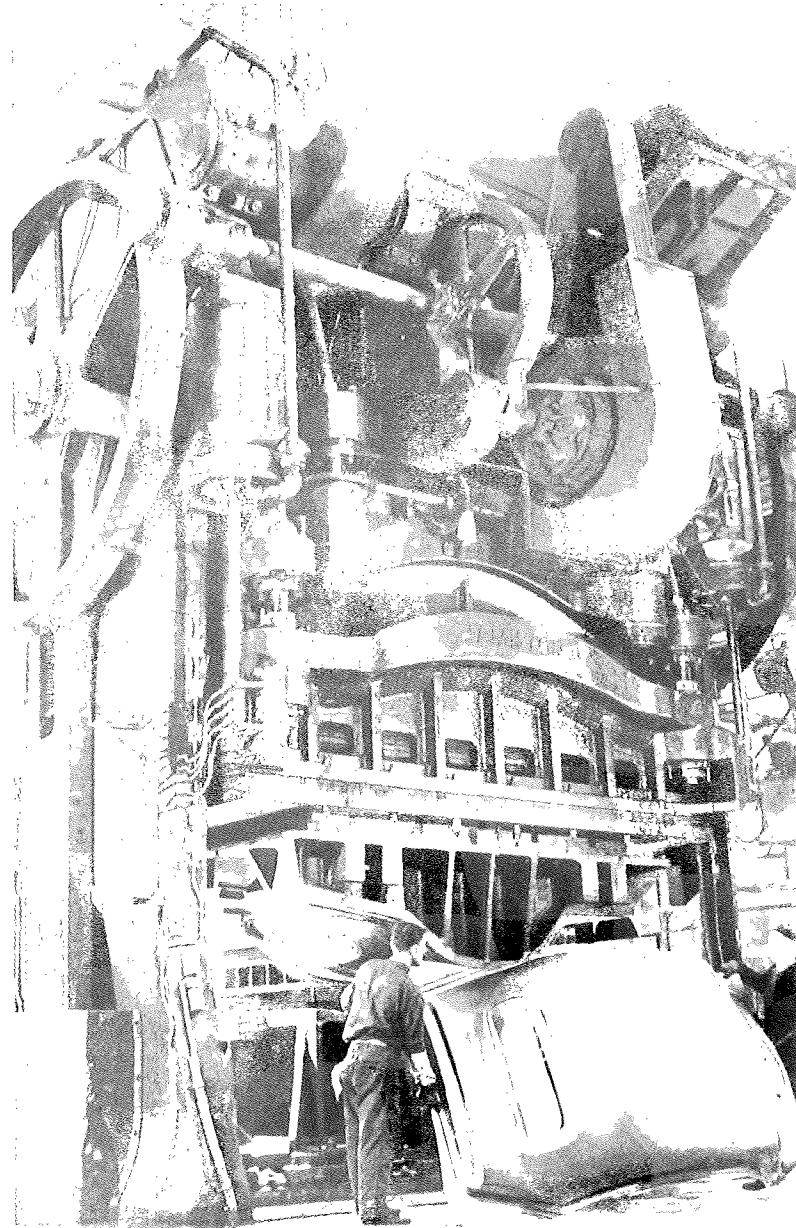


War workers Helen Novotnie and Eleanor Salamaha operate tensile strength test machine to test Shotweld welded seams at Budd Field Plant in 1945 (Top). — Buddgette. Budd's Conestoga RB-1 Naval cargo plane (Bottom) undergoes flight tests near Philadelphia in 1944. — Courtesy Bill Frame.





Edward Budd is honored by professional colleagues in 1944, when he receives the Outstanding Engineering Achievement Award from the American Society of Mechanical Engineers. — *Budd Photo.*



Budd's huge presses switch from defense work to car production again in 1945, stamping out all-steel bodies originally designed for production in the prewar early 1940's. — *Courtesy William J. Carniecki.*



Edward Gowen Budd, Jr., succeeds his father as President and Chief Executive Officer, November, 1946. — *Budgetette*.

BUILDING PRODUCTION . . . 1947-1949

The post war era was unfolding in fits and starts, and many citizens were frustrated with the apparent lack of progress. During the last couple of years of the war, much had been said about wonderful new structural materials like plastics, which would revolutionize many products, including cars. Much was said, too, about the superfast jet propelled planes, and the large rockets . . . which portended to take the world closer to the comic book fictional world of Buck Rogers, Flash Gordon, and others who lived in the awesome future era of the 21st Century.

Much ado was made about things like dehydrated foods, developed to enhance transportation and storage of that vital commodity. Some popular writers of the era suggested that pills would soon take the place of the midday meal. Just take a food concentrate pill and you can work right through with ample energy until dinner time . . . There were scores and scores of renderings of futuristic automobile styles in the popular magazines, most of which were created by imaginative artists and not by those who knew cars.

With heads filled with the post war wonders — most of which had never shown up in reality — American consumers began to wonder when they would get their slice of this new era pie. Many American homes still had ice boxes and not electric refrigerators . . . Many also had coal furnaces, and not gas or oil fired central heating systems. The principal form of urban transportation was still the bus or the electric street car. Trolley tracks ran down every major thoroughfare in Philadelphia and Detroit and America's other major cities, and the huge street cars crashed and ground along, sending sparks flying from their feeder masts which drew current from overhead electric lines. The cities were not crowded with cars . . . not by a long shot. Nobody had even thought about putting up a parking meter yet . . . there was too much room to evade them, and not enough traffic to make that venture profitable.

Men still shaved with shaving brushes and blades that got rough with the second using . . . or with electric shavers that often nicked the skin, or left a telltale stubble. After-shave lotion was a necessity, not for its odoressence, but to help

heal a much abused face. Aerosol shaving cream was still a few years away, and so were blades that would shave smooth and well shave after shave.

The public desire for futuristic design was reflected in men's clothing, and to a lesser degree in women's. After wearing khaki, blue serge, or olive drab for so many years, American men now wore outlandish sports jackets that barked out loudly. They wore bright diamond socks, wide gaudy neckties secured by large bold tie clasps, and voluminous multi-pleated trousers which overhung two colored oxfords, or lazy leather loafers . . . sometimes with shiny pennies stuck in the uppers. For all the brightness on the outside, though, many men who wore such garb also still wore homely elastic garters to keep their socks up.

Women's clothes were more a hold over from the war years, which, too, was frustrating. They, too, wore cumbersome garters to keep up their seamed nylon hose, and even the cosmetics of the era lacked the post war years promise. Lipsticks were thick and greasy and of stark hue, and terrible to dislodge when they stained a blouse or shirt collar. There were not even miracle liquid detergents to help do this at war's end, although they would be available widely by 1947. It would take that long even for ballpoint pens to come onto the market, and the fountain pen with its rubber reservoir of liquid ink was still the standard American writing tool. Most people still paid for their retail purchases in cash, and seldom by personal check. Many, many Americans did not even have checking accounts. Hardly anyone owned a credit card . . . and hardly any place of business accepted one. That would change very fast.

The primary forms of entertainment were still the radio and movies . . . and most of the good movies of the era were still being produced in black and white film. Americans longed for new and revolutionary products . . . But the means for producing them was not yet at hand . . . even though The Budd Company had gone all out to make sure this would not be the case with American cars. As already stated, Budd had helped give the public the new Studebaker look, which appeased many fiery imaginations and piqued those that were of a more sanguine nature. It was a perfect post war car in all respects, and many more were soon to debut.

One of these came from an entrepreneur named Preston Tucker, who worked up a sleek car with lines somewhat similar to the Studebaker, but with the more massive look of many of the newer post war cars which were yet to come. He had started his company in 1946, but it would prove a failure, because of poor financing, lack of a sound dealer organization, and . . . unfortunately, a product that had more eminence in the imagination of the public, than it could earn in reality.

The Tucker had a rear-mounted converted aircraft engine which ran so hot that the rear deck lid heated enough to burn one's fingers. Instead of a simulated center grille "propellor spinner" like that on the Studebaker, the Tucker Torpedo had a center mounted spotlight sitting between the regular headlamps. It turned left or right with the front wheels.

Not many people saw this car . . . but it was discussed all over America . . . and the discussions led to exaggerations about its design and capabilities. The center headlamp was described by word-of-mouth as a super-powered searchlight, which could throw a blinding beam bright enough to light a wet turnpike road for several miles ahead, even in the darkest night . . . It was said that this car with its revolutionary engine could travel so fast that no police car in existence could ever overtake it . . .

Indeed, it moved so rapidly and silently that it was menacing unless operated by highly skilled drivers. It zipped up on you so fast that you couldn't even hear it coming . . . and it was rumored that, instead of steel, the Tucker had plastic body panels . . . near miraculous plastic body panels . . . "Hit a door with a sledge hammer and it will only dent. A couple of minutes later the dent will pop right back out again like the car wasn't even touched" . . . and so on.

Those were the days before national television put things before the eyes of the public almost instantly, and much of the glamor of the day lived in American hearts and imaginations. Radio was still the home entertainment medium. . . and relied upon and called upon public imagination for its very survival. It was not called the "Theatre of the Mind" for nothing.

Millions of Americans could "see" clearly the wonderful

and super powered Black Beauty sedan of the radio character called the Green Hornet . . . though no description of it had ever been given on the airways. The Detroit radio station that developed that national radio program drew the picture with a sound . . . merely by projecting a melodious, gutsy engine sound . . . with the vague timbre of a hornet's buzzing wings . . .

That sound spoke to the millions . . . simple as it was concocted, it came over the airwaves with great majesty and with arresting compulsion. It compelled listeners to conjure and see the "ultimate" modern car . . . the car that was . . . the car of their own unique dreams. This car, in thousands of fanciful variations, was the ultimate car that could touch the aspiring hearts of all Americans . . . if anyone could ever design and produce one that even came close to it.

This was the car that Budd and the automakers wanted to design and capture in steel. They would come very close. First, Budd helped with the 1947 model Studebaker, which spoke to the imaginations of millions. Then, in 1948, Budd played a key role with the sleek new Ford that was squared off, but streamlined . . . that was fenderless like the Studebaker and also had a nose spinner . . . that was smart and exciting and a smash hit seller . . . And also in 1948, Budd helped create the opulent streamlined Hudson unbodied car with "stepdown" floorpan . . . It has often been said that the Hudson of this era was styled more as a "boat" than a car . . . there was surely nothing utilitarian about it. The interior was super roomy, comfortable . . . the exterior was bold, massive, flowing . . . like many minds would picture the Green Hornet's Black Beauty to be! Indeed, a few years hence, when Hudson came out with a more compact and lower priced version of the car Budd had helped develop . . . wouldn't you know it . . . it would be called . . . yes . . . the Hudson Hornet!

The revolutionary Nash Airflite series would debut late in 1948, too, and set a new pace for the 1949 model year. Budd supplied virtually all of the body components. The Nash Ambassador and Nash 600 looked swift, and were low silhouetted with what designers of the day called "racing curves," and all four wheels were enclosed within the integral fenders. All instrumentation was contained in an instrument hub module, instead of in the dash board.

This permitted the dash to be set further forward, close to the windshield, and resulted in the roomiest car interior in the industry. Many would-be car customers saw the new Nashes and the Hudsons as a "toss-up" situation, and couldn't decide which way to go. Ironically, in little more than a decade, both of those car companies would join forces in a dramatic merger and carry on from then on as American Motors Corporation.

Budd also produced body components for the new post war Packards. The opulent luxury car of the 1930's now became a sleek, "downsized" luxury car, while competitors in its class were still massive, overweight, overstated. The Packard even incorporated fiberglass into its grille and front end section. When this car met its demise, auto historians were to say that it was because it was a cross between an upper level luxury car and a practical, graceful sedan. It was, in short, a luxuriously appointed "personal car," in an era before the average American could afford such a degree of luxury.

The use of plastics in Packards was significant. Of its own volition, Budd was also working on an entirely different kind of car body in 1948 . . . one which would be made from an entirely new kind of material. Since war's end, Budd engineers, toolmakers, machinists, had worked hand in hand with chemical companies and had devised ways to form fiberglass reinforced plastic sheets into structurally sound, high surface quality automotive body components. . . and to form them not with conventional molding techniques, but with special presses which functioned much like those that stamped the same components out of steel.

Working with Studebaker, they produced an all-plastic, fully functional version of a 1949 Studebaker Hawk, which was the spitting image of those being produced in steel. Many of those who saw it said that it was even superior to the steel production cars in appearance, since the smooth, ripple free plastic panelling took automotive enamels of the day very well, and exuded a lustrous sheen. This was a one of a kind advanced concept vehicle that never went into production.

Was Budd earning its keep in America? Was it serving the American auto industry well? The Company supplied many body components for Chrysler's Chrysler-Plymouth,

Dodge and DeSoto divisions, for most of the General Motors divisions, and for Ford, Lincoln and Mercury. It also supplied wheels for most large volume passenger cars, and for many lines of medium and heavy duty trucks and trailers.

In the wings, in the sanctum of sanctums of advanced vehicle research, Budd and Ford designers and engineers were already well into yet another futuristic car . . . a two seater sports car . . . but a sports car of the new jet age . . . one which would be an instant classic . . . which would look as modern and dashing thirty years later as the day of its first showroom appearance. It wouldn't emerge for several years because national and international events would intervene. Its distinct, aircraft inspired styling would make it the model for virtually all other cars on the road, regardless of their size or class. It would touch off a designing war which would gradually focus on rear fender tail fins, which would rise to almost outlandish proportions, in some cases, then have to be tailored back until there were only vestiges left, and then nothing left at all that made an American car look like it was designed to fly as well as drive. The new two-seater sports car would be called the Ford Thunderbird.

Something of significance was taking place internationally, too, that year, which would eventually have a phenomenal impact on the American automotive industry. General Marshall had asked Congress to allocate "foreign aid" funds to the war torn nations of Europe, to help them reindustrialize, and rebuild their social infrastructure as well. This meant, among other things, that the leading European automakers would soon gather new strength from the "Marshall Plan," either directly, or indirectly. Those fine companies in England, France, Italy, Germany and other nations would flourish again . . . Fine companies that built fine cars using Budd technology . . . and which would soon be operating under new Budd licensing agreements.

Nobody knew it then, of course, but in little more than 30 years, the European car market would be equal in size to that of all of North America. The Japanese car makers were tinkering with new models, too, although nobody in the west thought they could produce anything worthwhile that was not an inferior copy of an American or European car. In 30 years' time, the Japanese automakers would be pro-

ducing more cars and trucks than America's entire industry of automakers.

But there was no hint or thought of that in 1948, and The Budd Company was going all out to increase its market share, and to try to help America's automakers develop an industry of a size, scope and quality that would make the rest of the world spellbound.

From war's end until the end of 1947, The Budd Company had invested some \$35 million in new plant and equipment, and production volumes in all automotive operations were the largest in the Company's history. Budd also invested heavily in research and development and planned to increase these expenditures in the years ahead. That same year, Budd licensed the Pressed Steel Company of Great Britain to produce its stainless steel railcars, and signed a similar licensing agreement with the French firm of Carel-Fouche et Cie.

In 1948, the Red Lion plant, which produced railcars and had been leased from the United States government, was purchased outright at a cost of \$5.3 million. In addition, the Company invested an extra \$10 million to build a hedge inventory of steel and other raw materials. Employment was on the rise, and the work force would soon exceed 22,000.

A four-year apprentice program was in full swing for the various shop trades, and a "cadet training program" was underway to provide work experience and career grooming for employees who aspired to work in administration, production management or sales. Foremen were attending the Budd Foreman's Institute, to develop human relations skills, and take training in productivity and quality control theory and methods. Another major program underway that year involved formal discussion seminars between workers, supervisors and management.

American passenger car production in 1948 surged to just under 4 million units . . . approximately the same heady level set in 1937, which had been the highest ever since the alltime record production of 4.5 million units in the last year of the Roaring Twenties. Production might have equalled or exceeded the 1929 record, but for the steel shortages that plagued the industry. Since Budd had ordered extra steel and developed a sizeable hedge inventory,

the effects of the steel shortages were minimal to its own operations . . . even though they curtailed overall automotive output and thus held potentially higher sales in check. It was in 1948 that Volkswagen sold its first cars in America — a total of two VW “Beetles.”

Budd still had ample steel in 1949, and this was the year that all things came together for the American automotive industry. New car sales shot up to an alltime high record of 5.1 million units. Budd’s wisdom in hedging steel paid off handsomely, for there was a national steel strike that year that lasted for 32 days. Budd continued to deliver the goods without production stoppages . . . although it did experience difficulty in procuring enough additional steel to meet its needs for such a protracted period. Think of how high new car production would have risen if there had been no steel strike in 1949!

Overall, Budd did so very well that it outstripped its own capacity and actually had to defer new business orders. Deferring business in an industry where car models changed every year and in which markets exhibited a certain seasonality was almost tantamount to losing business. Budd management decided they would not turn away any orders in the future.

They allocated another \$8.4 million for plant expansion. Seven million dollars would be used to construct a new, high output stamping plant at Gary, Indiana, which management hoped to have in production within a one-year period. The remainder would be used to construct a gray iron brake drum casting foundry at Red Lion, which would supply wheel and brake operations in Detroit.

Nineteen Hundred and Forty-nine was Budd’s best year until that date. Sales were up 22 percent to a new record level. Profits were up 67 percent — and all from automotive operations! Euphoria! Euphoria! This was the post war era! President Truman, now in his second term of office, carried forward American aid to foreign nations considerably: He asked congress to fund a program that would provide technical aid to underdeveloped nations . . . Some of the very nonindustrial nations that would compete against the U.S. auto industry with amazing strength in another three decades . . . That year, the Soviet Union ended its blockade of Berlin which had begun in 1948 . . . West Germany became

The Federal Republic of Germany, with Bonn its capital, Eire became the Republic of Ireland, Siam became Thailand, India became a Republic, the North Atlantic Treaty Organization was created, and at the Shubert Theatre, just off Times Square in New York, Mary Martin was belting out a song in which she vowed she was “Gonna wash that man right outta my hair” . . . The Rogers and Hammerstein musical South Pacific had just opened, based upon novelist James A. Michener’s best selling Tales of the South Pacific. Mary Martin’s costar, Ezio Pinza, was singing the smash hit song, “Some Enchanted Evening” . . . and it was not difficult to find enchanted evenings that year . . . Those were indeed enchanting times. How could we know that they would change again even before another year had ended. On a less enchanting note: The Soviet Union detonated its first atomic bomb.



Laura M. Zimmerman, first woman employee hired by Edward Budd, talks to phone operators at Budd Philadelphia headquarters in February, 1949. By then, Mrs. Zimmerman had been with the Company for 35 years, and was a manager in charge of all of Budd's telephone communications. — *Courtesy, Laura Giniff.*



When Budd's first woman employee, Laura Zimmerman (bottom row center) retired in 1954, she had devoted 40 years of service to the Company. Combined with the service of other members of her family, the total was well over 100 years. Her brother Daniel Miller (Top, left) worked at Hunting Park, her daughter, Laura Z. Giniff (center, top) worked in Personnel, her sisters Mary M. Lloyd and Lydia C. Miller (left and right, bottom row) worked in payroll. Woman at top right is another sister, Ada M. Dunn, who was not employed by Budd. — *Courtesy, Laura Giniff.*

THE KOREA WAR ERA . . . 1950-1953

Nineteen Hundred and Fifty began happily enough, despite the international tensions between East and West. The bulky streamlined cars continued to be turned out in unprecedented numbers. While sleek to the eye then and exuding class and opulence, some would seem in later years like overstuffed furniture, when compared to more modern, graceful, functional designs. But then they were hot.

There was very little automation in those days. Budd engineers had devised an automatic spot welding system dubbed "the merry-go-round" by plant personnel. It consisted of a bank of three automatic spot welders, which each welded floorpan components from a different angle and aspect so that a fairly complex job was done with the least manpower employed.

Most of the work was done by so-called "semi-skilled" craftsmen, who used a variety of hand tools, stationary tools, and specially constructed jigs.

A fully assembled, ready for installation car door, for instance, was produced manually. The large door panels would be stamped out on presses in two basic parts. The smooth finished outer door panel would have a lip about a half inch wide, slightly bent inward. The inner door panel would have reinforcing contours, and holes and slots for anchoring window regulators, door locks and for accessing window and door latch cranks. This would be the larger of the two panels, since it also made up the thick door edge. The two panels were connected at one or more points by a metal strapping or "clamp," which was spot welded to each of the panels.

The assembly process would begin by laying the outer panel inner face up in an assembly jig. The inner panel and clamps were laid on top of it in an inserted manner, and the lip of the outer panel was forced over that of the inner panel by a hand held pneumatic hammer. A skilled worker could completely join the panels together in a few seconds, almost like spreading butter with a knife.

The assembled door was then moved onto a welding jig. The jig consisted of copper strapping about two inches wide, which was designed to fit the contours of the outer perimeter of the door. This frame was set on a central

swivel, like a secretary's office chair is affixed to its pedestal.

Once the door was set on the jig, a spot welder would go to work with a pneumatically driven resistance spot welding machine. The welding end consisted of a two prong air driven claw, with a copper electrode inserted in each pincer. The welder pressed the trigger on his machine, which he held in his hands.

The claw gripped the door edge tight between the two electrodes and electric current passed through, spot welding both door panels together at that point. The welder gave the gun a little tug before he released the trigger. This rotated the door slightly, and the rotation was stopped when he pressed the trigger again, gripping the door between the electrodes and performing another weld. The welder could fire off 50 or more welds in a few seconds, spinning the door and jig with ease. He would also insert the electrodes through slots in the inner door panel, and spot weld the clamps in place. From there, the door would go to a metal finishing station, where a tradesman would remove surface imperfections.

While many automakers even then were integrating their own metal body assembly operations, ordering unassembled stampings to assemble and finish them themselves, many others were still ordering complete bodies and doors from The Budd Company, which were ready to go on the fine metal finishing and paint production line upon delivery.

This was the year Nash introduced its new Rambler series, another modern car with body by Budd. It was an even better year for the automotive industry than 1949 had been. Production soared to 6.7 million . . . an amazing 1.5 million increase over 1949. The Budd Company would once again post alltime high sales and profit figures, despite the loss of more than usual production time caused by customer model changeovers.

It should be explained that, back in those days, the auto industry operated on a strictly annual basis, rolling their dice in a one-year market. New models were developed under utmost secrecy. Every summer, the assembly plants would shut down for model changeover. Employees would go on vacation, and many production workers would be laid

off as well. The changeover would run into several weeks.

Once tooling and jigs were changed over, the workers were recalled to crank up assembly. The first cars would go through the line assembled by maintenance men and various assembly trouble shooters. As the lines rolled, the new models would be stockpiled in the factory marshalling yards. These would be enclosed by cloth walls or cardboard facia to screen the new models from public view. Nobody would see them until the day they debuted in the showroom, and when they did, there was an all out advertising blitz and much other hoopla to bring hordes of customers into the showrooms.

This style of marketing fed upon itself. It cloaked each year's new models in an aura of mystery, and made the car buying public ever expectant and looking eagerly forward to newer, more advanced cars of the future.

With production soaring, with America's economy booming, an event occurred in Asia which put a damper on things. The impact would not be felt immediately in an economic sense, for who could ever expect that the invasion of a few battalions of North Korean infantry into South Korea would involve the United States in another fullscale war.

Yet it did. While American occupation forces had withdrawn from South Korea just the year before, there were still many American military advisors in the country, and these were caught up in the hostilities right away. General Douglas MacArthur still maintained sizeable garrisons in Japan and in Taiwan, and immediately came to the aid of South Korea with considerable force. The United Nations condemned North Korea as a military aggressor, and organized a large military force composed of military contingents from many nations to perform a "policing action" in South Korea. This force was placed under MacArthur's command.

The United Nations forces were driven back to Pusan by the armies from the North. But then MacArthur regrouped, landed forces behind the enemy lines at Inchon, and drove the North Korean army back to the 38th parallel which separated the two countries. He told the news media that the American troops would be home in time for Christmas. Many World War II veterans from The Budd Company had

been recalled to service. And many workers too young for service in World War II were now drafted to meet the new military demands. Suddenly, it was clear that the troops would not be coming home. China attacked the UN forces with its so-called Chinese Peoples Volunteers army, and the scope of the war was enlarged.

The federal government rightfully put controls on steel and other raw materials essential to defense. Strong credit controls were also invoked, to hold consumer spending in check and retard the inflationary pressures which were sure to build. The credit controls also would make it easier for the federal government to raise funds on the investment market, since much less money would be available to consumers for buying new refrigerators, television sets, or flashy new cars.

Budd's own analysts predicted that auto production would decline by 25 percent in 1951 because of these things. It worked out that total production was off by 17 percent. However, The Budd Company was the premier automotive body builder and supplier of wheels, hubs, drums and chassis frames. It served virtually every major automaker in America, and it was increasing penetration with many of these customers. Budd's own sales actually went up, while overall industry sales declined sharply.

However, profits were down significantly. The Budd Company began 1951 at absolute capacity, but as months went by, shortages of steel and other materials became critical. Production was often interrupted. Budd sometimes had to buy steel from non-traditional suppliers, and pay exorbitant premium prices. Often the steel did not meet Budd's quality standards, and was rejected. The greatly reduced schedules of customers also began to impact The Budd Company in the last half of the year. Before year-end the Company was operating well below capacity. With great reluctance, management laid off 10 percent of the work force — the first general employment cutback since the 1930's.

The layoffs proved justified. New car sales fell another 20 percent in 1952, and — despite the economy measures taken — Budd's earnings were off substantially, as were overall sales. While the nation was surely engaged in war, The Budd Company had very little defense work. Automotive

operations accounted for 90 percent of sales at the beginning of the year.

However, Budd management was going all out to procure defense work. The government would not classify the products the Company produced for military vehicles as defense items, and thus deprived Budd of priority access to steel for its automotive work.

By year end, defense projects accounted for 20 percent of total sales. A new plant was built within a few months time at Hunting Park, to machine and weld tank hulls and turrets. The new facility was equipped with a 2 million volt X-Ray laboratory, with a huge 46-by-78 foot chamber to X-ray tanks for possible flaws in the castings and weldments. Budd was also able to draw upon its stainless steel processing expertise, and began producing impellor blades for jet aircraft engines.

Even though the Korea war was raging, the "front" was stabilized near the 38th parallel and armistice talks had been going on since 1951. The hostilities could end at any time. Budd management, while meeting its defense contract obligations to the letter, was still pumping a lot of funds into research and development in non-defense consumer products, too. The Company also continued its program to expand plant capacity and upgrade manufacturing equipment. An additional \$19 million was invested for expansion in 1952, bringing the total to \$25 million since the new program began the previous year. Budd was again poised to prosper in yet another post war era.

It would come in the summer of 1953, when hostilities in Korea ended. It had been a different kind of a war. No armistice would be signed. Armistice talks would continue for more than 30 years following the cease-fire agreement. Both sides would meet regularly each year to formally reopen discussions. And this time, troops serving in Korea had been able to return to the United States after one year of duty. It was called the military rotation system. Troops who sailed for Korea from west coast ports looked at the permanent welcome home signs painted on the dockside warehouses that would greet them on the return trip . . . if all went well.

The automotive industry would recover nicely as the economy spurred after hostilities ended in Korea. Consum-

er credit controls would be relaxed. Raw materials would be more readily available. New car production would soar upward by 46 percent, with more than 6.1 million units built nationally. However, 1953 ended with substantial new car inventories on hand.

Since The Budd Company's sales mix now included a large portion of defense production, the end of hostilities in Korea had its impact. Defense sales peaked at mid-year and tapered off to a dribble. They had grown to such a volume that they still constituted more than 20 percent of total 1953 sales, despite the drastic tailing off.

There was also a change in the automotive sales pattern in 1953. General Motors, Ford and Chrysler virtually monopolized the market, and Hudson, Nash, Studebaker and Packard were losing ground. The Big Three were realizing new economies of scale, having shaken out their companies well since the end of World War II. They had invested heavily in new equipment and facilities.

Increased competition between all of the automakers put new cost demands upon automotive suppliers, including The Budd Company. Still, on its 1953 sales volume — which was up 13 percent over 1952 — The Budd Company had a profit increase of 18 percent. However, profits in 1952 had been abysmal. The Company was not realizing a good return on its invested capital. However, that return could improve with increased productivity, which meant of course, acquisition of more state-of-the-art production equipment. Another \$9 million was invested in new plant and equipment.

The two-seater sports car Budd had been working with Ford debuted in 1953 as the 1954 model Ford Thunderbird. This sleek, graceful, aerodynamic car would attest to Budd's automotive capability and the craftsmanship of Budd workers. Budd would not only produce the components for the Thunderbird body, but would actually assemble the entire body, and deliver it ready for painting to the Ford assembly plant. Budd would continue to produce the Thunderbird bodies that way for several years.

General Motors also introduced a two-seater sports car that would not only have a styling impact on the cars of the day, but would strongly influence the development of fiberglass reinforced plastic car bodies. It was the Chevrolet

Corvette . . . a high powered sports car line that would carry through for more than three decades. The Corvette was also America's first all-plastic body production car. GM would not put another all-plastic body car in production for 30 more years, when the Pontiac Fiero would be introduced. Budd would play an even more significant developmental role in the Fiero, than it did in with the 1954 Ford Thunderbird. Budd would also produce some of the Fiero's all-plastic body components, and similar plastic parts for the Corvette.

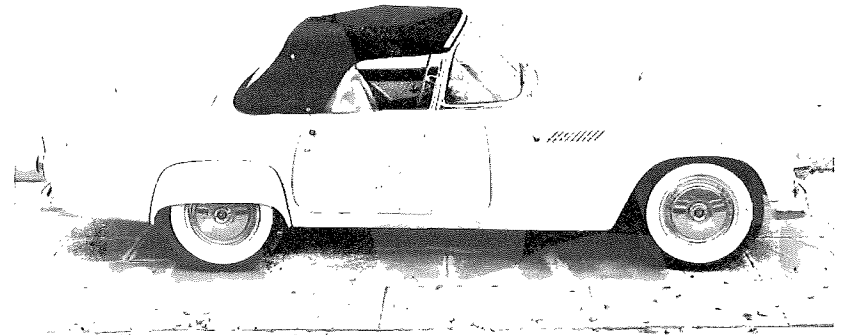
Three of Budd's longtime and excellent customers, Studebaker, Nash, Hudson and Packard were not holding up well, and discussing combinations and mergers to strengthen their position. Some Budd executives thought it time to add new lines of business to The Budd Company mix . . . Non-automotive business which would bolster profits in those periods when the nation's automotive fortunes temporarily wained. It was a worthy thought. However, the American automotive industry had now reached such a size and was so pervasive throughout the American economic structure that when it faltered, the very economy of the country faltered — including most other lines of manufacture.

There were other things tempting Company officials to lay the ground for a new pattern of diversification. This was, after all, the atomic age. It was also the age of the jet and the rocket. Jet airliners had been flying in England and in Canada since the end of the 1940's and were just now being produced by Lockheed, Boeing, Wright-Douglas and others . . .

The year before, America had launched her first nuclear powered submarine . . . and the atomic age grew even more complex as American scientists exploded the world's first hydrogen bomb. America also had its first nuclear reactors in operation, producing electricity in place of coal fired. This was a new and highly scientific era . . . or so it seemed. Remington Rand had developed an amazing computer called the Univac system which promised to change the very nature of the business world — and indeed it did before the decade was over. It was used to analyze returns and project the outcome of the 1956 federal elections. These seemed like the solid growth fields where opportunities would be

abundant. This seemed to be the new kind of ground to plow . . . even though those industries had little to do with developing products that relied upon the forming and fastening of metal, which was then, always had been, and always would be the calling of The Budd Company, and, of course, that expertise had and always would be applied to the automotive industry.

Nonetheless, it was good to look for new ground to conquer. Some men do that because it is their nature. That very year, a New Zealander named Edward Hillary and a Nepalese named Tiger Tenzing Norgay, were the first men to step foot on the windswept peak of Mount Everest. Joseph Stalin had died, and Dwight D. Eisenhower had been elected the 34th President of the United States.



The Ford Thunderbird two-seater sports car debuted in 1954. It was destined to become a four-seater in late 1957. Budd built and assembled the T-Bird body through to September 2, 1960, producing 251,453 total units. — *Courtesy, Ford Motor Company.* T-Bird (shown below) was exhibited in Budd Charlevoix office lobby in 1955. Pictured with it are Dawn Sinnhuber, of Purchasing (Standing) and Beverly Netzloff, of sales. — *Buddgette.*

A PATTERN OF DIVERSIFICATION . . . 1954-1959

While historians generally label the last half of the fifties as a lacklustre era in which nothing of significance happened, perhaps they do so because they run out of calamities to focus upon. It was said by some that, with the Eisenhower government now entrenched, government spent much of its time retiring to Camp David and other resorts, to more or less let the country run itself. Lacklustre? Why, this was even the era of rock and roll music! Yes it was. Rock and Roll was already a phenomenon, and a young man named Elvis Presley would soon emerge and become "King" to a realm of hundreds of millions of admiring fans.

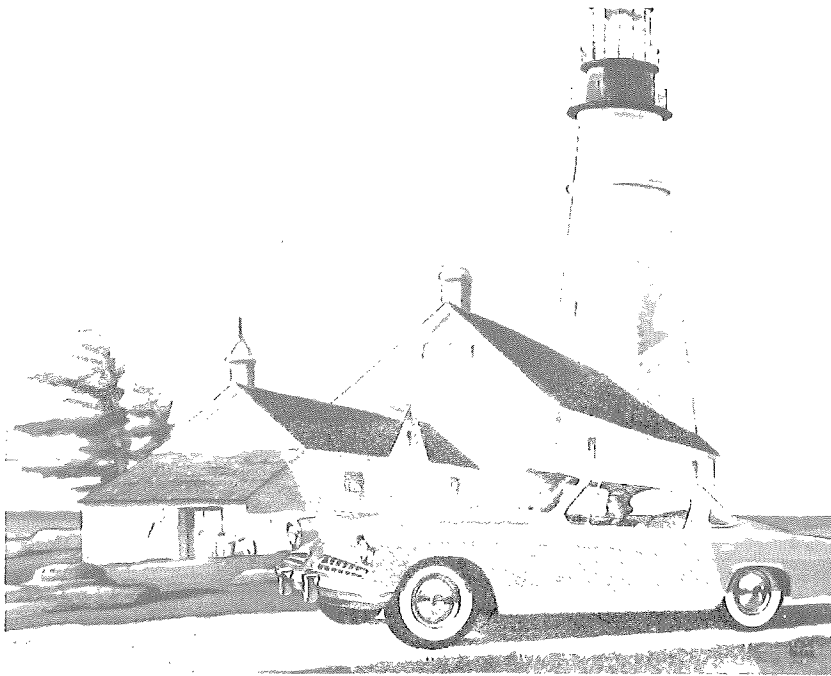
It certainly wasn't a lacklustre era for the auto industry, by any stretch of the imagination. In 1954, Studebaker and Packard joined forces to create the Studebaker-Packard Corporation. Nash and Hudson would amalgamate and form American Motors Corporation.

This was also the year in which Chrysler Corporation unveiled a revolutionary new kind of car . . . revolutionary from a powerplant standpoint. The Chrysler gasoline turbine engine performed well, and seemed the wave of the future . . . even though the engine had a mildly disconcerting accelerator lag, and some heat seal problems.

Ford came out with its highly successful two-seater Thunderbird sports car, and Chevrolet introduced the first in a series of two seater fiberglass body Corvettes.

The Budd Company not only developed all of the body dies, tooling and production fixtures for the hot-selling, exciting Thunderbird, Budd actually assembled the bodies at its Detroit plant, and transported them to the Ford production line at its Wixom plant outside of Detroit.

The Thunderbird proved itself a styling trend setter. It's graceful, aerodynamic lines would be emulated by many automotive designers in many other applications. It was a sound sales success, too. In its first production year, over 16,000 T-Birds were sold. This would rise to more than 21,000 in the 1957 model year, when the two-seater version was discontinued. The Thunderbird at that point became a



Translating Ideas Into Steel

● The bodies of the spectacular new Studebaker were once no more than a daring idea—something drawn on paper by Studebaker designers.

Budd made them things of steel—strong and beautiful.

Translating ideas into new and better products that contribute to your happiness, your welfare and your safety has always been Budd's way of life.

Among the results have been the development of the all-steel automobile body. Improved wheels, brakes, hubs and drums for highway vehicles of all kinds. The stainless steel railway passenger car and disc brakes which stop it quickly, smoothly and safely. Lighter, stronger stainless steel highway trailer bodies.

The Budd Company, Philadelphia, Detroit, Gary.

1953-1951

B U D D
PIONEERS IN
BETTER TRANSPORTATION

This Budd advertisement, which appeared in National Geographic magazine and elsewhere, tells the main mission of The Budd Company. — *Courtesy R.J. Padisak.*

luxury five-passenger car, and would continue on that way.

Nineteen fifty-four was also the year that Volkswagen made a concerted drive to market its VW Beetle in the United States. It had sold the first of them — a total of two cars — in 1948.

Nineteen Hundred and Fifty-four was also the year of automotive tailfins, which would increase in size over the next couple of years, and it was the year of chrome and stainless steel trim . . . lots of it, liberally applied to car bodies, and held in place by wire fasteners that jugged through holes tapped into the body panels.

It was also a year in which automotive sales tumbled by nearly 10 percent, or some 500,000 cars. The Budd Company experienced big sales cuts from newly merged Studebaker-Packard, and from American Motors. Budd's total sales were off by nearly one third. Profits were down by 40 percent.

In the 1954 Annual Report to Shareholders, Budd management stated that there was desirability in broadening the Company's base of operations to lessen its dependency on the auto industry. The annual report also revealed that Budd was negotiating to purchase Continental Diamond Fibre Company, a major producer of laminated plastics.

This feint toward diversification did not in any way suggest a stepping away from the automotive industry. Management knew that The Budd Company was and would remain an automotive company. They simply sought new revenue streams. Step away from automotive? That would be stepping away from reality.

To the contrary, Budd had now spent some \$84 million on new plant and equipment since the end of World War II — practically all of it automotive oriented. Despite sales cutbacks in automotive bodies and panels that were in line with declines in the 1954 automotive market, Budd was doing very well in other automotive areas. The Company had received substantial new orders for wheels, hubs and drums.

It was also producing stainless steel over-the-road trailers. Sales in this area were up over the previous year. The Company also produced nearly \$30 million worth of automotive dies, jigs, fixtures for its customers. And in 1954, for a change, the passenger rail car business showed a small

profit. And the following year, Budd's wisdom in beefing up its automotive operations paid off. The Company had the capacity to handle a 38 percent increase in sales, and its modern equipment, streamlined manufacturing processes and seasoned work force enabled it to more than double net profits. Again, a considerable portion of earnings went into expansion and improvement. Another \$12 million was invested in 1955 — most of it coming directly from gross earnings — and this brought the total expansion and improvement expenditures since 1945 to a colossal \$100 million! It is good to remember that one million dollars two decades ago was a much more substantial sum than it is today. Inflation alone has devalued modern day currency by two-thirds its 1955 value, so that \$1 million in 1955 dollars would equal some \$3 million in 1986. Moreover, in those days, a modern 60-story office tower could be built for well under \$10 million, while the cost of construction would be more than five times that amount in the 1980's.

Budd management proudly proclaimed that in 1955 the Company was in the most efficient state in its history. The character of Budd's automotive sales had changed somewhat, too. The Company was now very heavily involved in producing dies, jigs and fixtures. It had expanded its Philadelphia facilities to accommodate the greatest volume of tool building business the Company had ever known. In addition to producing steel bodies or body components for Ford, General Motors, Chrysler, Studebaker-Packard and American Motors (in that order of sales volume importance), Budd had greatly increased its sales of wheels, hubs, drums, chassis frames, and stainless steel trailers.

The Budd Company was trimmer than it had been at the end of World War II. It now employed slightly more than 19,000 workers. During 1955 more than 750 people had been promoted to higher positions — entirely from within — as opposed to hiring new supervisory and management people from outside the Company.

A new three-year labor contract had been signed with the United Automobile Workers, which represented most of Budd's employees, and there was considerable labor and management harmony. Of the more than 19,000 workers, over 1,600 had been with the Company for more than 25 years, and another 8,000 had been employed by Budd for at

least 10 years. Roughly 1,000 employees had retired, and were drawing pensions.

Management was proud of these 1955 statistics, which indicated a highly seasoned work force, and good employee relations, with many workers already retired on pensions. All of the apprentice and management training programs were running smoothly, helping to perpetuate the "promote from within" policies.

The Budd Company acquired Continental Diamond Fibre Company, which served the automotive, railroad and electrical industries, and thus was allied with business Budd was already involved in. The Company also purchased the rights to produce isotope radiography machines from a company called Gamma Corporation, and thus became involved in manufacturing non-destructive testing equipment. The Budd Company also purchased a one-third interest in the French railcar firm of Carel Fouche et Cie, which was licensed to produce Budd stainless steel railcars in France. For all of this diversification activity, the cost of these acquisitions did not begin to approach the amounts the Company was investing to continuously expand and improve its automotive production capabilities.

While 1955 new car production had topped out just below the 8 million mark, setting a breathtaking all-time record. . . it plummeted sickeningly in 1956 to less than 6 million. As it turned out, a good slice of the 1955 car production had been "surplus" — well and above the needs of the market. At year end, hundreds of thousands of 1955 model cars sat gathering dust in marshalling yards, and the automakers put a strong foot on the production line brakes to try to bring car inventory into balance with real market demands.

Shareholders would read in the 1956 Annual Report of The Budd Company that "The experience during 1955 emphasizes the necessity of continuing our efforts to broaden diversification so that we are not so dependent on the automotive industry." Sales were off and so were profits.

It could also be noted in the 1956 Annual Report that The Budd Company's diversification efforts were moving ahead. The Company had formed Tatnall Measuring Systems Company, which produced highly sophisticated equipment for performing non-destructive tests on equipment and materials. This equipment was so precise that it could

be called "space age" equipment, and indeed that was apropos to the times.

The Company management also revealed its diversification plan outline. In addition to automotive, Budd was interested in plastics, scientific measurement, electronics and nuclear energy. Seven separate divisions were established to pursue the various businesses: Automotive, Rail Car, Continental Diamond Fibre, Defense, Nuclear Systems, Tatnall Measuring Systems and International. Each division was headed by a vice president.

There was some encouragement from early diversification efforts during 1956. Continental Diamond contributed to profits, and in defense, Budd had increased its aerospace business, and was producing jet engine afterburners, engine casings and other components for Pratt & Whitney, Ford, General Electric, and the Allison Division of General Motors. Moreover, management expected this business to double in 1957.

The Nuclear Division was already involved in a Department of Defense project exploring the development of a nuclear aircraft propulsion system. The Budd Company also had an airframe research group working on special heat resistant alloys for use in high speed aircraft.

To assume that diversification was a preoccupying passion of Budd management would not square with the facts. Automotive employed roughly 80 percent of Budd's work teams, and — even with defense business up, and the new contributions from Continental Diamond and Tatnall — automotive still accounted for 80 percent of sales.

It was automotive that consumed the energy of senior management. The other interests were relegated to newcomers to the company . . . men who had cut their teeth and made their marks in those specialized fields.

One also should not assume that the drive to diversify had a wholly economic basis. That, too, would be erroneous. We should not forget that a company tends to perpetuate its own management style by bringing people of similar interests and outlook into the business. Certain of these people take over, eventually, and the management traits are enhanced and carried forward. The type of pioneering, entrepreneurial traits of Edward G. Budd and the men who had founded the Company were still quite evident in Ed-

ward G. Budd, Jr. and other senior executives.

Management's interest in the nuclear industry reflected this pioneering spirit. The peaceful use of atomic energy was an exciting prospect — a great frontier. There were visions of a nation self-supporting in nuclear-produced electric energy, for instance. Dozens of nuclear reactors were being planned by the nation's electric utility companies. In theory, these could operate very cheaply, from a few pounds of fuel. The low cost, abundant energy would give the entire nation a new and mighty industrial energy!

Behind this effort, there were uranium mining booms in the American West and in Canada. Prospectors were combing the deserts, the rocklands, with picks and geiger counters, avidly seeking out a new kind of yellow gold: uranium. And they found it in vast quantities. Dozens of new mines were started. Tens of thousands found new employment, sinking the mine shafts, designing and building the huge mills, which would pulverize the ore and convert it to oxide.

Budd management's interest in aviation was fostered partly by new types of planes that were flying off to new adventures, making it possible to reach virtually every part of the world within a few hours. Executives of The Budd Company were beginning to experience travel on jet airliners, which were rapidly replacing the venerable propeller driven planes like the luxurious Lockheed Constellation and Boeing Stratocruisers. Instead of an eight hour flight to California in one of these lumbering skytrains, it was possible to take the same journey in half the time. It was possible to travel the Atlantic in five or six hours. This was a new era, and The Budd Company embraced it.

The new era also seemed to fire rivalries between the United States and the Soviet Union, and in the autumn of 1957 the world suddenly was truly into the space age . . . and appeared to have been taken there not by Americans . . . but by Russians! The Soviet Union launched Sputnik 1, the first spacecraft to orbit the Earth. And, still glowing with the prestige of this accomplishment, they would follow it up with Sputnik 2 — and launch a dog into orbit, and land that dog on Earth again — safely.

Here was challenge to be met! Here was the vast frontier of space, and others had gotten there before America did! Here was a new frontier where special alloy metals, special

metal joining techniques, special instrumentation for manufacture and testing would be required, and would draw upon the resources and imaginations of pioneering men of many manufacturing specialties. Budd would pioneer on that new space age frontier with new alloys, and new metal forming and joining techniques, and new measuring systems.

Automotive sales for 1957 were up only a few percentage points over 1956 . . . and The Budd Company's profits were down. Defense work had not increased but had been "stretched out" by the Air Force to cover longer periods. There had been start-up costs for some of the new non-automotive operations, too, which eroded profits. America's railroads were experiencing hard times. Passenger and freight traffic was falling off. Labor costs had shot up drastically. Rail beds were in terrible shape and in need of repair. They postponed the order of new rolling stock — especially for passenger railcars — and this, of course, had a negative effect on Budd's Railway Division.

A new force was being felt in America, too, which would have considerable and growing impact. The United States Civil Rights Commission was established, and immediately began investigating the issue of public school segregation in Little Rock, Arkansas. That little city erupted in violence, as its black citizens demanded the right to public education in unsegregated schools. In time, violence stemming from racial issues would afflict many of the nation's major cities . . . but only after many long years of passive resistance demonstrations and slow, tedious maneuvering in the nation's courts . . . which, too, were largely segregated.

Anyone who would characterize the 1950's as a "sleepy era," would not have a good sense of history. This was a very new era, when the Nation and the World had to realize that America's black people — and all other minorities — had equal rights . . . rights not just to exist . . . but rights to pursue work, professions and lifestyles of their desires, on the same terms and with as much freedom as their fellow white citizens. Until now, these rights had existed largely in written legislation, and in practice only to the extent that the minorities would not exercise them to the inconvenience of those in the white majority.

Creation of a Federal Civil Rights Commission was a step in a process which would change America considerably. It would change the education systems, the factories, the professions, and those changes would be enormously difficult ones, often accompanied by great civil turmoil and distress.

An international event took place that year which would have a profound effect on the economy of Europe, and stimulate the overseas interests of many American corporations to a point where they became known as "multinational companies." Representatives of France, Germany, Italy, the Netherlands and Luxembourg met in Rome and signed The Treaty of Rome, which established the European Economic Community. This paved the way for the removal of trade barriers between those nations in 1958 and beyond, and the admission of other countries, and the establishment of huge continent-wide markets, where goods produced in any member country could be exported to and sold in any other without tariffs, duties, or other restraints. Moreover, the community established economic aid programs to help member countries develop their industrial base.

Many of these nations developed enticing industrial investment incentive packages, giving American and other industrial nations special tax waivers, deferred interest loans, and other incentives, to get them to build new plants in various areas of their countries.

American corporations rose to this bait enmasse . . . and not blindly, either. They realized full well that the Treaty of Rome had effectively formed — economically at least — a "United States of Europe," and a market for all manufactured products which would fast equal that of North America.

Wouldn't you know it? With the Soviet Union's space coup, with growing civil unrest in the land, with a lacklustre, sputtering economy . . . America would experience a very deep recession in the last part of 1957, and throughout most of 1958.

Automotive sales fell off in the last quarter of 1957, beginning when the new car models were introduced, and, ironically, when Russia's Sputnik was visible each night in Western skies . . . and being watched by tens of millions of Americans. New car sales would continue at a much reduced rate through nine full months of 1958, and be off by

almost 30 percent for that full year.

The Budd Company's new business ventures did not fare well because of this. Defense contracts for aircraft engine parts were stretched out even further by the Air Force. Continental Diamond Fibre had a very bad year. Automotive, despite the big downturn in car sales, was carrying everything. And automotive was conquering new frontiers of its own!

During 1958, The Budd Company introduced a new type of flared brake drum for trailers. It ran much cooler than traditional drums, and had much better performance. There was less brake fade, and brake lining life was enhanced.

Budd also introduced the industry's first automatic, synchronized brake for light utility trailers. This accomplishment would help end one of the greatest road hazards in America of that time — outside of high speed driving. Heretofore, trailers towed by cars had had no braking systems. In sudden stop situations, the trailer jackknifed on the slowing car. Budd was also working on passenger car disc brakes.

Budd also tried to bring in new business, and opened a west coast office in Los Angeles, primarily to get a stronger foothold in the aerospace market. And it took an "internal diversification" step, too. Among the technologies built up by The Budd Company through the years was the precision electric welding of metal components. Budd decided to capitalize on the unique advanced welding equipment it had developed, and established the Electronic Controls Section. Its mission was to engineer, manufacture, sell and service automatic welding control systems developed by the Budd research laboratories.

Before 1958 was over, America and the Soviet Union were running full bore in the new space race. America launched a satellite of its own, Explorer I . . . and followed this with others. The Soviet Union sent Sputnik 3 into orbit. At the end of the year, the U.S. Navy sent its nuclear submarine, the Nautilus under the Arctic ice cap, beneath the very North Pole Richard Byrd had flown over in a Fokker Trimotor more than 30 years before. This submari-nal fete was widely publicized, both to show the American public that their nation led the Soviet Union in applied

nuclear technology . . . and to show the Soviet Union that American submarines could now travel safely under the great Polar icecap, and emerge within easy striking distance of the Soviet Union.

Nikita Krushchev took over the reins of power from Nikolai Bulganin, and sneered to the U.S. that "We will bury you." He didn't mean bury as in "bury bodies" but bury American culture and technology with the proliferation of Soviet developments and innovations.

There had been 5 million Americans unemployed at mid-year. Auto sales had fallen drastically. Consumers got their buying nerve back, when the new 1959 model cars were introduced in September, and the sales decline that had begun in September of 1957 was arrested. Total new car production for 1958 was just 4.3 million units.

Finally, in 1958, the Supreme Court of the United States ordered the integration of public schools in Little Rock, Arkansas.

And now, the last year of the 1950's unfolded. Alaska became America's 49th state . . . Fidel Castro, with American support, overthrew the Cuban regime of Fulgencio Batista, and then promptly renounced the United States and set up a socialist government. At the same time, General Charles DeGaulle came out of retirement to become the President of France.

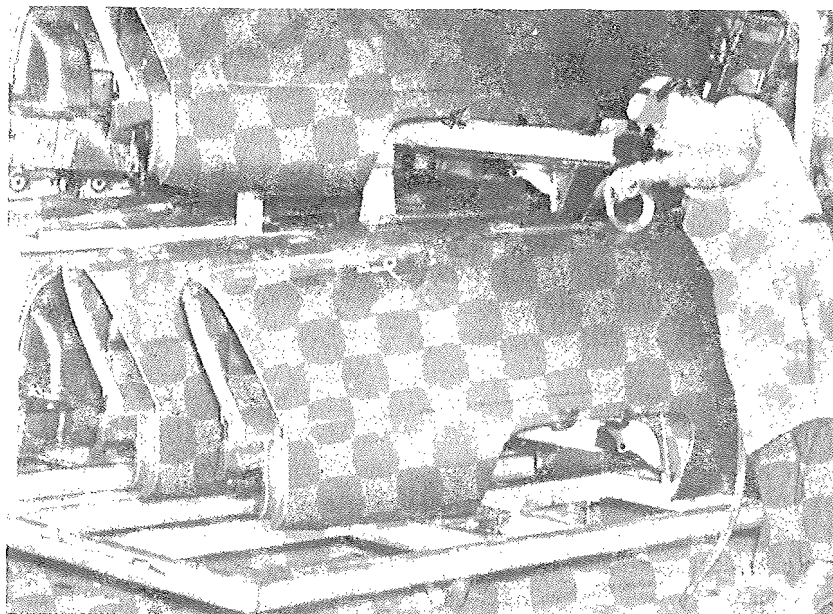
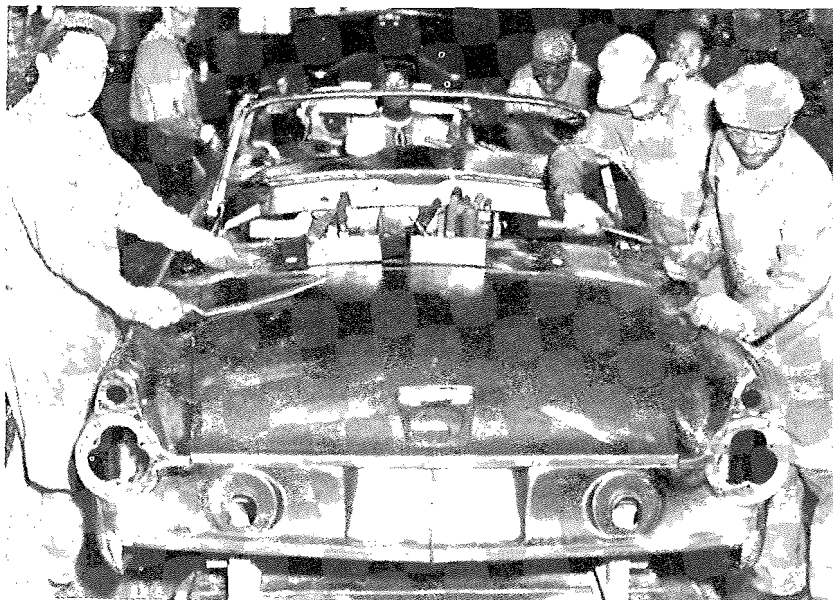
And the Soviet Union took another pioneering space step by sending an unmanned spacecraft Lunik I to the moon, and then sending another one, Lunik II, to photograph the back of the moon. These things were publicized considerably, to the consternation of America's own space authority.

What was not so highly publicized was another Soviet "space" achievement. It seems the Russians had launched a multistage rocket, put it in orbit a little while, sending it from its Ukrainian launching pad to a spot in the South Pacific some 7,000 nautical miles away. Amazingly, not a single newspaper, television station or radio station in America grasped the significance of this, and shrugged it away as just another "space race" fete. Actually, it was an arms race fete. The Soviet Union had just demonstrated that they had developed what would soon be labelled inter-continental ballistic missiles, clearly capable of reaching any target within the United States.

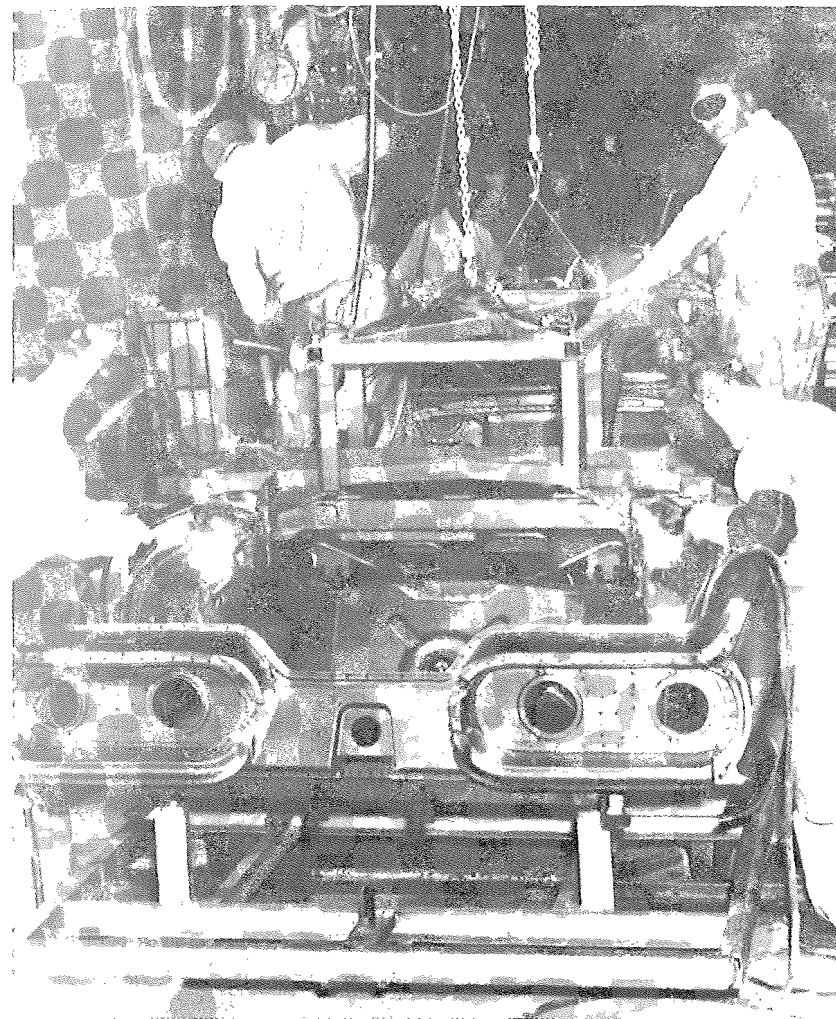
When Nikita Krushchev visited America, he laughingly told TV reporters that, after looking around, "We will bury you even sooner than I had thought." Except that that was not true. Barred from visiting Detroit, Krushchev did not see his own envoys' eyes pop out as they watched new cars roll off the assembly line at the Ford Rouge plant at a rate of nearly one a minute. Nor could he resist being complimentary about the wonderful, high speed American roads.

Nor could he resist making a special plea to see Disneyland, and proclaiming his great disappointment when permission was denied for security reasons. Nonetheless, Hollywood's filmmakers, led by Samuel Goldwyn, staked Krushchev and his party to a lavish banquet . . . but only to berate the Soviet premier. On a signal from Goldwyn, actress Marilyn Monroe gave Krushchev a disgusted wave and stalked from her table. Other stars started spewing out of the banquet room like planets in an exploding universe, and Krushchev was left crestfallen and crushed with the nation's network TV cameras grinding.

And Detroit and other automotive cities — the assembly plants of the industry were spreading — built almost 6 million cars once again. The recession was over. The fifties were over.



Final touches are made on 1955 two-seater Ford Thunderbird at end of the assembly line in Budd's Charlevoix Plant in Detroit. Finishing team includes Robert Sowders (left) and William Farrell and Robert Dixon. In photo at bottom, welder Wellington Ingles works on side panel for 1955 Packard, also being produced at Charlevoix. — *Budgetette*.



Producing the 1958 model 4-passenger Ford Thunderbird bodies at Budd's Detroit Plant. Workers are William Stasie, Rufus Williams, Henry Youngblood and William Townsend. *Budgetette*.

OVERVIEW . . . THE VOLATILE 1960's

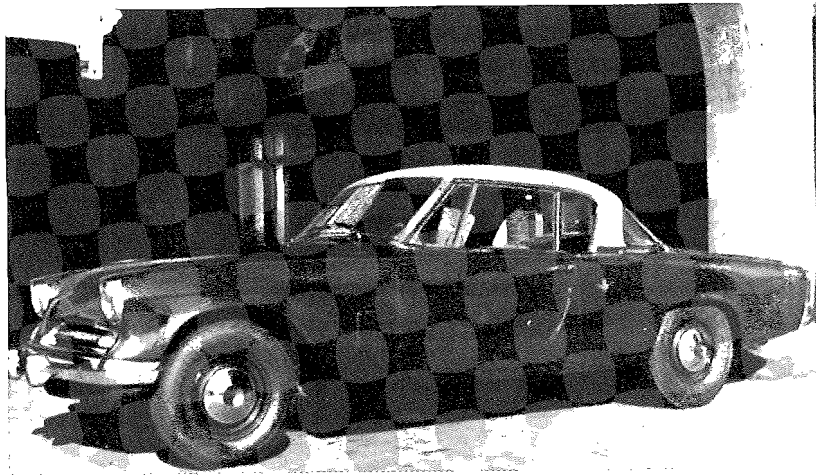
The Budd Company entered the 1960's on a happy enough note, but this was not to last. While the automakers succeeded in producing 6.5 million new cars in 1960, the nation slipped into recession in the fall and winter months. Budd's own sales were at an all time record high level . . . but profits were down by nearly 50 percent from 1959.

Part of this had to do with tooling and start-up costs for the abundance of new models being introduced by virtually all the car companies. In the Fall of 1960, the public would see a proliferation of a new type of car — the compact car. The new compact body style was evident in the Ford Falcon, Plymouth Valiant, Dodge Dart, Oldsmobile Cutlass, Chevrolet Monza, Buick Skyhawk, Pontiac Tempest and others that were introduced in the early 1960's. In later years, many of these trim little cars would swell up into larger versions classified as "mid-size," or "personal size," but for a little while they would stay small. They would sell like hotcakes.

This was also a new era of drastic styling change for the traditional full-size cars, too. The tailfins of the 1950's were gone.

Budd had and would continue to work hard to develop new structural techniques to produce the new types of automobile bodies. They would do the same for mid-size and full-size cars, too, for these would get even bigger year-by-year and be of massive size in the last half of the decade. This meant producing the big bodies with lighter metals to conserve weight and keep them "power balanced." This would mean taking steel out in some areas . . . using lighter steels . . . stronger steels of thinner gauge . . . There was much to do, and it was very costly.

The sweeping 1961 model styling changes experienced in 1960 had been the most expensive ever for the Company. It had taken much longer than normal to build the intricate dies and production fixtures necessary to produce the new bodies. The automakers were hard enough pressed themselves, but they had relatively few bodies to worry about. Budd, on the other hand, was charged with simultaneous retooling for more than 30 different car lines. And much of the development work, costly as it was, could only be re-



Harbinger of Things to Come. In 1954, Budd engineers at the Product Research Division in Philadelphia produced this all-plastic body Studebaker hardtop, using fiberglass reinforced plastic. It was the "spitting image" of the 1954 model steel-bodied production Studebaker, and logged thousands of miles under test on public highways. *Budd Archives.*

covered in future times as sales were generated by the new dies, fixtures and design concepts.

Adding to the financial woes of 1960 was the very high cost of steel. There had been a three-month steel strike in 1959 that had put the whole market out of whack. Supplies were interrupted and deliveries were spotty well into 1960. Steel was bought at premium prices on the spot market.

The nation slipped into another sickly recession before 1960 had ended, and it did not seem that the first year of a new decade augured well for the times that were ahead. Nonetheless, The Budd Company believed otherwise, and completed a foundry modernization program in Detroit, and expanded the Gary stamping facility.

Budd engineers were working extremely closely with their customers. They wrestled with the problems involved in model changes that were yet to come, rising labor and material costs, product quality, and — even in those early years — the delivery of steel bodies and components to customer plants on a “Just In Time” basis.

One could never begin to embrace the significance of the 1960’s merely by reviewing production statistics and profit reports. It is necessary to take an overview of the entire decade to gain insights into the history of The Budd Company throughout this period.

President John F. Kennedy had been elected in 1960, and would take office in January of 1961, with the nation in a severe recession. The times were not only changing, they were ready to erupt in change, and looking for a spokesman catalyst to inspire the citizens to channel the new forces productively. America was surely going to change! Drastically, and permanently. Better it changed under control and with unity. Kennedy would have the privilege of stewardship.

Until the 1960’s, part of the past was evident in all things in America, in some measure. Sometimes this was good. It surely seemed to be good at The Budd Company, where management had so long operated along altruistic lines, with very liberal attitudes toward workers.

Yet the new forces in the 1960’s would refute and rebuke forces from the past. A new generation would, in fact, condemn the past, and try to hack it off and start from then on out anew, regardless of the consequences. They didn’t care

what the destruction of traditions or generally accepted ethics might mean in economic terms. If the world were to turn in tune with their own sense of right, it would have to turn with America either rich, poor, or somewhere in between.

Too many compromises had already been made, in their view, to assure national prosperity. And one of those compromises was the restriction of high prosperity to a relative few, and distribution of most of the rest along racial lines to a white majority . . . and even to certain classes within that majority, and not to others.

The forces of change would rip or cause the social and economic fabric of the land to erupt in flame . . . even though America was to enjoy the most prosperous years in its entire history.

The young President would authorize the American-assisted invasion of Cuba, to try to unseat an unfriendly President Fidel Castro. This invasion at The Bay of Pigs would be a debacle, and a smear on American prestige, since it revealed the extent of covert military activities the United States was involved in.

President Kennedy would also authorize a large military mission for South Vietnam in 1961, which would also have a grievous impact upon Americans and upon the world. He would also, however, launch his “New Frontier” programs. New legislation would establish departments and inspire additional legislation to help rebuild America’s cities, highways, sewer systems. It would become easier for Americans to buy homes. The federal government would guaranty mortgages on a sweeping scale. New trading initiatives would be made with other freeworld nations. A confused, itinerant, self-styled, one-man revolutionary would assassinate the young President in his third year of office.

Lyndon Baines Johnson succeeded Kennedy, and promptly crashed great, sweeping civil rights legislation through Congress. But he was also a southerner, and spoke plainly on many things — so plainly that he sometimes seemed crude — and, to many, bigoted and self-serving and not acting in the public interest, although most of his own programs surely exuded that interest without question. Yet there were issues that seemed far from such interest.

Many of these had been inherited, just as his predecessor had inherited them. Just as he pushed through civil rights

programs with great zeal and conviction, he pursued his task as Commander-in-Chief of the Armed Forces with no less tenacity. He did not understand personally, nor was he well advised about the nature of the war in South Vietnam and public attitudes toward the conflict. He waged a very hard war, which escalated to a state where thousands of Americans were being killed monthly, even though the public cried out loudly about their perceptions of the morality of that war.

President Johnson would endure much criticism from all points of the globe, and when he disclosed in Congress that we would not stand for a second elected term, he said that he hoped in future years the world would understand that, right or wrong, he and his government had pursued policies they unquestionably thought were right.

While new civil rights laws gave everyone new guarantees for pursuing and enjoying those rights in peace and under full protection of law, the nation would eventually erupt in fiery riots which would impact every one of our major metropolitan communities . . . including, of course, Philadelphia and Detroit. These new forces would have a terribly negative impact upon the nation's industrial base, as well as upon all other things.

Yet despite the violence and the discontent, the rise in urban street crime and other social negatives, America, from an economic and personal income standpoint, had entered its golden years. So extensive was the new largesse of the land, that a broad new industry came into being in the mid-1960's. It was called the "leisure industry."

Before the decade was over, billions of dollars would be spent on boats and recreational vehicles like travel trailers, motor homes, pickup campers, motorcycles, all-terrain vehicles, snowmobiles.

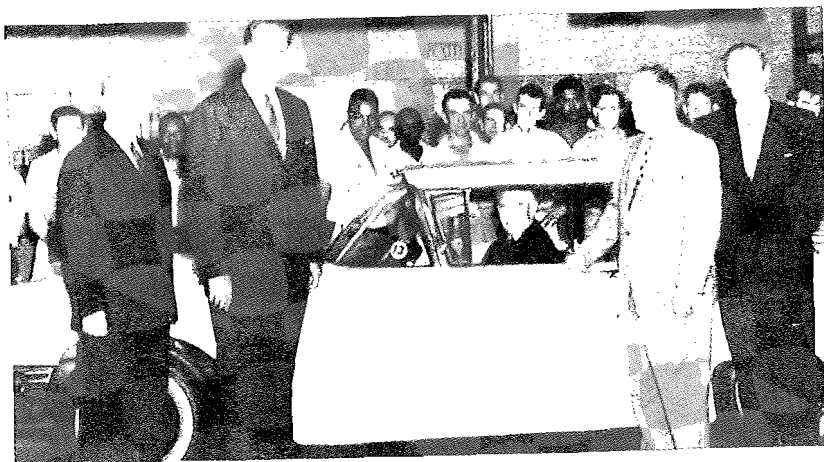
Health clubs would spring up in abundance . . . racquet ball clubs, swim clubs, tennis clubs . . . Clothing designers even came out with a thing called a "leisure suit" which had a cut similar to a two-piece military fatigue outfit, usually complete with epaulets, but cut from double knit cloth of many different hues. They were worn over loud, multicolored shirts with wide collars and large cuffs that were turned back over the leisure jacket sleeve ends.

There was no doubt about it. The man and the woman of

the day "had arrived." America now produced the biggest and dollar-for-dollar best valued cars in the world, which practically anyone could buy with a hundred dollars or so down. They were luxurious cars. They would get almost unbelievably more luxurious in the mid-1960's, and Budd would produce many of their body components. Work was so plentiful, once the recession of 1960-1961 ended, wages so high, and products so cheap, that Americans could now afford the considerable luxury of pondering how to enjoy their non-working hours . . . instead of worrying about where they could find more work, or how they could pay their bills. Consumer advertisements pressed home the "leisure life" theme, and invented the term "lifestyle," and encouraged everyone to live it up.

One more ingredient should be mentioned here relative to the social climate of the sixties. The unrest in the land was surely reflected in Congress. Congress, as it should, was speaking on behalf of citizens engaged in the various social reform movements, and some legislators were actually crusaders and spoke for themselves and their own conscience. One very strong, pervasive force coming out of this was to become known as the "consumer movement." Consumers, and their advocates — even some self-proclaimed ones — were decrying products they purchased, with respect to value, quality . . . and safety!

Already, Washington was beginning to rumble about federally mandated auto safety laws. They were also rumbling very much about the national environment, including the pollution effects of automotive and industrial emissions. They were rumbling, too, about health and safety conditions in the workplace. These things would all have a drastic impact on the automotive industry by the end of the decade, and a sometimes almost crippling impact in the early 1970's.



Last of the Budd-assembled Ford Thunderbird bodies rolled out of Budd's Detroit plant on September 2, 1960, when Body Number 251,453 was completed and shipped to Ford Motor Company's Wixom, Michigan Assembly Plant. Picture below shows last 1960 model Thunderbird being driven off Ford's Wixom assembly line. — *Budgetette*.

PROFIT SQUEEZE . . . 1961-1963

In 1961, the focus of national discontent was the poorly performing economy. New car production fell off a full 30 percent from the year before. The production decline was drastic through the first nine months of 1961, which severely reduced Budd's overall sales.

While Budd automotive operations showed a slim but not unreasonable profit, other operations, especially railcar, operated at a severe loss. The effect was that Budd recorded an overall loss of \$1.7 million, compared to roughly \$6 million in profit in 1960, and \$12 million in 1959.

This was the 49th year of The Budd Company's experience in structurally forming and joining metals in a way that was superior to the ability of all other companies, regardless of world location.

As evidence of this, before 1961 had concluded, Budd's Product Development Department designed and built eight stainless steel space satellites for NASA. Despite having 21 openings each for antenna, optic sensors and other devices, the spherical satellites had to be entirely leak-free in construction.

Budd developed new forming techniques to produce stainless steel in an incredibly thin gauge of just 23/1000th inch, yet with strength enough to withstand the rigors of being rocketed into space orbit. Moreover, the techniques developed enabled the steel to be formed with a tolerance variation of just plus-or-minus 2/1000th inch. In so doing, Budd engineers and craftsmen carried the metal processing state of the art to amazing new extremes, even though the application was highly specialized and fairly limited.

Yet this was the space age, and advanced technological work in the aerospace field was prestigious, although the markets were unfamiliar to Budd and sometimes not all that profitable. Was it ever the space age! In 1961 the Soviet Union again zapped the United States in the space race, sending Cosmonaut Yuri Gagarin into sub-orbit in the world's first manned space flight. America quickly followed, sending Astronaut Alan B. Shepard aloft in a space capsule produced by Rockwell International and sent into orbit assisted by Redstone missiles developed by Chrysler Corporation.

Yet here came 1962, and The Budd Company was fifty

years old! This golden year was marked by strong economic recovery. And Congress unknowingly gave Budd an anniversary present, by enacting a new 7 percent investment tax credit, which went into effect that year. For every million dollars invested in new plant and capital equipment, manufacturers could reduce their federal income tax liability by \$70,000.

This was essential, even though Budd had been very aggressive in this area of activity since the end of World War II. The automakers had been no less busy, and had many new ultramodern facilities in operation. Obviously, new business would flow to those suppliers whose own plants were most compatible with those of the automakers from a production speed and product quality viewpoint.

While Budd had no peer in the industry, and was the largest independent supplier of major steel automotive body components, the automakers were doing a substantial portion of this work themselves. If cost and quality of The Budd Company products were eclipsed by productivity and quality gains in the automakers' own plants, this could obviously lead to a reduction in orders and further integration of body stampings into the automakers' own operations.

There was also strong competition in brakes, hubs and drums from other major suppliers. While Budd led the industry in the sale of steel disc wheels, it unfortunately did not do so at a profit. The Detroit plant was not efficient from a capital equipment standpoint. It was hoped that a heavy modernization program would correct this, and "Project Progress" was launched. In the next five years, The Budd Company would spend over \$50 million in this program.

Budd's total sales improved in 1963, reflecting the end of the economic recession and an outstanding level of new car sales. The Railway Division made a small contribution to profits — enough to give hope that the many years of effort, and the support of Red Lion and its workers by the profitable automotive operations, was now over.

More profits seemed to be waiting just around the corner for the Red Lion railcar operations, too. The Budd railcar work order backlog totalled \$90 million — the largest in Budd's history. Moreover, Budd had received word that the

New York City Transit Authority planned to order 600 stainless steel subway trains at a total price of \$69 million.

This was the largest single subway car order in American history, and would result in creation of the world's largest stainless steel transit fleet. Edward G. Budd, Jr., noted to shareholders that The Budd Company bid for this order had undercut the next lowest bid by some \$2 million. The profit margin was very thin.

Total 1963 new car production had bounced up strongly to a near-record 7.7 million units. But things were different. Cost pressures were extreme.

The Annual Report to Shareholders stated flatly that although profits had improved in both 1962 and 1963, earnings were far from satisfactory, either as a percentage of sales, or as a percentage of the assets employed. The sales/earnings ratio was just 2 percent. For every dollar of sales, Budd got back just 2 cents in profit.

The Budd Company did not expect that kind of unsatisfactory performance to continue, however, and was taking steps to improve these returns. One avenue was through new products. Budd had introduced the first commercially feasible American-made passenger car disc brake in 1963. Shown at the Society of Automotive Engineers Congress and Exposition, the Budd disc brake was being tested by five different domestic car divisions.

Much of the development of this product had been done at the Detroit plant. While new to America, the disc brake concept was certainly not new to The Budd Company. Budd had also introduced the world's first disc brake for railcars 25 years before, in 1938.

Another avenue to better financial performance was through improved production efficiency, which Budd management saw as a process involving virtually all employees and all equipment. Edward Budd told shareholders in December of 1963 that, "We can turn around, stop and start faster, and adapt ourselves to change more rapidly than the manufacturers for whom we work. The top men in the automotive companies understand and appreciate our contribution to their own profitability.

"Our efficiency is being improved by the extensive program of modernization at our Detroit automotive plant, which was begun in 1963. Its objectives are cost reduction

and quality improvement through machine replacement, and reduction of material handling costs by improvements in plant layout. Investment of another \$13.6 million will be required in 1964 and 1965."

Mr. Budd added that of the Company's \$360 million in sales in 1963, roughly \$100 million came from non-automotive sales. He concluded that "The Company's diversified efforts are beginning to yield appreciable results in volume."

One of these diversified efforts was in electronics. The Budd Electronics Division was engaged in developing radar equipment for the Air Force. That year, the Air Force publicly announced that Budd had built the nation's first successful Storm Radar Detector Processor (STRADAP) system, which had completed a program of tests very successfully.

The Air Force reported that the Budd STRADAP system had detected and displayed a severe storm that caused a tornado in Charlton, Massachusetts. This was the first time radar observations of storm intensity and storm height had been made available within minutes of the observation time, the Air Force reported.

"Ultimately, it is hoped that all major weather radar stations in the United States will be equipped with the STRADAP," the Air Force announcement went on, "With data transmitted to a national center and then automatically incorporated into a complete countrywide storm map."

Such has indeed happened. Alas, The Budd Company was not to get credit for its pioneering work with the Air Force. The Air Force, for budgetary reasons, cancelled the Electronics Division's primary communications radar project the following year, and the electronics business was terminated.

Budd was not alone in feeling a profit squeeze in 1963. The automakers were feeling it, too. Studebaker-Packard decided to stop building cars in the United States, and went out of business. Fortunately, Budd's coverage of the entire automotive market was so broad that Studebaker-Packard accounted for just 4 percent of total sales.

Yet this gives an insight into the new industrial economics, and the necessity of continuously improving productivity. Here was this great company, which had produced the

first post war modern car, which had introduced the compact Lark in 1958 and sparked the compact car rage of the early 1960's . . . now forced out of business.

Although Budd was not exactly basking in profits, cash flow was good, and part of the plant modernization was being paid for from pretax earnings. The nation was feeling its mettle. The year before, President Kennedy had ordered the blockade of Cuba, and turned back on the high seas Soviet ships which were bringing missiles and missile support equipment to President Castro. Both Cuba and the Soviet Union had backed down and long range missiles were never to become part of the Cuban arsenal.

President Kennedy's interest in the theme song from the long-playing Broadway musical Camelot had renewed the public appetite for that song. Indeed, with employment picking up and earnings rising, it seemed to many that the nation was becoming a veritable "Camelot." On November 22, 1963, President Kennedy was assassinated, and his vision of Camelot ended. He left behind a disparate nation; one which knew riches for the masses on a scale never before experienced, but which also seethed in great discontent in practically every area of public interest. In 1963, a new musical-singing group emerged from England. They would disseminate a philosophy which united the very young and which would reflect young thoughts and moods and become a force in itself. Most adults of middle or senior years scoffed at the group of young English singers with strange "Teddy Boy" haircuts. But that group, the Beatles, became a unifying element for the emerging adults, who digested the words of their songs with considerable astuteness. Almost at once, the long hair of the Beatles would be a style that many young men adopted.

CLASS FOR THE MASS . . . 1964

And now, let's look at 1964. That year, Ford Motor Company launched the Mustang. It was the rage car of the year. A total success. The Mustang was a sleek, low-lined, four-seat car, exuding sportiness, but with considerable class. Light in weight, it was powered by a V-8 engine. This new type of personal "sporty" car would help revolutionize auto industry sales patterns and consumer buying habits.

"Class for the mass," then Ford Division general manager Lee A. Iacocca would quip in a Time magazine cover story, which lauded him as "Father of the Mustang." What he meant was this classy number, while available then for less than \$3,000 without options, could be jammed to the gunnels with them, in accord with the buyer's personal taste and preference.

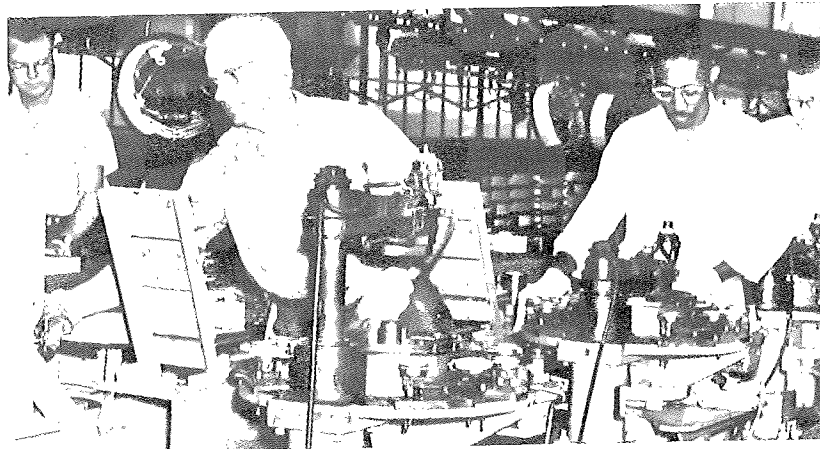
The car was excellent quality and a fine performer in its most basic version. But one could upgrade the engine to higher power, order stereo radio, stereo cassette player, air conditioning (although the first versions were retrofit equipment, with blowers which hung beneath the dash in a chrome shell). The options list ran on and on. Dark tinted glass, vinyl top, convertible top, wire wheels, magnesium wheels, racing-style steering wheel . . .

This is common enough today, but back then such an array of lavish options on a moderately priced car was a new strategy. Those options could increase the base price by almost half, and optional equipment had a handsome profit margin.

Nineteen sixty-four was also the year of the lap seat belt. The Mustang had them. So did all the other 1965 model cars sold that year.

General Motors would soon follow up with the Camaro, which it would introduce for 1965, and Chrysler would offer the Barracuda.

There was also another new trend underway in 1964, though. The start of the "muscle car" era. Pontiac kicked this off by introducing the fiery GTO. Every other division within the Big Three would follow suit. The Ford Mustang, for instance, would become available in Shelby Cobra racing version, as well as in other high performance packages.



Budd Wheel and Brake Division's drum brake assembly department in Detroit had nearly 10 women workers to every male employee in 1961. At that time, Adele Kitzmann, Helen Kirsch and Nora Maczko had a total of 76 years' experience in brake operations between them. There were only a half dozen men on the brake assembly line, including Howard Stoddard, Leo Wolslager, Ben Harrington and Edward Chmielewski. — *Budgette*.

The Chevrolet Camaro would become available in a hot Z-28 version, with the most powerful, highest revving engine Chevrolet had ever produced.

Chrysler would install its Hemi V-8 pretty much across the board in all its big car models, and it would make history at tracks all over America. Along with this trend, of course, went high speed driving. High speed driving not just on the tracks, but on the highways, too. Road accident death rates increased. And pressure for legislated automotive safety equipment grew more intense.

But in 1964, gasoline was just 30 cents a gallon, and even the large displacement engines had no trouble getting upwards of 20 miles per gallon when they weren't racing. There were no emission control systems to chop mileage rates by as much as 50 percent, and the era of high priced gasoline was still a full 10 years away.

Cars were now selling so fast that there seemed room for everyone. The Volkswagen Beetle, which Budd's Joseph Ledwinka had helped design in the late 1930's was now selling at close to 1 million units a year . . . well over 10 percent of total U.S. new car sales. But nobody seemed to mind. The little Beetle was a "niche" specialty car, some analysts thought. Americans would eventually quit buying it, once they were sufficiently romanced by the new breeds coming out of Detroit.

While the Japanese car makers withdrew their first Toyotas from the American market shortly after they were introduced in the late 1950's, mysterious things were now happening in Japan. The Japanese automakers had retained educator W. Edwards Deming of the United States to help them to learn how to build a really high quality car, at relatively low cost. (Their early efforts had been the reverse of this: poor quality at high cost.)

The established American industry already had a production system in place which had cost a veritable fortune, which had grown up over a period of several decades, which was always under development, with new equipment on order for several years out. True, it was not as efficient a system as the one Deming and others were advocating, but

the industry using it was without question the biggest and most successful in the world. It was geared for colossal mass production, and mass production had been undertaken on the premise that you cannot build tens of thousands of vehicles at high speed as precisely as you can build low volumes using hand tools and hand methods. However, the mass produced vehicles were available at extremely low cost, and that low cost was the reason there was a market large enough to consume the industry's vast output.

American plants were filled with in-process inventory. Inventory that tied up tens of millions of dollars. It was there to make sure that the lines always kept running. There was extra equipment on the floors, too, in case some machines broke down. There was, in fact, redundancy throughout all operations. But this system delivered the goods — at low cost. Federal safety and emission requirements would soon elevate those costs considerably, and distort the industry's established pattern.

The Japanese automakers were developing new production systems. These systems required total high quality to keep functioning, and not redundancy of effort and output. Production processes were arranged so that each station produced only the exact requirements for each subsequent station. Further, they did not stockpile the parts produced, but delivered them precisely, *just in time* for the next production stage.

In effect, they were producing parts on a one-at-a-time basis, with no extra parts ever produced. That meant that each part had to be perfect. There were no others standing by to take its place. If there was an indication that part quality was declining, the operator shut down his equipment and made adjustments.

The Japanese were getting very, very good at this, and on the west coast of America, Californians were buying up the little Japanese imports as commuter vehicles and discovering that they were not only relatively cheap, but very sound. Ten years before, the entire Japanese auto industry had produced just 21,000 cars. They were now building over half a million a year.

While national new car production in 1964 only inched up over the 1963 level, with 7.8 million cars built, compared to 7.6 million, The Budd Company's sales had never been higher on a dollar volume basis. The Company sold \$373 million worth of product, mostly automotive product . . . but profits were cut in half from the 1963 level.

Much of the profit reduction had to do with the massive Detroit modernization program, which involved replacing or moving 1,600 major machine tools, and installing the latest state of the art material handling systems. This essential program interrupted operations at Detroit severely, so that the entire plant complex operated at a substantial loss — and would until the program was completed in 1965.

Budd was also installing the most advanced chassis frame assembly line in the industry at the Red Lion plant, at a cost of some \$4 million. Capable of producing 4,000 frames a day, the Red Lion line would double Budd's capacity for supplying Chevrolet. It would provide one half of Chevrolet's total chassis frame requirement.

During 1964, an additional \$22 million was allocated for capital equipment. That was the highest one-year allocation in Budd's history.

The auto industry had completed three back-to-back years of record sales. Of the 31 American car lines, Budd was supplying body components, wheels, brakes, hubs, drums for 28 of them, and wheels, hubs and drums for 14 out of 15 leading heavy duty truck and trailer manufacturers. It looked like these prosperous years would now go on and on. Everyone was economically optimistic. Consumer confidence was soaring. Economic forecasters saw activity heading upward, and held in check mainly by the Vietnam War, which was becoming worrisome to everyone.

Another war got underway that year, too. President Johnson implored Congress to "wage war on poverty," and Congress responded with new budget allocations for a wide range of public assistance programs. Congress also passed the Equal Employment Opportunity Act, requiring businesses not only to end discriminatory hiring practices, but to report on the percentages of minority employees hired, and to set plans for bringing these percentages up to coincide with national population shares.

The United States continued its race with the USSR to conquer space, and launched Ranger VII to photograph the Moon, and Mariner IV to photograph Mars. Nikita Krushchev, who had said that the Soviet Union "would bury" the United States with its accomplishments, fell from power, and was succeeded by Leonid Brezhnev.

THE GO-GO YEARS . . . 1965-1969

Now 1965 was a fantastic year! A stellar year! American new car production headed for the far reaches of space, too. Some 9.3 million new cars were produced — the highest production level ever attained. And The Budd Company, supplying major components and parts for nearly every American car line, had record high sales. They were roughly 20 percent above the level of 1964.

Demand was very high for new dies, jigs, and fixtures for producing and assembling the proliferation of new body styles. The hard bump of the year before — when extra long model changeovers, a customer strike, materials shortages, heavy unforeseen expenses not budgeted for — had sliced profits in half. Now they rose by 140 percent to \$9 million — near normal levels.

1965 was such a fantastic year and the economic indicators so strong that many automotive analysts predicted the new car market would rise above 10 million, and stay at that level. And that essentially looked like a 10 million car market for the Big Four, for imports were still just a drop in the bucket and of little concern.

Now the industry found success in another great plan. Since the Big Four had heavy plant investments in both the United States and Canada, it made good sense to economically rationalize these facilities so that they could serve the entire North American market. It did not make good economic sense to have a plant in Canada, for instance, which produced four or five distinctly different types of cars at high cost for the Canadian market, when it could produce a single car line to be sold in both countries, at a much higher rate of productivity. What was needed was to eliminate automotive import tariffs between the two nations.

All of this was contained in the North American Automotive Tariff Agreement of 1965. The Budd Company responded quickly, and was the first automotive company in North America to construct a new plant on the basis of this new trade pact. Budd Automotive Company of Canada, Ltd, was organized, and headed by James H. McNeal, Jr. Construction began immediately on a \$22 million chassis frame plant in Kitchener, Ontario. The 300,000 square foot facility would be able to produce 450,000 frames a year. It

would prove to be a smashing success!

Less than a complete success, though, was the Detroit plant. It continued to operate at a loss. Installation of the new mechanical handling systems and state of the art machinery had dragged on past the targeted completion dates. There was still much to be done.

In 1965, Congress passed the National Traffic and Motor Vehicle Safety Act and the Highway Safety Act, and the Department of Transportation was formed to administer the new laws. For starters, seat belts became standardized and required by law. (The automakers had installed them on 1965 models, beginning in 1964.) The list of other innovative safety features administrators wanted to see in U.S. cars was long.

The Mariner IV Spacecraft sent back high quality color photographs from Mars — no simple feat, but not particularly moving to a now space jaded public — and both America and the USSR had men doing “space walks” . . . that is, leaving their spacecraft while in orbit. Americans were flocking to movie theatres to see a new epic film called *Dr. Zhivago*, which centered on the era of the Russian revolution.

The war in Vietnam worsened, and now American planes were bombing North Vietnamese targets regularly. The war on poverty at home was escalating, too. Congress established Medicare, to ensure that America's senior citizens would have adequate health care coverage.

In 1966, the year following, America and the Soviet Union signed a “space treaty,” assuring each other that space efforts would be devoted only to peaceful purposes. Russia also made a “soft” unmanned spaceship landing on the Moon — that is, landed a spacecraft under control.

Americans in Massachusetts elected the nation's first black senator, Edward Brooke. Things seemed to be going fairly well on most fronts. Forecasts calling for a 10 million car year didn't go so well, though. Auto production actually fell by nearly 10 percent, with nearly 1 million fewer cars sold. As sales slowed, the automakers cut back their schedules drastically. However, with 8.6 million cars built, and Budd supplying parts for most of them, it was still a pretty good year.

Good enough, in fact, that The Budd Company spent

some \$29 million on new plant and equipment. This included not only costs for the Kitchener frame plant, but for a new \$6.5 million plant in Clinton, Michigan, which would produce disc brake components. This new facility was designed to produce 1 million hub and rotor assemblies in its first year of operation, and nearly 4 million sets each year thereafter.

The passenger car disc brakes The Budd Company had pioneered in and unveiled at a Society of Automotive Engineers Exposition in 1963 had met with excellent success. Budd disc brakes were being applied as standard equipment on the 1967 model Chrysler Imperial that went into production in September, 1966. The Budd disc brakes were also being supplied as optional equipment for the Chrysler Newport, New Yorker and 300 Series, the Plymouth Fury, and the Dodge Polara and Monaco.

Edward Budd would comment that “Budd was the first to introduce the passenger car disc brake, although others have followed and adoption of this type of brake has grown so rapidly in the industry that practically every make and model will offer disc brakes as standard or optional equipment in 1967.”

In total, during 1966, Budd's array of automotive products was being applied to 28 different passenger car models and 14 different truck makes.

Budd was still very much in the railcar and aerospace businesses, too. In fact, that year, the world's first self-propelled gas-turbine railcar — built by Budd — was successfully tested on the Long Island Railroad. The project was financed by the Federal Housing and Urban Development Department and New York State. The car was powered by two 535 horsepower turbine engines, developed by the AiResearch Division of Garrett Corporation, Budd's partner in the project.

That year, NASA launched a 495-pound Atmosphere Explorer spacecraft aboard a Delta rocket, to perform a series of experiments to help determine the constituents of the upper atmosphere. The Atmosphere Explorer was contained in a stainless steel body designed and built by Budd.

Federal industrial emission regulations were now in full effect, with standards which varied from location to location. As it worked out, those in the Detroit area were the

most stringent particulant regulations in the country. To comply, Budd spent a full million to install an air particulant control system at its Detroit gray iron foundry. The Detroit foundry, incidentally, had been the first in the nation to install a smoke filtering system, which was purchased and functioning in 1945, just after the end of World War II.

Both the new Kitchener and Clinton plants began operations in 1967, and the refurbished Detroit plant was at a point where it would soon become profitable. New car production tumbled by 20 percent, though, with 1 million fewer cars produced by American automakers. Part of this had been a softening economy, but more of it reflected labor strikes with some of the major automakers, mainly Ford.

Edward G. Budd, Jr. reached the Company's mandatory officer retirement age of 65 on March 23, 1967, and retired at the end of that month as Chairman and Chief Executive Officer of The Budd Company. He had spent his entire working career with the Company, including a stint as a machinist apprentice.

Edward Budd had joined The Budd Company in 1923, after graduating from Wesleyan University. He had been assigned with the Citroen Company in France in 1924, and returned in 1925. During the next several years he served in the methods and equipment department, as night superintendent and director of purchases. In 1934, he was promoted to factory general manager, and elected a vice president of the Company. He was elected a Director in 1938, executive vice president in 1943, and became president in 1946, following the death of his father. He had been chairman of the board since 1965.

Succeeding Budd as chief executive officer was Philip W. Scott, who had been president since 1965. He had joined The Budd Company as a group vice president in 1958, after serving in several senior executive positions with other automotive supplier companies.

Ironically enough, the Japanese automakers attained total production of 1 million cars in 1967 . . . a new record for them, equaling the exact volume that the American market had lost. There was no relationship between the numbers, of course. Japan was not yet exporting cars to the United States in any appreciable numbers. Scarcely anybody took note of the Japanese achievement, or bothered to track the

fact that the Japanese economy was growing at an amazing 20 percent per year — the highest economic growth rate the world has ever recorded!

There was little focus on Japan at all, although Suzuki and Honda motorcycles were trouncing their American counterparts, and Japanese television sets, radios and other appliances were taking U.S. markets by storm.

The focal point of attention in 1967 was on the Middle East. Fearing a general attack by surrounding Arab nations, Israel attacked them on a preemptive basis, and virtually diffused their military strength in just six days. Attention focused there because much of America's oil came from the region . . . and the novel success of the Israelis was indeed noteworthy.

America had a painful setback in its space program in 1967, when the spacecraft Apollo 3 caught fire on its launch pad, killing all three veteran astronauts on board. For the first time, the public learned that the spacecraft was not equipped with quick escape systems, that the astronauts had been sealed into the capsule behind a door that was held in place by bolts.

There was some success in U.S. space enterprise, although the Apollo 3 tragedy overshadowed it. Colonel Chuck Yeager piloted a rocket plane at speeds exceeding 4,500 miles per hour. It is interesting to note that, while The Budd Company was not involved, the rocket plane was made from stainless steel.

New car production shot up to 8.8 million units in 1968, as the industry put in a full year completely free of major labor strikes. The Budd Company experienced new record sales, and profits were more than double those of the previous year. New management began the process of selling off "marginal" businesses . . . although they didn't know it was a process which would involve virtually all of the non-automotive businesses Budd had entered into. The Instrument Division was the first to go.

And The Budd Company made two new acquisitions: The Gindy Mfg. Corporation of Downingtown, Pennsylvania, which was America's fourth largest trailer manufacturer, and Waupaca Foundry, Inc., which was to become Budd's major source of gray iron products.

The Detroit plant continued to show improvement. Both

Detroit and the new Kitchener plant were significant contributors to profit, even though Kitchener had experienced an eight week labor problem. The new Clinton facility showed a profit in the last three months of the year. The Budd Annual Report to Shareholders stated unequivocally that the primary factor for the improvement in performance was The Budd Company's automotive operations. There was no doubt now that the flirtation with non-automotive high technology businesses was all but over.

These years, incidentally were called "Go Go" years by the business press. This term was not difficult to define in the times. Everyone knew what it meant. It's roots came from a man named Christopher Kraft, who was the public information director for NASA. During a manned spaceship launch in 1965 he had yelled on network television "Go, baby, go!" to the slowly rising rocket.

Everyone knew what "Go" meant. It meant "Go all the way! Go for all you're worth! Go to new levels!" A new thumping, booming music swept the land, and the new dance that went with it was called, "Go Go dancing." Go Go discos sprang up to accommodate the trend. They were replete with flashing lights to create laser, space effects.

This same spirit carried over into American business. Young executives were going all out now to grow their companies. They did it by merger, by new technological achievement, by any means that they could. And the nation's investors poured billions of dollars into stocks and other securities to help them try to do it.

They may have indeed been called "go go" years, but nobody was going like the Japanese automakers. They had set a new production record the year before when they built 1 million cars. In 1968, they eclipsed this magnificently by building 2 million. And the really significant thing about their industry was that it was export oriented . . . like all other Japanese manufacturing industries. Now their efforts did gain considerable attention, for well over half of the production was exported and about 200,000 of their cars were landed and sold within the United States. It was mostly a west coast market, but it was obviously a very energetic market, and not merely a niche. The cars sold fast. Indications were that they would sell even faster.

Both General Motors and Ford cranked minicar pro-

grams into high gear. GM went all out in its venture, designing a diminutive car called the Vega with totally new componentry . . . new engine, new drivetrain, new wheels, new body, new instrumentation . . . there was nothing borrowed, nothing snatched from existing car lines. To make sure the Vega would come in at an acceptable price level, GM built America's most automated assembly plant at Lordstown, Ohio. The Budd Company would supply some of the body components, but most of the work would be done by GM.

Budd was also working closely with Ford on its new Pinto minicar, which was also fresh in design and componentry.

The nation was still light headed and delirious over its new prosperity. It was not only dancing to a "go go" beat, it was also in hot pursuit of the great leisure life the advertisements and news features advocated.

This pursuit, among other things, made light and medium truck sales skyrocket. Pickups came into high demand to carry detachable camper bodies. Medium trucks were bought by the recreational vehicle manufacturers without cab bodies. They built motorhome bodies over the frames.

Budd got a big slice of this business, especially in the sale of wheels, hubs and drums. It also got a major slice of the heavy truck, tractor and trailer business, which was booming along in line with the growing general economy.

The so called "RV craze," produced vehicles that were particularly appealing to consumers of retirement age. Pickup campers and motorhomes were bought out of savings, and tens of thousands of couples set out to spend their golden years seeing the nation from stem to stern.

The RV craze also afflicted a younger generation, just coming to know affluence. It was not uncommon for young couples to own a motorhome, snowmobiles, a boat, Japanese-made trail motorcycles, all in one big, wonderful recreational package.

The automotive industry responded with a multi-use recreational vehicle of its own: the four-wheel drive utility vehicle. American Motors had its Jeep Wagoneer. Chevrolet came out with a nifty, rugged, good-looking Blazer. Ford brought out its gutsy Bronco. It was all good for business. Very good for business. A wide range of van-type

vehicles also evolved. Designers first put windows in utility vans and called them "suburbans," and then began to design the vans in a variety of sizes, right up to elongated vehicles called "super vans."

Immediately, enterprising companies began converting these vehicles to rival the motorhomes. They installed padded ceilings and walls, beds, swivelling captain's chairs, refrigerators, and even plumbing fixtures. The converted vans were sold under a variety of brands by dozens of conversion companies.

Since most of the recreational vehicles had been designed initially for other purposes, it often worked out that they were grossly overweight when equipped with camper or motorhome body and all the furnishings that went with them. Their gasoline mileage was often abominable. Many could not get ten miles to a gallon. But gasoline was cheap. You could fill a 20 gallon super-size tank for just \$6.00. You could buy an RV with very little money down, and interest rates were fairly low. What the heck! These were the times! You might as well "shoot the moon!"

And NASA did. In 1968, the Apollo 8 spacecraft with a three-man crew orbited the moon, paving the way for a future manned moon landing.

As was noted earlier, this entire period was accompanied by exceptionally tumultuous events in virtually all of the nation's cities. There had been major racially inspired riots in several metropolitan areas in 1967, and these were much more than demonstrations. Property damage ran into the hundreds of millions. Many were killed. Business patterns were distorted, even while the nation was luxuriating with its new found wealth. These riots were in marked contrast to the countless, meaningful and successful civil rights demonstrations: the long marches, the "sit-ins" in public buildings. The riots were also in contrast to most of the demonstrations held to protest the Vietnam war. There were also demonstrations for women's rights, for the rights of the poor, for the rights of a wide range of interest groups. In short, despite the great prosperity in the land, millions were unhappy with the course of events.

In 1968, Senator Robert L. Kennedy, the brother of the slain President, and himself candidate for the Presidency, was slain by a young immigrant in California, who was pro-

testing some obscure Middle East issue in which Kennedy was alleged to have taken a position. Dr. Martin Luther King, who had led the civil rights movement and who had been awarded the Nobel Peace Prize, was shot to death by a zealous bigot. Richard M. Nixon, who had been Vice President under President Dwight D. Eisenhower, and a Presidential candidate in 1960, was elected to become the 37th President of the United States.

Nixon took office in 1969, and one of his first public acts was to announce that he would reduce the number of American troops serving in Vietnam. One of his next was to invoke an anti-inflation program by encouraging fiscal and monetary restraint policies. The nation was so prosperous that the money supply had been growing in leaps and bounds to keep enough cash in circulation to pay for the goods and services provided.

The Budd Company, participating in most of the automotive programs of the Big Four, supplying body components, frames, wheels, brakes, and other components, reaped record high sales in 1969. The Company also acquired two new firms which were to prove stalwart performers in the future years. One was the Milford Fabricating Company of Detroit, a leading automotive prototype and tooling manufacturer. The other was the Duralastic Products Company, a medium-sized Detroit supplier of reinforced plastic automotive parts.

With the automotive market still promising to rise to 10 million cars per year, Budd also launched a massive expansion program to increase capacity. Some \$36 million was allocated for the Gary stamping plant, to more than double its production capacity. An additional \$36.5 million was invested in the new Kitchener plant, to increase production from 450,000 chassis frames per year to a colossal 1.4 million! Despite long range optimism, Budd management looked toward 1970 with trepidation, though.



Philip W. Scott was appointed President and Chief Executive Officer of The Budd Company on March 31, 1967, when Edward G. Budd, Jr. retired.

SETTING THE TONE FOR '70's . . . 1970-1971

Except for the opening year, the decade of the 1960's had been one of unbounded prosperity for America. Yet the years had been marked by violence and upheaval. Many American traditions, American institutions had come under heavy attack.

In many respects, while this did press home the need to make civil rights and equality a fact and not just an implied philosophy, it also accelerated a trend that had been little heralded, but one which would come to light in the 1970's.

With costs rising drastically, many companies in the high cost centers of the Northeast and the Midwest began looking toward the nation's sunbelt states. This was especially true in Detroit. Automotive suppliers, faced with the necessity of paying wages and fringe benefits equal to those of their automaker customers, bending under the burden of mounting local and federal taxes, of rising costs in insurance of all kinds, of new costs to meet federally mandated environmental and plant safety rules . . . had been heading South.

Instead of expanding currently held operations, they simply elected to start up new ones in lower cost areas. In small towns in Tennessee, the Carolinas, and other states. Some got financial assistance from local governments to help build their new plants. Some got long-term tax abatements to assure their profitability. Some even got free training for local workers who would provide the manpower and the womanpower.

Rioting in the major urban centers where many large plants were located, tended to accelerate this process. It also started a new one: flight to suburbia. Companies began to build their shops, and transfer their headquarters operations from the major city locations to quiet suburbs, where the problems of the cities did not follow. Nobody could question the business sense in leaving dangerous, unstable surrounds.

The Budd Company, incidentally, vowed that, despite the ferocity of civil unrest in both Detroit and Philadelphia, that they would keep their urban operations intact, to the extent that it was at all economically possible. The Company surely stood by its word.

While never materially richer, America was now poised to be economically hamstrung by many different forces. But all of these forces would attack the great automotive muscle, which provided much of the lifeblood for the entire economy.

One thing of particular concern to The Budd Company was the feasibility of remaining in the railcar business. At the Budd Shareholders Meeting in 1970, Budd President Philip Scott announced that "Budd is seriously considering selling the Railway Division."

Sales from the Division had fluctuated from just 1 percent to 13 percent of Budd's total annual sales during the last four years of the 1960's, Scott pointed out. He added that the Railway Division had had a loss in each of those years.

"Budd's emphasis is on expansion designed to serve the automotive business," Scott told the shareholders. He went on to point out that the railcar business had changed considerably since Budd revolutionized it with stainless steel products in 1934.

"The railcar business was founded and based on Budd's success as a producer of mainline, long-haul passenger trains in which a majority of the costs were represented by the Company's own designs and manufacturing and assembly operations," Scott said.

"This market has disappeared. Today, the cost of outside supplied items, principally the electrical components and subassemblies we must buy from others, runs in excess of 70 percent of the total cost of the self-propelled transit cars and commuter cars in today's market."

In other words, Budd's design, engineering and tooling costs had to be amortized by just 30 percent of the cost of each unit. At the time, Budd's railcar production was held up by a strike at General Electric.

In 1970, The Budd Company had a total work force of some 17,000, and operated 22 plants in the United States and Canada. The size of the workforce would grow significantly during the decade, as Budd continued to upgrade its plants, develop new products, and serve new and established customers.

Budd's Stamping Division (then separate from the Frame Division) operated two plants in Philadelphia, one in De-

troit, and one in Gary, Indiana. The three locations collectively employed nearly half of Budd's total work force. Together, they occupied some 4.6 million square feet of floor space, and were situated on nearly 300 acres of land.

The Division was by far the world's largest independent supplier of car and truck stampings. Ford was the major customer, followed by Chrysler, General Motors, and American Motors.

The Detroit plant produced stampings for the Lincoln Mark—Lincoln-Mercury's ultimate luxury car. It also produced parts for various Dodge vans. The Hunting Park, Philadelphia plants devoted 90 percent of total production to Ford, producing body stampings for the Lincoln Continental full-size sedans, the intermediate size Mercury Montego, and Ford Econoline vans. The remainder of capacity was dedicated to producing Chevrolet truck fenders.

The Gary Stamping Plant had produced stampings almost exclusively for American Motors since its opening in 1950, but began handling Ford work in 1970. This had entailed doubling the size of the plant, at a cost exceeding \$36 million. At the beginning of the 1970's, most of Gary's productive capacity went to the Ford Thunderbird, which accounted for 65 percent of plant sales. The rest was accounted for by the AMC Ambassador and Matador models — both of which were not doing well saleswise.

The Frame Division operated production facilities in the Red Lion plant in Philadelphia, and the three-year-old plant in Kitchener, Ontario, which was being expanded at a cost of \$36.5 million. Nearly 1,000 workers were employed in the Red Lion chassis frame facility, and another 2,000 at Kitchener. Red Lion made frames for the Chevrolet fullsize cars and station wagons, while Kitchener produced various passenger car frames for both Ford and General Motors.

The newly acquired Milford Fabricating Company was heavily involved in producing prototype stampings for Ford, Chevrolet and Pontiac. Milford did all the tooling to produce the dies, then did actual production-type runs in "test batch" volumes of about 200 pieces. Milford's capacity would be doubled by 1972.

Waupaca Foundry, Inc. in Waupaca, Wisconsin, kept over 400 workers very busy, and supplied one-third of Budd's brake castings. The subsidiary would triple its size

by 1972.

Duralastic Products Company, soon to become the Plastics Division, was expanding. Most of its business was in fiberglass reinforced polyester compression molded automotive panels.

The Railway Division had been reduced to a small force of about 500 workers. It received a subcontract order for 200 railcars in 1970, which were to be supplied to General Electric.

Other units and plants of The Budd Company were doing fairly well generally, with no major problems being experienced.

Some very strange things were occurring in that mirky world of economics; some worrisome things which would become very alarming.

Government anti-inflation programs, and the impact of a prolonged strike at General Motors had slowed economic activity enough that the stock markets tumbled many points. Investment funds were temporarily short, and interest rates were rising rapidly. Part of the interest increase was merely offsetting the declining value of the dollar, for the rising national deficit and increased labor and material prices had caused the government to circulate currency in huge volumes, despite the Nixon economic control measures.

The printing of new money, not backed by gold, cheapened the dollar. In theory, for every ten percent increase in the money supply over and above national output of goods and services, there was a 10 percent depreciation of the currency. Something that had cost \$1.00 would soon cost \$1.10.

The Budd Company had entered the 1970's fearing a short term, but sharp drop in business . . . but also very obviously convinced that the upbeat mood of the 1960's would continue on . . . that America would have two back-to-back decades of prosperity. Management was pretty much on target with respect to the short but sharp drop in business.

New car production for 1970 was an abysmal 6.5 million units . . . a drop of close to 2 million cars, or 20 percent from the year before! That had been anticipated, both because of the lengthy General Motors strike, which itself depressed

the nation's general economic activity, and also because of the effects of government programs to slow the economy and reduce inflationary pressures.

At the end of 1970, management was to tell its shareholders that, "The future profitability of the Company rests largely now on our continuing ability to serve the automotive markets, and the elimination of those portions of our business which have been a drain on earnings."

The company at that point fully intended to divest the railcar business, and was already shutting it down. The plan was to wrap up all railcar operations at Red Lion the following year, when the General Electric subcontract order was completed. The plant would be converted to 100 percent automotive production.

During the year, the Company closed its unprofitable Wheel Division foundry at Detroit. This had been imperative. Despite heavy investments made to turn things around, the wheel products produced in Detroit were uncompetitive on a price basis.

Budd was also going all out to expand capacity in the automotive stampings and chassis frame areas. The plan was to be able to handle an additional \$100 million in sales by 1975. Counting the funds allocated just the year before to expand the Gary stamping plant and the Kitchener frame plant, the Company was looking at new automotive capital expansion of some \$200 million!

The economy improved strongly toward the end of 1970 so that in the final months auto sales, and truck sales, were booming. So were the costs of raw materials, all consumer goods, the cost of borrowing money, and the cost of labor and professional services. It should be noted that, at this point in time, about 40 percent of Budd's automotive sales were derived from the truck segments of the market. The economy was so strong in its resurgence that growth in the rate of truck sales was outstripping the growth rate of consumer demand for new cars. Medium and heavy truck sales are directly dependent upon growth in gross national product, since, except for replacement purposes, new ones are

needed only to the extent that greater quantities of goods are produced and shipped, and that new plants, housing and roads are built.

Before turning to an economically great 1971, it should be noted that, while U.S. automakers produced just 6.5 million new cars in 1970, a new phenomenon was impacting the industry. In 1970, the Japanese automakers exported 1.1 million cars, and some 300,000 of them were sold in the United States. That was more than 4 percent of total U.S. new car sales! This was just a beginning.

Significantly, in 1971, General Motors would become a part owner of Isuzu Motors which would produce its LUV minipickups, and Chrysler struck a deal with Mitsubishi to sell their minicars and compacts under the Chrysler-Plymouth and Dodge nameplates.

Nineteen Seventy-one also saw a resurgence in new car sales, with some 8.6 million American cars sold. The Budd Company enjoyed record sales of \$540 million, and profits of about 10 percent of total sales. Everything seemed to be falling into place.

Detroit stamping operations were profitable. Red Lion and Hunting Park stamping and frame operations were profitable. The recently expanded chassis frame plant in Kitchener had doubled production, and was profitable — despite heavy startup costs involved to produce the new Ford midsize car chassis frames.

The newly acquired Waupaca Foundry, Inc. had record sales and earnings, and was producing all of the castings for the new Clinton, Michigan disc brake component plant, which also had an excellent year.

Duralistic was doing well, too. Its new plant in Carey, Ohio had gone into fullscale production early in the year and turned a profit in its third month of operations. Even though Budd management had resolved to shut down railcar operations, the subcontract railcar work for General Electric brightened that otherwise dismal picture.

While the Nixon Administration had imposed a wage-price freeze which was doing some good to hold prices in check, the federal government, including both the Adminis-

tration and Congress, had to share considerable responsibility for the rising costs in the first place, especially in the automotive industry . . . (although some of their actions and policies undoubtedly had merit on a non-economic basis).

Automotive emission control programs had already caused the automakers to invest hundreds of millions in basic engine research, and the stop-gap modified engines developed to meet the new laws had 20-to-30 percent less fuel efficiency than their pre-emission control era counterparts. The reduction in vehicle mileage attainable per gallon of gasoline caused an extraordinary rise in demand for fuel, which resulted in higher prices. Among other things, this caused the end of the "muscle car" era, although high fuel costs were just part of it. Modifications to the engines greatly reduced their power-per-cubic-inch of cylinder displacement, and that's the reverse of the process for developing gutsy "muscle cars." Congress was also going to require the automakers to further reduce exhaust pollutants. General Motors had responded that it would do so by using catalytic converters, and thus set a pattern for the entire industry. The converters would operate only on unleaded gasoline. Indeed, the gasoline refining and distributing industries were on notice to have adequate unleaded fuel available to serve the entire nation's new car fleet. Unleaded gasoline would further reduce engine performance, since it is a relatively low octane fuel.

The automakers were also under a barrage of other orders from Washington. Orders for bumpers that could withstand five mile per hour crashes . . . car bodies that would withstand severe barrier crashes and side impacts . . . new braking ability . . . new flush fitting, non protruding controls and instruments . . . collapsible hood ornaments that would not mame a pedestrian, should one be struck by the car and knocked up onto the hood . . . The list was very long and still growing. The designers and engineers were hard pressed. So were the treasurers and accountants, trying to figure out how to pay for all of this and still keep their cars cost competitive.

One respected Wall Street investment firm, the Dreyfus Company, even sold off its automotive securities, stating publicly that the automotive industry had become, in their

view, a regulated industry like the public utilities industries, and therefore not likely to experience substantial future growth in earnings, yet was still a cyclical industry.

At the same time, the automakers — and their suppliers — were being hammered with an increasingly long list of Washington orders to curb industrial-caused pollutants . . . to put expensive electrostatic precipitator devices on their smokestacks to capture particulates . . . to process all discharge water . . . They also had to put extensive plant safety programs in place . . . even if they had excellent ones of their own that were somewhat different from those ordered out of Washington.

The cost of these and other government mandated measures ran into the billions! And sooner or later the dramatically rising costs would have to pass through to the consumer. Unfortunately, this would occur at a time when less costly foreign imported cars were beginning to demonstrate a very high level of quality that was of considerable interest to American consumers.

Thus far, the auto industry had permitted profit margins on its cars to erode, trusting that their overall profits would rise as a function of an expanding market. They were eating more costs than was healthy. The balance was precarious. Already, they had learned they could not be cost competitive with Japanese import cars with their own America-made subcompacts, which were selling with the very slimmest of margins for both the automaker and new car dealer.

One very major increase in any basic area could give the automotive industry great sickness. And one was coming! But not that year . . . or the next.

There was a major executive change at The Budd Company in 1971. Gilbert F. Richards, who had joined the Company 13 years earlier, was elected president and chief executive officer.

Richard's career with The Budd Company had been spectacular. He joined Budd as a product sales manager in Philadelphia in 1958, and one year later was appointed vice president of sales for the Automotive Division.

Richards became vice president and general manager of the Automotive Division in 1965, and was named president of the Division in 1968. Early in 1971, he had been appointed a corporate officer of The Budd Company and also

named executive vice president, Automotive products. In October, he became Budd's chief executive officer.

There was also a sad note that year for the hundreds of workers who had known Edward G. Budd, Jr. Mr. Budd died on May 20, 1971, at age 69, just four years after his retirement.

THE BOOM . . . 1972-1973



Gilbert F. Richards became the fourth Chief Executive Officer of The Budd Company in 1971.

Indeed, the new car sales edged up again in 1972. Combined new car and truck sales increased by some 12 percent. It was in fact The Budd Company's best year since the Company's founding. Budd's sales growth eclipsed that of the entire industry, and rose by a very noteworthy 30 percent! Profits increased by 300 percent over 1971! Many of the vehicles that Company supplied parts for proved to be the year's hot sellers: the Lincoln Continentals and Town Cars, the Marks, the Ford Econoline vans and suburbans, the new Dodge Compact vans . . . and the Ford Thunderbirds! The "T-Bird" was now a full-size luxury car quite unlike its earlier namesake. All of the outer metal parts for the Thunderbird were being produced and supplied by The Budd Company.

Sales were up in other areas, as well as automotive stampings. The Kitchener frame plant shipped 1.3 million chassis frames . . . its full capacity. The Red Lion chassis frame plant also had an excellent year.

One detriment to earnings that year were the heavy costs involved in changing chassis frame design and manufacturing processes required to produce a frame that would meet the federal five mile per hour impact resistance requirements. The changeover was not made easily, and added considerable expense and downtime to chassis frame operations in 1972.

The Wheel and Brake Division also had a sharp sales gain, and was making substantial inroads in the steel disc wheel market. This was true even in East Coast states, which had traditionally favored cast spoke wheels. Ground was broken for a new \$8.5 million truck disc wheel plant in Frankfort, Ohio. Everything was wonderful!

Except that automotive stock prices were not very high. Investors were shying away. That year, many of them got a chance to make a killing in a new "flash in the pan" market. Many made considerable fortunes in South African gold mining stocks. American floated the dollar free from gold reserve backing, and rescinded laws that prevented citizens from owning gold. Gold stocks shot up 500-to-700 percent! The price of gold itself soared 1,000 percent within a year's time. . .

Nineteen Seventy-two brought another significant change to The Budd Company, in addition to strong success in all operations. That year, the Company was reorganized on a divisional basis along product lines. Corporate headquarters were moved from Philadelphia to the Detroit suburb of Troy, so that senior management could be close to and maintain ongoing contact and rapport with their customer counterparts.

While things had seemed wonderful in 1972, they would seem even more wonderful in 1973 — providing one did not forget that inflation was running around the 12 percent level. The Budd Company's excellent performance continued. Budd established a new record sales level of \$777 million, which was 14 percent higher than the record level established the year before. Profits were excellent, and totalled \$24 million, which was 60 percent higher than they had been in 1972. Budd's ratio of earnings to sales had also improved.

These statistics reflect some of the increased management and production efficiencies now being realized. These efficiencies resulted from the massive investments in new equipment, the new divisional organizational structure, and, as always, the contributions of Budd's individual workers. It should be noted that the new divisional structure of the Company permitted managers involved in operations to better direct those operations, to be able to take immediate swift action as required, and to closely control production efficiencies.

These were booming times, indeed. Some \$4 million was budgeted to build a new gray iron foundry at Marinette, Wisconsin, to produce disc brake castings for the Waupaca Foundry operations. Another \$2.5 million was allocated for building a new hub and rotor plant at Ashland, Kentucky.

Gindy Manufacturing was building a \$4.3 million trailer plant near Martinsville, Virginia, and the Plastic Products Group was formed by combining the Duralastic Products Company with Budd's Polychem operations. Immediately, funds were approved to both expand capacity at the Carey, Ohio plastic molding and fabricating plant, and to build a second plastics fabrication facility in North Baltimore, Ohio.

ENERGY CRISIS . . . 1973-1975

Late in 1973, America was to receive that great, jolting general cost increase that many companies and businesses had worried about. They hadn't known how it might manifest itself, or why, but they knew the economy was so tight that one major distortion in costs, or in market patterns, could destroy it. The economy received that shock. The auto industry felt it most acutely — both in dramatically increased costs, *and* in suddenly distorted market patterns. The so-called Oil Producing Exporting Countries put an embargo on oil destined to the United States, and for the rest of the world, doubled the price of oil on an instant basis. It was cataclysmic!

The oil embargo hit with a hammer blow. It shot the cost of energy upwards, including natural gas and electricity. Many industrial power plants burned bunker oil to generate their own electricity. Many electric utilities did the same to produce electricity sold in their regions. Many people depended upon fuel oil to heat their homes.

A shortage of any required good or service in and of itself drives up its price, because those who need it will bid more to get it. In this instance, energy was so badly needed that immediate substitute sources were drawn upon. Electric utilities, for instance, stopped burning oil to generate electricity, and in many cases substituted natural gas as the fuel to power the generators. Industries, businesses and residences that could, also immediately switched to natural gas. That drove up the cost of "spot market" natural gas within the various producing states.

Gas utilities which transported natural gas across state lines to their markets immediately applied for higher rates to offset higher spot market prices incurred in the gas producing states, and to offset the cost of building pipelines, or taking other action required to tap into new gas supplies.

Many of these utilities would be absolutely stunned in future months to learn the consumer reaction to these price increases. Consumers had no choice but to pay for what they used . . . but they sure had a choice in now *much* they used! They dialed back thermostats, plugged leaks in storm windows, began burning logs in fireplaces. Before many months had passed, the average consumer would find a way

to reduce natural gas consumption by about 20 percent. And consumers would soon find a way to reduce new car consumption, too, when they deemed their prices to be too high. They would simply forestall purchase decisions. Instead of buying a new car every two or three years, they would plan to buy one every five or six years . . . or, only out of sheer necessity.

The automotive companies, of course, were especially sensitive to the energy crisis, since they carried both the burden of excessive plant environmental and safety costs, and the cost of having the design of their products changed to meet environmental and safety laws directed at the vehicular level, too.

There was outright fear that the import cars, which had made such dramatic sales gains, would gobble up a much bigger share of the new car market. As it turned out, the general economic distortions caused by the energy crisis curbed consumer spending abruptly. This impacted both the domestic and imported cars. There was a sharp sales drop for both domestic *and* imported cars in 1974.

It was an automotive executive's nightmare! It looked like the public wanted to buy nothing but small cars in January and February, when there were long lines at the gas pumps. But in March, when the oil embargo was lifted, consumers went all-out after the traditional big-size American cars again. The intermediate and full-size cars were still preferred by most Americans, despite the fact that it now took three times as many dollars to fill their gas tanks.

The automakers breathed easier — and gasped frantically at the same time! They had already committed their companies to sweeping downsizing programs, yet the market had suddenly changed on them once again and was predominantly a big car market. Traditional large car production lines swung into full gear. The compact and subcompact production lines were slowed down. Even at that they continued to produce small cars that simply would not sell. The automakers scrambled to get a fix on long range consumer trends.

Strangely enough, the general public wasn't aware that the market distortions caused by the oil embargo had quickly corrected themselves. There was an erroneous impression that Detroit's cars were not selling because they were too

big, and the import cars were selling well because they were small, which was perceived as being "just right." They also thought that "import car" meant Japanese car.

Actually, in 1973 America's domestic automakers produced an all-time record of nearly 10 million cars — mostly intermediate and full-size cars. The import cars had sales of roughly 2 million units. Of those, about half were Japanese, and half were European. Volkswagen, in fact, outsold any competing foreign make by a wide margin. VW sold 551,000 cars, which was one quarter of total import car sales and 124,000 units more than Toyota, its closest competitor. Imports held about 17 percent of the U.S. market as 1974 began.

During 1974, domestic new car sales would tumble by 24 percent. Import sales would fall by 20 percent. The sharper decline in domestic car sales reflected a new consumer trend — a price reactive trend. It was not one the automakers really wanted to see. At long last, all of the pent up costs for safety and emissions equipment, for government mandated industrial equipment, simply had to be passed along to the consumer. A new term came into being: "Sticker shock!" Many models increased in price by more than \$1,000 over the previous year — a rise of some 20 percent. Consumers set aside plans to replace their cars. At the new higher prices, the quick turnover cycle of previous years wasn't feasible.

While domestic car sales were down by 24 percent, however, truck and trailer sales were up and set an all-time high record. Since wheels, hubs, drums, rotors and other wheel and brake components now accounted for an appreciable part of Budd's automotive business, this helped boost Budd's 1974 sales higher than they had been in 1973.

Gil Richards would later explain that the high volumes of truck and trailer sales were caused by two factors. Fleets were buying in anticipation of 1975 price increases. More importantly, they were also buying because in the following year, federal regulations then pending would require trucks and trailers to be equipped with anti-skid systems. These systems would add to the expense of trucks and trailers generally, and many fleets were concerned about the reliability of electronically controlled brake systems.

Despite the increase in sales, Budd, like most other man-

ufacturing companies, felt a greater squeeze on profitability. Budd's operating costs increased at a much higher rate than national inflation, which ran at 12.2 percent in 1974. Interest costs on borrowed funds were 40 percent higher than they had been the year before.

In June of 1974, Gil Richards was elevated to Chairman of the Board, and retained his position as Chief Executive Officer. James H. McNeal, Jr. was elected President and Chief Operating Officer of The Budd Company.

During the next six years, they would lead Budd through its biggest sales years, and their efforts would see to it that Budd had the equipment, the people and the plans in place to come through another devastating depression — one which would hammer the Company as severely as that of the Great Depression of the 1930's. This time, however, when the economy recovered, the entire automotive industry would have undergone drastic change.

While this depression was several years off, the economy right there and then in 1974 was suffering, and the automotive industry was bleeding badly. The nation was plagued by recession that was accompanied by volatile inflation, which usually indicates that plants are running full blast, instead of far below capacity. Economists coined the term "stagflation" to describe the phenomena of the stagnant economy, which also had severe inflation.

Some chroniclers of those times suggested the nation was yawing sideways instead of ploughing straight ahead because President Nixon faced impeachment for the Administration's "cover up" of illegal campaign activities, including the break-in of national campaign headquarters at the Watergate complex in Washington. Nixon resigned, and was succeeded by President Gerald Ford.

The economy was on a course of its own, though, and impervious to national politics. The shocks of the oil embargo and skyrocketing fuel prices were to last a very long time. They sent the nation into a harsh one-year recession. It was the worst economic decline then recorded since the Great Depression of the 1930's — but would be "kid stuff" compared to that which would come in the early 1980's.

In 1975, new car production tumbled a half million units, with just 6.7 million new cars built in America. Truck sales also dropped off sharply. Trailer sales fell off worst of all,

dropping by 75 percent!

The Budd Company was in fighting trim, though, and weathered the onslaught. In the five years preceding, some \$200 million had been invested in new plant and equipment. In fact, Budd, in 1975, opened its new Plastics Research and Development Center in Troy. This was very significant. The automakers were looking at plastic as a new lightweight material that could be used to reduce the weight of cars and enhance their fuel economy characteristics. Budd also had a substantial backlog of tooling orders.

To help spur auto sales, Budd offered all employees a \$100 "rebate" if they purchased a new American-made car. All of the automakers also offered rebates. Indeed, new car sales were on the upswing by late autumn, and by December, it looked like the economic tide had turned. Gil Richards spoke before a Philadelphia Chamber of Commerce Group, saying 1976 new car sales would be up by 15-to-20 percent. This increased automotive activity would cause a ripple effect throughout the economy so that Gross National Product would grow by at least six percent. He said there would be a substantial decline in unemployment.

The Vietnam War ended in 1975, when U.S. troops were withdrawn and South Vietnam collapsed. U.S. troops had been involved in the fighting for 15 years!

A NEW PROSPERITY . . . 1976-1979

The Nation marked its 200th anniversary in 1976, and it was truly a golden year in all respects. Rampant inflation which had ravaged every industrial nation in the world now began to slow markedly in America. The public had adjusted to automotive "sticker shock" and new cars were selling at a highly accelerated rate. The predictions made by Gil Richards in December had been right on target. The American automakers produced 8.5 million cars in the Bicentennial year — nearly 2 million more than the year before! Perhaps that great nationalistic feeling, or great patriotic feeling extant throughout the land also impacted consumer buying patterns. At any rate, import car sales *dropped off* by 100,000 units! They stood only slightly above the level achieved two years earlier.

President Gerald Ford, who had succeeded Richard Nixon, ran for the Presidency again. James "Jimmy" Carter defeated him by an easy margin.

The Budd Company's sales now topped \$1 billion for the first time in history. The hundreds of millions invested in state-of-the-art production equipment now began paying off. That year, Budd installed a computerized customer order management system to streamline sales order functions throughout all automotive operations. Profits more than doubled from the level of 1975. It was, by far, the best year in the history of the Company to that time.

Automotive sales were now evenly divided between cars and trucks. Every unit of the Company was doing well. Budd introduced a new demountable rim for tubeless truck tires, which was produced at the new Frankfort, Ohio plant and was an instant success.

Not only was 1976 a wonderful year for business, the outlook for the years ahead was no less rosey. Reflecting its own successful work and strong customer interest in plastics, the Plastic Products Group announced another major expansion for the Carey, Ohio plant, which would increase the Carey workforce by 30 percent.

The Stamping and Frame Products Group had several new orders. The Kitchener, Ontario plant had been selected to supply frames for General Motors intermediate-size cars for the 1978 model year, and would begin on this

project in mid-1977. This Group had also been selected to supply aluminum cabs for a new line of GMC heavy trucks.

The Plastic Products Group would supply fenders and hoods for this truck line that were press-formed from Budd's own sheet molding compound.

That year, Budd also acquired the Woodings-Verona Tool Works of Verona, Pennsylvania.

The Budd Company, as its founder Edward Budd had said at its 25th anniversary in 1937, "had hit its stride!" The dividend paid to common shareholders was increased by 50 percent. The Budd payroll had never been larger. The Company had some 25,000 employees worldwide. There were 23 major plants operating in North America, and Budd had affiliated companies or joint ventures in Argentina, Brazil, Mexico, France and Germany.

In 1977, new car production set an all time high record, with 9.2 million units produced. Budd's sales, and profits, increased dramatically. Construction began on a new \$3 million plastic compounding plant in Van Wert, Ohio. Automotive production climbed even higher in 1978. Combined domestic and imported car sales that year exceeded 11.5 million units. The Budd Company signed a new three-year labor agreement with the United Auto Workers. The Company was performing at such a high level that it attracted much attention, and particularly the attention of a German-based company called Thyssen AG.

Thyssen was one of the largest corporations in Germany, with nearly 200 member companies operating in Germany, the United States and other countries. Thyssen specializes in producing steel, and produces a wide range of capital goods. Thyssen saw in The Budd Company an outstanding automotive supplier which has recorded outstanding performance through more than 60 years, and which was poised to become even more successful as the American automotive industry continued to blossom in the years ahead. Accordingly, Thyssen offered to purchase the outstanding shares of The Budd Company, and Budd shareholders agreed to a merger between Budd and Thyssen at the shareholders meeting in April of 1978.

Budd management favored the merger, since Thyssen had agreed that The Budd Company would operate under

its own management as a separate entity, and would continue as a U.S. corporation. As of April 25, 1978, The Budd Company was owned by Thyssen. Since The Budd Company itself was no longer a publicly traded company, it no longer issued sales and earnings reports, and its progress was not tracked in the general public record, or by financial news media.

However, Budd continued to know excellent success in line with that of the North American auto industry. While 1978 had been a good year for Budd in both sales and profits, the Company would feel a slump in 1979, along with the rest of the industry. New car sales fell in 1979, but by only 300,000 units. Yet this was the year in which an awesome change would occur in the market pattern. Domestic automakers sold some 8.4 million new cars, which was a drop of not 300,000, but 800,000 units from the previous year. Imported cars, on the other hand, *increased* their sales by 500,000 units, rising to 2.8 million from 2.3 million sold in 1978.

Once again, American compacts and subcompacts were losing ground to the imports, and quality was still an issue. There had been numerous recall notices issued against American cars, and few against the imports. Moreover, Japan had gained import supremacy by a vast margin. Of the 2.8 million imports, more than 2 million were produced in Japan. Volkswagen, once the import car sales leader in America, sold just 187,000 total units — a decline of 90,000 from the year before. On the other hand, Mazda's sales doubled from 80,000 to 165,000 in the same one-year period, Nissan's sales rose by more than 120,000 units to 574,000, Honda gained an extra 70,000 units and sold 354,000, Chrysler's Mitsubishi imports gained nearly 80,000 additional sales and recorded a total of 185,000 units, and Toyota — now the import King — increased its sales by 100,000 units to 638,000.

Double digit interest rates still pervaded the American economy. Even corporations with gilt-edged credit ratings were paying 12 percent interest to their lenders. Consumers who purchased new cars and other durable goods were paying even more than that. The rising interest rates reflected, once again, high levels of inflation.

The American big cars sold well. It was the American

small cars that were taking a trouncing from the Japanese automakers. Still, the Big Four had to commit to small cars and the eventual abandonment of the big, luxury cars the American consumer had long favored. For one thing, the federal government was now regulating passenger car fuel economy. Each manufacturer would have to achieve a certain fuel economy average. This meant that, while some cars could exceed the average, others would have to be rated better than average. To attain the levels of fuel economy set for the years ahead meant industry-wide downsizing.

The drive to produce more fuel efficient cars led to many lightweight or alternate fuel source vehicle programs. Budd took on many experimental projects aimed at developing lighter weight, more fuel efficient cars, and safer cars, too. Federally required vehicle safety features were still a growing compliance challenge for the automakers. Many of the projects Budd entered into were funded by the federal government.

Budd produced a lightweight, crash resistant research safety vehicle (RSV) in 1977. The body consisted of unitized steel metal construction, but body components were filled with a core of rigid polyurethane foam to increase vehicle crashworthiness. The vehicle had gull wing doors, high strength roll bars and roof struts. The front module could withstand 10 mile per hour barrier crashes. Budd's partner in this U.S. Department of Transportation project was Minicars, Inc., of Goleta, California.

Budd also built a lightweight composite plastic electric powered car with Garrett AiResearch of Torrance, California. Two of these lightweight, alternate energy source vehicle were built. Budd provided conceptual design and body, including flexible foamed plastic bumpers.

In partnership with the Vought Corporation of Dallas, Budd's Milford Fabricating Company produced an Experimental Light Weight Vehicle for Ford. The two companies supplied 149 of the 160 graphite reinforced plastic components in the vehicle. Of these, Milford Fabricating provided 119, including the front end, doors, fenders, front and rear bumpers, dash panel, and others. Milford Fabricating also assembled the vehicle, which looked like a regular Ford production model.

Budd also developed improved side structures for sub-compact cars, to help them withstand crash impacts with larger cars. The new designs reduced the amount of passenger compartment intrusion in oblique side collisions, yet accomplished this with only a minor increase in body weight.

BITING THE BULLET . . . 1980-1983

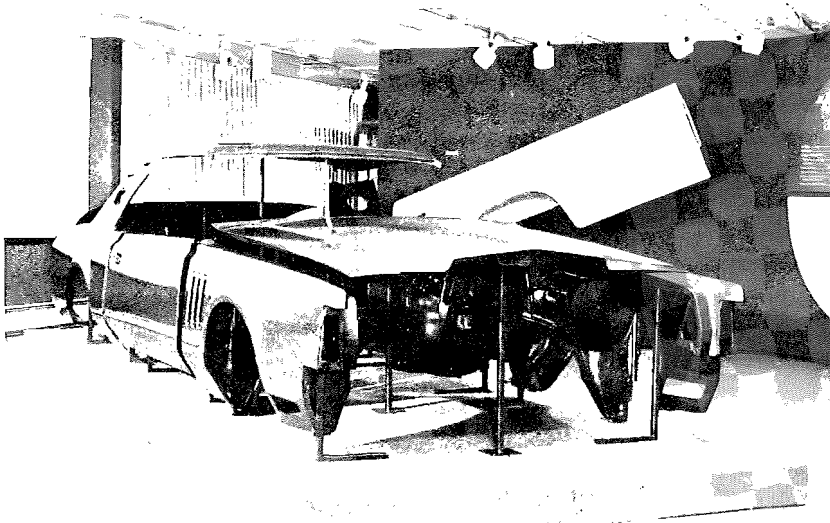
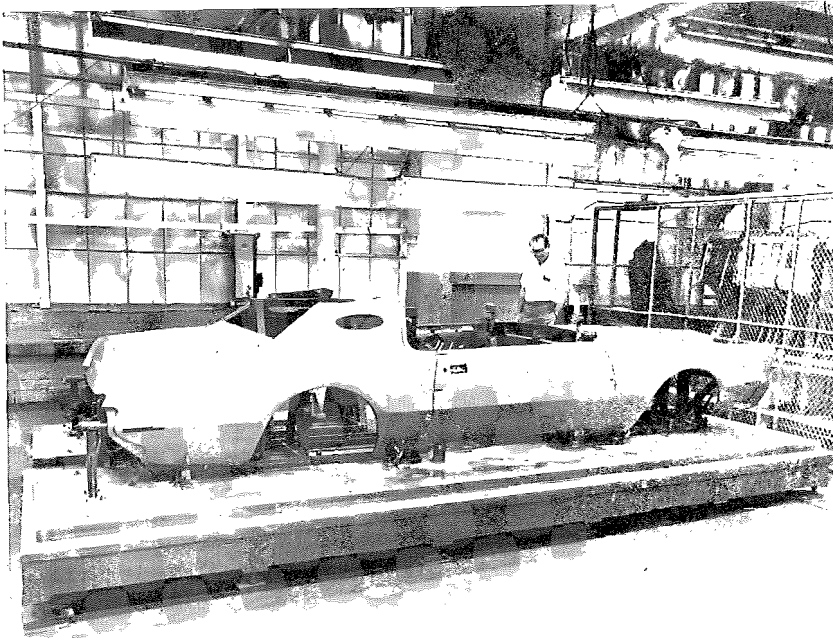
Now the automakers had the true feel of the land, a realistic view of the economy, an increasingly clear view of what was happening in their industry, and what they would have to do to try to turn the tide that ran against them. In 1980, they bit the bullet hard, and winced as new car sales plunged by nearly 2 million units to a total of 9.3 million. They winced even harder when analysis proved out their fears: Domestic new car production had taken the full impact! American automakers produced some 2 million *fewer* cars than they had in 1979. The foreign imports had *increased* their sales slightly, and accounted for just under 3 million units!

Now the American automakers were in the soup, and knew it full well. While they have never received much credit for it, they and their workers never stood higher. They undertook the most demanding programs the industry had ever known, at a time when it reeled under the most adverse conditions ever experienced.

Everyone in the industry knew now and acknowledged that the market favored imports on the basis of cost and quality. The automakers launched a seemingly impossible program to turn things around; to bring up the quality of American cars to an all-time high level, and to reduce costs as much as required. The American automotive suppliers, of course, were hit very heavily as the market of 1980 tumbled. While their own costs shot upwards, their automaker customers curtailed purchases and sought price reductions.

One of the things the automakers did, in fact, put many automotive suppliers under excruciating pressure. A good many of the smaller, less capitalized companies went out of business. The American automakers, depending upon model and plant location, purchase some 40-to-55 percent of the finished content of their cars from automotive suppliers. They wanted to whack these costs the same way they assailed their own internal costs.

They could cut costs internally by reducing work force, abandoning marginal operations, reducing inventories, by installing new state of the art manufacturing equipment, and by implementing new quality control procedures which would reduce or eliminate scrappage and parts rework.



Luxury car body components in production for 1976 Lincoln Continental Mark IV (Top) and on display for 1977 Mark V (Bottom) at Budd's Charlevoix Plant in Detroit. — Budd Photos.

To cut the cost of the parts they purchased from suppliers, they went shopping on a worldwide basis. They often found that companies in places like Japan could deliver very high quality products at less cost than the American suppliers could sell them for in the United States. They found the same held true with respect to many European sources, too, and in emerging industrial areas like Brazil, and other Latin American nations.

American automotive parts suppliers, including The Budd Company, had to wage the same kind of seemingly impossible cost cutting war. They had to convert their plants to new levels of high efficiency; to improve product quality, and hold, or even reduce, product costs — despite rising material costs. This involved huge new investments, which had to be made at a time when sales were plummeting, and when most companies, including Budd, were running very much in the red.

To some extent, The Budd Company was shielded from direct overseas competition, because of the highly specialized nature of its business. Overseas companies could not — at that time at least — become involved with the American automakers in developing prototype car bodies.

However, Budd did feel this competition directly with respect to some of its smaller stampings, and to various castings and other small fabricated metal products. Such products could be produced more cheaply abroad and landed within the United States at very low cost. The advantages enjoyed by foreign automakers and foreign-based automotive suppliers — especially in Asia and Latin America — included and still include, much lower wage rates, much lower rates of taxation on manufactured products, and much lower costs for steel and other raw materials.

The Budd Company felt the pressure of foreign competition in a massive, but indirect way. Since Budd's American customers lost an enormous slice of market share, Budd's own orders from these customers were drastically slashed. Almost at once, Budd experienced overcapacity in all of its major facilities. Had this been a short term glitch, the Company could have weathered it with a shrug. But there was nothing short term about the impact of the new global competition . . . nor of the terrible back-to-back recession years

which America would experience.

With no lack of challenge before him, President James H. McNeal, Jr., was elected Chief Executive Officer of The Budd Company on December 1. Chairman Gil Richards retired.

McNeal had spent his entire professional career at Budd, having joined the Company shortly after graduating from the University of Delaware with a degree in business administration. He served in a variety of production assignments in Philadelphia from 1951 to 1959, when he was appointed Assistant to the Vice President-Sales, of the Automotive Division. Two years later he was appointed vice president and general manager of ARMETAL, Budd's Argentine affiliate.

In 1965, McNeal was named President and General Manager of Budd Automotive of Canada, Ltd., and oversaw construction and start up of the Kitchener Frame Plant. In 1968 he became Vice President of Overseas Operations with responsibility for the Canadian, Mexican and Argentinian subsidiaries. He had also served as Vice President of Manufacturing Services, and had been President and Chief Operating Officer of The Budd Company since 1974.

The American automakers would experience another production decline in 1981, and produce just 6.3 million new cars. The import cars would also lose 100,000 unit sales, but the Japanese car makers would increase their market share over European imports.

In 1981, American investors seemed to completely lose faith in the profit generating ability of the American manufacturing industry, and American automotive industry in particular. Stock prices would decline month by month, and in August, would nosedive, beginning with the sharpest one day loss recorded since the Wall Street collapse of 1929!

Here we had the automakers, and the suppliers of the automakers like The Budd Company, collectively investing billions of dollars in new processes and equipment to increase product quality and make the companies' products cost competitive on a worldwide basis. Here we also had the publicly traded stocks of those companies nosediving to ridiculous levels.

To raise money for the needed capital investment programs meant to borrow it long term at extremely high rates

of interest. It was a bloodbath! Every automotive company would lose money. The whole industry would operate in the red! Congress passed special legislation that enabled Chrysler to borrow funds under federal government guarantees for repayment.

American new car production fell agonously in 1982. Only 5 million cars were produced in America! On the other hand, import car sales declined by only 200,000 units, and some 2.6 million foreign cars were sold in America! That was more than half of national production!

This was the most economically devastating period the nation had faced since 1929-30. Perhaps it was even more devastating. Now, of course, unemployed workers could draw unemployment insurance for protracted periods, and there were other social benefits to ease the pains which were not available in the Great Depression of the 1930's. Interest rates continued to soar, and this cut with a two-edged blade. On the one hand, manufacturers had to pay very dearly to make needed improvements and bring products out that could compete with the low priced, high quality imports, and there was no ceiling on the amount of interest they could be charged.

There was, however, a ceiling on the amount of interest consumers could be charged for small loans. So-called rotating charge accounts had interest rates running from 18-to-24 percent in most areas of the country, which drained off much of their cash. Straight loans for new cars, recreational vehicles and other durable goods that were repaid on a set rate interest multi-year contract, however, were fixed by the various states. Banks might charge corporations 18 percent, or even more than 20 percent, for the funds they advanced them. Yet they could charge consumers only 12 percent, or 14 percent, depending upon prevailing local laws.

The banks and other financial institutions all over the nation tightened consumer credit qualifications. Some did so to such an extent that many consumers were not able to obtain financing. One of the laments of new car salesmen was that, they might sign up five or six customers in a week, and have four or five of the credit applications rejected by the financing institution. The automakers' own retail financing institutions were caught up in the same sort of

squeeze. To obtain the funds to underwrite new car loans, they had to pay almost as much in interest as they could charge.

The financial scene got so topsy turvy that the automakers and some of their major suppliers developed very novel methods for bracing their financial resources. The federal government allowed corporations to claim a 10 percent investment tax credit. That is, for every million spent on new plant and equipment, they could deduct \$100,000 from their federal income tax liability. However, in 1981 and 1982, the automotive companies made little or no profits, and therefore had no income taxes to pay. They most surely had made sizeable capital investments, though, and had massive investment tax credits, running into many millions of dollars. Some of the automakers began selling these investment tax credits to other companies. Those companies could then apply the credits against their own income tax liabilities, provided the contracts for making the transaction followed careful formula which did not bend the federal tax regulations.

In some cases, the tax credits were sold to the credit finance subsidiaries of major manufacturing companies whose fortunes were not so closely tied to the automotive industry. Such companies could apply the credits to reduce the amount of taxes they were required to pay to the federal government. They would invest the savings. Some of them would invest it by buying up huge fleets of cars from the automaker they had bought the tax credits from. They would then make these cars available to the automakers' dealers at attractive lease rates.

Despite the abysmal auto sales and the terrible financial performance of the automotive industry, a very surprising thing happened in August of 1982. Economists and market analysts weren't able to explain it. It just seemed that Americans got damned good and tired of seeing the kind of golden economic years experienced in the 1960's and the 1970's replaced by those in which nobody seemed to have any control over anything, and in which the largest manufacturing corporations in the world were doing ridiculous, although innovative things to try to scratch up a little extra money and loosen the economic bonds that held them back.

Investors went back into the stock markets enmasse. Au-

tomotive stocks shot up in the course of a couple of weeks. Those with courage made fortunes. The automotive stocks gained in market value week after week. And now, stocks were being sold by a wide range of financial institutions. More than 100 million shares a day were changing hands on the New York Stock Exchange. This was not a temporary fad reflecting new activity that had long been pent up. It was the way things were and would continue to be. This didn't put more money in the paychecks of workers. Nor did it ease consumer credit. But it surely reflected the confidence and determination of those who could invest, and this braced the spirits of those who could only watch.

Nonetheless, a new mood swept through the land. This was it! The *economy* was not going to rule the lives of the American millions. They were going to rule that economy! And they did indeed force it to turn around. Durable goods started selling again. The only basis behavioral scientists could find for consumer predisposition to buy was that they thought the recession should and would end. When asked why they felt this way, consumers answered in a variety of ways, but generally expressed their powerful view that, "Because it has gone on long enough!"

Now 1983 came on, and the rate of new car sales increased tremendously. Overall new car sales were up by 38 percent. And this time, by damn, American new car sales increased by 1.7 million units, and imports by only 300,000 units! There was a message there, to be sure. Still, domestic auto production was just 6.7 million units — far below the levels experienced in the 1970's. But the automakers, now using new production facilities which attained very high levels of quality, were indeed turning the tide.

RECOVERY . . . 1984 AND BEYOND

It wasn't an anomaly, either. In 1984, the American car makers would produce 900,000 more cars, with production hitting 7.6 million units. On the other hand, import sales would rise by just 100,000 units. Only now, the American public learned, the Japanese automakers were purposefully limiting the quantities of cars exported to the United States. While American automotive quality had come up dramatically, the Japanese could still produce a car and land it in America with a distinct cost advantage over their American counterparts.

In 1984, the American automakers announced their earnings for fiscal 1983 — the first comeback year from the devastating "Depression of 1981-1983." General Motors, Ford and Chrysler all had record high levels of profit. Automotive analysts quickly explained that this was a function of the sweeping changes made in production efficiency. The hundreds of millions invested in new processes had yielded their first return. Unfortunately, the work forces of all of the automotive manufacturers and their suppliers had been drastically cut back.

This was mostly a function of the greatly reduced domestic share of the available auto markets — the ultimate impact of the foreign imported cars. Some of it was also caused by efficiencies rendered by new state of the art production equipment, which could speed production rates, without requiring corresponding increases in work force.

The Budd Company had gone through this economic bloodbath with no less pain than any other major automotive supplier. Diminished capacity, projected lengthy market downturns for both cars and trucks, required the Company to trim its manufacturing base. This was done selectively, and historically low profit operations were priority candidates for divestment. The huge Gary, Indiana stamping plant, which had not shown a profit since its capacity had been doubled in 1971, was closed. Even at that, the Company still had press capacity available in its Philadelphia facilities. Some other smaller facilities were also divested, and their production consolidated in other plants. The Trailer Division, which had been unprofitable since the end of the 1970's, was sold.

And action was taken to separate The Budd Company from the railcar business. Budd's Transit Division, now the only American-based entity manufacturing passenger railcars, was "spun off" from The Budd Company, to become a free standing company called Transit America Inc., which now functions as a separate, wholly owned Thyssen subsidiary, completely independent of The Budd Company.

While fiscal 1984 would prove to be a profitable year for The Budd Company, the preceding four years surely had not been profitable. Facing a new labor agreement with the United Automobile Workers, Budd management opened its books to union officials for their review so that they would have no question about exactly how much added expense the Company could handle, and how much it could not tolerate. The prolonged recession had been an excruciating experience. The scars were deep and in some areas, unhealed.

The UAW and Budd's UAW members took a cooperative approach in negotiations, restrained wage increase demands in many areas, and gave the Company the breathing room it needed to gather new strength. It is very significant that The Budd Company had only half as many employees as it did in the halcyon year of 1976. The Company also had some 10,000 former employees on its pension list, for whom it pays medical insurance benefits and other costs, largely out of generated cash flow.

The new labor agreement was signed, and The Budd Company moved into the last half of the 1980's with new spirit. Throughout Budd production facilities, Budd Employee Involvement Groups are popular, and working hard, to inject worker thought and creativity into the production processes. The Company still favors the "promote from within" policies of its founder, and tries to do this where possible. Despite the withering recessions just experienced, The Budd Company also maintains its college training programs for workers who aspire to higher levels of education, and higher positions within the Company. After some 75 years, the founding philosophy of Edward G. Budd still lives on.

And Budd surely continues to make substantial contributions to the automotive industry. Budd's Milford Fabricating Company facility, for instance, developed the metal

space frame for the Pontiac Fiero, America's first successful popular priced passenger car using a press-formed reinforced plastic body. Milford Fabricating also assembled the prototype Fiero model. The Budd Plastics Division produces major plastic body panels for this car.

Budd's Stamping and Frame Division continues to innovate in new body and frame components, and is working very closely with the primary automakers to develop stronger, lighter weight steel bodies for the cars of tomorrow. The Division is delivering these components to many customers on a "Just in Time" basis, to conform to their new and efficient production requirements.

The Wheel and Brake Division successfully introduced a new line of metric steel disc wheels with a new mounting system, which has met with excellent success. Waupaca Foundry, Inc. has made excellent progress, and is serving a wide range of industrial castings customers, as well as supplying the Wheel and Brake Division with many of its major casting needs.

The North American automotive industry is still troubled, because of global competition, and the importation of billions of dollars in cars, trucks, parts and components. Yet the American automakers have made great progress. They turned back much of the tide themselves during a savage recession, bringing their own product quality up to a new high world standard. They successfully attacked costs on every possible front, and are still doing so.

The Budd Company has certainly attained new levels of product quality and production efficiency, too. James McNeal, promoted to Chairman and Chief Executive Officer in 1986, has repeatedly credited Budd employees with these attainments, as opposed to crediting the new state-of-the-art production equipment that has been installed. During the summer of 1986, McNeal travelled throughout The Budd Company's facilities, holding breakfast meetings with representative employee groups, to hear their thoughts about the Company, to ask for their support, and to keep them directly involved with Budd's future planning. While The Budd Company is much leaner than it was in former years, McNeal was able to tell the employees that the Company had never been in such sound shape in its entire history.

Total worldwide employment stands at little more than half of what it was in the boom years of the 1970's. Including Budd's affiliate operations outside North America, total worldwide employment is a little less than 14,000. With the exclusion of Budd's affiliated operations in Europe, Argentina, Brazil and Mexico, total employment stands at a little under 11,000. The Budd Company is, as it was in its earliest years, almost totally automotive oriented. Moreover, Budd's products still set a standard for the industry, and many new ones are coming along to set new standards in the years ahead.

In its 75th year of operations, The Budd Company operates five major divisions and a diversified products group, consisting of four subsidiary companies.

The Stamping and Frame Division is Budd's largest employer, and also provides a larger share of sales and income than its sister divisions. The Division constitutes the fourth largest automotive stamping company in North America, next to General Motors, Ford and Chrysler. It represents approximately 7 percent of all of the major automotive stamping capacity in North America.

Stamping and Frame operates 44 major press lines at its stamping and frame plants, and has just under 6,000 employees. The Philadelphia Stamping Plant is the largest of any in The Budd Company, and encompasses some 2.4 million square feet of floorspace. The Philadelphia Tool and Die Plant, which is contiguous to the stamping plant, occupies an additional 200,000 square feet, and has the largest automotive tooling and machining capacity outside of the automakers themselves.

Next in size is the Detroit Stamping Plant, which has more than 2 million square feet of floorspace. These facilities produce a wide range of car and truck body components, including doors, quarter panels, hoods, floorpans, spaceframes and other stamped steel components.

The Kitchener Frame Plant stamps and assembles chassis components and frames for cars and trucks. Including recently completed additions, the plant is approximately 1 million square feet in size, and has some 1,500 total employees.

The Division's Sales and Engineering Center in Rochester, Michigan, provides product design, tool design and

manufacturing feasibility tests for customers, and has total computer aided design and manufacturing (CAD/CAM) capabilities.

In 1986, The Stamping and Frame Division opened a new Robotics Center in Sterling Heights, Michigan, to experiment with and develop manufacturing methods that employ robotics, electrical controls, and automated materials handling systems. The Center is also involved in welding technology.

The Budd Wheel and Brake Division is the second largest employer within The Budd Company. It opened new divisional headquarters offices in Farmington Hills, Michigan, in early 1986, after being housed in headquarters on Charlevoix Street in Detroit since 1925.

The Division's new headquarters house product design, engineering, sales and administrative functions, and is "on line" by computer to all production locations.

All three plants are relatively new, having been built within the past decade. Largest among them is the Johnson City, Tennessee Plant, which machines and assembles hubs, drums and disc brake components for cars and trucks. The plant has 320,000 square feet of floorspace.

Budd has long been famous for its steel disc wheels and rims for trucks, trailers and buses, which are produced at the Division's 185,000 square-foot Frankfort, Ohio Plant.

The 89,000 square-foot Ashland, Ohio plant machines and assembles disc brake components for cars and light trucks.

In addition to its domestic operations, the Wheel and Brake Division has operations with affiliate companies in Argentina and Mexico. Armetal Industria Argentina de Metales, S.A. produces cast wheels, disc brakes, automotive stampings and other products at its plant in Buenos Aires. Another affiliate, Farloc Argentina/S.A.I.C.yF, produces hydraulic drum brakes and associated parts in its Buenos Aires plant. The Division's Mexican affiliate, Auto Manufacturas (AMSA), produces hubs, drums, disc brake rotors, castings and other products at its two plants near Mexico City.

The Budd Plastics Division has six facilities in the United States. The Division stands second to no other company in the world in producing high quality fiberglass reinforced

plastic body panels and other products for the automotive industry.

This Division employs 2,000, and is positioned to grow as demand for plastic automotive parts increases in the years ahead. The Division's Headquarters and Sales and Engineering Offices are located in Madison Heights, Michigan.

This facility is close to the Budd Plastics Research and Development Center in the adjacent Detroit suburb of Troy. Between these two facilities, the Division has the capability to completely design all-plastic bodied cars from the concept stage, and produce fullscale working prototypes. It took on such a project for a major European customer quite recently, and the customer has phased that prototype car into production.

The Division produces its own specially formulated sheet molding compounds, which are used in Class A surface automotive body panels, marine products, business machine products, and other applications. These materials are formulated and compounded at the 67,000 square-foot Van Wert, Ohio Plant.

Both the 234,000 square-foot Carey, Ohio Plant and the 233,000 square-foot North Baltimore, Ohio plant produce a wide range of plastic automotive body components. These plants have developed new high speed manufacturing methods which lead the rest of the industry.

The Division also owns and operates Connelly Skis, Inc., of Lynnwood, Washington, which produces America's best known line of high performance water skis and related accessories.

Budd's Polychem Division is also a producer of plastics, but concentrates on heavy-duty plastic products used in a variety of industrial applications. Typical products include cast nylon elevator buckets used in material handling systems, nylon gears, molded conveyor chains, extruded plastics for electrical, aircraft, waste water treatment and home appliance applications, and other products. The Polychem Division operates a 220,000 square-foot plant in Phoenixville, Pennsylvania.

The Budd Aftermarket Division supplies heavy duty truck and trailer parts to fleets and repair outlets. It also supplies new and rebuilt transmissions, drive train components and cold weather starting aids. The Division's Freeway Truck

Parts operations are headquartered in Los Angeles, California, with distribution centers or branches in 16 cities in California, Washington, Arizona, Texas, Missouri, Georgia and Florida.

The Budd Aftermarket Division's Tempro operations are based in Winnipeg, Manitoba, Rexdale, Ontario and Eden Prairie, Minnesota.

The Budd Company also has four major subsidiaries which operate outside of the divisional structure. Collectively, these subsidiaries have 1,650 employees.

Milford Fabricating Company has total capability to manufacture prototype sheet metal and plastic parts for vehicle body and chassis components, including development of the original dies. One of the largest automotive prototype specialty firms in the world, Milford Fabricating produced the prototype steel space frame for the all-plastic Pontiac Fiero, and assembled the Fiero prototypes. The Detroit-based company has headquarters, engineering, foundry and production facilities in structures encompassing 270,000 square-feet of floorspace.

Waupaca Foundry, Inc., operates three plants in Waupaca, Wisconsin and one in Marinette, Wisconsin. They produce process controlled grey iron, compacted graphite iron and ductile iron castings, using the most modern techniques known in the industry. Products include various automotive castings, parts for construction equipment, pumps, and a wide range of other specialized parts and components.

Greening Donald Co. Ltd., is a manufacturer of wire ropes, wire screens and cloth, communications wire and other associated products.

This subsidiary is based in Hamilton, Ontario. It operates two plants in Hamilton encompassing 215,663 square feet and 68,000 square feet of floorspace, a 106,000 square-foot plant in Orangeville, Ontario, and a 78,000 square-foot plant in Midland, Ontario. Greening Donald has sales offices and service centers in Plainfield, New Jersey, and six Canadian cities in Ontario, Quebec, Nova Scotia, Alberta and British Columbia.

Chairman James McNeal, believes employee morale at The Budd Company is at an all-time high. Everyone seems to have taken a personal interest in the challenges ahead, and is doing his or her part to meet them head on. Edward

G. Budd, the founder, said in 1937 that, "We have hit our stride. There is much sport ahead for all of us."

Management and workers are teamed together in close harmony at all facilities. Together, they're working on the problems that must be overcome. There is no coasting in the automotive business. There were problems in 1912, when The Budd Company was founded, and there are problems as The Budd Company enters its 75th year. Edward Gowen Budd, his successors, and employees have usually seen problems as "challenges." More than that, they have always seen something not all others have the foresight to see — the great opportunities that lie ahead.

There has been much talk of such cooperation throughout the industry, and some observers dismiss it as "lip service." Indeed, in some companies it may not amount to very much more than that, for a variety of reasons. But it is surely not lip service at The Budd Company. The Budd Company was founded on the basis of employee involvement.

That movement, if it can be called an industry movement, may even have started with Budd back in 1912. The founder never dictated to members of his workforce, but asked them to use their own ingenuity and skills to get the job done, to improve the products, to advance the state of the art of the automotive industry. Edward G. Budd went unsung throughout much of his life, except in the City of Philadelphia, and historians of the automotive industry have given him hardly a thought as they chronicle the accomplishments of some of the others who started the early companies.

In so doing, they also overlook the fact that it was the workers of this or that company that did the trick! They were the achievers, the innovators, the spirit of the company! One should not make that mistake in tracing the history of The Budd Company. Throughout the lifetime of the founder, he and his workers were closely intertwined, and he always credited them respectfully for the Company's achievements.

Analysis of the Company today shows that this same philosophy is very much alive. The Budd Company has been involved with design and production of some of the most outstanding, most successful automobiles the world has

ever known. Indeed, the Company showed all of the world's automakers how to make the all-steel body car, and in many respects, the all-plastic body car, too. In the next quarter of a century, while Budd reaches for its 100th year, it will be interesting to see what sweeping innovations the present day workers of The Budd Company bring to the world's automotive showcase.



James H. McNeal, Jr., was elected Chairman and Chief Executive Officer of The Budd Company in 1986, after serving as President and Chief Executive Officer since 1980. He had served as President and Chief Operating Officer from 1970 to 1980.

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