



WATER FOR OIL FIRES

The time-honored rule not to use water for oil fires is successfully broken by a new fire-fighting technique. On the left is a blazing tank of oil in a recent test and at the right is the same tank a few seconds after a strong spray of water was turned on it. The water-for-oil-fires technique requires special equipment. Don't throw on water the next time your automobile catches fire.

ceptible heart beats or other bodily processes.

During the first second of fall there was a horizontal velocity of about 175 feet per second, a vertical speed of about 16 feet per second and a tumbling motion of the body. Of all these motions he was aware only of his body's rotation.

At no time did the jumper feel dizziness, nausea or the "gone" feeling in the abdomen such as is common in elevators and airplanes. His eyes, unprotected from the high wind blast, were not irritated.

His one sensation had to do with skin sensibility and was a result of the increased air pressure on the lower surface of the body, Dr. Armstrong believes. He described it as a "very gentle, evenly distributed, generalized, superficial pressure on the surface of the body toward the earth."

Such a demonstration is expected to encourage airmen to leave disabled ships more readily and to delay the opening of the parachute until all danger of entangling with the plane is past.

Science News Letter, October 12, 1935

● RADIO

Tuesday, Oct. 15, 4:30 p. m., E.S.T.
WHEN THE DUCKS FLY SOUTH, by Dr. W. B. Bell, Chief, Division of Wild Life Research, Biological Survey.

Tuesday, Oct. 22, 4:30 p. m., E.S.T.
THE LURE OF ARCHAEOLOGY, by Dr. N. C. Nelson, Curator of Prehistoric Archaeology, American Museum of Natural History.

In the Science Service series of radio addresses given by eminent scientists over the Columbia Broadcasting System.

SEISMOLOGY

Second Earthquake in Month In North Japanese Region

NORTHERN Japan was visited by a second strong earthquake shock in less than a month, a half-hour after midnight, Eastern Standard Time, on the morning of Wednesday, Oct. 2, seismologists of the U. S. Coast and Geodetic Survey stated, after studying telegraphic reports gathered by Science Service. The preceding shock in the same region occurred on the morning of Monday, Sept. 11. (*SNL, Sept. 21, p. 190*)

The exact time of the quake was 12:33 a. m., and the approximate epicenter was in about 45 degrees north latitude, 146 degrees east longitude. The focus was about 30 miles beneath the earth's surface, according to calculations made by the Jesuit Seismological Association at St. Louis, Mo.

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PHYSICS

Oil Fires May Be Put Out By Fine Spray of Water

WATER is being used successfully to fight oil fires, the National Fire Protection Association of Boston reports.

The water-for-oil-fire method, which apparently breaks basic rule No. 1 of fire-fighting techniques, is illustrative of progress and research in the fire-extinguishing field, says the Association.

The new revolutionary oil fire-fighting method consists of a fine spray of water forcibly ejected from special nozzles installed in sprinkler pipes or on a hose. Secret of success seems to be that the spray droplets must be of a critical size; if too large, they splash the burning oil and spread the fire; if too small, they cannot extinguish the flames. So don't rush out and throw water on the next oil fire you see.

Although not yet submitted to fire underwriters' organizations for final testing and approval, installations have already been made for the protection of electrical oil transformer and high-pressure oil systems.

Water, in a suitable spray, affects an oil fire in many ways, the NFPA points out. First, a combustible liquid will continue to burn only if its temperature is high enough to keep on creating vapor, for it is the vapor and not the liquid that does the burning.

For some types of oil fires, the spray may act by keeping the liquid sufficiently cool to prevent the needed amount of vaporization. Water suitably applied may be able to lower the temperature of the liquid below the fire point, the critical temperature for the flames.

Water, too, can affect a combustible vapor, which will not burn below what is known as its ignition temperature. The tiny droplets of water entering the flame turn to steam and in doing this absorb heat from the flame. Thus the amount of heat from the flame is reduced and vaporization of more liquid, caused by the heat, is diminished.

Water vapor can also mix in with the combustible vapor and dilute it and diminish the flame intensity.

All these happenings probably occur in varying degrees when a water spray is directed on an oil fire. Possibly also there are others more obscure.

What fire equipment companies do know is that the water drops must be shot at the fire sufficiently hard to reach the blazing surface and not be stopped by the strong upward heat convection current in the flame. And yet the drops must not hit the blazing surface so hard that they splash the oil about.

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