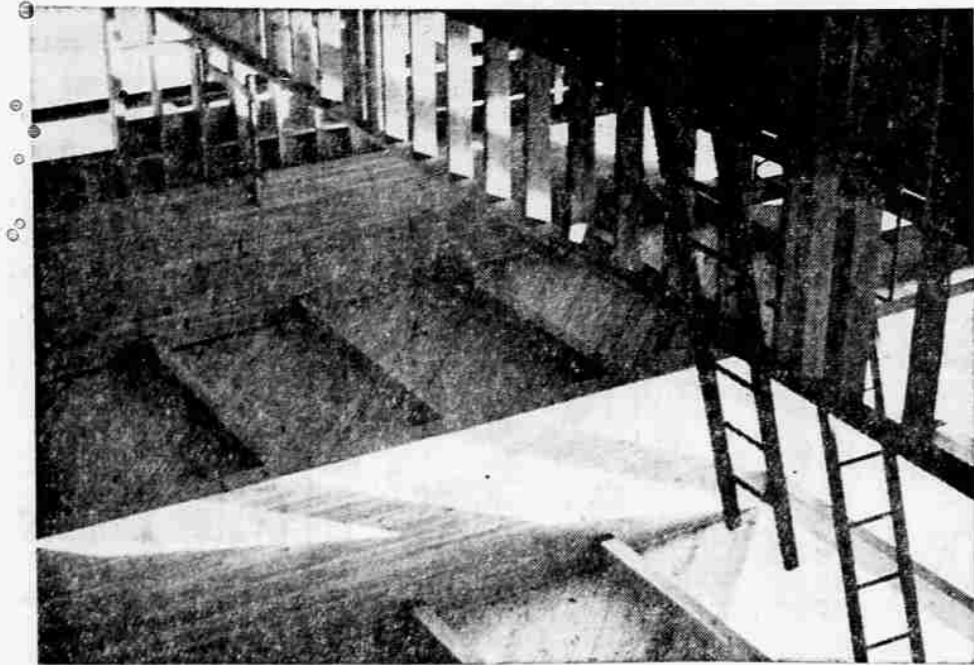
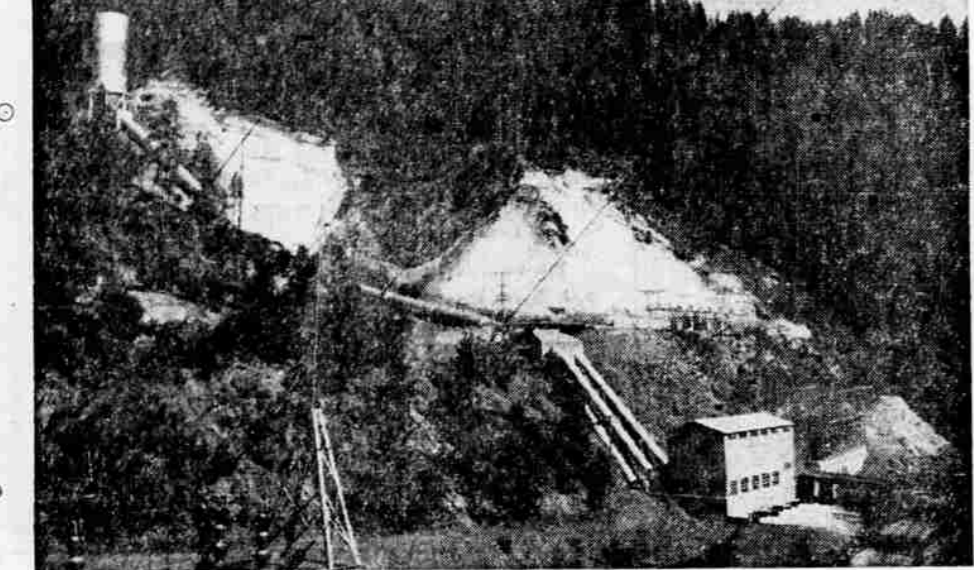


Engineering Good Mirror of Area's Growth



LONGEST GIRDERS DEVELOPED—Shadows dramatically illustrate size of the span glued laminated wood girders that will brace the roof on the new \$465,000 Southern Oregon college gymnasium in Ashland. The girders, of which there are six, cost \$3,000 each to build. The 130-foot long beams are probably the longest ones of their kind ever developed, according to A. D. Harvey, engineer for the project.



POWER PLANT—Above is the Toketee Falls power plant, nerve center of the \$58,108,768 power development by the California Oregon Power company on the Upper Umpqua river, completed last November. Toketee Falls, which generates 42,500 kilowatts, is the final major power plant in the development's network before the water is returned to the ocean. The entire project produces 185,000 kilowatts.



HIGHEST EARTH FILLED DAM—This is Jackson county's highest earth-filled dam, standing 84 feet high from its base. Arrow points to its owner and contractor, Robert von der Hellen, Eagle Point. His plan for the dam, which has a storage capacity of 900 acre feet of water, is to irrigate 300 acres of land in the Eagle Point area where he intends to harvest 150 acres each of pears and clover. Von der Hellen and three men completed the structure last fall after three and a half months of work.

Ashland Chamber To Ask for Interchanges

Ashland — Directors of the Ashland Chamber of Commerce are planning to recommend to the city council that it request the state highway commission for two additional interchanges between the Valley View and Crowson rd. interchanges.

The interchange at Crowson rd. will connect the present Highway 99 with the proposed Highway 99 freeway, which will bypass Ashland. Tentative freeway plans place the only interchange at the point where Highway 86 and the freeway cross.

Chamber directors indicated one more interchange should be provided to give additional access into Ashland. A letter reflecting the chamber's view will be submitted to the council.

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LARGEST MID PROJECT—Medford Irrigation district crews are shown preparing the foundation for two 4 by 14 foot bays that will traffic water from the siphon (at right) during the winter and be used for regulating purposes in the summer. Installation of the 1,860-foot long siphon across the valley floor, about a half mile below Phoenix, has been completed. The siphon damaged by floods with one having a 75-year life expectancy.

Dayton, O.—U.P.—The "little 2,000 homes will serve as school red school house" is back again. Buildings for a year in order to Ten brick homes in a housing relieve overcrowding in class development which will contain rooms of regular schools.

Professional Men Observe National Engineers' Week

By ELLIOT CARLSON
Mail Tribune Staff Writer

This week Professional Engineers of Oregon, who are now about 1,000 strong, are observing National Engineers' Week. The week is observed during the time of George Washington's birthday, engineering's "patron saint."

Professional engineering, a broad field including engineers from aeronautical to civil, "is a profession less understood by the public than others," according to Portland's Daily Journal of Commerce.

"In a word, the newspaper says 'One thing engineers have in common is the fact they are all planners and creators.'"

In southern Oregon engineering during the past year has been a good mirror of the area's growth, according to engineers. Work of engineers has progressed on two levels, private and corporate, they indicated, and one of the major objectives in this area has been to harness and utilize water.

Examples are the work of Fred Brown, a retired engineer in Medford, and Vic Gardner of Eagle Point. They assisted in designing two large earth-filled dams near Eagle Point. Purpose of the structures is irrigation.

Brown engineered the highest earth-filled dam in Jackson county, completed this fall. Owner and contractor for the structure is Robert von der Hellen, Eagle Point.

The dam, located near Lake creek about 12 miles south east of Eagle Point, is 84 feet high, 760 feet wide, and 355 feet thick at the base. Von der Hellen and three others constructed the dam using one caterpillar and three earth movers. The operation took 3 1/2 months.

Capacity of the dam's reservoir is about 900 acre feet of water, covering 30 acres of land. Because of the small amount of rainfall this year, von der Hellen said water level of the lake now is only about 45 feet, covering some 20 acres.

The lake, one of the largest private storage capacities in the county, is fed from three sources. Two are canals made by von der Hellen about three miles long, and the third is a natural drainage area supplying the lake from natural creeks and wintertime runoffs.

When capacity is reached sources of the two canals are re-channeled along their natural routes. Spillways flanking one end of the dam are designed to absorb water in excess of what will ever occur, according to von der Hellen.

Irrigate 300 Acres
His plan is to eventually irrigate about 300 acres of land in the area, which will be divided evenly between pears and clover. Only work remaining on the project is installing canals and siphons to get the land under production, he said.

A similar dam in the same vicinity is Gardner's. Engineering for the project was done by the late Herman Powell, of Medford, and Jim Clabby, of Medford. Total cost of his project was \$23,500, Gardner said.

Although height of Gardner's dam is about 27 feet shorter than von der Hellen's, its capacity is 300 acre feet of water greater and about 340 feet wider.

Its capacity of 1,200 acre feet of water is probably the largest in the county, that is manmade, according to Gardner. He added, however, an earth-filled dam owned by several farmers in Sams Valley has a similar capacity.

Multiple Benefits
Unlike von der Hellen's water supply, Gardner's reservoir has multiple benefits. Since its completion in 1931, it has been used by water skiers and fishermen and will provide some flood control in its immediate area.

Another earth-filled dam was completed this January on Squaw lake for five farmers who plan to use five water to irrigate about 196 acres there. The dam also will have recreational benefits. Engineering for project was by Cliff Jensen, resident engineer of the Rogue soil conservation district.

Gardner has also assisted in the surveying and engineering of several other earth-filled dams in the county. Number of earth-filled dams in the county is 16, some of which are still under construction, according to Dave Hendrix, county water master.

Any dam 10 feet or more high must be designed by a registered engineer and approved by the state.

ing a large lake into which Lake creek flows.

The water is carried by a 14,800-foot concrete-lined canal and a 1,875-foot concrete flume to a steel penstock which goes almost a mile and a half sharply downhill to the Lemolo One power plant on the Umpqua.

At that point a low diversion dam directs the water to Lemolo Two, a 33,000 kilowatt power plant, where it is steered back into the river.

At Clearwater diversion dam the water is channeled to the Toketee Falls power plant which generates 42,500 kilowatts, then diverted through two smaller plants, Slide Creek and Soda Springs, before it is finally released.

As a result of his power development program for Copco on the river, John C. Boyle was accorded the Oregon Engineer of the Year award several years ago by the PEO.

Other Copco engineers working on separate phases of the project were Wilbur L. Warren, Elwood Hedberg, D. D. Cobleigh, W. H. Fisher, L. M. Stinson, L. S. Horton and R. S. Daniels.

Distribution Network
The power-generating project is tied in with Copco's distribution network through several power lines. Copco serves a large area in northern California and southern Oregon, both east and west of the Cascades, as far north as Riddle.

Another major Copco project is the \$70,000,000 hydro-electric plant planned for the Klamath basin, started this winter and scheduled for completion in 12 years.

Since it is only during winter-time that irrigation districts can rebuild or construct new flumes and siphons, both the Rogue Valley and Medford irrigation districts have razed outdated siphons and constructed new irrigation facilities.

Design Innovation
An innovation in the design of flumes is one being constructed by the Rogue Valley Irrigation district, according to A. D. Harvey, Medford consulting engineer.

It is the first precast reinforced concrete flume ever built in southern Oregon, although a similar one was constructed by the bureau of reclamation in the Klamath basin about 35 years ago, Harvey said.

The flume, now nearing completion, will be the main canal in the RVID network. It replaces an old metal flume on wooden supports, near Yankee creek and Antelope rd. Harvey is acting as contractor for the project as well as engineer.

Capacity of Structure
Capacity of the \$14,500 structure is 50 cubic feet of water per second, which is more water than the irrigation canal could ever supply it, according to Harvey. The flume is 320 long and situated 16 feet above the ground on about 16 concrete base supports.

Its flume box is composed of 26 reinforced concrete panels six inches thick and four feet high. Base supports for the flume have already been constructed along with most of the side rails for the flume box. Each panel weighs 7,500 pounds and was made in White City.

When the panels are erected concrete slab floors will be installed in the flume box completing the project, which should be in about a week. It was started in November.

Adaptive Design
It is hoped similar type designs can be employed for future RVID use, according to Harold Sexton, district manager. The design is adaptive to replacing previous structures, he said.

The new flume has a life expectancy of 40 years, Sexton said, and will be comparatively "maintenance free." It will serve about 90 per cent of the irrigation district.

Sexton pointed out several disadvantages of the old type structures are eliminated with the new one. Old type siphons need trash racks, he said, which often impede water flow. They also require additional personnel to check plugged trash racks.

Another advantage of the new design is a lower initial cost. Sexton said. The district manager said cost of the new flume will be over 30 per cent less than the previous type structures. He added they also lend themselves to easier erection in adverse weather and terrain conditions.

The Medford Irrigation district is in the process of replacing an old wooden stave siphon built in 1921 with a concrete steel pre-stressed cylinder one with a 75-year life expectancy, according to Jack Hoffbuhr, district manager.

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The 1,860-foot long siphon was designed by the bureau of reclamation and Hoffbuhr is supervising construction. The pipe, 48 inches in diameter, crosses the valley floor at its narrowest point, about a half mile south of Phoenix.

Flood waters damaged the old siphon due to its low construction over Bear creek. The new line, a tie-in between the east and west canals, is channeled under the creek alleviating the possibility of damage from floods.

The new siphon has a 65 to 55 cubic foot per second superiority in capacity over the replaced one. About 1,000 tracts will be benefited by the siphon between Medford, Jacksonville, Central Point and Phoenix. Source of its supply is Four Mile and Fish lake.

Spillway Incorporated
A large spillway has been incorporated into the project to direct possible flood waters into Bear creek, Hoffbuhr said. Two 4 by 14-foot bays will traffic water through the spillway in the winter and be used for regulating purposes during the summer.

The MID contracted the work itself, Hoffbuhr said, when estimates from bidders were "too high."

He added district crews will complete the siphon, which is the largest single project ever undertaken by MID crews, at a lower cost than the lowest bidder's estimate, \$113,667. Engineer's estimate was \$84,804.

A unique project from Harvey's engineering staff are the six longest span glued laminated wood girders ever built, installed for the roof of the new \$465,000 Southern Oregon college gymnasium in Ashland, now under construction.

Architect for the six girders, costing \$3,000 each, was Howard P. Perrin of Klamath Falls. The girders were developed under the supervision of Harvey, who assigned development of the girder's design to Robert F. Scherzinger, then with Harvey firm.

Designing Girders
In designing the girders, Harvey said, "our purpose was to get away from the conventional dome roof." The girders are 130 feet long, nine inches thick and taper in depth from six feet, eight inches at the center line to four feet at the support.

"As far as we know," Harvey said, "these are the longest girders ever developed." Benefits from the new design are better acoustics and appearance, he said, and cost is about the same for this roof as for a conventional one.

In order to test the girders a scale model was built and the

Chessman Given Isolation Term

San Quentin, Calif. — (U.P.) — Convict-author Caryl Chessman began a 29-day sentence in isolation Friday for smuggling out the manuscript of a new book and three letters.

The sentence was imposed Thursday by a prison disciplinary board after Chessman pleaded "no contest" to the charge of violating prison regulations.

Warden Harley O. Teets said guards found carbon copies of the letters and a 160,000-word manuscript, "The Face of Justice," during a surprise shake-down of death row Wednesday night.

Chessman was sentenced to die in 1948 for kidnap and rape. He is awaiting a reply to his seventh appeal to the U.S. Supreme Court.

Teets said the manuscript appeared to deal with Chessman's relations with various attorneys who have represented him in his long fight to escape execution.

The letters were to Gov. Goodwin J. Knight of California, Director of Corrections Richard McGee and to Chessman's literary agent in New York, Joseph Longstreth.

The letter to Longstreth indicated the manuscript of the book was on its way to New York.

Teets said a rule was imposed recently forbidding any inmate death row to write anything but legal documents and a limited number of personal letters.

The rule was imposed after Chessman smuggled out his second book, "Trial by Ordeal." He wrote his first book, "Cell 2455, Death Row," in prison when there were no literary restrictions.

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FIRST FLUME OF KIND IN AREA—Above is the flume connecting the main canals of the Rogue Valley Irrigation district, which will serve 90 per cent of the district. Advantages of the \$14,500 structure include easier erection in adverse weather and terrain conditions and eliminate trash racks that impede water, which characterized the former design. It is probably the first pre-cast reinforced concrete flume ever built in this area, according to irrigation district officials.

In observance of National Engineer's Week, the Rogue Valley section of the PEO will honor high school students in the district who plan engineering as a vocation. A banquet will be held for them Monday night at the Medford hotel. James Hoey, Medford engineer, is president of the Rogue Valley section.

A dramatic indication of Medford's growth is the increased length of city water mains from 76.99 miles in 1955 to 84.22 in 1956. This is a 9 1/2 per cent increase over 1955, according to Robert Lee, city water superintendent.

Increase Significant
The increase is significant when considering the fact that average increase has been less than one half of one per cent since city water system was created in 1894, Lee said.

The \$256,000 worth of water mains constructed during the past year included 464 new connections in the Medford area. The work has been done under supervision of the water department engineering force.

Also pointing out the city's growth is the new \$1,937,425 Rogue Valley Memorial hospital, now under construction on a 20-acre site in southeast Medford. It is the first structure in Jackson county whose cost ever exceeded \$1 million. Harvey is engineer for the project.

On the county level a \$55,000 contract was awarded recently to the R and M Construction company, Central Point, for construction of four bridges, according to Paul Rynning, county engineer.

Reinforced Concrete
The four reinforced concrete structures replace old wooden bridges and a capacity of 16 to 20 tons, which is more than that of the old structures. Largest of the bridges is a 70-foot structure over Snider creek on Tresham lane in Sams Valley.

The others are over Guy creek on Bigham rd. near Eagle Point, Willow creek on Fish Lake rd. near Butte Falls and Kane creek on Foley lane west of Central Point.

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