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PLAINTIFF'S
EXHIBIT

TIC-44

THORPE

June 27, 1994

Mr. Gregory D. Morrison, Esq.
COOK & BUTLER
1221 Lamar, Suite 1300
Houston, TX 77010-3038

Re: ALCOA plant, Vernon, CA

Dear Mr. Morrison:

I regret to inform you that I have no deposition transcript information on asbestos-containing products in use at the above-referenced site during the years 1950-1958. During our telephone conversation of June 10, 1994, I recalled that we had some information in our deposition library, however upon consulting my database, I realized that we have nothing at this site for the years you had requested.

While I was unable to come up with transcripts, I discovered that our Long Beach office represents a client, James Kelso, who performed work at this plant for a local boiler contractor, J.T. Thorpe. I have enclosed a history of the company which our client was thoughtful enough to construct for us. In addition, Mr. Kelso should be deposed this year. If you wouldn't mind checking back with us later on in the year, I might be able to provide additional information.

If you would like to speak with Mr. Kelso, you will have to contact the Long Beach office directly to get his permission. The telephone number is listed above on the letterhead. Please speak with either Gregory Stamos, or his paralegal, Deanna.

I hope this information is helpful. Please do not hesitate to contact me if I can be of additional service.

Very truly yours,

Jeffrey H. Solomon
Legal Assistant for
ROSE, KLEIN & MARIAS

encl.

HISTORY - J T THORPE, INC.
COMPILED BY JAMES D. KELSO
JULY 1989

Over the years I have had several requests to try and write some of the history of J T Thorpe, Inc. Mr. A. L. Erickson, who was a part owner of Thorpe, (he started with the Company before I did) suggested that I go ahead with the project. Also, many of our employees and customers have expressed an interest. I sometimes use the expression "I could write a book", so -- here goes!

I started with Thorpe in 1930, so some of the history is information from others.

I will try to tell about the Company's origin, and growth, the personnel, some of the major jobs, as well as the development of equipment, products and capacities over the years.

Company History

J. T. Thorpe and his son came to San Francisco in 1906 to help rebuild the city after the disastrous earthquake and fire. The Thorpe's had been contractors in Salt Lake City, Utah, and had worked on the iron and copper furnaces in that region.

Shortly after they started work in the San Francisco bay area they found the new oil refining industry, and the local power plant needed refractory bricklaying experience in their refractory brick lined furnaces for heat and distilling oil and producing steam.

After several years working with the refineries and power plants J T Thorpe and Son was chartered in California in 1922.

That same year, 1922, they sent their employee, Fred Bitgood, a graduate engineer from U. C. Berkley, to Los Angeles to open an office to take care of similar refractory work in the new oil and power industry in Los Angeles. The first sales engineer Mr. Bitgood hired in 1923 was M. L. Webster and the second one hired, in 1925, was A. L. Erickson. Mr. Webster was an engineer from V.M.I. (Virginia Military Institute) and Mr Erickson had just graduated from Cal Tech. In 1929 Mr. Bitgood left to form his own company to design and build industrial furnaces.

In 1932 Mr. Webster and Mr. Erickson purchased the Los Angeles branch from J T Thorpe and Son Inc. and named their new company J T Thorpe Inc. so that the two companies could work together with common goals.

In 1934 Mr. Webster and Mr. Erickson purchased J T Thorpe and Son, Inc. from the Thorpe family so that control of both companies then was in Los Angeles.

That same year, Mr. Webster hired Mr. D. G. Lynch, the M. H. Detrick manager of sales in the western states and J. T. Thorpe, Inc. and J T Thorpe and Son, Inc. gave up their Bigelow-Lipstak account and became the exclusive representatives for M. H. Detrick in California, Arizona, Nevada, a portion of New Mexico and the southern corner of Texas. Mr. Lynch was made president of J T Thorpe and Son, Inc, reporting to Mr. Webster. Mr. Webster remained President of J T Thorpe, Inc. with Mr. Erickson as Vice President.

Olga Wells was also employed in 1925 as bookkeeper and office manager and remained with Thorpe in that position until her retirement in 1960.

WENT In the early 1930's Chet Olds and Frank Farrell and Kenny Towing went to work for Thorpe in Los Angeles and continued until their retirement.

In 1932 Mr. Erickson gave Horace Baker, after his first year at Cal Tech, a summer job in the J T Thorpe Office. Mr. Baker was rehired for two more summers and was then given a permanent job after graduation from Cal Tech in 1935.

In 1936 J T Thorpe, Inc. became sales representatives for the North America Manufacturing Co.

When Mr. Baker went to work as a full time employee in 1935 he was first sent to Chicago for a five month training course with the M. H. Detrick Co. and then to Cleveland for six weeks with North America.

Mr. Erickson brought Wes Barnes, a Cal Tech graduate, into the company in 1947 and Mr. Baker hired W. R. Solaini, a U. S. C. engineering graduate in 1957.

Richard Nielsen was hired by ^{WES} ~~West~~ ^{BARNES} B. Barnes as a summer employee while an undergraduate at Cal Tech. Nielsen then spent an additional four years receiving first a Master of Science and then a PhD in Mechanical Engineering from Cal Tech. Following his graduation Nielsen accepted full time employment with Thorpe.

Leo Purvis was hired by Olga Wells in 1957 to be her assistant and then assumed her responsibilities when she returned in 1960.

Bill Solaini hired ~~then~~ C. R. Twyman as an engineering assistant and then John Allen in a similar position.

On December 30, 1966, J T Thorpe, Inc. was liquidated and the assets and liabilities and the name were sold to a group of Thorpe employees. The company continued to function as before but with a change in ownership to a distinctly different group of employees.

In August 1989 J T Thorpe, Inc. moved from the Monterey Park building to join the field supervision group at the warehouse and yard in Carson, so that for the first time all Thorpe employees would be operating from one location.

For many years the boilers and furnaces were constructed with thick walls of red brick with a firebrick lining. The firebrick could only be bonded to the red brick every fourth course, so the two engineers, Webster and Erickson developed a 2 1/4" red brick and this made it possible to bond every course. For many years all the outside walls of the boilers, heaters, etc., were constructed in this manner. After the units were dried out and started to operate, Thorpe would go back to the job and seal all of the cracks caused by expansion, by trowelling a coat of Insulcoat to the complete exterior surface. This also stopped air from leaking into the furnace.

J T Thorpe, Inc. would have Simon Brick Company make up a complete kiln of approximately 1,000,000 2 1/4" Thorpe Special red brick for their use.

Before World War II the thick walls were eliminated by using steel casing, insulation block, insulation brick and firebrick. All the boilers installed on ships were installed with the above construction, with the burners being installed with special burner tile. Later these burners were pounded and formed with moldable firebrick plastic.

Before the invention of the Clipper saw, which was used to cut the firebrick, the bricklayers used what was called a set, or a 3" wide chisel. They would use the set, in addition to their brick hammer, to cut the brick. The brick hammer was sharp on one end. They also used a scutch, which was sharp on both ends. With the invention of the Clipper saw in 1936-1937, the above mentioned tools were no longer used.

The Clipper saw frame was made with angle iron, with the motor across the frame. The first ones used a dry Carborundum blade, but due to the dust they tried a wet blade. This eliminated the dust but slowed down the cutting. Later they increased the horse power of the motor and used diamond blades.

These saws were awkward to load on the trucks, causing the truck drivers to dismantle them in order to load them. Later they were loaded with the forklift.

Wheelbarrows had steel rims until just before World War II when the steel rim was replaced by a rubber tire. This was a great improvement and made a bricktenders work much easier.

All the firebrick was loaded, and unloaded by hand; some being delivered by truck and some by box car. Some of the bricks were handled with "brick tongs" making it possible to pick up six brick at a time. If the job was large, the red brick was delivered in a large dump truck and the bricks were dumped at the jobsite.

The original forklifts were small, with hard rubber tires, and were used in warehouses. After they started to use pneumatic tires, the height of the lifts increased from 14 feet up to 40 feet. This was a big improvement, allowing the materials to be loaded on pallets at the factory and then unloaded by forklift at the jobsite and placed up on the scaffolds. The forklifts could be towed behind the truck.

The scaffolds, up until about 1936, were built of wood, using 4" X 4" uprights, 2" X 6" cross pieces nailed to the uprights to carry the weight of the brick. The uprights were held in place by nailing a cross brace using 1" X 6' lumber. As more new factories moved to Southern California the Company started to use tubelox steel scaffolding made with 1 1/2" pipe with male and female ends. These pipes were held together with special castings called regular clamps along with some adjustable clamps. This type of scaffold was an improvement on all the jobs, but especially in the refineries and on the large boilers at the Edison Company plants.

The California earthquake in 1933 created a lot of repair work for Thorpe. The greatest amount of damage was done at the Shell Oil Refinery in Dominguez, and at the Emesco Brick Yard in South Gate.

In the 1930's a large amount of work consisted of building round kilns which were sometimes referred to as "beehives". These "beehives" were used at brick yards, pottery manufacturers and also for making of sewer tile.

These were later replaced with tunnel kilns. In tunnel kilns the brick are loaded on a flat car covered with special tile or bricks with an angle on each side to seal off the heat from the rails. The cars are pushed through the kiln with a large piston. The kiln consists of three zones - the preheat zone, the firing zone, and the cooling zone. The kilns are approximately 10' wide X 8' high X 150' long. They have a sprung firebrick arch covered with loose insulation.

In 1932 Thorpe became sales representative for the M. H. Detrick Company in the California and Arizona market areas. The Detrick enclosures consisted of special tile and supporting castings, either aircooled or insulated.

J T Thorpe, Inc. had a working agreement with the C. C. Moore Company who sold B & W Boilers. This agreement created a lot of work for Thorpe after the war, many large boilers were built at Redondo Beach, Huntington Beach, Los Alamitos, and Oxnard.

Thorpe also had good working relationships with C. F. Braun, Fluor Corporation and Ralph M. Parsons Company. Our engineers, Mr. Baker and Mr. Solaini worked very closely with these companies helping them with new designs.

In 1932 Thorpe had a nice job building a large furnace at Philadelphia Quartz (now called P Q). This was a silica furnace, built similar to a glass furnace. It is a large unit in which the materials are melted. There are checker sections on each side of the melting furnace. The combustion and flue gases are reversed through the checkers every 20 to 30 minutes. The walls of the main melter are lined with large alumina blocks.

As Thorpe grew it was necessary for the Company to take on out of town work.

Some of the out of town jobs were at West End Chemical Company, located near Trona, American Potash Chemical, in Trona, and California Portland Cement, in Colton.

Thorpe built a new cement plant for Permanente Cement Co., at, or near San Jose. The unions were trying to put more men to work so the job was working four - six hour shifts; one of Thorpe's top superintendents, Gus Bergstrom, and I, were loaned to J T Thorpe & Sons for this Permanente job.

There were two 10' diameter kilns to be lined. They were lined with 3" block insulation next to the shell and 6" kiln block on the face. This was Thorpe's first, and I believe only, experience with this type of lining. In order to turn the kiln it was necessary to install strong backs and kiln jacks to hold the lower lining in place when the kiln was turned. The pressure from the jacks compressed the insulation so it was necessary to install 9" kiln blocks behind the strong backs to eliminate the insulation..

At the time we were working on these kilns Frankie Albert and the "Vow Boys" were playing football for Stanford University. I got to see one game. For those who are too young to remember, these players "vowed" that USC and California would not beat them while they were in college. They went to the Rose Bowl three years in a row.

In 1937, at the job at West End Chemical Company we lined a 13' diameter X 45' long kiln with kiln blocks, also a 13'diameter lime kiln.

A number of years later we went back and installed what was called a "trefoll" in the kiln. This was a very complicated section that required much skill on the part of the bricklayers.

At both the West End and American Potash plants, the men stayed in a bunk house and ate their meals in a mess hall.

The 1937 job book shows we worked at some of the following companies:

Boiler at Twentieth Century Fox. (Sonia Heinie, Olympic Gold Medal winner for ice skating, and future motion picture star, was in the studio next to our job filming her first motion picture.)

Proctor & Gamble/Long Beach - Foster Wheeler Boiler

General Petroleum Refinery/Torrance - now Mobil Oil Corp.

Emasco Refractories Co.,/South Gate - Tunnel kiln

Shell Oil Co.,/Dominguez - Boilers #1 and #4

The refineries and aluminum plants at that time had their own bricklayers on staff, and called Thorpe in for large repairs. Later, as the bricklayers retired the companies did not replace them. This created more work for Thorpe.

In 1938 some of the work was at the following plants:

Filtrol Corp.

Southern Service Co., Ontario Laundry

C. F. Braun Co., at Richfield Refinery (now Arco)

Wilshire Oil Co., Santa Fe Springs (repairs)

El Rey Products Co., East Los Angeles, (repairs)

Gaffers & Sattler, re-line Ball Mill

Cudahy Packing Co., Boiler repair

C. C. Moore & Co., Queen of Angels Hospital boiler

Pacific Clay Products, Santa Fe Springs, tunnel kiln repairs

I'm not sure of the exact date, but around 1938 Thorpe did all the brickwork, below the ground level, on two Alcorn heaters, and all the brick work on six De Flores heaters. I believe they were 28' diameter X 50' high. These heaters had special hanging tile on the roof with one large burner in the center. This burner was pounded with moldable plastic. There was a large cone section at the bottom. This was Thorpe's first experience using the jack scaffold. It took some time, and engineering, to get the first one assembled, (two and one-half days). It was assembled so that it could be removed and then re-assembled in each heater. The lining on the walls behind the vertical tubes were 4 1/2" silocel insulating brick and 9" firebrick. The firebrick was laid in airset mortar.

Again, I am not sure of the exact date but Thorpe did the brick work on the concentrator unit at Shell Chemical, Dominguez, about this time. This was a complicated unit with special tile installed around the special carbon tubes which extended into the furnace. Note, this was a 16' diameter unit with a 6' diameter pier in the center. This pier went up to the bottom of the roof tile.

Thorpe also built three Ketone acetone heaters in this plant. The steam used in the plant came across the fence from the Shell Oil Co., Dominguez refinery.

In 1935-1936 Thorpe did the brickwork for C. C. Moore on a large waste heat boiler at Riverside Cement plant in Riverside. This boiler had several baffles in order for the heat to create more steam. The tubes from the steam drum went down to the header at the floor of the firebox, these tubes were covered with 1" studs and these studs were pounded with chrome ore plastic or moldable material. This also was our first experience with chrome ore but we later used plenty of this material on ships.

Some work done in 1939 -

C. C. Moore & Co., - installed brickwork in new Stirling boiler at Pacific Hard Rubber, Co., - Vernon.
Standard Oil Co., repaired boilers on the S.S.H.D. Collier, at Bethlehem Ship Yard, Terminal Island.
California Metal Enameling Co., - repairs
Los Angeles Soap Co., - repairs
Vetrefrax Corp. Brickyard, - repaired 35' section of tunnel kiln.
Fluor Corp, - UOP heaters at Fletcher Oil Co., Wilmington
The Texas Co., - installed brick lining two stacks at Filmore.
UCLA - rebuilt burner wall #3 boiler.

Note: In 1939 the Company started to do more repair work at all of the refineries.

Pacific Coast Borax Co., Wilmington - relined glass furnace.

In 1940 Thorpe built a large stress relieving furnace for C. F. Braun at their Alhambra plant. This furnace was built with Thorpe red brick - firebrick walls and Detrick tile on the roof, with a car that they could use to move the large vessels through the furnace.

Standard Oil Co., repairs to tanker, S. S. H. W. Berg, dockside. Wilshire Oil Co., Norwalk, - many repairs.

Note: The repair work at the following refineries increased in 1939. Shell Oil Co., Dominguez and Watson; Standard Oil Co., El Segundo; Union Oil Co., Wilmington.

Mr. Webster called on the refineries; Mr. Erickson took care of the boiler work; Mr. Baker handled the carbon plants and later, during the war, he was in charge of the ship repairs.

In 1940 Thorpe built the #1 coke calcining kiln at Great Lakes Carbon, Wilmington plant. Mr. Baker was in charge. I will try to give some of the details of how it was built. Due to the flames coming out of the stack, for black-out reasons, the plant was shut down until after the war. After the war three more kilns were built.

The firing hood was on a platform approximately 20' above ground level; in order to get the material up on the platform it was necessary to remove some of the floor plates. We then installed a sheave at the top of the building with a cable down to the hoist anchored at the floor level. We fabricated a three piece chain with one hooked on the wheel and the other two hooked around the handles of a wheelbarrow. These chains were made at the right length and went to a ring above the wheelbarrow, allowing the load to balance. When the wheelbarrow was hoisted to the platform, we could unfasten the chains and wheel the wheelbarrows into the kiln.

The kiln lining, unlike cement kilns, was lined with 2 1/2" key brick laid in airset mortar. The coke was so smooth it was necessary to built two dams, using larger key brick. This allowed the coke to calcine and become carbon.

The nose tile at the discharge of the kiln were special blocks which were held in place by special castings bolted to the kiln shell. Due to the castings burning off it was necessary to replace the nose tile quite often.

After three more kilns were built Mr. Baker redesigned these nose rings, installing refractory anchors and pounding Harbison-Walker Coral 3000 degree plastic. This more than doubled the life of the original nose tile.

The retaining blocks at the entrance to the kiln were large special tile installed to cut down the size of the entrance to the kiln. Due to the feed pipe in that area it required great skill on the part of the bricklayers to get these blocks in place.

The original kiln end housing on the #1 kiln was built somewhat like a box, 20' X 20', and at least 30' high. It was built with Thorpe special red brick and firebrick which allowed the walls to be tied in every course. There was also a 24" solid firebrick wall in the center of the chamber going from the wall under the kiln to the opposite wall. This wall was built on top of a large arch at the bottom which allowed the hot gases to go over to and out the breeching leading to the stack. This center wall was built up to the bottom of the feed pipe in order to support and protect the feed pipe from burning out. After the war the stack was moved and an incinerator was added. This chamber was built with Detrick tile both on the roof and the side walls. This chamber was covered with a pitched roof, but without a casing or insulation on the walls.

Great Lakes Carbon had a large brick shed and stocked all the firebrick material, including the Detrick tile. Thorpe supplied all the mortar, castable and expansion material. Great Lakes moved all the refractory from their shed over to the jobsite using their forklift and driver.

Thorpe tried to convince them to stock 3" key brick, telling them the bricklayer would be laying 20 percent more brick, but they refused to change.

Thorpe also built the # 2 kiln at Great Lakes Carbon in 1952, and rebuilt it after an explosion in 1969.

This kiln was approximately 180' long X 10'6" diameter. The first 100 feet from the firing end was laid with 9" key brick and the remaining 80 feet was laid with 6" kiln blocks, both were laid in airset mortar. Two dams were installed using 13-1/2" key brick.

The nose tile and the retaining ring were built the same as mentioned on the # 1 kiln.

The much larger forklifts were used when this kiln was built, so hoisting wheelbarrow was no longer necessary.

A 1-1/8 square foot bar was welded to the kiln in two places to prevent the rotation of lining. These bars ran the full length of the kiln and were welded every 18 inches.

The incinerator settling chamber and combustion chamber walls were built with Thorpe special red brick and super duty firebrick. All expansion joints were loosely packed with Kaowool.

Mr. Don Anderson, a Thorpe engineer, made a drawing showing how to space the tubelock upright and the cross pieces in the settling and combustion chamber. This turned out to speed up the building of the scaffold, and the drawing was used many times on repair work.

The firing hood was quite large, close to 13' high and 12' wide. A 30" diameter bullseye was in the center which allowed the burner pipe to protrude into the kiln. On the outside row of the firing hood we installed #1 flat back arch brick, 9" X 6" X 3".

The settling chamber extended from the kiln to a drop curtain wall. This caused the chamber to catch most of the particles, although some of these went over to the combustion chamber. The heat went from the settling chamber up and through a large breeching leading to the stack. The stack was approximately 15' diameter by 150' tall. The lower 50 feet of the stack was lined with 13-1/2" key brick and the balance was lined with 9" key brick.

Thanks to our engineer, Mr. Baker, we installed two layers of corrugated paper next to the steel lining. This would burn out and allow for the expansion of the brick.

Around 1969 Great Lakes Carbon had a big explosion in their # 2 kiln. It didn't do much damage to the kiln but it did demolish the settling and combustion chambers. These were completely rebuilt, using Detrick tile on the walls, supported by fabricated steel tee's in place of Detrick castings.

Thorpe installed a large North American burner on the east side wall, near the top of the wall on the settling chamber in the 1969 rebuild. Note, MSA Detrick tile was installed on the settling chamber and roof. In 1976 a water cooled damper was installed on this kiln and on the # 3 and 4 kilns.

The damper was fabricated from 2" pipe on 9" centers and 3" X 6-3/4" X 9" K26 insulating brick was installed around the 2" pipes. It was necessary to cut a circle at each end of the brick in order to protect the pipe and complete the damper.

In 1976 forced air inlet pipes were installed through the lining of # 2, 3 and 4 kilns. These pipes were 15" diameter X 3' high. Several types of anchors and refractory protection materials were installed, but none would stay on very long. Later these were cut off a few inches above the brick lining. Each kiln had a breeching duct approximately 12' inner diameter, the steel X 60' long with 9" refractory lining. Thorpe also gunnited a lining in two dust collectors, 10' diameter X 15' long.

Ord Brodersen and Les Craig and Dan Bellamy were foremen on most of these jobs.

Thorpe also designed and constructed the refractory linings and the incinerators for several other carbon plants - too many to describe, however I will try to name some of the plants.

Union Chrum.	-	San Maria
Harvey Aluminum	-	Watson
ARCO CQC	-	Wilmington/Long Beach. (This includes a co-generation unit.)
Great Lakes Carbon	-	Port Arthur, Texas. (This was engineered by Mr. Baker. J T Thorpe Co./Houston, furnished the manpower.)
Mountaineer Carbon	(Mocad) -	Moundsville, West Virginia. Sohio was the owner-contractor. The brick installation was handled by BMI.
Kaiser Aluminum	-	Chalmet and Gramercy, LA.
Conoco	-	Lake Charles, LA, 2 units
Conalco	-	Lake Charles, LA.

In 1940 Thorpe sent a supervisor to Deer Park, Texas to work for C. F. Braun at a new Shell Chemical plant. This was a duplicate of the Shell Chemical plant at Dominguez, except we built two large boilers. These boiler had much heavier support beams, etc. than we used in California. Before the work was completed Deer Park had experienced 59 inches of rain, (in seven months) and a hurricane.

Mr. Gus Bergstrom, Dan Danielson and myself were from Los Angeles. There was an average of 26 bricklayers on the job and they had only one week full pay for the duration of the job. In addition to the boilers, two acres around the concentrator and other units were paved with acid brick laid in sulphur. These brick were laid on sulphur chips and the sulphur melted and poured around in the joints. Dan Danielson was transferred to a boiler job at Honolulu, Hawaii and was working on this job when the Japanese bombed Pearl Harbor.

When this job was completed George Hallott and I went to a job at Baton Rouge, Louisiana. When this job was completed we went on to Baltimore, Maryland. This was at the time during the war when gas rationing began. About this time Thorpe started a large job for Titanium Metals Corporation at Henderson, Nevada.

Our foreman, George Strandsky, was made General Superintendent of the complete job. He had three foremen, Glen McCutchen, Bill Milwood and Ralph Hartman. Karl Glasoe, one of Thorpe's long time employees was in charge of the office. I am not sure how long this project lasted, but when it was completed Karl came back to the Los Angeles office and later was put in charge of Thorpe Insulation Co.

While the Henderson job was going on Thorpe started to work at the Kaiser Steel plant and Taylor Forge Plant, both located in Fontana.

Again, this was a very large job requiring one superintendent, two foremen and myself. Charley Heningsen was superintendent.

I won't attempt to describe all of the different furnaces the Company built but I will mention the torpedo car ladle that was lined with firebrick. This was used to transport the hot metal from the open hearth to the soaking pits. Later on, when we started to maintain the open hearths and the ladle this required some of our best bricklayers. The tear-out, and the hot repairs were a real experience for us but it would take too long to describe this work.

Taylor Forge was located near Kaiser Steel and one of Thorpe's old time foreman, Charles Rempel and I took care of this rotary furnace. This was a 17 foot diameter rotary furnace with the hearth rotating. This furnace heated large billets which were formed into 6 inch diameter shells. These billets created a lot of weight on the hearth, causing many repairs to the hearth.

Thorpe was doing repairs at the refinery at Bakersfield. The largest was Bankline, later called Signal Oil Company and later called Tosco.

Ralph Hartman was working for Oil Field Construction at Bakersfield. He quit that company and went to work for Thorpe.

Hartman was a very good foreman. He worked with Louie Thorpe on the ships during the war and later was in charge of much of the new local work, as well as going out of town for many of the large jobs.

Hartman's son Walter was an apprentice bricklayer with Thorpe and he, like his dad, was in charge of the company's jobs. Walter Hartman now works as an estimator and superintendent in the Carson office.

Louie Thorpe and Ralph Hartman were in charge of the ship work, both new and repairs, during the war. Six month before the end of the war I was transferred to the Harbor to work with them.

Thorpe opened an office on Anaheim Blvd. in Wilmington to take care of some phone calls and paperwork. During the war Thorpe installed the brickwork in three ships being built at Todd Shipyards in San Pedro. These were repair ships with three "A" type boilers on each vessel.

Thorpe also installed the brickwork on the new Navy ships that were being built at Bethlehem Shipyard on Terminal Island and Craig Shipyard at Long Beach. The ships were called "D. E.", or Destroyer Escorts.

The Company did not do the brickwork on the Liberty Ships that were built at Kaiser Shipyards on Terminal Island. Later on, after these ships were in use for a while, there was plenty of repair work to do on them.

On the ship repairs made during the war, all of the refractories were brought from Mr. Ed Ryan who represented all of the brick companies. Ryan also delivered the material to the ships, either dockside or to the shipyards.

As the war continued, maintenance work increased. This work was all done on a "time and material" basis until the war ended. After the war the company had to bid on jobs. Some times there were as many as twenty-one ships at a time in the Harbor. When John C. Butler was discharged from the Army he became a bricklayer and later took over the ship repairs.

Refineries

During the war Union Oil Company, Wilmington, and Mobil Oil, Torrance built what they called "TCC" units, or "Thermal Cat Cracker". They later built what is called an "FCC" unit or "Fluid Cat Cracker".

Shell Oil Co., Dominguez, and Texaco Refinery, Long Beach, each built a cat cracker during the war. The lining on the re-generator at Shell Oil was lined with special Detrick tile and the one at Texaco was lined with Bigelow Liptack special tile.

The cyclones, plenum, and feed lines were all lined with 3/4" hex steel filled with extra strength castable.

Thanks to John Hunter an engineer with Shell Oil who worked with us, Thorpe made many samples of refractory using different types of material. Hunter put the samples in an oven and then tested them by sandblasting.

From all of the tests Thorpe settled on Resco AA22. This is a two component material which had to be mixed at the jobsite. It was necessary to furnish scales, measuring cups and special pans to be used by the bricklayers. AA22 is still the best material available. The refractory tile on the walls of the re-generator at both Shell and Texaco took the abrasion from the catalyst but due to the castings that supported the tile not being made out of alloy material, after a few years the castings grew, causing the tile to come loose.

These walls were then replaced (at both refineries) with 304SS alloy V-anchors welded on 9" centers to the shell. Thorpe gunnited 4 inch thick, fifty pound insulating castable and 4 inch thick, 120 pound hard castable on the face of the insulating castable. The reactor at Shell Oil was not lined, but the one at Texaco was lined with 3/4" hex steel. Due to the expansion of the hex steel they had many repairs. The Company later removed the hex steel and lining complete and welded 304 alloy anchors on 6 inch centers and gunnited 4 inch thick lining with 90 pound castable. Due to the thickness of the 4 inch lining it was necessary to install the anchors on 6 inch centers.

After we gunnited the castable lining it was necessary to cure this material. This was done by using a light water spray for 24 hours. This added to the expense of the job, since due to safety regulations it was necessary to have two men on the job.

Due to good old America ingenuity they soon came up with a material called Sealcrete; this was sprayed on with a Hudson Sprayer and this cured the castable better than the water spray.

When Thorpe first started to tear out the brick work in the refineries, the rubbish was put in a pile near the jobsite, the refinery's would load this debris with a skip loader, later we furnished hoppers for the trash. The hoppers were dumped on our trucks and taken to land fills.

During the war Wilshire Oil Co., in Santa Fe Springs, built a Cat Cracker which was not as large as the ones built later at Shell and Texaco. After the war they added 10 feet to the height of the units.

I would like to mention two things about this unit; first, that the lining was gunnited 4 inch thick, consisting of 4 cubic feet of Haydite and 1 cubic foot of Lummite Cement. The V anchors were installed on 9" centers, this lining is still in place.

I don't know what material was used in the Cyclones when it was built, however, after the war, we installed Resco FA22. This turned out to be almost as good a material as AA22. However the material was very hard to mix. Don Livermore the foreman on this job and I discovered that after we mixed the material, using a small plaster mixer, we would let the material set in the mixer for two minutes and then start the mixer again for a short time, then we could install the material without any trouble.

In 1955 Thorpe installed a Cat Cracker lining at Standard Oil Co., at the El Segundo Refinery. Chicago Bridge and Iron were the General Contractors.

Tom Towning was our foreman on this job, later he was in charge of the Cat Crackers built at Salt Lake City, Utah, El Paso, Texas and Richmond, California.

At the same time Thorpe lined a Cat Cracker at Union Oil Co., (now UNOCAL) and at Mobil Oil Co., in Torrance. I am sorry that though I was involved in both of these units I do not remember the names of the Foreman at Union Oil. Dale Wildey was foreman at Mobil. I do remember about the work at Standard Oil Co., the re-generator and the reactor, as well as the Cyclones and Plenum Chamber were lined with 3/4" hex steel. We installed Fiberzist material in the hex steel and this material failed due to the dry out. We then had to replace it, using the same material.

In addition to the Cat Crackers mentioned above we built one for Richfield Oil Co. (now called Arco) at their Watson Refinery. I think Ralph M. Parsons was the General Contractor, but, again I am not sure who the foreman was.

All of the Cat Crackers had a C. O. Boiler. These were sometimes called Waste Heat Boilers. The used gas from the Cat Cracker went through a line (which was lined with refractory) over to the boilers. Through the years Thorpe has had many repairs on all of the Cat Crackers, and they still do. Dan Bellamy is now in charge of these repairs. Dan has trained many of our bricklayer foremen to work with him. To name a few, Leonard Waugh and his son, Darrell; Bob Angarella, Jim Butler and Earl Fisette.

After the war Thorpe bid a job for Kaiser Steel at Eagle Mountain. This was located twelve miles up in the mountain from Desert Center. Thorpe did not get the job as the bid was too high. A contractor from the east was given the job.

This was a De Voe car bottom kiln (furnace), or as I would call it a "pelletizing" furnace, used to sinter the iron ore pellets.

This kiln was 300 feet long and approximately 18 feet wide. It looked like other tunnel kilns. It had a pre-heat zone, a firing zone and a cooling zone. The curtain walls dividing the zone were hung by using Detrick tile. Bill Solaini and I checked on the job while they were working on it. I am not naming the contractor who did the work because of the many things we found wrong, i. e., the plastic in the burners was being installed by laborers, not bricklayers, the anchors for the area they were gunniting was installed on 18' centers and they were using the rebound over, and in some areas they were leaving the rebound and covering it with new material.

After the kiln was in operation Thorpe was called to make several changes, too many for me to describe, but Solaini and Mr. Baker were a big help to the men in the field. This might not have anything to do with the history of Thorpe, but everytime we had to make a repair it was either real hot or real cold. They had one small restaurant and the men had to furnish their own bedding.

This kiln was designed in an oval shape, somewhat like the top half of a bottle. The firing zone had a flat MSA arch. The waste heat from this area was used to preheat the pellets and also to be recycled into the burners.

After the war Thorpe built three or four tunnel kilns for American Standard Radiator, in Torrance; these were car bottom kilns, except due to the type of material going through the kiln the fire zone had a muffle to protect the ware from the furnace gases.

Gus Bergstrom and Vic Houg were the foremen on the new work. Later Vic was in charge of repairs.

Bill Solaini designed a billet heating furnace for Soule Steel in Dominguez. Ord Brodersen was the foreman.

This was designed to produce 20 tons per hour, so Soule ran 30 tons per hours. This created a lot of maintenance work for Thorpe.

The furnace had four equally spaced skid rails in the preheat zone. These rails were supported by brick piers. I wish I could describe the furnace, but words fail me. It had two sets of burners the full width of the furnace; one set under the skid rails and one above. The skid rail ended at the end of the preheat zone, and the balance of the hearth, called the soaking zone, was rammed with plastic chrome ore.

There was also a set of burners in the wall above the drop out trough. The complete roof was installed with SP9125 Detrick tile however due to excessive spalling the roof section over the soaking zone was replaced later with Detrick MSA tile.

Bill Solaini designed several furnaces for Jorgensen Steel at their Lynwood Plant.

There were four forge furnaces in the main bay of the building. Thorpe built two more (somewhat larger) in this same bay.

One 20' X 20' car bottom ring hearth furnace was built south of the forge furnaces.

In the bay on the west side of the plant, Thorpe built two shuttle heat treat furnaces; one was 65 feet long and one was 44 feet long. Two car bottom furnaces, one 12 feet long and one 26 feet long. Thorpe also built several new furnaces at their Seattle Plant. Tom White worked with Bill on this project.

Since I have been telling about Bill Solaini and his jobs, I want to add that due to his engineering help with Julie Venterina and Jim Wilcox at Bethlehem Steel Mill, Thorpe was able to make many repairs to their soaking pits and tunnels.

Thorpe also made many emergency repairs to their two acid brick tanks in another part of the plant. Don Anderson, Thorpe Engineer, usually handled these repairs. These tanks had a rubber membrane against the steel tank and this was protected with what is called acid brick doubles. It required much skill on the part of our bricktenders not to tear or disturb the rubber lining while they were looking for the ~~leads~~. *LEAKS*

Los Angeles Steel Casting, I hope those of you who take the time to read this will realize this is a part of the history.

Thorpe did maintenance work when the plant was on 25th Street, near Santa Fe, in Los Angeles. At that time Mr. Baker was called in to check their burners and improve their combustion. Due to his help, Thorpe received the contract to build their furnaces when they moved the plant to Huntington Park. Later Thorpe was given the contract to redesign their furnaces and rebuild them at a new plant on Downing Road, in Vernon.

During, and after, the war Thorpe had approximately ninety men working in the field; fifteen bricklayer foreman and each one had a bricktender foreman. The balance were bricklayers and bricktenders.

Thanks to Mr. Erickson and Mr. Baker, Thorpe was just like a large family.

Whenever a Thorpe employee had bad luck due to sickness, etc., the crew contributed to a fund; some of them giving as much as a days pay. The Company always matched the gift, which made this a very substantial gift. The amount donated always totaled over \$1,000.00, with one exception. The following is a copy of a letter I received.

"When our field people found that you were going into the hospital for some surgery a number of them felt that it would be very appropriate to ask for contributions from the crew.

As it has done over many years in the past, the Company felt an obligation, and also a strong desire to match this gift.

We have been told that donations totaled \$1.74, and it is with great enthusiasm that we are matching this gift, and enclosed is our check in the amount of \$3.44."

This was to defray the high cost of a very expensive hospital stay and for lost income. They wished me a speedy recovery. It was signed R. C. Nielson.

They didn't sign the letter "Sincerely," they just asked me not to cash the check.

My surgery was in April of 1986. I have the letter, and the check, framed. It reminds me of my many friends at J T. Thorpe, Inc.

Thorpe also had a large job at the Hyperion Plant at El Segundo. George Stransky was the foreman, but I didn't check this job. I do know that there were two large, brick lined, stacks.

During the war Thorpe built two boilers at the Naval Weapon Station, at China Lake, and later another crew built three boilers. I won't mention names but the labor on the three boilers was less than the labor on the two boilers.

I wrote a letter to the main office telling about our experience on this job; how the Indians lived, the cafeteria, sleeping quarters, etc. I wish I had saved a copy of the letter to add to this report.

Also during the war Thorpe built four Butidene furnaces at the Standard Oil Co. refineries in El Segundo. Ralph Hartman was the foreman. These were horizontal cylinders with bumped heads at each end. It is approximately 30 feet long and 12 feet in diameter. The shell of the cylinder was insulated on the inside and then lined with a special Detrick tile. There were rider arches on 18" centers installed on the lower part of the vessel. Perforated tile spanned these arches. Thorpe installed a course of 1 1/2" thick silicon carbide tile which covered the perforated tile. A catalyst bed approximately 3 feet deep was installed over the silicon carbide tile.

Thorpe was always called to take care of the maintenance. Standard Oil always removed the catalyst. Thorpe then removed and cleaned both the silicon tile and the perforated tile.

Shell Chemical built a plant on Figueroa Street in Torrance at the same time as the Butidene Plant. The materials produced from these plants were used to make synthetic rubber. Thorpe also did the maintenance at this plant. Both of these plants have been torn down.

Thorpe's start and continued growth was due to the work in the refineries, however, as Thorpe continued to expand, a large part of the expansion was due to the aluminum business.

Harvey Aluminum on Western Avenue, (now called International Light Metals) had four small melting furnaces with a sprung arch. The front of the furnace had a large opening with a large door that could be raised to load the furnace.

Large jack hammers were used to tear out these furnaces. Later, 50 and 100 ton jacks were used.

After Bill Solaini redesigned these furnaces many others were built. The roofs on all the new ones had SP9125 Detrick tile. The roofs would stay in place while the balance of the furnace lining was removed and replaced.

We saw a big improvement on the tear-out when we started to use a hoe ram. A hoe ram is a type of skip loader with a swivel head with a 5" diameter bit in the head. This is sharpened on the end like a chisel. The engineers who operated the hoe rams were skilled in their trade. The debris was moved, or hauled, to the outside of the building and Harvey disposed of it.

Thorpe designed and installed other types of furnaces for Harvey Aluminum, but I am unable to describe them.

Thorpe also had a good working agreement with Alcoa Aluminum in Vernon. At first they had the old style sprung arches, however these were changed to the Detrick tile roof.

Thorpe did many hot repairs in this plant by gunniting the door jambs, etc.

Both the Harvey Plant and Alcoa Plant are still good accounts.

Thorpe also had a good account at the Bridgeport Brass Plant, later Alcan Aluminum, in Riverside. J T Thorpe designed and built two melting furnaces and one holding furnace.

Vic Houg was usually in charge of the maintenance work.

Thorpe worked on many other aluminum plants in the Los Angeles area, all good accounts.

Ametek, Los Angeles	Aluminum
Federated Metals, Vernon	Aluminum
Apex, Dominguez	Aluminum
International Extrusion, Alhambra	Aluminum
Pacific Smelting, Torrance	Zinc
H. Kramer Foundry, El Segundo	Brass
Weiner Metals, Paramount	Zinc

Monsanto Chemical, located on Paramount Boulevard, in Paramount had two phosphoric acid burners which required maintenance occasionally. These burners had a 12 foot diameter stack with a crossover going over to a downcomer, the stack was lined with 4 1/2" super duty circle brick, the crossover was lined with 9" super duty wedge brick and the downcomer was formed with large carbon block.

In 1966 Thorpe was successful in bidding the installation of a new burner. This was a much larger burner with the crossover at ground level.

This burner was 20 foot diameter X 60 foot high with a dome roof, with a large burner in the center of the dome. The burner was lined with 4 1/2" circle brick and the downcomer and cross over was the same as shown on burners # 1 and #2. This dome had refractory anchors, and was rammed with plastic material. Jim Douglas was foreman on this job. Safety was very important in this plant. We had to include a copy of Monsanto's Safety rules along with our work order, due to the type of material we had to dispose of we had to have a manifest from Monsanto saying it was a hazardous waste, describing the type of material and telling how to handle it.

One of the oldest and best accounts that Thorpe had, and still has is Stauffer Chemical Sulfuric Acid Plant at Dominguez. They took over a small plant in 1928 and changed the name to Stauffer. As they started to expand the plant, located in Richmond, our engineers worked with their engineering department.

They now have what they call # 1, # 2 and # 3 plants. We worked with Leonard Construction in building # 2 and # 3 plants. I am not sure who built # 1.

Charles Garnham was our foreman on most of the new work, and some of the repairs.

Their plant manager and plant engineer worked with our engineers, Mr. Don Anderson and Mr. Karl Glasoe, both on new construction and maintenance work. These men continued to upgrade the material, especially in the burner area.

I am not sure I can describe these units, but I'll try. There was a horizontal cylinder, approximately 12 feet diameter X 30 feet long with the burners on one end; also a 30" diameter steel duct lined with 2 inch thick fire brick which carried the flue gas over to the tower. The tower was lined with acid brick. The bottom of the tower has rider arches spaced 12 inches apart. These arches are covered with 3" X 6" X 18" tile spaced two inches apart. The tower is then filled with Raschig rings of several sizes.

The lining in the cylinder was 4 1/2" insulation brick and 9" super duty firebrick, at the center of the cylinder there was a bridge wall on the lower half of the vessel which caused the flame from the burners to spread out. On each shut down there was a large amount of debris to be removed from the cylinder.

At the time of this writing Stauffer is closing down three plants and replacing them with one large unit. Thorpe has the contract to install the brick work on the new furnace.

U. S. Borax Co., Wilmington

I won't be able to give the dates on these jobs, but before the war Thorpe, along with C. C. Moore Co., built a new boiler. Thorpe also did maintenance work on the other boilers. After the war Thorpe built two furnace on the second floor and one on the third floor. The borax they were melting in these furnaces fluxed the refractory lining so that it wore out rapidly. Thorpe patched these furnaces many times. Later they removed them and new ones were built at the Boron Plant when they changed to open pit mining.

U. S. Borax Co.,/Boron

As I stated at the start of the work at the Wilmington Plant, I won't be able to give the exact dates. I asked one of our old time foreman about some dates and he remarked that "Thorpe built Borax Plant at Boron from day one".

At the start of the plant, which I will refer to as the old plant, the Borax Company mined the material and they had a furnace built like a horse shoe, the material went through the furnace. I think this was in the 1930's. Later Borax built their #1AR and #2AR furnaces which eliminated the horse shoe furnace. As a helper with Thorpe I worked at the old plant on these boiler. We lived in barracks and ate in a mess hall.

Thorpe did the brick work on both the furnaces, but as I was working out of town most of the time for thirteen years, I can't make an accurate report during this time. I do know that near 1962 Borax Company would classify their repairs as major or minor.

Thanks to Mr. Baker and his engineers many of the repairs were gunnited with castable refractory such as Purocast, Kaogun, Shastacast, etc., They also started to install Christmas tree anchors around the burners, these anchors were also used in the curtain walls. From 1962 up until 1975 Thorpe made many repairs by gunniting castable refractory 1 to 5" thick on the front wall, rear wall and curtain walls. On some of the repairs Thorpe gunnited a secondary roof on top of the main arch and the flue to the mixing chamber.

In 1964 Thorpe installed a new 10" MSA Detrick arch, using Diablo D. material. This was a big improvement and increased the life of the roofs.

Before describing the furnaces in the new plant I want to acknowledge some of our foremen who did such a good job, year after year. The conditions at these plants were wet and cold in the winter and hot and dusty in the summer, also not much choice of rooms or restaurants. The foreman who were there for most of the new work and repairs were Ord Broderson, Cliff Whitehead, Dale Wildey, Vic Houg and Roger Hearn.

The four furnaces, # 1AB through # 4AB, were built in 1955-56, with Thorpe designing and building #1 and #2 and Industrial Furnaces the other two. On the 4AB furnaces mentioned, the original Detrick arches was refractory hanger construction with H B curtain walls. Later in 1962 we changed to MSA construction using MSA-8-MSA3 Detrick tile.

These four furnaces were in service for almost the same length of time, so to save the paper work I will try to give a short report on the repairs for # 1.

- 1963 - new flue and mixing chamber
- 1964 - miscellaneous gunnite repairs
- 1965 - gunnite walls and poured secondary roof; complete brick front wall
- 1966 - gunnited all the walls and poured secondary roof
- 1967 - miscellaneous gunnite repairs
- 1968 - replaced large section of roof, some repairs to side walls
- 1969 - major rebuild
- 1971 - gunnited front wall, side walls and curtain wall
- 1972 - major rebuild
- 1973 - extensive gunnite repairs except to front wall which was replaced
- 1974 & 75 - both had extensive repairs by gunnite and some areas being replaced
- 1976 - minor repairs
- 1977 - major repairs
- 1978 - minor repairs
- 1979 - major repairs
- 1980 - extensive gunnite repairs
- 1981 - major repairs

In 1962 Thorpe designed and built their # 5AB furnace. This was a larger furnace than the # 4AB furnace mentioned before, and in 1965 Thorpe designed and built # 6AB and in 1970 we built # 7AB. These two were much larger.

In 1966 Thorpe designed and, along with C. F. Braun Corporation, built the ABA furnace in plant 26. I would compare this furnace to the Carlsbad Cavern. This furnace was designed and constructed by J T Thorpe, with Mr. Horace Baker having a large part in the design. Our superintendent, Ord Brodersen, also did a good job in handling the man power.

This furnace simply melted a mixture of sulfuric acid and borax produced sodium sulfate and anhydrous boric acid. The two liquids had different densities. The sodium sulfate went under a platinum weir while the boric acid floated on top and discharged from the furnace through a port a few inches above the sulfate port.

In concluding the history of Thorpe's work at U. S. Borax Co., Boron Plant, I think the following should be included.

We had a two shift job working on #5 Furnace in 1960. I received this information from Ken Craig, our bricklayer, who was working on the job. Ord Brodersen was the day foreman and Jim Douglas the night foreman. The work was nearly completed and they were pouring the insulating castable on top of the roof tile. U. S. Borax had neglected to remove the borax from the roof, and according to Ken Craig it had built up three feet high. The building roof, including the beams, collapsed at about 10:30 p. m. All the electric wiring was torn out, leaving the men not only in the dark but with the building full of dust.

Thorpe was very fortunate on this accident, and although it was not their fault, they did have one of the helpers go to the hospital to be checked. Note, they also had a crew that was lucky.

Number 5 Furnace

This furnace was built in 1962, by C. F. Braun. Thorpe had only minor repairs until 1967 when the furnace was shut down for an indefinite period.

1972 and 74 - minor repairs

1975 and 76 - major repairs. This included replacing forehearth.

I think this furnace was shut down in 1978.

Number 6 Furnace

This furnace was built in 1965.

Extensive repairs in 1968, again in '71.

- 1972 - replaced front wall, including pouring the three burners with Shastakast
- 1973 - Thorpe replaced old doghouse with experimental doghouse. This included replacing the INCOLOY 800 skimmer weir.
- 1974 - minor repairs
- 1975 - major repairs
- 1977 - new forehearth and skimmer
- 1977 - minor repairs, Thorpe, and Cliff Whitehead, experimented with a sacrificial wall around the base of the furnace walls.
- 1978 - frontwall, installed sacrificial wall, 22 1/2" wide, by 21" high. Side walls installed 31 1/2" wide by 21" high. Rear wall installed, 21 1/2" wide by 21" high. Note: The word sacrificial relates to sacrifice. These additional walls were installed in order to protect the existing walls.
- 1980 - Almost a complete rebuild. Section of roof not replaced. The floor was removed completely and we installed new cooling pipes (Sono Tube) 4" diameter and installed 1 cubic foot of Lumnite and 4 cubic feet of Haydite insulation concrete. The usual floor construction was installed; one course insulation brick, one flat course and one 4 1/2" rowlock course. Also the sacrificial walls around the furnace.

Thorpe continued to make furnace repairs, however, in about 1984 their new chemical process for making ABA was in full production so they no longer needed to malt borax to produce anhydrous borax.

Number 7 Furnace

This furnace was built in 1970-71 by C. F. Braun Corporation and Thorpe. It is larger than # 6, but has the same type of constructions. Thorpe made about the same number of repairs.

This furnace is still operating.

In 1968 the Borax Company union went on strike. This lasted two and one-half months. Thorpe was not called on to work in the plant during this strike, however, in 1974 the union again went on strike. This strike lasted approximately five months.

The union at Borax was the Longshoreman's Local. Thorpe belongs to the A.F.L. Our International Union ordered Thorpe to take care of the repairs.

It was not easy to get our regular men to go through the picket line, but their loyalty to Thorpe paid off. Mr. Baker and I didn't have to go through the picket line, but we did fly to the job from the Burbank Airport two and three times a week. We landed on the golf course behind the plant and Borax sent a driver to pick us up. Thorpe was indeed indebted to our Foreman, Roger Hearn for staying on the job.

Borax Company furnished a bus to transport our men from the plant to a motel in Mojave. They also had a police escort for ten miles each way. After some threats the men decided to stay in Bakersfield; 80 miles each way. One night the foreman's truck was blown-up, as well as the front portion of the motel where the men were staying. Needless to say, we were glad when the strike ended.

While the work mentioned on the furnaces was being done, Thorpe designed and built five or six Wyssmont Dryers. These were not large, and in order to lower the cost the lining was pounded in with plastic firebrick. These linings didn't last to long so we changed to high aluminum fire brick.

American Potash and Chemical Co., Trona - (now Kerr McGee)

This was one of the first jobs I recall working on at Trona. It was one Class XXV Sterling Boiler. C. C. Moore and Company were the general contractors.

We lived in tents which were boarded up. The walls were four feet high with four beds in each tent. There were community showers and we ate in what was called a "Mess Hall". I am not sure if this is part of the history, but we worked 40 hours per week and the men agreed to work nine hours a day for four days and four hours on Friday in order to drive home in the day light.

Mr. Erickson handled the C. C. Moore account. He was also responsible for the manpower for the company. A number of years later he became Chairman of the Board and I took over the manpower. Gus Bergstrom was foreman on this job.

This was a large boiler with three steam drums. After the brick work was completed, Thorpe hired insulators to cover the drums with block insulation. Gus and I stayed with the insulators until the job was completed.

Trona is 180 miles from Los Angeles, toward Death Valley. I often wondered how the materials were delivered, it must have been by train.

I have often read about desert floods, however while we were on the job it really happened. The rain came down like the bottom fell out of the sky. Fortunately, it didn't last too long.

In addition to the boiler repairs we worked on their pyro furnaces, salt cake dryer, potash dryer and calciner.

Note: The original pyro furnace was built using Detrick tile. This was later changed to plastic refractory. Thorpe has done some new construction which was handled by Walt Hartman. Thorpe is still called in for repairs.

In 1963 Thorpe worked with C. F. Braun on a large job at Hobbs, New Mexico. Mr. Baker, with the help of Wes Barnes and Carl Stemen looked after this work.

The name of the plant was Climax Chemical, the unit was built for the manufacture of plastic. My knowledge of this job is rather limited. I do know that in addition to Mr. Baker and Mr. Stemen we had three bricklayer superintendents on the job; General Superintendent was Guy Sedlak, who later went to work for F. F. Braun, in Alhambra, Carl Stemen, Sr., Les Craig, and one labor foreman, John Welch, Sr.

Due to the type of mortar used, it was necessary to build a housing around the vessel and have a hot air heater blow hot air around the vessel. Again, I am not sure, but I think they were trying to keep the temperature at 105 degrees, inside the vessel as well as outside.

Edison Company, Terminal Island, Redondo Beach, Los Alamitos and Huntington Beach.

Before, and during the war we had a large maintenance crew at the Terminal Island plant. Due to the demand for electricity, the boilers would be started up fast, and later shut down fast. This caused the brickwork in the fire box to spall.

The first four boilers built at Redondo Beach had space between the tubes which required 2" X 12" X 22" tile behind the tubes, with block insulation behind the tile. The large burners in these boilers were pounded with moldable plastic fire brick.

The boilers that were built at Los Alamitos and Huntington Beach had tangent tubes and this eliminated most of the brick work but increased the work for the insulators.

Firestone Tire and Rubber and Goodyear Tire and Rubber each had large boilers which Thorpe maintained, however both of those plants have been torn down.

Glass

Thorpe has always worked on glass furnaces, but they didn't concentrate on glass like they did refineries, cement, etc. Thorpe always did the work at Kerr Glass in Santa Ana. Guy Sedlak was in charge. For a number of years Kerr would shut down each year, for repairs. Later, as the quality of the material was improved Kerr was able to operate for four or even five years without any repairs.

Later Thorpe hired Jim Douglas and Lionel Fisette, who were experienced in glass tanks. Thorpe then worked at Owen Illinois Plant in Vernon, Glass Containers, Los Angeles, Latchford in Huntington Park, Brockway in Pomona and Thatcher Glass, in Sagus.

All the glass companies had an engineer on each shift and our foreman would answer to these engineers. The engineers would go to different parts of the country to work on furnaces, and were always impressed by our equipment. Thorpe supplied equipment for both tear out and rebuilding. On the tear out it was necessary to furnish large steel body trucks. On each repair we had to haul the material further in order to find a dump that would take the rubbish.

The glass furnaces were usually built with the melter on a platform above ground level, and the regenerators, on each side, starting below ground level, extending up to the crown of the melter.

These were small kilns and it was necessary to crawl through them on our hands and knees. Bill Ellis, who was working there at the time and who had made many repairs to these kilns was a big help to me, both on the survey and the estimate; giving me his estimate of the man days he thought it would take.

Mary McGreggor, of Thorpe's Carson office, had to type out a quotation for each kiln. I was almost afraid to go to the office.

Over a period of two years Thorpe made all the repairs that they had said would be required.

Brickyards

Since Thorpe is known as Firebrick Constructors, I feel I should mention the brickyards where we did maintenance. We bought material from the following yards, as well as doing maintenance work.

Vitrefrac Corporation, Huntington Park
There super duty brick was Aargon
There first quality brick was Vites

Pacific Clay Products, Norwalk
There super duty brick was Acorn
There first quality brick was Excelsor

Los Angeles Brickyard, Alberhill, near Lake Elsinor.

In 1942 Thorpe built four round kilns and one square brick stack. Gus Bergstrom was the foreman. I don't remember the brand name of the brick. I do remember that the walls on the kilns were thick and since they made the fire clay there they only used regular mortar, (sand and cement) on the outside course and the balance was laid in fire clay. Ordinarily the fire clay is mixed in mixing boxes, on this job we used so much we mixed the clay with a plaster mixer.

In 1978 I became Public Relations representative for Thorpe. At that time Thorpe received a request from Ralph M. Parson Co., to make a take off of the material required on the Aramco Co. job that they had in Saudi Arabia. It was a three month delivery to this job and they wanted to be sure they had enough ordered. They also wanted Thorpe to furnish some one to go to the jobsite to check the bids they received for the brick work and to work with their engineer.

Thatcher Glass, in Sagus, had two tanks like the one mentioned above. In the late 60's Thorpe built a third large tank or furnace, at least the size of the two smaller tanks. This unit was all above ground level.

After the earthquake in 1971 all three of the furnaces at Thatcher had to be renewed; not only the refractory, but more steel was added.

When the large melter broke at the end it allowed the glass to run out, but with the fire shut off the glass froze so we not only had to remove the refractory, but also an estimated 200 tons of glass.

Gladding McBean, later called Interpace, and then called North American Brickyard was located on Los Feliz Boulevard in Los Angeles. This plant had several round kilns that were used for making firebrick and at least thirty small tunnel kilns used to make the floor and wall tile. Four kilns were used to make Franciscan ware dishes.

Gladding McBean hired their own bricklayers to maintain these furnaces until they stated to make the brick at plants in Indian Hills and in Pittsburgh, California. Thorpe then took over the repairs on the tunnel kilns.

Thorpe hired one of Gladding McBean's foreman, Bill Cant, who stayed until he retired. Bill Ellis handled the account until he passed away, and then Paul Maidel was in charge of the account until the plant was closed.

I am not sure I can describe the type of work Thorpe did to keep the kilns in operation. Some of the kilns were called "Shuttle Kilns" and they had a muffle lining. The brickyards stopped making these muffle tile and it became necessary for Thorpe to make molds and pour the tile using Interpace Shasta Coast, a 3000 degree material. The cars had to be inspected and repaired as necessary, to make sure that there were no break downs while they were moving through the kilns.

After the 1971 earthquake, Thorpe was requested to check any damage that was done to the twenty-six shuttle kilns. (Four that were used to make the Franciscan ware and twenty-two that were used for floor and wall tile.)

We had to write a description of the repairs, an estimate of the cost and time required. I am sure this was turned into their insurance company.

While I was flying to Berri, Saudi Arabia, I thought of what Vince Scully, the Dodger announcer, said when he received an award, "Why me?" My resume for this trip would be high school, business college and 48 years of practical knowledge.

The flight over took 24 hours. I changed planes in London. Coming back the flight crew was changed in Frankfort, but not the plane.

Mr. George Glade who Thorpe worked with on many projects in the Los Angeles area, was in charge for Ralph M. Parson. Glade made my work there somewhat easier, furnishing me with a car and driver plus an engineer who was with me at all times.

The first thing I was to do was to check the bids. There were seven contractors bidding the work, only one from the United States.

I reported that five out of the seven would be acceptable. The work was awarded to an Italian company.

I stayed in a hotel at Aramaco, but I had to check two jobs. One was at Berri the other Skedgum. Berri was approximately 50 miles north of Aramco. Shedgum approximately 75 miles south.

The units I had to check were sulphur recovery units with ceramic feruls in the tube sheets of the waste heat boilers. Thorpe built at least four of these units in each of the refineries in Southern California. The only difference was that the ones Thorpe built were 8 foot diameter; the ones at Saudi were 15 foot diameter.

The lining in the vessel was 4 inch thick insulating castable refractory and 9" fire brick. I crawled in the vessel and the temperature was over 120 degrees. I talked to one of the engineers in charge for Parson and explained what the manufacturer had marked on the sack: "Do not install if temperature is over 90 degrees." Parsons then ordered two ten ton air conditioners, shipped by air, to lower the temperature before they installed the castable.

The tube sheet had to be protected by installing a high grade castable around the feruls and in front of the tube sheet. This castable had to be formed and poured. In order that they could make a continuous pour it was necessary to build the form so that you could make a pour and then install more form. This would permit the continuous pour. This vessel was so large that it was impossible to brace the form.

As usual, Mr. Baker came to my rescue. When I told him the problem he made up a drawing showing where to weld two I-beams to the shell and brace the forms from the I-beams.

I could add a few thing here about the trip, such as the trash, old cars, etc. along the freeways but the History of J T. Thorpe, Inc. has turned out to be quite long.

Again, my thanks to Parson Co., and especially Mr. George Glade for making my trip a pleasant one. The trip took ten days.

As I mentioned previously, I started being a public relations representative in 1978. Tom Towing, Walt Hartman and John Butler continued to handle the field work, and later Dan Bellamy and Rick Lewitt were added.

Mr. A. L. Erickson retired in 1982. In 1986 J T Thorpe, Inc. liquidated and on December 30, 1986 the new J T Thorpe, Inc. bought the assets.

Since Thorpe had only service and good engineering to share/give to customers, they owe a big thank you to the men who were in charge of maintenance and later, as changes were made, we worked with plant managers and chief engineers. I must also mention the purchasing agents.

To show appreciation to these men, (and to quote Mr. Baker: "For past favors") Thorpe started to give Christmas presents. Some of the items given were a 15 inch long bone shoehorn, a thermos bottle, a large pen knife, to use on fishing trips, a box of pears, (they all ripened at the same time. For many years Thorpe gave a package of Knotts Berry Farm jams and jellies. These gifts were well received by customers, especially those with wives and children.

Thorpe also had season tickets for the Rams, Dodgers and later the Angeles games.

When the Rams moved to Anaheim the seats were in such a poor location that the Company decided to return the tickets and not offer them to customers.

They still have good Dodger and Angel seats.

In addition to the above, Thorpe had what was called a give away. Pens, pencils, cigarette lighters, pen lights, golf balls and donuts We were kidded about the donuts but they were well received at the Cat Cracker shut-downs, planning office, purchasing offices, etc. Louie Thorpe started the donut give away and it was continued by others.

I am sure that the four new owners will continue with the high degree of excellence that has kept J T Thorpe high in the esteem of their customers over the years.

Jobs, particularly new construction, are not as plentiful this year, so the company has had to travel to Arizona, Nevada, Arkansas, Washington, etc. to find work. Repair work, however, has been fairly steady. We are indeed fortunate to be in the refractory business.

In this somewhat brief resume of J T Thorpe, Inc. I have tried to present some idea of the history of the past fifty years. Through the years the company has retained the friendliness and understanding handed down by those leaders who have contributed so greatly to our growth, strength and stability. All of this is a part of the company's progress through service.

My thanks to Mr. A. L. Erickson, Mr. Richard C. Nielsen and especially my son, J. D. (Jim) who encouraged me to write this History. Also thanks to Mr. Horace Baker who provided much of the information regarding the origin of J T Thorpe. Thanks to Lisa Griggs who not only corrected my spelling, but checked out some of the dates I needed. Thanks also to my daughter, Sharon Kelso, who helped me with the continuity of the history and also for taking over the typing after Lisa Griggs retired.

I would like to add here that I am proud to say that my son, J. D., has been a part of Thorpe since 1974, and I hope he continues as long as I have.

I thank each of you who have taken the time to read the History of J T Thorpe, Inc. My work with Thorpe has been a large part of my life, rating next to my family.

I feel I should end this History with a quotation I heard:

"I am drinking from my saucer, 'cause my cup has overflowed".

Sincerely,

Jim Kelso