

RADIO

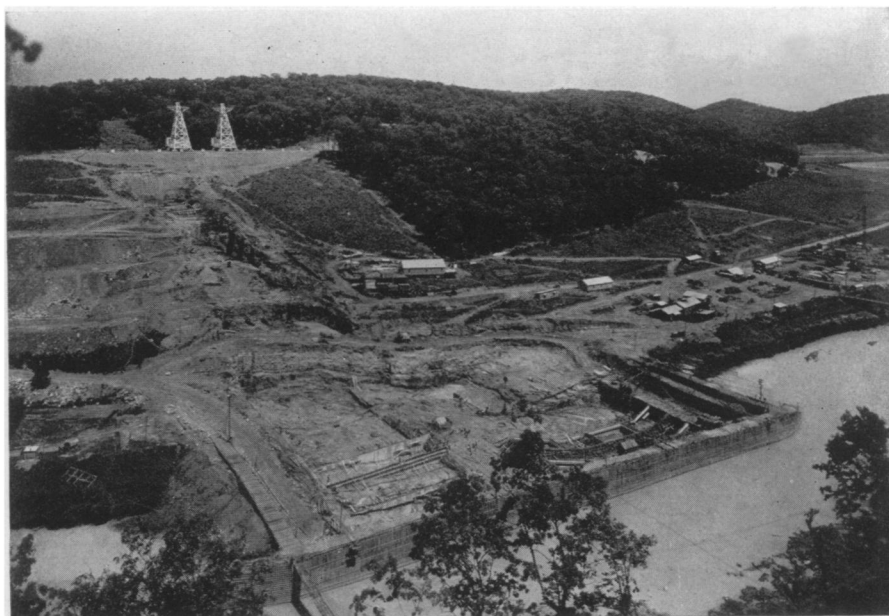
Lost Dorries Located By Radio Direction Finder

DANGER to fishermen in small dorries on the Grand Banks of drifting to sea in a fog can now be overcome by the use of small radio transmitting sets which signal the position of the scattered craft.

Each dory, as it sets out for fishing, carries a small 20-pound radio transmitter. If there is a dense fog at sea when the work is done the little craft starts sending out a code signal. The mother ship has aboard a radio direction finder and thus locates the line to each dory.

Tests made by Frank Blutworth of New York City, in cooperation with the fishing schooner *Mary M.*, show that dorries can be located for a distance up to six miles. The new development is reported in the current issue of *Electronics*.

Science News Letter, August 18, 1934



AS IT IS NOW

Scene of actual construction progress on Norris Dam on the Tennessee Valley power project.

ENGINEERING

World's Deepest Mine To Be Air Conditioned

WHAT will be the largest installation of air conditioning equipment in the world will soon be placed in the famous Robinson Deep Mine near Johannesburg, South Africa. The deepest point in the mine is three miles on an incline below the surface of the earth and measured vertically, 8,380 feet.

Contracts for the work have just been issued to the Carrier-Brunswick International, Inc., foreign division of the well known American air conditioning firm.

Miners working in the gold mines on the Rand gold belt must toil in temperatures of between 100 to 120 degrees Fahrenheit with a relative humidity of from 90 to 100 per cent. Extension of mining operations to still lower levels appears impossible if working conditions are not made more comfortable. Yet the high price of gold demands further extension of operations. Air conditioning, it is expected, will increase the efficiency of the miners, reduce loss of life due to heat stroke and reduce accidents due to the severe conditions of labor.

The high temperature in deep mines is the result of the rise in temperature

due to adiabatic compression caused by the increasing pressure of air as one goes to lower and lower levels. A temperature increase of five degrees for every 1,000 feet of mine depth is the average.

The excessive humidity arises from water seepage into the mine shafts and the mandatory wetting down of mine walls following every blasting operation or drilling where dust is raised. The quartz dust thrown into the air after these operations must be washed out to insure workable mining conditions.

The air conditioning equipment to be installed will comprise refrigerating apparatus having the cooling effect of 4,000,000 pounds of ice. The installation will exceed in cooling capacity the installation of the great R. C. A. Building in Radio City, New York. It will be the largest in the world.

Present plans call for the cooling plant on the surface which will pour cooled and dehumidified air into the deep mine at the rate of 400,000 cubic feet each minute. This air will be distributed by the present ventilating system of the mine.

Studies of working efficiency in atmospheres of high temperatures and various humidities indicate that only 30 per cent. as much work can be accomplished steadily in air at 100 degrees Fahrenheit and 100 per cent. relative humidity as in air at 100 degrees and 60 per cent. relative humidity. Again "it's not the heat but the humidity."

With a system cooling air and taking away some of its excessive water content a great gain in working efficiency should result. Moreover the washing down of the walls can be continued, for the excess humidity thus created will be rapidly dissipated by the system.

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U. S. Has 43 Per Cent. Of World's Radio Sets

THE United States not only leads the world in its number of radio sets, but nearly has more than all of Europe.

Statistics just compiled by the U. S. Department of Commerce give the radio census of the United States as 18,500,000 sets as compared to a world total of 42,540,239. Radio sets in Europe total 18,594,605.

The United States has 585 of the world's 1,497 medium wave broadcasting stations. This entirely eclipses Europe's number of 215 medium wave stations.

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