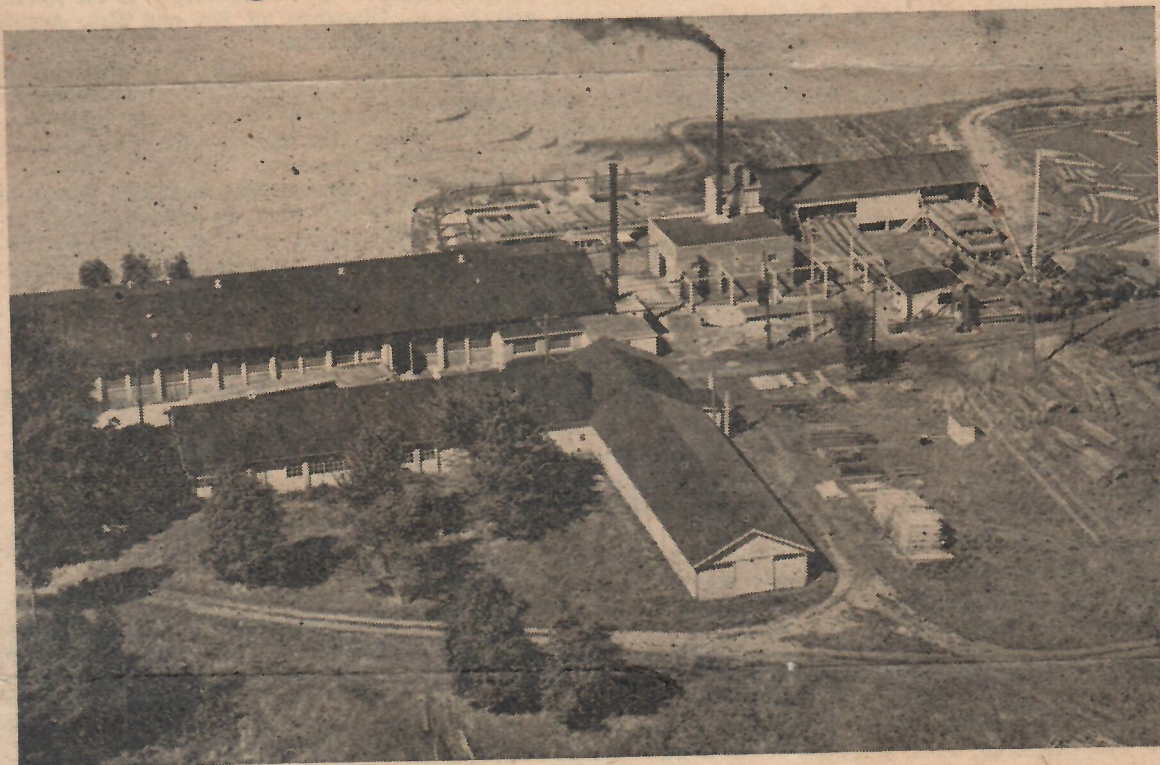


Logs Come Out Of Here In Paper-thin Sheets



This close-up aerial photo of the Olympic Manufacturing Corporation plant in Gresham was taken from the plane of the Olympic Company's "flying salesman," J. W. Goldston. The veneer plant here is the only one of its kind on the Pacific coast. It has now changed over to peacetime production after establishing an outstanding war record. This is one of the many industries in the Gresham area.

* * * * *

Hardwood From Far-Off Lands Made Into Veneer By Olympic

Plant Here Processes Logs Into Thin Wood Sheets

(This is the first in a series of articles dealing with industries in the Gresham area.)

The only plant of its kind on the west coast, the Olympic Manufacturing Corporation in Gresham has swung over to full peacetime production of veneer for use in furniture construction and in interior decoration.

Located on the northwest outskirts of Gresham, the plant employs approximately 35 workers, and in the opinion of J. S. Vaughan, general manager, the firm has a brilliant post war future.

The Olympic Manufacturing Corporation plant was started here in October, 1942, and during the war supplied more than 30,000,000 feet of veneer for use in ships and airplanes. Wood which was cut in this plant went into planes which saw action against the Germans in

Europe and the Japs in the Pacific. For its outstanding wartime achievements the plant was awarded an honorary Army-Navy E.

Change Is Smooth

The change-over from war-to peacetime production was accomplished without loss of time, and overnight the plant here was producing for civilian markets. A large supply of hardwoods is now being cut to build up the company's stock.

Although the Olympic concern

was born during the war emergency, the parent concern, the Dean Company, had planned on the establishment of a veneer plant on the west coast, regardless of the war, according to Mr. Vaughan. The vast west coast area has been supplied by eastern veneer plants in the past, Mr. Vaughan pointed out.

Overnight Service

"This plant can give overnight service into many of the important furniture making centers on the coast, compared with the week or 10 days it takes for shipments to arrive from the east," he explained. The operation of the local concern is interesting, and the trade is one which goes back 3,500 years to the time of the Egyptian pharaohs. Actually, what is made here is the fine grained veneers which are used in the construction of many kinds of furniture and in interior decoration.

Hardwoods cut in Guatemala, South America, or on Pacific Islands, are especially desirable for their fine grain textures. Such woods as prima vera, mahogany, kelobra, matilischaute, ojoche, cedro-espino, albarco, and oriental from far-flung foreign forests, as well as California walnut and other homegrown varieties, have definite characteristics which particularly adapt them for use in the making of veneer for plywood.

Process Started

Logs are shipped to the Gresham plant where the process of making them into veneer starts. Upon arrival at the plant here, the logs are made into flitches, a name in the trade which refers to cutting the logs into appropriate shapes for the later process of slicing.

Each flitch is numbered and from that time on all the wood that is cut from it remains together as one unit so that all of the grain in that unit will be of a similar nature. After the flitch has been cut it is placed in a water bath, the degree of temperature depending upon the particular type of wood used. After it has been properly soaked the flitch is taken to the slicer, a huge machine capable of cutting off slices of wood as thin as the thicknesses of the news stock which this story is printed. When the contracts the plant supplied veneer as thin as 1/100s of an inch. All of the wood used in maritime and airplane construction was soft wood such as fir or spruce.

to the inch, or about as thick as the average piece of cardboard. The wood after it has been properly prepared, never splinters or crumbles, and it comes off the slicer as slick as spuds from the knife of a soldier on KP duty. The slices are then trimmed and put through the drier. Every slice from one flitch is kept together and samples are drawn for use in selling.

Can See Grain

This is done so that when prospective buyers inspect the cut flitches they know just what kind of grain they can expect in that particular bundle. Like the tailor, the salesman for the Olympic firm has his "swatches."

The local company has probably the only flying veneer salesman in the world. He is J. W. Goldston whose territory goes as far north as the Canadian border and as far south as Santa Clara, California. To cover this huge area, Mr. Goldston has two airplanes.

The Olympic concern is affiliated with the Dean Company of Chicago, of which T. A. Dean is president and T. J. Connelly, secretary-treasurer.

Dec 1963

Veneer Plant Head Among New Owners



James Vaughan stands between stacks of crated veneer in the warehouse of Gresham's Olympic Manufacturing division. This week Vaughan and three other executives of the Dean Co., of which Olympic is a division, acquired ownership of the parent firm.

(Outlook photo)

James S. Vaughan, head man at Gresham's Olympic Manufacturing plant, this week became one of four owners of the local veneer plant and other operations of the far-flung parent firm, the Dean Co.

But Vaughan still gave and received the same friendly "Hi's" as he strolled through the plant a day later. Many of the 45 employees of the veneer plant have been there 10 years or longer and just about everybody is on a first-name basis with the man in charge.

Four executives of the Dean Co. acquired control of the 59-year-old company, which has its headquarters in Chicago and other plants at Norfolk and Portsmouth, Va. All of the executives are continuing in their present positions. Vaughan will remain an executive vice president and head the Gresham operation as well as the Dean's import and export division.

* * *

Vaughan came to Gresham on August 1, 1942, to establish a veneer plant, he recalled Tuesday in an interview in his wood-paneled office.

"The War Department badly needed veneer for airplane production," he said. "There wasn't any being made in the Northwest. The logs were all going shipped back East and the veneer made there. That didn't make much sense when the planes were being manufactured out here in the West."

Vaughan converted some empty buildings into a going concern in exactly two months and five days, he remembered with a touch of pride.

"We turned out our first veneer on Oct. 5, 1942."

* * *

Today the firm's payroll isn't as big as it has been some times in the past but the 45 employees have steady work. About 70 per cent of the wood used here is Philippine mahogany. Other woods used are Douglas fir (which is called Oregon pine by the time it gets to Switzerland as veneer), spruce, walnut from Iowa and Illinois and several more.

Veneer is supplied to makers of everything from guitars to laminated water skis. A Portland firm takes quantities of veneer for door facings, a piano manufacturer requires spruce veneer for sounding boards and furniture makers need lots of it.

The veteran wood products executive stressed that all key personnel will keep their present jobs at the Gresham plant as well as elsewhere throughout the Dean Co.

Peter Akse, a veteran at the Gresham plant, will continue as assistant secretary, and Bill Edmondson, with the Dean Co. for 30 years, will remain as local plant superintendent.

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"This change in ownership won't mean any change here at Olympic Manufacturing right now," concluded Vaughan. "But we're hoping to expand with the growth of the business. We've got 15 acres of property here so there's room to grow."

The three executives who joined in the purchase of the firm are Ted J. Connelly, president; Grady Goldston Jr., High Point, N.C., vice president for sales; and Edward V. Horton, vice president of the Dixie Veneer division of Portsmouth, Va.

Gresham Once Had Auto Fac

EDITOR'S NOTE: The purpose of this article is a record of the Antique Automobile Club of America. It would like to hear from anyone in Gresham who remembers the Beaver auto or its features of it.

RICHARD E. LARROWE
Box 900
t

There was once an automobile factory in Gresham. The building now has been added on to and is occupied by the Olympic Manufacturing Co., 519 NW Third Drive. The building was completed in March, 1914, as the home of the Beaver State Motor Company. The company believed that Oregonians would purchase a product instead of one imported from Detroit if the car was of equal quality. The first Beaver car was made in Gresham in 1912 and is pictured in the Beaver brochure sent to

prospective stock-holders.

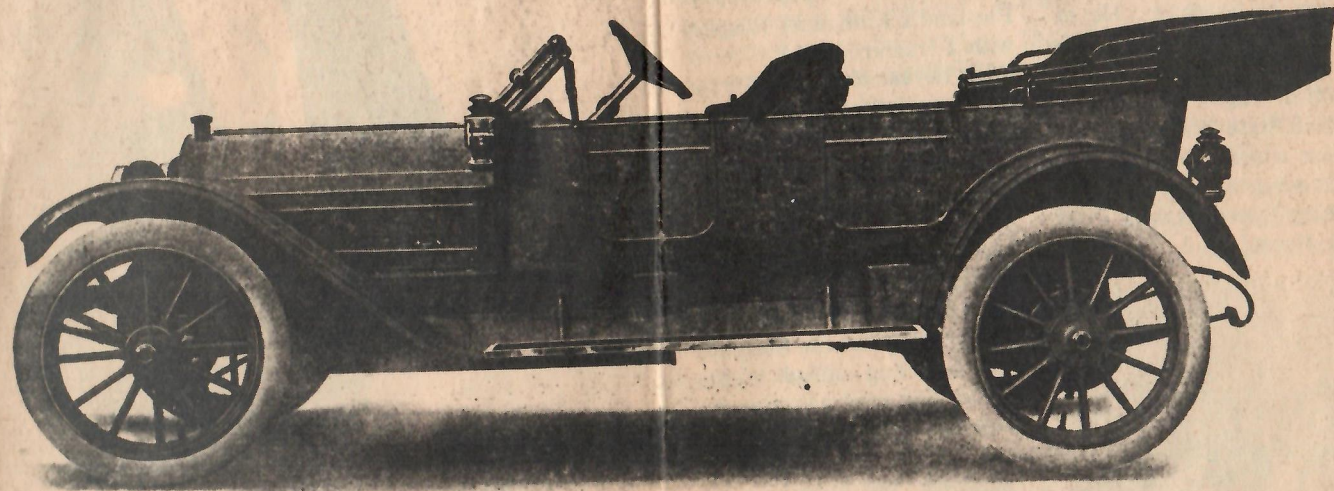
This brochure compares the Beaver with the Ford Motor Company car, saying Beaver in 1914 was the same size as the Ford was in 1904 and that Beaver has every expectation of growing and prospering the way Ford did. It also listed the profits made by several other auto companies, including General Motors and Packard.

Glowing testimonials as to the sterling character of the officers of the Beaver State Motor Company are also included in the brochure. These testimonials came from officers of The First National Bank, Willamette Iron and Steel Works, and the Portland Chamber of Commerce.

Beaver State Motor Company believed it was in an ideal location for exporting cars to other countries. The Panama Canal would make it possible for Beavers to be sold on the East Coast. The brochure compares the future of auto building in Oregon with the California gold rush, but states that while the riches obtained in the gold rush were the result of luck, the riches obtained with the Beaver car will be the result of careful planning and hard work. Beaver held the patent on the single plate dry clutch. This type of clutch is still used on manual transmission cars.

P.A. Combs was president and general manager. He invented the clutch and at one time worked for one of the predecessors of American Motors. The factory superintendent was Tom Fetch. He

ORIGINAL BEAVER SIX CAR



THIS CAR HAS BEEN ON THE STREETS OF PORTLAND SINCE OCTOBER, 1912

makes cars for the Queen of England.

The car was comparable with the Chevrolet Classic Six, The Studebaker Six, or the 1912 Oldsmobile, none of which were cheap cars. They planned at a

the customer.

A reporter from the Gresham Outlook visited the Beaver factory in early 1914 and found a two passenger runabout that the reporter said looked modern enough to be a

not explain how the engines ran. It is doubtful they would revert to the obsolete hot tube ignition system. The 1915 Beaver was advertised as "The smallest six cylinder car in existence."

May 16, 1916. A photograph of the Beaver factory was on the front page of the Outlook. The story said that the 1917 Beaver was to be an 8 cylinder. There was a depression in 1916. This, together with war shortages,



Headlines in the Gresham Outlook reflect the growing concern on the part of the stockholders. Headlines such as "Numerous Unforeseen Delays Delay Production at Beaver" were common in the Outlook.

Few 1914 Models were built, it is possible the above mentioned Runabout was the only one. The factory had 25 men employed and expected to hire 500 more. The 25 men were preparing to build 1915 models.

In September 1914 they were building six cylinder engines that "require neither battery nor magneto". The Outlook did

along with cast iron. At the end of 1914, it was revealed that the officers of the Beaver Co. had worked all of 1914 without drawing any salary. The factory workers were paid.

On Jan. 15, 1915, the company said it was optimistic about its future as it owned all machinery and property it occupied and owed no money to anybody. In February of 1915, Beaver resumed work, making castings.

On March 30, 1915, the offices were moved to Gresham from the Lumbermans Building in Portland. Only 5 men were employed in April of 1915 when Beaver resumed automobile production. Worry on the part of the stock holders again was responsible for a visit from the Outlook on April 27, 1915. The reporter found Tom Fetch in his work clothes with the five employees busily working casting four cylinder engine blocks. The work was being done in a shed dating from 1865 that was built by a member of the Powell family that Powell Blvd, a main street in both Portland and Gresham, is after. The men were working long, hard hours in an effort to keep the Beaver State Motor Company alive.

On Dec. 17, 1915, a new foundry was completed and Beaver began manufacture of drag saws and cement mixers. The next news of the Beaver State Motor Company was in

one because of shortage. In April 1915 Beaver had men on the payroll, the size of the plant was doubled, and was running at full capacity making drag saws. The drag saws sold for about \$200 each. There is no further mention of Beaver cars.

In about 1915, the Outlook printed a list of cars by make owned by Gresham residents. There is not one Beaver on the list, in fact, there are no orphans on the list. Only makes that are still in existence to

ctory

are listed. How could they have known which ones would survive?

There was far more interest in the Detroit cars by the local residents. There is far more information about the Willys-Overland factory in the old newspapers than there is about the Beaver.

At the time the Beaver State Motor Company was comparing itself with the Ford Motor Company of 10 years before, it was the same size and had a comparable car as Chevrolet, which started the same year Beaver did. Ford

and Chevrolet are now known all over the world, while most residents of Gresham are doubtful if the Beaver ever existed.

The Chapel of the Hills

Between Sandy and Brightwood

A Community Church without
a membership.

You Will Be Welcome!

Bible School 9:45 a.m.

Morning Worship 11:00 a.m.

Evening Service 7-8:15 p.m.

Bible Study (Thurs.) 7:30 p.m.

Thyra E. Strand, Minister
622-3260

Veneer plant in middle of Gresham

By ERIC GORANSON
of The Oregonian staff

GRESHAM — The Dean Co. may be the best-kept secret in Gresham.

Logs are one of Oregon's major exports. But The Dean Co. imports them, including some from Japan.

The company also is the only supplier of a part that for years has gone into the nation's primary missiles.

For more than 40 years, The Dean Co. — formerly known as Olympic Manufacturing Co. — has been quietly going about its business of making veneer and importing wood while

Gresham has grown from a small town into a bustling community.

The company set up shop here in 1942 in an abandoned structure that once served as the manufacturing plant for the Beaver automobile. What is now the Gresham Elks lodge across Eastman Avenue was a feed store, said James M. Vaughan, Dean Co. vice president.

Yet today, when truck drivers ask directions to the plant, most people can't tell them where it is, he said.

The company is located just off Division Street, west of Eastman Ave-

nue. A "For Sale" sign on a vacant tract of land in front of the plant would indicate the entire complex is up for sale.

Not so, said Vaughan. Business has picked up considerably from 1983 and 1984 when the company was forced to trim operations to three or four days a week, Vaughan said. Sales for the company's Gresham plant are about \$4 million annually.

Vaughan's father, James S. Vaughan, set up the first operation as an affiliate of The Dean Co., which was based in Chicago, to supply aircraft and PT boat manufacturers with Sitka spruce and fir veneer. It took government help to get the necessary equipment because of wartime scarcities.

Today The Dean Co.'s headquarters is located in a new veneer plant in Princeton, W.Va., to be better able to serve the nation's furniture manufacturers. The Gresham operation produces veneers for use in specialty plywood and furniture, boats, musical instruments and doors.

The Gresham plant is only one of two on the West Coast using a knife — 17.5 feet in length — instead of a peeler to slice logs into veneer.

While most of the veneers stay in the United States, the company does ship to the Far East, Australia, Canada and Europe, said Vaughan, who took over as head of the operation in 1980 after rising through the ranks.

Raw materials come from even more nations — several in Latin America, Southeast Asia, Indonesia and Canada as well as from throughout the United States. Often lumber from Canada is returned to Canada as veneer, he said.

The company also imports walnut logs from Japan.

The plant is the No. 1 user in the United States of Sitka spruce, which the company turns into vertical-grained veneer, Vaughan said.

The Dean Co.'s defense work involves making Alaskan Sitka spruce veneer for a Lockheed supplier, which in turn manufactures nose cones for missiles. Pound for pound, the spruce is stronger than steel on a strength-weight ratio, Vaughan said.

The Gresham-produced product has been used in all missiles launched by submarines, including the Navy's newest, the Trident-class submarines.

Sitka spruce also is the veneer used in pianos, guitars and harps, Vaughan said. Until Japanese-made pianos hit the U.S. market, a good portion of the



The Oregonian/MARV BONDAROWICZ

SHARP STUFF — James Vaughan, The Dean Co. vice president, checks sharpness of knife blade used to slice veneer from logs. One of only two on West Coast, the blade can cut slices one-hundredth of an inch thick.

Gresham quietly keeps producing



PAPER THIN — Two employees at the Dean Co. sawmill in Gresham help move thinly sliced veneer

along track after it was sliced from log. The Gresham mill has been making veneer for more than 40 years.

plant output went to U.S. piano producers. The influx of the Japanese pianos hurt, Vaughan said.

Wood used and stocked in the Gresham plant includes knotty pine, Douglas fir, walnut, myrtle, redwood, cedar, rosewood, mahogany, yew, cherry, teak, ebony, meranti and oak, now the most popular among furniture producers. Mahogany imported from the Philippines after World War II helped sustain operations for years.

Buying the logs is the key to success of The Dean Co. operation, Vaughan said. Except for knotty pine and myrtle wood, in which knots and burls are sought, the wood must be free of knots. These are best obtained in old-growth stands — timber 300 to 500 years old. Only the lower ends of the trees are used, Vaughan said, because the tops still have branches and therefore knots.

One 26-foot-long, 55-inch-wide log can cost up to \$7,000. The company requires its softwood logs to be some 4 feet wide, while hardwoods such as yew and myrtlewood can be 15 to 20 inches wide.

After being quartered, the logs are sliced to as thin as as one-hundredth of

an inch, Vaughan said. The knife, which must be replaced and sharpened daily, can cut 65 paper-thin slices a minute.

The plant uses small volumes of wood compared with most mills, Vaughan said. Some species, however,

such as Sitka spruce, must be bought in quantities that make it worthwhile for loggers to harvest and that, as a result, will last the company for years. Two spring-fed ponds at the Gresham plant are used for storage and to keep the wood from cracking.



ROUND THE ROSES

Karl Klooster



The former Beaver State Motor Company plant in Gresham. What currently occupies the building. (Answer below cartoon)

Portland's own auto: The Beaver

It wasn't actually produced in Portland proper, although they did have an office downtown. And there were, at most, four of them built. Nonetheless, the Beaver State Motor Company and its automobile, the stylish Beaver Six, makes for an intriguing tale.

During the first two decades of this century, hundreds of would-be, motor car magnates tried to cash in on what was clearly the wave of the future. In 1912, P.A. Combs, a successful automobile supplies and accessories merchant, obviously felt he could catch that wave. His enthusiasm must have been infectious because he convinced a number of substantial local citizens to become a part of the Northwest's first-ever auto manufacturing venture.



The first (and only?) Beaver Six, completed Oct. 1912

The good roads movement had gotten well under-

Then, suddenly, the grandiose plan for Gresham to become the "Wheel City of the West" ground to a screeching halt. It seems that the Beaver's engine design was a smidgeon too close to that patented by Overland and Toledo-headquartered Willys-Overland, Inc., cried "infringement."

Talk of a revitalized Beaver auto operation persisted for another three years but nothing came of it. Instead, the Beaver State Company converted its casting equipment to the manufacture of rail car wheels and sewer pipe. Later, drag saws, cement mixers and gasoline engines were produced. At one point, the firm employed up to 36 men.

The few Beavers that were built (conflicting information has it between two and four) all apparently passed into oblivion. One story says that a Beaver was being driven around the Gresham area until just before World War II. Another more colorful account was told by Portlander Ralph Coan whose father was a local bankruptcy trustee attorney.

Coan claims that his dad bought the one remaining car following the company's long protracted liquidation and the kids drove it until the tires gave out. Then it sat in their back yard for several years

way. The Columbia River Scenic Highway was on the drawing board. Tens of thousands of Oregonians were already caught up in the motoring mania. The time was ripe. This was the pre-Detroit dominance era. Auto manufacturers were situated in a dozen eastern and mid-western states. So, why not Oregon? Think of the savings in shipping costs.

Combs and his colleagues selected a site in Gresham near the main rail line. What was to be Beaver State's first unit, a one-story, 60-by-200-foot, concrete and brick structure, was completed in March 1914. The first six-cylinder, 45-horsepower, Beaver open-touring car was already on the road with Mr. Combs at the wheel.

E.T. "Tom" Fetch, a 12-year Packard employee, came out from Detroit to run the factory. A special Daimler-Lanchester worm drive gear was imported from England due to its perceived superiority. All other parts were fabricated at the factory. The company geared up for mass production amidst comparisons with the fledgling Ford operation of 10 years prior and the fanfare of a public offering which raised \$300,00 in capital.

until, in 1929 as Ralph recalled, the senior Coan got fed up with seeing the old junker and built a bonfire under it. The aluminum body and oak frame melted and burned down to almost nothing.

A month following the fateful Beaver bonfire, according to Coan, a representative of tire tycoon Harvey Firestone came to his father's office prepared to pay \$5,000 for the auto. Serious doubts, however, have been raised as to the authenticity of this offer and, in fact, that the destroyed car was even a Beaver. Antique auto historian Dick Larrowe of Corbett, who has painstakingly traced the Beaver's background, found that Firestone was never a car collector and, furthermore, that the Beaver had an all-steel body and frame.

Larrowe also advises that the Portland area had at least two other attempts at motor car manufacturing. A cycle car, called the Portland and later, the Pacific, was produced locally around World War I. There is also evidence that one of the first buses in the country was made here briefly in 1903. As for the Beaver, if anyone can find one, Dick Larrowe is willing to pay \$10,000 for it.



Answer: The Dean Company, 519 N.W. 11th Drive, is one of the country's largest manufacturers of high-quality, wood veneer.

This week. Nov 24, 1987

Old Car Tale Stirs Memories

By MARTIN CLARK

From time to time in Journaltown we strike a historical note. What never fails to astound us is that note after note may be struck without so much as a faint echo and then, for no predictable reason whatsoever, one note in the history of Our Town will bring a succession of echoes to be envied by the Grand Canyon.

Reference here is to the mention a week or so ago of the manufacture in Portland of an automobile known as The Beaver some half century or so ago. Among the many Journaltowners from whom that note struck a responsive chord were David Matt Trout, H. T. Coles, and Fred Powell.

POWELL SAYS The Beaver Motor Co., was primarily a manufacturer of drag saws and that the addresses listed in this column were of the company's office, that the plant was located in Gresham in a building which still stands.

He and Coles point out that it is located on the north side of SE Division Street just across the road from the north end of the fairgrounds race track.

Says Trout: "In 1924 or 1925 my brother Barney, now deceased, worked in a small foundry on the north outskirts of Gresham. This was a neat red tile and wood building and had office space and a small display room, at that time, in addition to the foundry.

"INSIDE THE display room, was a fully equipped new Beaver automobile. It was in excellent condition and I was told at that time it could be neither sold or used due to litigation. I was also told that it had a special differential not used before in cars and that the Buick people had acquired the rights to the use of this differential.

"If my memory is correct, the gentleman in charge of the foundry and building was a Mr. Cone. They were still making cylinder ring castings and other accessories for Sears Roebuck and other dealers. Mr. Cone told me the car had been manufactured in that plant."

So goes the latest chapter in the search for the full story of the Beaver.

John Kareni had asked about
Beaver State Motor Co. I found the
in my file. JFV

THE OREGON JOURNAL, MONDAY, DECEMBER 22, 1969

JOURNALTOWN

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Dean Co. Elects; Employees Acquiring

One of this area's important industries, The Dean Co. at Princeton, manufacturers of imported and domestic hardwood veneers for the nation's furniture plants is very much in the news these days.

First of all, new officers have just been elected by the board of directors with Edward V. Horton assuming the presidency Jan. 1 and Ted J. Connelly, a Dean Co. pioneer, continuing as board chairman.

Secondly, announcement was made that Dean's new employee stock ownership plan (ESOP), introduced last June, is "working out remarkably well and being enthusiastically received by employees."

In time the plan will transfer



EDWARD V. HORTON

ownership of the company to the employees at no cost to them also creating a realistic and equitable value for the company's stock where there was no previous active market for it.

Besides Horton, other newly elected Dean officers are James S. Vaughan, former president who becomes vice chairman; William A. Costoplos, executive vice president in charge of sales and James M. Vaughan, vice president in charge of Dean's Olympic Manufacturing Co. division at Gresham, Ore.

Other continuing Dean officers besides Chairman Connelly are Donald J. Brohard, treasurer; C. E. Fulcher, vice president-procurement and Pete S. Consolo, vice president-

manufacturing, Dixie Division, and William P. Edmonson, vice president-manufacturing, Olympic Division.

Eddie Horton, Dean's new president, is a Suffolk, Va., native who joined the company 40 years ago at its Portsmouth, Va., plant. When that plant was replaced by the Princeton operation in 1963, Horton moved with it. Horton's experience includes accounting, office management, procurement, manufacturing, sales and administration.

Bill Costoplos, now executive vice president-sales, came to Dean in Princeton from Chicago in 1973. With Dean over 28 years in accounting, management and sales, he became an officer and director in 1974. In addition to

Charleston To Host

Long Soft Coal
Market Is Seen

Tipple

Company By Stock Ownership Plan

ales Costoplos will have broader duties in overall management of the company.

Ted Connelly, who is nationally known in the veneer manufacturing field and who continues as Dean's chairman, and James S. Vaughan, the new vice chairman, are semi-retiring but will continue to be active in management and overall operation of the company. They also remain as Dean directors.

Discussing Dean's new employee stock ownership plan, Connelly said yesterday it was worked out over a two-year period with the approval of the IRS. Under the ESOP the Dean Co. is authorized by the IRS to contribute 15 percent of its total company payroll, tax deduc-

tible, to the plan.

The ESOP, in turn, is a non-profit trust, tax free, belonging entirely to all employees of the company who ultimately will own substantially all of the stock at absolutely no cost to them.

Continuing, Chairman Connelly explained, "The setup in a ESOP is that it is a retirement plan and Dean shares, of stock as bought, are credited to various employees based on their pay and seniority. At the time of retirement the shares they hold is extended at the then existing value. The retiree has the option of holding his shares or selling them at their current value back to the ESOP."

Connelly added that the Dean



WM. A. COSTOPLOS

ESOP has increased the already fine morale of employees, motivating them to reduce waste and increase efficiency, thus boosting profits.

"We could have sold or merged our company in other directions (including foreign ownership) but felt that our ESOP was the best way to proceed to take care of our dedicated and loyal employees," the Dean chairman told the Daily Telegraph.

Typical of Dean's leadership in the veneer industry, is the fact that it is the only company of its kind nationally with an ESOP. It is being handled by the First National Bank of Bluefield as trustee and is probably the only ESOP in the county.

Topics

Mine School Dean

Foreston Coal Gets

Tenneco Deal



NEW OFFICERS — At a special meeting recently of the Board of Directors of the Dean Company in Princeton five new officers were elected for the fiscal year 1972. Shown, seated left to right, are Thomas H.

York, Jr., John Hawkins and Jack Fletcher. Shown, left to right standing are Peter W. Cross and President of the Company, Ted Connelly.

(Photo by Ken Hilling)

Dean Company Directors Name '72 Officers

Five new officers were elected to serve during the fiscal year 1972 for the Dean Company of Princeton recently.

At a special meeting of the Board of Directors, elected to serve as officers for the fiscal year were Thomas York, vice president in charge of procurement (Princeton Division); Peter W. Cross, vice president in charge of Manufacturing (Princeton Division-; William P. Edmondson, vice president in charge of manufacturing (West Coast Division); John W. Hawkins, treasurer and Jack A. Fletcher, assistant treasurer.

Re-elected for the new fiscal year were Ted Connelly, president; James S. Vaughn, executive vice president; E. V. Horton, vice president and secretary; J. G. Goldston Jr., vice president and P. G. Akae, assistant secretary.

With the exception of Vaughn, Edmondson and Akse all of the officers are located in the Company's main office in Princeton.

Previously the main office for the Company was located in Chicago for a period of more than 50 years. The Company moved its main offices to Princeton in September of 1971.

At the Board of Directors meeting a resolution was passed acknowledging the valued services rendered to the Company by J. Grady Goldston, Jr., who is retiring July 1. Connelly said, "Goldston will continue as a consultant with the Company on a part time basis as vice president in charge of Research and Development and as a member of the Board of Directors."

Lockheed missile men discover

WOOD IS FIRST CHOICE FOR POLARIS NOSE CONES

By NELSON NASH

"POLARIS UNFAIR to American Press," we complained in the February 1965 issue of WOODWORKING DIGEST. In retaliation, they hit us with a barrage of material on missiles that has our heads still spinning.

Of particular interest to woodworkers is a 16-page paper entitled "The A3 Polaris Nose Fairing: A Structural Composite of Wood & Aluminum." It was written by F. B. Johnson, Manager, Missile Systems Mechanical Engineering, and V. P. Mamone, Materials and Processes Engineer, Sr., of Lockheed Missiles and Space Company, Sunnyvale, California.

A Fast Start

The paper begins with this exciting statement:

"The nose fairing of the A3 designed for logistic, hydrodynamic, aerodynamic and hypersonic en-

vironments, is an insulator for salt water corrosion, dynamic water and air pressures and for supersonic aerodynamic heating. Wood is the material selected to take these environments, literally, 'on the nose.' In this day of exotic materials and processes, wood may seem out of place. At the end of this paper, we believe you will agree that this oldest of engineering materials, wood, has many years of engineering utilization remaining."

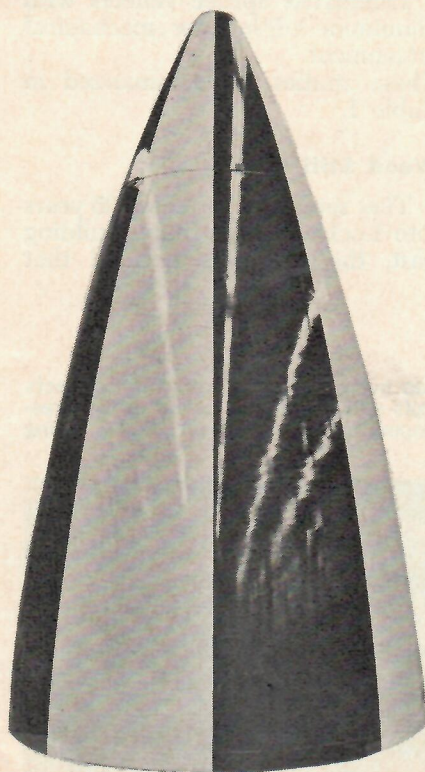
The A3 Polaris Intermediate Range Ballistic Missile, 4½ feet in diameter and 32 feet long, will deliver a sophisticated and effective weapon on targets 2,500 nautical miles distant—accurately. It can be launched in rapid succession from the surface or from the 16 tubes of a Polaris type submarine. The re-entry system and internal systems for guidance, electronic computing and sequencing of function are protected during the launch and atmospheric exit phases by the nose fairing.

Rigid Demands

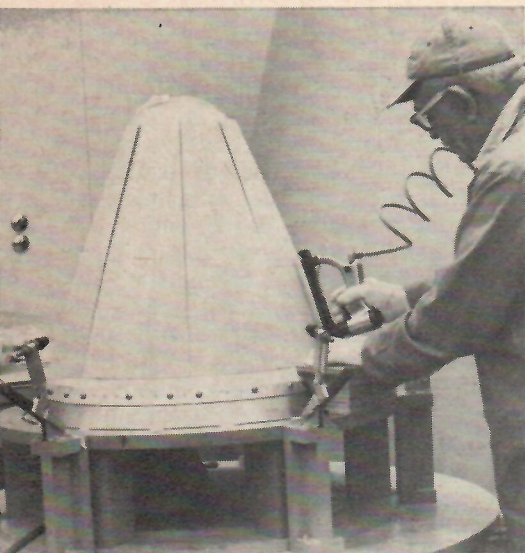
The nose fairing must resist bursting and crushing, and provide the hydrodynamic and aerodynamic shape for the forward portion of the missile. The nose fairing also protects the missile payload from the heat generated during the exit phase of its trajectory and, in addition, is the hoist coupling for lifting the missile.

Materials considered during the early design phases included aluminum, titanium, magnesium, reinforced plastics and laminated wood. Preliminary design and value analysis resulted in the manufacture of prototypes of titanium and wood. After testing, factors of weight, ease of fabrication and cost dictated laminated wood as the optimum choice for tactical production.

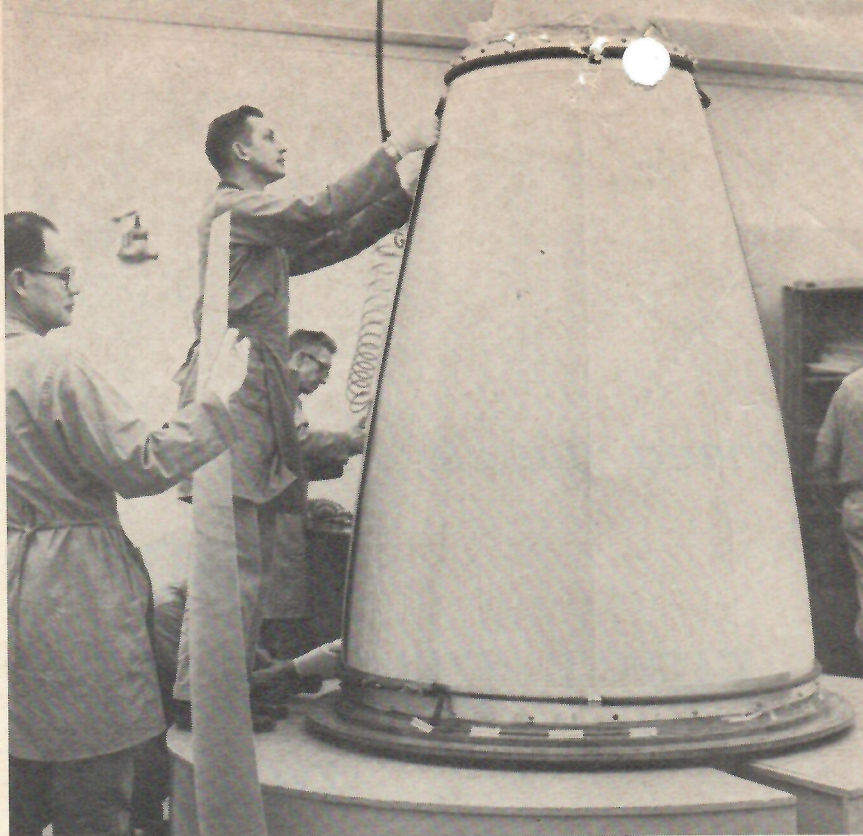
The A3 nose fairing is a bullet-shaped monocoque shell, 94 inches in length and 54 inches in diameter at the base. The form, a Von Karman ogive, is streamlined to minimize drag in both the hydrodynamic and aerodynamic trajectories. In addition, once the fairing has performed its functions, it must be disposed of so that all remaining second-stage impulse



A Polaris A3 nose fairing of Sitka Spruce after it has been finished and shellacked. The bullet-shaped monocoque shell is 94 inches long and 54 inches in diameter at base.



A worker uses pneumatic stapling machine to fasten the Spruce panels to the conical mandrel when forming the tip component of the nose fairing for the Polaris missile.



Sitka Spruce veneer also is used for the main part of the fairing. It is stapled to cone mandrel and sheets are laid up with vertical and horizontal grain alternate.

contributes directly to the ultimate range capability of the payload.

Everything Is Tested

To fully appreciate wood's victory in this battle of the materials, it is interesting to study the other materials which were considered:

Magnesium plate, stiffened with internal rings;

Magnesium plate, etched internally to provide a waffle grid;

Filament-wound fiberglass;

Fiberglass-honeycomb sandwich;

Thin titanium shell, stiffened

with rings and stringers;

Laminated Spruce veneers with aluminum edging for mechanical attachment.

These studies are summarized in Table I.

Wood Still Best

That settled it. Reaching 35 years into Lockheed's air frame building past, the engineers decided that

none of the newer materials could match the strength of interleaved sheets of Sitka Spruce, 20 inches wide by 80 inches long, and 1/25 inch thick.

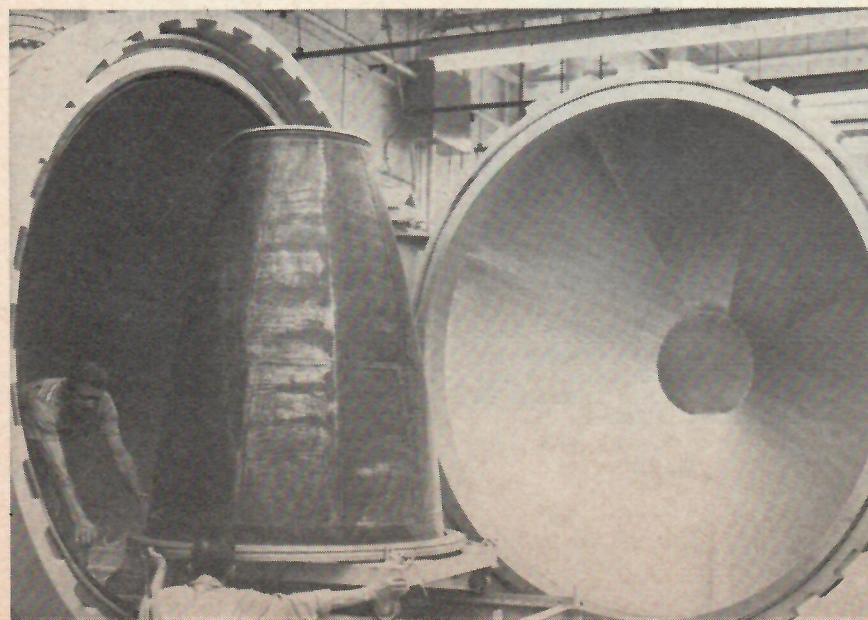
The resins used to weld the sheets together are thoroughly modern, but some of the techniques utilized to shape the Spruce sheets are much the same as those employed when manufacturing the famous Lockheed Vegas airplane in 1928.

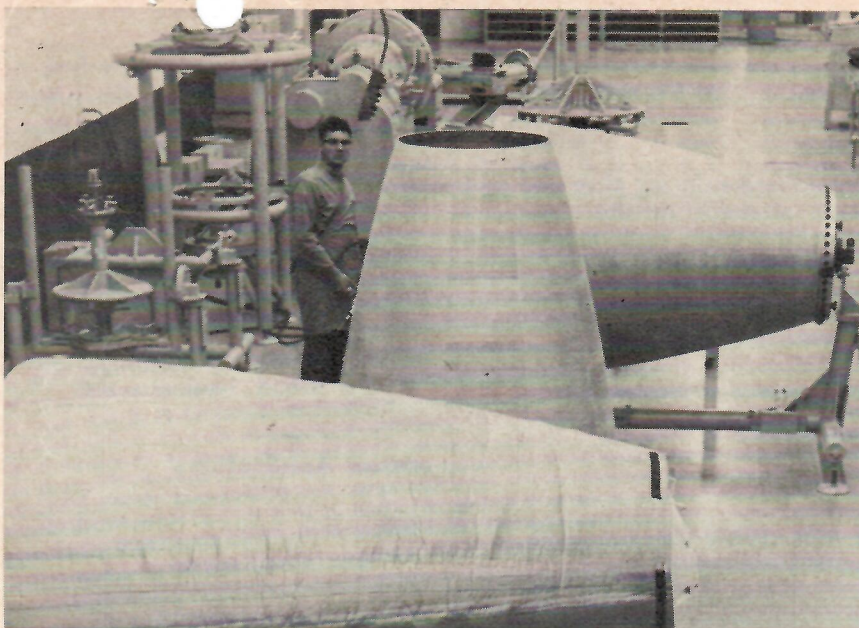
A Sticky Problem

It readily became apparent, during fabrication of the first prototypes, that conventional resorcinol, phenolic or melamine adhesives would not be satisfactory. Film adhesives seemed the obvious answer, and a high-strength, one-part, dry-film, nylon-epoxy was chosen after preliminary laboratory tests. The adhesive cured at 340° to 350° F.

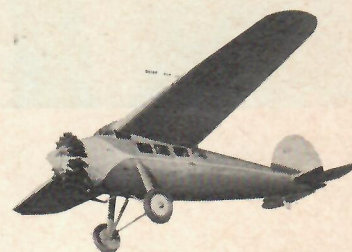
However, the high cure temperature resulted in uncontrollable pressures within the prototype due to the liberation of steam from the wood. As a result, the assembly literally delaminated itself. Also, the difference between the thermal

After being glued, the fairing is placed in an oven-like autoclave. Wire connects the heat measuring thermocouples to controls and the unit is baked in the pressure cooking device for several hours at temperatures slightly over 200° F fusing the glue and wood together.

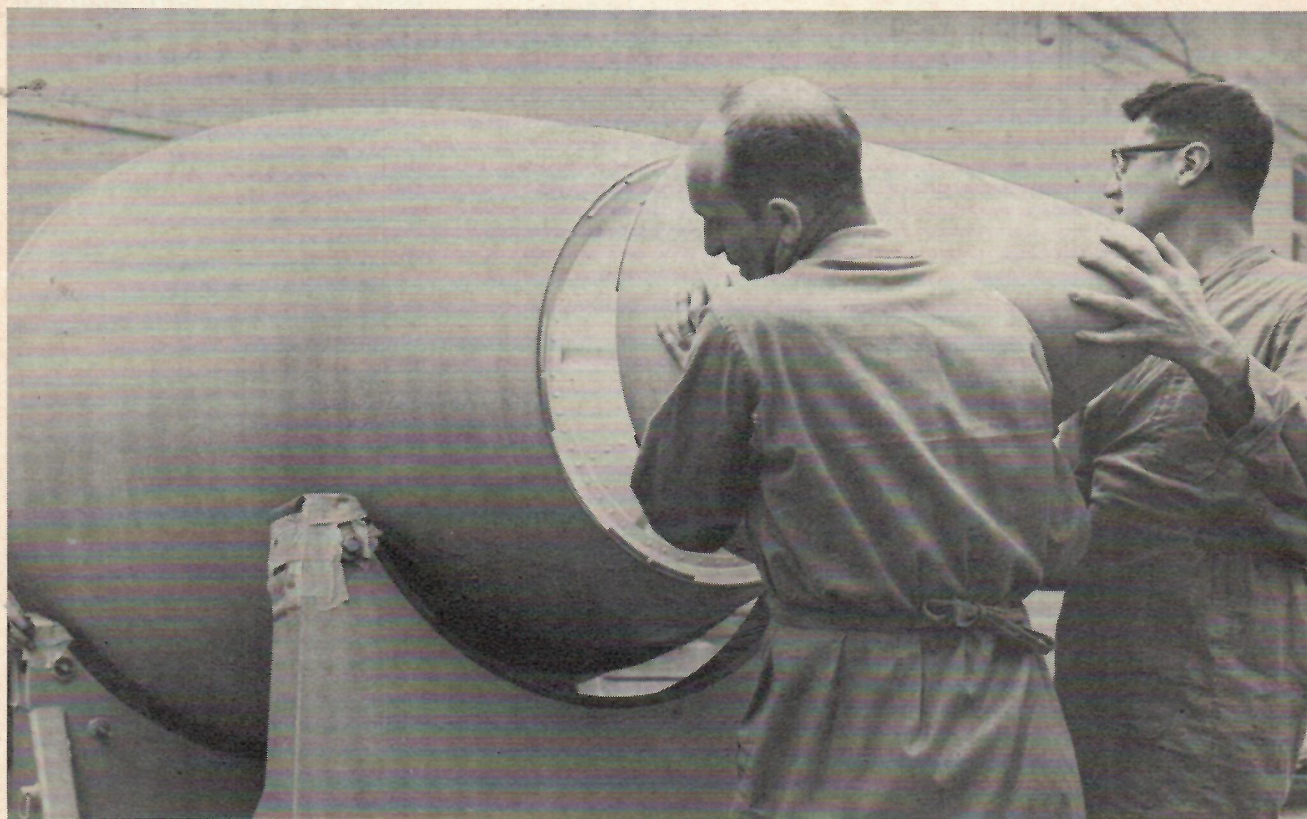




After it is cooled, the fairing is moved to a shop where it is machined. An inspector examines the oven-baked cone before machining.



The early Lockheed Vega which helped establish over 32 flight records, was built in 1927 employing molded Plywood construction, monocoque fuselage.



The fairing components are made to fit each other in a perfect match. Here workmen check the fit and make necessary adjustments.

coefficients of expansion of the wood and aluminum segments and the aluminum mandrel caused severe buckling and misalignment.

A lesser effect (but a significant one from a structural viewpoint), was a drying of the wood caused by the release of water and certain low boiling volatiles. The loss of these "wood plasticizers" resulted

in a marked embrittlement of the wood.

Epoxy-Glass Film to the Rescue

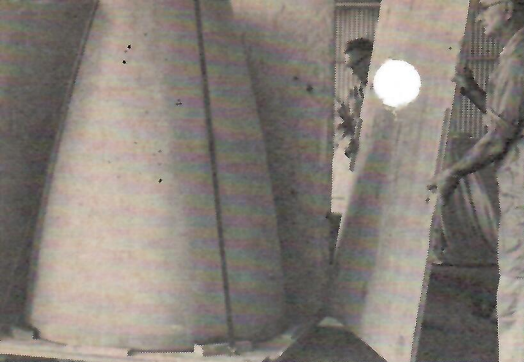
Fortunately, the Bloomingdale Rubber Company of Aberdeen, Maryland, was able to develop a low-temperature curing, one-part epoxy adhesive, supported on a fine glass scrim cloth.

This adhesive called FM-97 weighs 0.025 lbs./sq. ft., and it is

0.004 inch thick.

The adhesive cured at 205° F under low pressure and had excellent metal-to-metal and wood-to-metal bond strength; no primers were required. The refinement of providing the film with tacky surfaces eliminated misalignment of the individual segments prior to and during adhesive curing.

Advantages of the glass cloth are that it restricts excessive flow of



The components then are banded to skids for shipment and boxed in a Plywood container for travel to missile plant.

the adhesive during cure and adds some strength to the completed assembly, since each laminate interface is lined with adhesive-impregnated cloth.

A series of tests was performed in which wood proved itself most satisfactory.

Recently, a portion of a nose fairing carried on an experimental test vehicle was recovered off shallow coastal waters on the Atlantic seaboard. The recovered part had been submerged 373 days but showed remarkable preservation. Except for minor damage by marine boring worms, the integrity of the wood laminate was preserved.

Other Applications

The success of the cloth-supported epoxy-film adhesive, FM-97, helped solve many of the perplexing processing problems encountered during early prototype production of the A3 missile. Conceivably, this adhesive, tested so thoroughly by Lockheed's engineers, might help solve many special problems in the woodworking industry. Those of our readers who have been following our series of articles on Irradiated Wood and are conducting experiments with it, might find FM-97 or others of the same family well worth investigating.

Wood's Bright Future

The last paragraph in Johnson and Mamone's paper is one of the most heartening statements woodworkers will ever read:

"A promising future is seen for laminated wood in structural ballistic shell assemblies. The lightweight, excellent thermal insulation, and inherent structural stability suggest many design possibilities for future aerospace applications."

TABLE I COMPARISON OF CANDIDATE NOSE FAIRING CONFIGURATIONS

Configuration & Material	Weight (Shell Only)	Problems
Filament-Wound Fiberglass	166 lbs.	Weight, process control
Magnesium Plate	153 lbs.	Weight, corrosion protection
Explosive-formed, chemically milled, magnesium waffle construction	123 lbs.	Corrosion protection, producibility, thermal protection, etch control
Fiberglass-honeycomb core sandwich	131 lbs.	Thermal protection, weight, process control
Titanium ring and stringer structure covered with a thin titanium skin	102 lbs. (.025 inch) 110 lbs. (.032 inch)	Thermal protection, cost, hydrodynamic & aerodynamic smoothness requirements
Laminated Wood—Monocoque structure	100 lbs.	Process control, moisture content control

TABLE II PROTOTYPE TEST RESULTS

Test Condition	Number of Tests	Predicted Failure	Actual Failure	Failure Mode
Burst	3	50 psi	62.8 psi	Tension-Shear-Wood
		50 psi	65.6 psi	Tension-Shear-Wood
		50 psi	63.3 psi	Tension-Shear-Wood
Crushing	3	12 psi	21.6 psi	Buckling Wood
		12 psi	20.1 psi	Buckling Wood
		12 psi	20.8 psi	Buckling Wood
Hoist	6	118,000 lbs.	150,000 lbs.	Tension Wood
		118,000 lbs.	157,000 lbs.	Tension Wood
		118,000 lbs.	147,000 lbs.	Tension Wood
		118,000 lbs.	176,200 lbs.	Tension Wood
		118,000 lbs.	179,200 lbs.	Tension Wood
		118,000 lbs.	162,700 lbs.	Tension Wood

Lockheed Looks Ahead

Lockheed Missiles & Space Corporation of Sunnyvale, California, has provided one-day-per-week jobs in its machine shops for shop instructors of three nearby high schools to enable the teachers to keep up-to-date on new equipment and techniques their students should know about when they graduate. Woodworkers, from sawmill to furniture plant, might find such a program to their advantage, too. It would help the industry's educational problem and would foster good will in the local community.

TO:
J.S.V.
J40 DM C



Nose fairing designed, on basis of FPL plywood design criteria, for Navy's Polaris A-3 missile.

Nose Fairing for Polaris Missile

Design criteria developed generally for plywood shell structures under combined loading conditions proved of great usefulness to FPL engineers in designing a nose fairing for the Polaris A-3 missile, now in successful use by the Navy as a weapon launched from submerged submarines. The work was done in cooperation with the Office of Naval Research.

Plywood was chosen because of its low weight for its stiffness and strength and because of its marked superiority to high-strength metals and plastics in resistance to crack propagation. The nose fairing is approximately 6 feet long by 5 feet in diameter at the large end and 2 feet at the small end. It has been established as standard for this missile; several successful launchings have proved out the design.

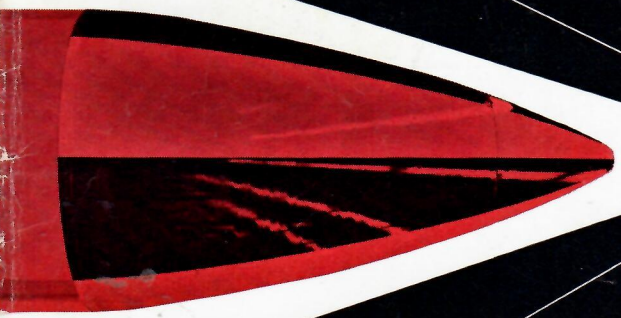
Made from one piece veneer.

WOODWORKING DIGEST

AMERICA'S LEADING WOODWORKING MAGAZINE

Lockheed missile men discover

Wood is First Choice for Polaris Nose Cones



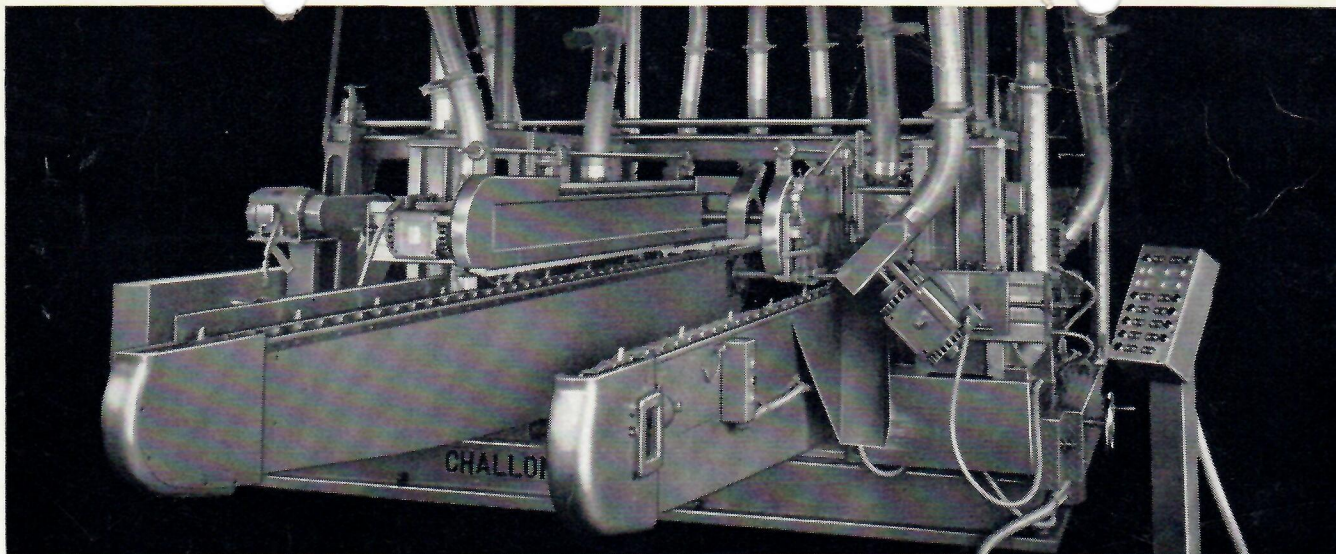
OLYMPIC MFG CO
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GRESHAM OREGON 97030
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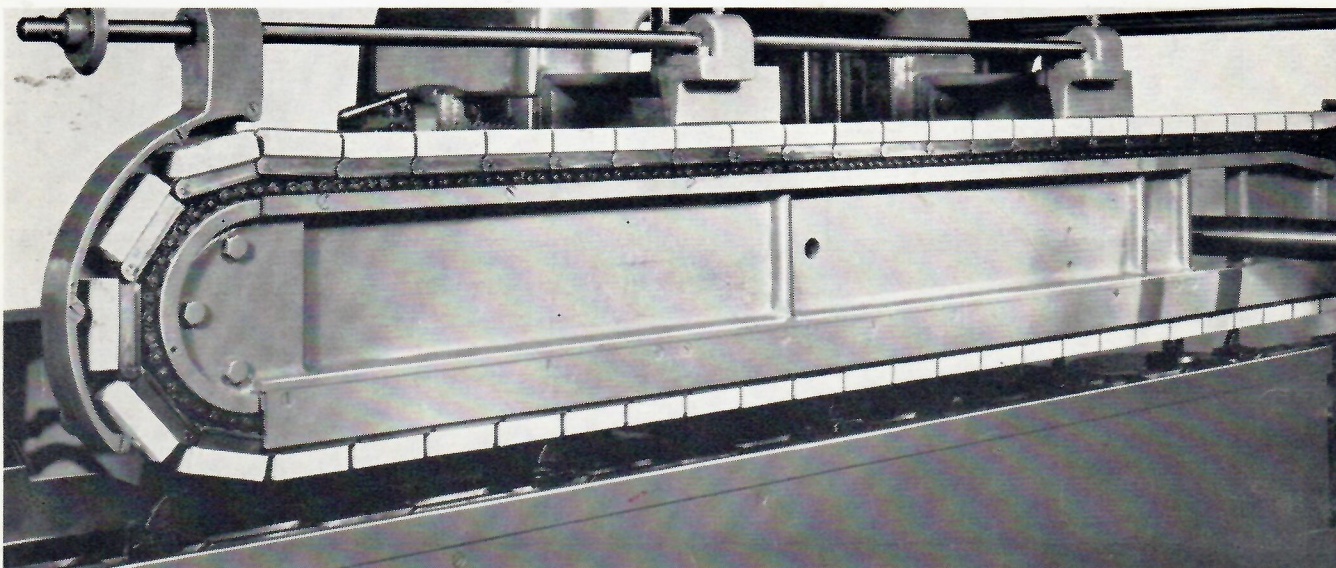
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THE REAL ISSUE IN THE ABM SHOWDOWN

Far more than just another test of political strength was involved in latest White House battle with Senate foes of an expanded U. S. missile defense.

This time, Administration insisted, outcome would have crucial bearing on getting Russia to slow down the arms race.

Cut through the debate and confusion surrounding the Senate's latest showdown over missile defenses, and a key fact emerges:

The Nixon Administration fought hard for an expanded ABM—as the anti-ballistic-missile system is called—convinced that, without it, this nation would suffer a great disadvantage in arms-control negotiations now going on with Soviet Russia.

The ABM, in short, was viewed as the key "bargaining chip" in the so-called SALT talks—strategic-arms-limitation talks—in Vienna.

With a Senate go-ahead on the ABM, the White House argued, the U. S. would be in a better position to get the Soviets to agree to a "freeze" of the nuclear arsenals of both countries at a time when the balance of power is still slightly in America's favor.

"**Dangerously foolish.**" Senator Henry M. Jackson, of Washington, one of several Democrats in the forefront of the fight on the Administration's side, said on August 5—at the height of the debate—that it would be "dangerously foolish" for the Senate to kill further expansion of the Safeguard ABM system. He added:

"If the Senate stops the forward motion of the Safeguard program, what are our negotiators . . . going to offer the Russians as an inducement to stop building their SS-9s?"

The SS-9 is a Soviet missile—one of a family of Russian weapons cited by defense officials as part of a new Soviet buildup. These Pentagon officials have warned that the Kremlin's momentum in building new weapons, unless halted, will carry them far ahead of the U. S. in three to four years.

At immediate issue in the "great de-

(continued on next page)

WHY U.S. STANDS TO GAIN FROM "FREEZE" ON NUCLEAR WEAPONS

As Arsenals Compare Today —

U.S.



RUSSIA



Land-based
intercontinental missiles



Submarine-based
missiles

More than
200



500

Long-range
bombers



About 150

THUS, an over-all ceiling on strategic weapons would keep the two superpowers at their present rough parity—with possible slight edge for U.S.

WITHOUT A FREEZE, picture could change dramatically in next 3 years. At present rate of building, Russians will move far ahead in land-based missiles, pull at least equal in sea-based missiles. U.S. bomber force will decline. Over all, warning is given that strategic lead could shift sharply to side of Soviets.

THE ABM SHOWDOWN

[continued from preceding page]

bate" was a proposal to spend an additional 1.4 billion dollars for more work on the Safeguard system. The official Administration argument, leaving aside the effect on the arms-control talks, was that the country needs the ABM to protect strategic targets against a possible Communist missile attack.

Opponents claimed the system would be obsolete before the network is operable—a waste of money while offering no real protection. Some, such as Senator Edward M. Kennedy (Dem.), of Massachusetts, contended a go-ahead on the ABM would not help at the Vienna talks, but would wreck them by indicating America's "bad faith" in negotiations.

Critics of the ABM nearly managed last year to prevent the system from getting under way at all. Approval for construction of two sites, near Grand Forks Air Force Base, N. D., and Malmstrom Air Force Base, Mont., won by only one vote in the Senate.

Current debate centered on Army plans to build another ABM installation near Whiteman Air Force Base, Mo., and to begin preliminary work on a site in Wyoming.

Senator John C. Stennis (Dem.), of Mississippi, said expansion of the project was necessary to protect America's land-based Minuteman missile silos. Failure to do so, he argued, would make the U. S. vulnerable to a Communist attack.

"Our very survival," Senator Stennis declared during the debate, "may hinge on the decision we make on Safeguard this year."

Soviet build-up. Underlying the concern of many lawmakers were recent intelligence reports that the Russians have built about 300 huge SS-9 missiles, and are producing about 50 more a year. Each can carry one big nuclear warhead or three smaller multiple re-entry vehicles—MIRV's.

Senator Stennis said 300 to 500 SS-9s "could very well give the Soviets a capability for neutralizing virtually all of our Minuteman force if we do not deploy an effective ABM system."

As the chart on page 19 shows, the Russians already possess more land-based intercontinental ballistic missiles than the U. S. In addition, the Soviet Union is expected to match or surpass the U. S. in the number of missile-firing submarines in three years. America's third major nuclear force, long-range bombers, is gradually being reduced in size as the Air Force's stable of B-52 jets gets older and older.

Defense sources say it is only a matter of time before Russia takes the lead

in numbers of deliverable nuclear weapons—giving the Kremlin the edge in the "balance of terror"—unless some agreement is reached in the arms-control talks.

White House advisers say that is why President Nixon is so anxious to conclude a nuclear-arms limit as soon as possible which would either preserve the slight U. S. nuclear advantage, or possibly give both nations parity.

U. S. control plan. America's latest proposal—to establish a numerical ceiling on offensive delivery systems—was submitted to the Russians in Vienna on July 24.

Soviet negotiators have shown interest in the plan, but have not committed

themselves to key features. A Russian counterproposal is expected soon—perhaps before a planned recess in the talks. The conference is scheduled to resume in Helsinki in the autumn.

Military sources say the U. S. control plan, although it would set a limit on the number of nuclear-weapon launchers, would not prohibit the development of newer and more efficient missiles by either country.

Experts say a ban on these newer weapons could be enforced only by on-site inspection, which is unacceptable to the Kremlin.

The proposal, according to reports, also omits mention of missile testing, medium-range missiles in Europe, radar,



—U.S. Air Force Photo

Poseidon was fired for first time from submerged submarine August 3.

DOES RUSSIA LEAD U. S. IN NUCLEAR SUBS?

The U. S.—despite a dramatic test on August 3 of a new undersea missile—is in danger of losing its over-all lead in nuclear submarines to Russia.

The warning comes in a report by the Joint Committee on Atomic Energy of the Congress. It was issued just a few days before the Navy launched its multiwarhead Poseidon missile for the first time from a submerged submarine—the U.S.S. *James Madison*, off Cape Kennedy.

The new U. S. missile, successor to the Polaris, is designed to carry as many as 10 warheads to separate targets, with a range up to 6,400 miles. Today's Polaris carries only one.

Poseidon passed its first underwater launch test within sight of a Soviet trawler, which observed the blast-off with electronic spy equipment.

With both stages of the new missile now tested from a submerged submarine—they had been fired 20 times before, from a land pad and a surface ship—Poseidon is scheduled to be fitted into the first of 31 Polaris nuclear submarines by early 1971.

However—

Soviet Russia's nuclear-submarine fleet was reported to be expanding and deploying off U. S. coasts.

"Surpass our efforts." In its report, the Joint Atomic Committee told Congress:

"The Soviets in the last two years introduced several new-design nuclear

ARAB-ISRAELI CEASE-FIRE— A PAUSE, OR LASTING PEACE?

Even with the backing of the superpowers, moves for a permanent Mideast peace are headed into heavy going. A cease-fire is only one small step.

Reported from
CAIRO and JERUSALEM

Now that at least a temporary truce has been achieved along the Suez Canal—

United Nations peacemakers—already three-time losers in the Mideast—are rolling up their sleeves in another major effort to get actual peace talks started between Israel and the Arabs.

Confidence is high that, except for Arab commando skirmishing, most of the heavy fighting is over for the next three months. That is the minimum time limit proposed by the U. S. for the cease-fire, starting August 8, agreed to by Egypt and Israel.

The outlook for success in negotiations themselves is another matter.

Stage for the cease-fire was set on August 4 when Israel formally accepted—though with reservations—U. S. Secretary of State Rogers' proposals for a truce and indirect talks with the Arabs. Egypt and Jordan had accepted the plan earlier.

The Big Four powers formally endorsed the American initiative on August 5. The same day, the U. N.'s special mediator on the Mideast, Gunnar V. Jarring of Sweden, began a new round of preparations in New York City.

All but the most optimistic Mideast experts, however, agreed that chances for a genuine peace settlement are extremely dim.

One observer in the Mideast explained it this way:

"For 22 years the U. N. has tried to bring about an accord between the Arabs and the Jewish state. Despite that effort there have been three major wars. There is no new evidence now that any more mediation, conciliation or plain hotel-room bargaining has any immediate chance of bridging the gap between what the Israelis and Arabs insist they must get—or can give away—for peace."

Obstacles to peace. Even before a cease-fire could be implemented, splits on the Rogers proposals rent both Israelis and Arabs.

Israel's right-wing Gahal Party quit



—Wide World Photo

Secretary of State William Rogers laid the groundwork for Mideast truce, Arab-Israeli talks. Now it's up to U. N. mediator Gunnar Jarring to make the plan work.

the Government on August 4 over the decision to accept the U. S. proposal. On August 5, Palestine commando groups supporting a cease-fire battled in Jordan with those who opposed it. Militant Iraq, Syria and Algeria criticized Egypt's President Nasser.

Officials in Jerusalem and Cairo provide ample reasons for pessimism.

In Jerusalem there is suspicion that Nasser's acceptance of a cease-fire is a maneuver for short-term advantage, not a serious bargaining offer.

Officials in Cairo argue that Israel, whatever its announced position, is really not interested in what Arabs feel is the key issue—returning Arab territory seized in the Six-Day War of June, 1967.

In both Mideast capitals there is resentment that Moscow and Washington—in order to reduce the chances of a direct U. S.-Soviet clash—are pushing Arabs and Israelis harder toward peace than they themselves want to be pushed.

Add to that the hatreds nurtured in the past, and it can be understood why Arabs and Israelis see a cease-fire—at best—only an interlude between wars.

Getting down to specifics, these are the major obstacles to peace, according to Mideast authorities:

Frontiers. Israeli Prime Minister Golda Meir said on August 4 that Israel never will return to pre-1967 frontiers. It insists on "secure" borders, to be recognized by the Arabs. Nasser demands that Israel return every inch of Arab territory it occupies—Egypt's Sinai Peninsula and Gaza Strip, Jordan's East Jerusalem and the west bank of the Jordan River, and Syria's Golan Heights.

Withdrawal. Mrs. Meir also declared that not one Israeli soldier will be withdrawn from cease-fire lines until

a binding contractual agreement has been reached in direct negotiations with the Arabs. Egypt rejects face-to-face talks, is said to favor a "phased" withdrawal by Israel—before a final settlement is signed.

Refugees. Arabs insist the more than 1 million Palestine refugees have the right to return to their homes in what is now Israel. The Israelis rule out a massive return of refugees on the ground that it would destroy the Jewish character of the state.

Commandos. Palestine commandos warn they will be satisfied with nothing less than the liquidation of Israel as a Jewish state. Some commandos already have served notice they will not obey any cease-fire.

Middle East experts say that in the face of these obstacles it is not surprising that Nasser, while accepting the cease-fire, is convinced the conflict will be settled only by force.

Doubts also prevail in Israel. A popular Israeli view runs like this:

"Nasser is the only Arab leader who really counts. He is maneuvering—not negotiating. His aims? One is to prevent or delay U. S. delivery of more Phantom and Skyhawk planes to Israel. Another is to raise his own stature as a peacemaker and to cast Israel in the role of warmonger. And he is out to satisfy Moscow, which genuinely wants a period of Mideast calm for its own purposes."

Even those Israelis who disagree with that view, who believe Nasser is actually tired of war, are convinced that he will have neither the stomach nor the power to deal with his critics, especially the commandos.

Whatever their doubts about negotiations, Israelis and Egyptians each are

research and development, and quality improvements in missiles.

Thus defense planners believe both countries will concentrate on refinements of the multiwarhead MIRV if a numerical limit on launchers is adopted. Such a system complicates the enemy's defenses by changing shape in flight, suddenly becoming several independently flying warheads instead of one.

America's first operational MIRV's, on Minuteman III intercontinental ballistic missiles, were recently installed and made ready for launching near Minot Air Force Base, N. D.

Minuteman bases are considered prime targets for a Russian attack, and—lacking an ironclad pact with Russia—the

Pentagon therefore would like to install the ABM's around most if not all such complexes. The antimissile missile is designed to intercept and destroy approaching enemy ICBM's before they reach their targets.

Long-range radar. A key to the ABM system is an elaborate device, called perimeter acquisition radar, or PAR, which can detect incoming enemy rockets about 2,000 miles away.

Computers directed by the radar will first fire long-range Spartan rockets, which are supposed to intercept the ICBM's hundreds of miles away.

Next the computers will fire short-range Sprint rockets, to intercept enemy missiles that get by the Spartan attack.

Both types of rockets are to be equipped with nuclear warheads.

The system is intended to combat not only Russian but also Communist Chinese ICBM's. The ABM sites approved last year by Congress protect only Minuteman sites—not population centers, too, as the Pentagon originally desired.

Some Administration officials harbor doubts about the effectiveness of the Safeguard. But they pressed for expansion of the system to try to induce the Russians to accept an arms freeze at present levels.

"The ABM may cost a few billions," says one scientist, "but it could save tens of billions in the long run by keeping us out of an impossible arms race."

submarines having a wide variety of capabilities.

"They have made large-scale commitments to submarine design, development, and construction that far surpass our efforts in the United States. . . .

"In the case of ballistic-missile submarines, the Soviets have assigned top priority to surpassing our U. S. Polaris fleet. They are concentrating on building nuclear-powered submarines similar to our Polaris types at a rate

which will equal our fleet of 41 by 1973 or 1974."

The Committee report pointed out: "A number of these submarines are completed and have begun operating at sea. We know they are patrolling in areas off the coast of the United States, presumably with each battery of 16 missiles targeted on our cities."

"Ahead of us now." Testimony behind closed doors by V. Adm. Hyman G. Rickover, director of the Navy's division of naval reactors, was disclosed by the Committee. In it, he stated:

"The Soviet submarine force is presently composed of about 240 attack submarines, some 20 of which are nuclear-powered.

"They also have about 50 ballistic-missile-firing submarines, some 20 of which are nuclear-powered."

Admiral Rickover then testified: "Last year, I told this Committee that the Soviets would be up to us in nuclear submarines by the end of 1970. On the basis of what they are doing today, I was probably conservative. . . .

"If we knew the precise status of all their submarines, we might find that they are ahead of us right now."

"Most modern yards." Russian production facilities already have surpassed those of the U. S., the Admiral stated. In his words:

"They [the Russians] now have the largest and most-modern submarine yards in the world and possess at least [deleted for security] times the nuclear-submarine construction capacity that we have in the United States.

"As late as 1966, the Russians had only two new construction yards building nuclear submarines; today

they have four—possibly five—with this capability.

"Even though this tremendous submarine-building capacity has not been fully utilized in the past year, it has produced some 12 new [nuclear] submarines. . . ."

By contrast, U. S. plans to build two or three submarines a year.

Concluded the U. S. Admiral: "The lead in nuclear submarines we have so long enjoyed has just about disappeared."

Crew of Soviet spy ship watches during test of new U. S. multiwarhead rocket.

—UPI Photo



Soviet attack sub is part of a growing fleet eroding U. S. edge in arms race.

—UPI Photo



OREG. 18 FEB. 1999

THE END OF THE Olympic

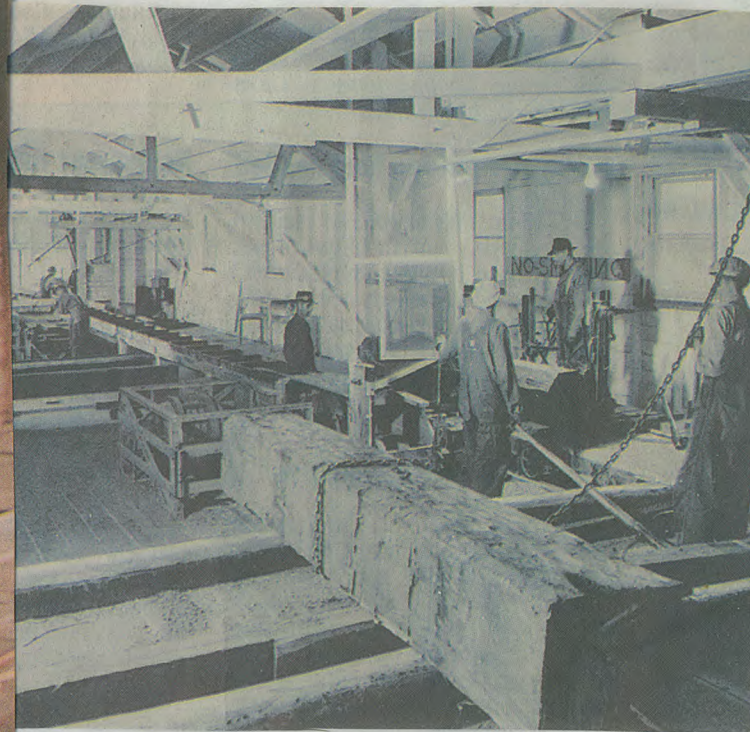
Built to make automobiles, the Olympic Mill became known for producing top-quality veneer

By CATHERINE TREVISION

of The Oregonian staff



The proposed Gresham Station development in Gresham's Civic Neighborhood would put small retail stores around the banks of the old mill pond.



ROGER JENSEN

James M. Vaughan, former manager of Gresham's Olympic Mill, stands near a circular blade that once quartered enormous trees. Much of the mill equipment is housed inside a long building constructed for a car factory in 1914. The building was converted to

The old Olympic Mill was out of place in modern Gresham — even the people who loved it admit that.

You can see City Hall, just a few hundred feet away, if you stand out back on the chest-high drift of sodden bark. Every few minutes, the MAX train zips by a silent pond that once held huge logs from old growth forests. Turning from the quiet parking lot into Division Street traffic sometimes challenged employees. After almost 60 years, that ended in November when the Olympic Mill closed.

Interforest Corp., the company that was running the business, fired most of the mill's two dozen remaining employees just before Thanksgiving. This month, the city announced that a California developer has options to buy the land. The new Civic Neighborhood development, called Gresham Station, would plant boutiques by the pond and replace the warehouse with a 12-screen theater.

"We hate to see the mill go away, but in all honesty, it's better for the community, because of what they're going to do," said A.H. "Herb" McClaugherty of The Dean Company, which owns the property and ran the mill until 1995. "In Gresham, a 60-year-old manufacturing mill is out of place."

The mill was here long before the development. It started as a car factory in 1914, on land where Gresham's first doctor built his log cabin in the 1850s. Although the Beaver State Motor Co. made rail car wheels, sewer pipe, drag saws and engines, hopes for an automobile empire died when World War I killed the supply of a vital English part. The company squeezed out just two cars.

One disappeared when the company went bankrupt in 1918; the other burned in a 1929 fire. The manufacturing building lay dormant until 1942, when The Dean Company of Princeton, W.Va., sent James S. Vaughan to find a good place for making softwood veneer.

Back then, the country needed the mill. The airplanes and PT boats of World War II had to have a strong, flexible skin. Workers made it by sandwiching together thin sheets of softwood veneer, altering the direction of the grain with each layer.

The old car factory was in the middle of the country's best source of softwood: huge old growth Sitka spruce, Douglas fir and red cedar. It took Vaughan two months and five days to convert it to a mill, said his son, James M. Vaughan, who became manager and took charge of Olympic's production after his father retired.

The process didn't change much in the years that followed. Wells fed the ponds, where the logs were stored to keep them supple. Huge circular saws quartered them and trimmed the rough edges, creating a smoother piece of wood called a cant. Mill workers slid the

cants into heated outdoor baths, where they soaked or boiled for days, depending on the type of wood.

Workers cleaned the cants and clamped them to a thundering straight blade that could whip a 24 1/2 inch board into 700 pieces of veneer with 85 strokes a minute. Customers could ask for widths from 1/100 of an inch to 1/6 of an inch. After they shaved it into wet, steaming layers, workers hauled it to a row of heated dryers.

At the mill's peak, in the 1960s, it employed 85 workers. A substantial fraction of Gresham's population earned money there, said Monty Schlechter, the mill's final slicer.

Two-thirds of the business was spruce, for piano sounding boards and plywood. The rest was fir and cedar for plywood, with a few specialty items, like myrtlewood and hemlock for furniture. Other mills started peeling veneer, so it spun off the log like toilet paper from a spindle, James M. Vaughan said. But craftsmen prefer the long vertical lines

Mill: Customers, logs dwindled in the '80s

■ **Continued from Page Page 1**
and matching layers of sliced wood, and that's what Olympic made.

"At one time we were the leading producer of Sitka spruce for sounding boards — in the '50s, '60s, '70s and '80s," McClaugherty said.

But parents stopped buying pianos for their kids. People with boom boxes and Sony Walkmans didn't need to make music for themselves. And if the kids needed music lessons, those electric keyboards sure took up less room.

"The piano industry just went away," McClaugherty said.

Adapted to supplies

And as demand dwindled, so did supply. To make quality veneer, you need big logs, with few knots and a tight grain, said Dick Krieger of the Softwood Export Council.

"In the old days, we never bought a log under 45 inches in diameter," Vaughan said. "The biggest was 7½ feet in diameter."

But environmentalists and the government eventually limited logging in old growth forests.

Other softwood veneer mills simply went out of business. But the men at the Olympic Mill still had tricks up their sleeves. Through contacts forged after World War II, the company had been importing logs from vast mahogany forests in the Philippines and Singapore. Now, they relied on the imported logs more than ever.

The company also adapted to second growth wood: 25- to 40-year-old alder and pine. By the 1990s, the company wasn't cutting much spruce. More than half of the busi-

ness was white knotty pine and Douglas fir, and 25 percent was alder. European furniture makers loved the light wood.

"What we were doing out here was unique. It was kind of a specialty," Vaughan said. "You got a good price for what you did. You didn't have to sell truckload after truckload to make a profit."

Gresham kept growing, adding the new City Hall and a nearby shopping center. When Schlechter would tell strangers where he worked, they couldn't believe the old mill was still in business in the middle of town.

"We were the best-kept secret in Gresham," he said.

In 1995, The Dean Company sold

the mill to Interforest Corp., a Pennsylvania-based subsidiary of Canadian and German parent companies. Interforest had a five-year lease on the property, McClaugherty said. It invested about \$750,000 in mill equipment and hired enough workers for a second shift, Vaughan said. It also replaced a longtime salesman and ordered changes in the mill's products, Vaughan said.

For example, the new managers told the mill workers to stop making myrtle veneer, Vaughan said. Myrtle took four times longer to soak and slice than other wood, but customers still wanted it, he said.

In 1997, the new managers brought Vaughan a letter. The letter thanked him for his service, and

promised to honor his contract, but said Interforest was taking the mill in a "different direction."

Last summer, Interforest laid off the second shift — about 20 people.

After that, "it was just a matter of time," Schlechter said.

In December, a cleanup crew helped ship out the veneer that had stacked up. These days, Schlechter is there alone, keeping a vigil for buyers who have appointments to look at the grinders and the machines.

"I miss it bad," he said.

The 38-year-old had worked at the mill since he was 18, and he is one of the few Americans who knows the techniques for slicing softwood veneers, Vaughan said. Although Schlechter might be able to find work out of state, he does not want to

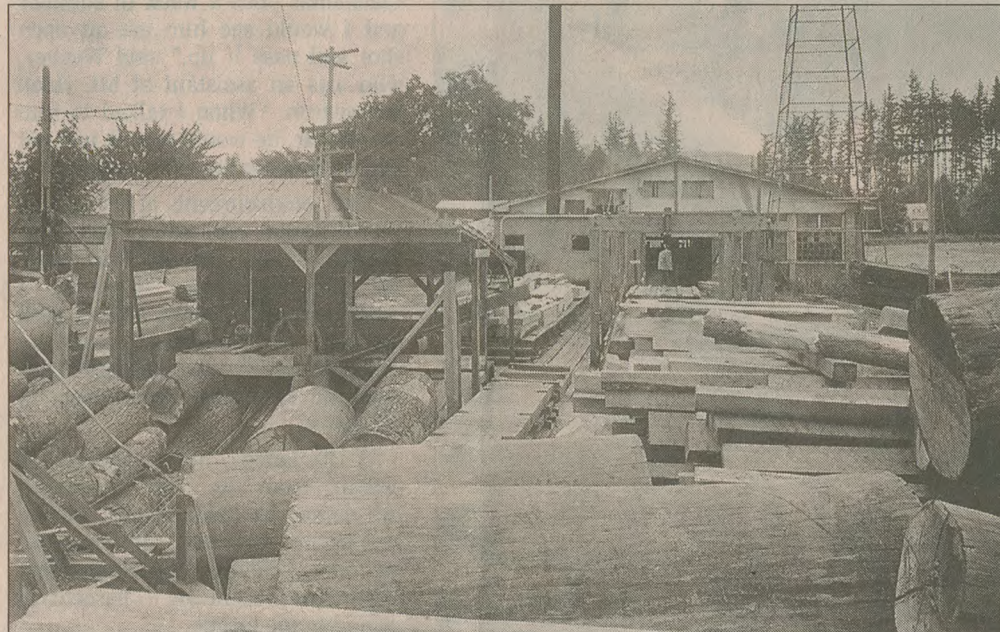
leave Oregon.

During Vaughan's last tour of the office, he admired the beautiful warehouse, where the beamed ceiling seems to stretch for a mile over the empty rooms.

He ran his hands over the paneled office, where both his father and his daughter worked, where he laid the foyer carpet himself.

"There's so much of me in here — I hate to see it go," Vaughan said. "It's sad it didn't last."

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The mill grew on a steady diet of spruce, fir, cedar and imported mahogany. "In the old days, we never bought a log under 45 inches in diameter," James M. Vaughan said.



ROSS WILLIAM HAMILTON/THE OREGONIAN

A mill no more: Part of the roof of Gresham's old Olympic Mill building trembles precariously before crumbling to the ground Thursday with the aid of demolition equipment. The mill produced veneer from World War II until 1998 on its property near City Hall, between Division Street and the light-rail tracks. Even as the mill crumbles, its successor is in the works. Developer Center Oak Properties plans to spend about two weeks in demolition before it starts building Gresham Station. Part of the shopping and office complex is scheduled to open by Thanksgiving.

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OUTLOOK-12-5-63

Veneer Plant Head Among New Owners



James Vaughan stands between stacks of crated veneer in the warehouse of Gresham's Olympic Manufacturing division. This week Vaughan and three other executives of the Dean Co., of which Olympic is a division, acquired ownership of the parent firm.

(Outlook photo)

James S. Vaughan, head man at Gresham's Olympic Manufacturing plant, this week became one of four owners of the local veneer plant and other operations of the far-flung parent firm, the Dean Co.

But Vaughan still gave and received the same friendly "Hi's" as he strolled through the plant a day later. Many of the 45 employees of the veneer plant have been there 10 years or longer and just about everybody is on a first-name basis with the man in charge.

Four executives of the Dean Co. acquired control of the 59-year-old company, which has its headquarters in Chicago and other plants at Norfolk and Portsmouth, Va. All of the executives are continuing in their present positions. Vaughan will remain an executive vice president and head the Gresham operation as well as the Dean's import and export division.

Vaughan came to Gresham on August 1, 1942, to establish a veneer plant, he recalled Tuesday in an interview in his wood-paneled office.

"The War Department badly needed veneer for airplane production," he said. "There wasn't any being made in the Northwest. The logs were all going shipped back East and the veneer made there. That didn't make much sense when the planes were being manufactured out here in the West."

Vaughan converted some empty buildings into a going concern in exactly two months and five days, he remembered with a touch of pride.

"We turned out our first veneer on Oct. 5, 1942."

Today the firm's payroll isn't as big as it has been some times in the past but the 45 employees have steady work. About 70 per cent of the wood used here is Philippine mahogany. Other woods used are Douglas fir (which is called Oregon pine by the time it gets to Switzerland as veneer), spruce, walnut from Iowa and Illinois and several more.

Veneer is supplied to makers of everything from guitars to laminated water skis. A Portland firm takes quantities of veneer for door facings, a piano manufacturer requires spruce veneer for sounding boards and furniture makers need lots of it.

The veteran wood products executive stressed that all key personnel will keep their present jobs at the Gresham plant as well as elsewhere throughout the Dean Co.

Peter Akse, a veteran at the Gresham plant, will continue as assistant secretary, and Bill Edmondson, with the Dean Co. for 30 years, will remain as local plant superintendent.

"This change in ownership won't mean any change here at Olympic Manufacturing right now," concluded Vaughan. "But we're hoping to expand with the growth of the business. We've got 15 acres of property here so there's room to grow."

The three executives who joined in the purchase of the firm are Ted J. Connelly, president; Grady Goldston Jr., High Point, N.C., vice president for sales; and Edward V. Horton, vice president of the Dixie Veneer division of Portsmouth, Va.