Thursday, February 26, 1970

# Owyhee: Grandaddy of the Big Dams

Editor's Note: This story on the building of Owyhee Dam was taken from the quarterly publication of Cornell, Howland, Hayes and Merryfield, Engineers and Planners. They have offices in Corvallis, Portland, Seattle and Boise, and are one of the largest engineering firms in the Northwest. This story has received wide circulation through their publication, and perhaps there are many of our readers who aren't familiar with the whole story of the dam. Pictures and data are courtesy of the U.S. Bureau of Reclamation, Design and Construction Division, Region 1.

Owyhee Dam, when it was completed in 1932, was the highest masonry structure ever built. It required 536,471 cubic yards of concrete for its construction, 12,186 of which were in the spillway.

Located in the central part of eastern Oregon near the Idaho border, it was constructed by the U.S. Bureau of Reclamation between 1928 and 1932, serving both as a storage and diversion dam.

The project derives its name from Owyhee River, which with its contiguous drainage area of volcanic origin, was named "Hawaii" by a group of Hawaiian trappers of the Hudson Bay Company early in the 19th century. Succeeding scouts, Indians and pioneers developed this into the word "Owyhee," and ultimately it was spelled phonetically.

The project first came under consideration at the turn of this century. The rich lands, favorable climate and transportation potential for successful settlement were recognized early. The territory, crossed by the Oregon Trail near old Fort Boise, now Parma, Idaho, had become very productive.

Alfalfa and fruit were being raised and livestock thrived as numerous irrigation projects were constructed to the east of Owyhee River. The need for a firm water supply became more and more urgent.

The magnitude of the project, combined with the inaccessibility of potential dam sites, delayed its development and kept the land in open range long after feasibility was established.

By the time construction began in 1928, engineering echnology had advanced sufficiently to handle the probems inherent in large dam construction. However, a





Reservoir created by Owyhee Dam is approximately 52 miles in length Lake Owyhee is a popular recreation area, attracting waterfowl hunters in winter, and swimmers, boaters, water skiers and fishermen in the summer. Water from the reservoir is supplied to 118,249 acres in eastern Oregon and western Idaho.

fault plane existed and required excavation to a nominal width of about 20 feet, 113 feet deep and 265 feet in length. Concrete backfill totalled 35,623 cubic yards.

A standard-gauge railroad was constructed from the Dunaway siding of the Oregon Short Line Railroad, southwest of Nyssa, Oregon, to the dam, a distance of 24 miles, for the purpose of hauling construction materials and equipment. Roadways had to be improved to provide access for trucks and workers' cars.

The mass of concrete for the dam, containing maximum 8-inch-size aggregates, was delivered to individual blocks by cableway, in 8-cubic-yard bottom dump buckets. A "jockey" rode the bucket, directing its travel from the mix plant to the point of delivery, then released a portion of the mix where designated by the foreman.

Instantaneous discharge of the whole load resulted in the empty bucket scooting skyward like a spitwad in a rubber band, as tension of the main cable, or gut, was released. Bucket jockeys needed no reminders to fasten their seat belts.

Owyhee Dam is a concrete arch-gravity type of structure, of 417 feet structural height and of 325 feet hydraulic height. A 60-foot-diameter steel ring gate on the crest of the spillway controls spillway discharges: The spillway is of the morning-glory type, located on the right abutment, with a vertical spillway shaft connecting to a tunnel that was used for diversion of the river during construction. Before overtopping the dam (elevation 2,675 feet) approximately 40,000 second-feet of water could be passed through the spillway.

Sluice outlets at an elevation of 2,370 feet consist of three 5-foot-diameter metal conduits. Control of flow is accomplished by two 4 x 5-foot high pressure slide gates installed in the dam near the upstream end of each. The upstream gate in each instance is for emergency control.

River outlets consist of three parallel conduits 4'9" in diameter controlled by 4-foot-square high-pressure slide gates and 48-inch balanced needle valves, the latter located in a valve house on the downstream face of the dam

Operation and inspection galleries are provided at upstream and downstream locations in Owyhee Dam at an elevation of 2,377 feet. These galleries are connected by four transverse galleries which open at portals on the downstream face.

lower transverse galleries, intersect similar galleries at

normal water surface elevation of 2,670 feet. Total stor-

age is 1,120,000 acre-feet, 715,000 of which is usable.

Water from the reservoir is supplied to 118,249 acres in

from these passageways.

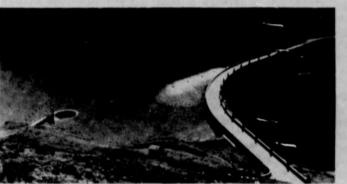
eastern Oregon and western Idaho.

Owyhee Dam served in a measure as a proving ground for theories being developed for use in design and construction of Hoover Dam. Frank A. Banks, its construction engineer, went on to become the builder of the mighty Grand Coulee Dam.

Today Owyhee Reservoir has become one of the area's great recreation facilities. Rugged mountains bounding the pool provide breath-taking scenery. Boating is excellent and spiny ray fish are abundant. A restaurant, motel, and boat launching facilities occupy a point on the east bank about four miles from the dam.

Crops on project lands have been extended to include large acreages of sugar beets, potatoes and corn. Farming thrives in the area. Dairies, creameries, meat packing plants, sugar refineries, canneries, and plants for processing, packaging and freezing farm products dot the landscape in all directions.

Growth in the area long ago exceeded the greatest dreams of the early day planners.



Sixty-foot diameter steel ring gate on the crest of the spillway, controls spillway discharges which, under 12-foot depth, are 30,000 c.f.s.

## **BUENA VISTA NEWS**

#### \*\*\*\*\* BY HELEN HOFFMAN - PHONE 372 - 2806 +++++

BUENA VISTA-Mr. and Mrs. Mrs. Esther Stephen and Mrs. Gene Stephen attended a card Edith Whipple attended the party at the home of Mr. and smorgasbord at Adrian Feb. 21. Mrs. Ray Strickland Feb. 21. Later they attended the card Mr. and Mrs. Gene Stephen party at the Ray Strickland

were recent visitors in the home. homes of their nieces, Mr. and Mrs. Bob Mosso and family, and family were dinner guests and Mr. and Mrs. Dan Crosswhite and family, all of Payette. and Mrs. Mancel Bishop. Mrs. Guy Tanner and Mrs. Alzina Salters went to Caldwell. on business Feb. 18.

Mr. and Mrs. Ed Brandt were dinner guests in the home of Mrs. Mae Bretz Feb. 22. Mrs. Mae Bretz and Mrs. Ed

Brandt went to Ontario on busivisited Feb. 23 at the Glenn ness Feb. 21. Hoffman home. -----Mr. and Mrs. Andrew Ekanger

accompanied their son, Mr. and Mrs. Bernard Ekanger and son. Randy of Caldwell, to Othello, Wash., where Mr. and Mrs. WWWBY FRANCES SMALLEY Andrew Ekanger visited another son, Alvin Ekanger. The Bernard Ekangers went on to Moscow where Randy participated in the Idaho State Wrestling Tournament. Randy received a trophy for his weight class. They returned home Feb. 22.

Woodrow Seuell was Mr.

### NU ACRES HAPPENINGS

#### BY MARGARET EVANS

NU ACRES-Mrs. Steve Anderson has been released from Caldwell Memorial Hospital. She is recooperating at the home of her mother-in-law in Caldwell.

John Walker and a friend from Seattle, spent Feb. 20 with Ralph Baxter. They are on their way to Colorado.

Mrs. R.R. Speas of Shelley, mother of Mrs. Roy Howard is spending a few days visiting her daughter and family. The Nu Acres Grange met

at the home of Mr. and Mrs. Clarence Neely Feb. 19. The next meeting will be held at the home of Mr. and Mrs. Buel Clement on March 5. The Farmerette Club met

at the home of Verna Shaw on Feb. 18. A Valentine exchange was the roll call. Mrs. Sue Nesbitt gave a demonstration on caring for new fabrics. Mr. and Mrs. Cecil Evans

drove to Glenns Ferry and King Hill Sunday. They attended church in Glenns Ferry and called on Mrs. Ernest Cartwright, a former resident of

Nu Acres. They spent Saturday night with Mr. and Mrs. Dan Bingaman of Boise. Mr. and Mrs. Paul Russell

of Twin Falls spent Feb. 20-22 with Mr. and Mrs. Gerald Russell. Saturday evening Mr. and at Ontario Sunday afternoon. Mrs. Earl Russell of Caldwell were guest of the Russells. Sunday Mr. and Mrs. Woodrow

Wilson were dinner guests of the Russells. Mrs. Ralph Cairns, David, Jimmy, and Mary Leigh of Vale spent Saturday with her mother, Mrs. Cecil Evans.

Mr. and Mrs. Elton Hunsucker went to Palouse, Wash., Feb. Feb. 19 with Honored Queen 17 on business. They visited Susan Kouns presiding. Feb. 22 at her parents, Mr. their daughter Mr. and Mrs. Mrs. Orma Cleaver was a

dinner guest Feb. 22 at the home of her daughter, Mr. and Mrs. Delbert Cleaver and family. nett of Farmington. Marvin Seuell and Bert Clea-Mr. and Mrs. George Gross- Grand Second Messenger, Mr. and Mrs. Carl McDRoe

day turkey dinner guests. Sat- Holmes. APPLE VALLEY urday, Mr. and Mrs. Grossman

the home of the Haggerty's in Boise APPLE VALLEY-Mr. and Mr. and Mrs. George Pul-Mrs. Fay Collins, Mr. and Mrs. Harrold Snider, Mrs. Clark Ol-Effie Murphy of Nyssa drove Grand Guardian of Oregon. sen of Nyssa attended the Preregion Eagles meeting held in

to the Owyhee Dam Feb. 18. Mr. and Mrs. Ed Meroney and her sister of Caldwell called

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Mr. and Mrs. Alden Bryan attended a meeting at the Dairyman's Coop Creamery in Caldwell Saturday It was held to see how many interested in producing Grade A milk for the creamery. The Bryans, Robert Shaw, and Robert A. Shaw also

his grandparents, Mr. and Mrs. attened the annual meeting of the Dairyman's Creamery Feb. 18 at the Caldwell Armory.

Mr. and Mrs. Mike McKague went to Boise Feb. 19. In the afternoon they called on Mr. and Mrs. Ed Lissonbee and Mrs. Eva Hughes.

Mrs. Ralph Baxter and Mrs. Effie Nielsen called on Mrs. Martha Besendorfer Feb. 18 who was ill in the Caldwell hospital. Miss Lela Fry of Denver

visited home Feb. 11-21. Mr. and Mrs. George Pulsipher and Lela drove to Black Canvon Dam Feb. 19 and took a picnic lunch. Lela called from Denver Feb. 21. she has returned to work. Mr. and Mrs. Ray Knaston,

formerly of Nu Acres, and now living at Caldwell, called on Mr. and Mrs. George Wilson Sat. evening.

Mr. and Mrs. Gary Heap and family of Emmett were Saturday dinner guests of their grandparents, Mr. and Mrs. Ralph Baxter.

Mr. and Mrs. Clark Strong attended the Elk's Crab Dinner



Job's Daughters of Bethel Mr. and Mrs. Ray Kimmes 33 held their regular meeting

Escorted and introduced Robert Smith and family. They were: Past Honored Queen had lunch Feb. 18 with her Joyce Jennings, of Bethel 33, cousin Mr. and Mrs. Jack Ben- Nyssa; Grand Bethel Parliamentarian, Marlene Jamison;

man of Ellensburg, Wash. Louise Wernick; Past Associate visited Feb. 20 - 23 with her Guardian for State of Oregon, parents, Mr. and Mrs. George Dr. L.A. Maulding; Guardian Pulsipher. Mrs. Gene Haggerty and Associate Guardian of and children of Boise were Sun- Bethel 33, Della and Bob

Job's Daughters plan to visit and Mrs. Pulsipher visited at Ontario Bethel March 4.

Susan Kouns was chosen as Jobie of the meeting.

The next meeting will be held sipher, Mrs. Buckley, and Mrs. March 5 with a visitation from

#### The Nyssa Gate City Journal, Nyssa, Oregon

Owyhee Dam had progressed to this point by March, 1932. Diversion tunnel delivered 14,500 second feet of water. Spillway located on the right abutment has a vertical spillway shaft which connects to the tunnel used for diversion during construction.

# New Camaro. Feb. 26th.

We've never announced a car at this time before. But then nobody's ever announced a car like this before.

#### Super Hugger

If it were an ordinary sportster, we'd have introluced it at the ordinary time.

Instead, we took the time to build a whole new amaro.

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Camaro Sport Coupe with RS equipment.

up to the Turbo-Jet 396 V8 that you can order.

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Because Camaro has a remarkable new suspension. And standard front disc brakes for a leech-like grip on the road.

New Camaro. The Super Hugger. Other sportsters always feared it might come to this.

And they were right. Only their timing was wrong.

Putting you first, keeps us first.

See it. At your **Chevrolet Sports Dept.** 

CHEVROLET

Two vertical inspection shafts begin at the respective among the group that attended bowling tournament at Van the 2,500-foot level and terminate at hatches in the crest Couver, Wash., over the weekroadway. Structural behavior equipment is monitored end.

Mrs. Nelva Dinger of Ontario visited Feb. 23 at the Woodrow The reservoir created by Owyhee Dam is approximate-Seuell home. ly 52 miles in length, with an area of 13,000 acres at

family. Miss Melinda Messer was a weekend guest of Patty Seuell at the Woodrow Seuell home. Circle. Mr. and Mrs. Earl Ingersoll of Livingston, Mont., were recent guests of Mr. and Mrs. Lloyd Adams. The Ingersolls are old friends of the Adams. Mr. and mrs. James Stephen

attended the Pamona Grange at Oregon Trail Hall Feb. 21. Mr. and Mrs. James Stephen visited Mr. George Coleman at

the Mercy Hospital in Nampa Feb. 22.

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TIRE TRUING

George Griffin and Mr. and Mrs. Sunday aftern Jim Favorel were guests of Mr. and Mrs. Gary Griffin.

February 21 Mr. and Mrs.

ver have the chicken pox.

La Grande Feb. 21-22.

February 22 visitors in the home of Mr. and Mrs. George Griffin were Mr. and Mrs. Lonnie Gorrell of Boise and Mr. and Mrs. Jim Favorel and

Mrs. Earl Boston was hostess Feb. 19 for the Susannah Mrs. Cora Rookstool was hos-

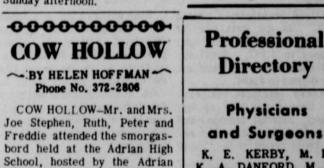
tess for the Merry Matrons PTA Club from Oregon Feb. 18.

La Verne Widmer, son of Mr. Mrs. Roy Rookstool won the and Mrs. Verne Widmer, left transister radio at the drawing Feb. 20 to visit relatives in for Eders Hardware in Nyssa on Salt Lake City and Ogden. Feb. 16.

Verne Widmer made a busi-Nancy Shippy of Weiser was ness trip to Boise Feb. 18. guest of her grandparents, Mr. and Mrs. Irvin Durfee, Mr. and Mrs. Earl Boston Feb. Linda and Keven spent the week-19-21. end in Rexburg visiting Mr. and

Mrs. Dwight Seward left by Mrs. Vance (Marie) Wooley, who bus Feb. 14 for Bend, Ore., are students there. where she visited Mr. and Mrs. Mr. and Mrs. Russell Howell Robert Jackson and helpedcare and Mr. and Mrs. Charlie McCoy for a new grandson, Brent Le- and daughter, Marcia visited Roy who was born Feb. 10. Mrs. Howell's brother, Mr. and He joins a sister, Marcy, and Mrs. Homer Cates of Boise weighed seven pounds and four Feb. 21. They also visited Mary ounces at birth. Dwight Sew- McCoy, daughter of the Charlie ard and Shirley and Gary went McCoys. She attends business to Bend Feb. 21 and brought Mrs. college in Boise. Seward home the 22.

Mr. and Mrs. Dale Morgan and family and Mrs. Helen Wilson and Don drove around the loop from here to McCall and back through Meadows having good roads.



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