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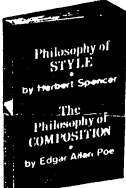


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## TECHNOLOGY

**New Rifle Can Kill Man Behind Concrete Wall**

➤ A NEW, CHEAPER rifle can kill a man "too dead," even if he is crouching behind a concrete wall eight inches thick.

Putting the rifle, called AR-18, on full automatic and firing two magazines of .223 ammunition can in seconds reduce a concrete wall four feet high to rubble.

The new rifle is a "kissing cousin" to the AR-15 (M-16), now used against Communists in Vietnam. Both weapons were developed by ArmaLite, Inc., Costa Mesa, Calif., and both rely on small but powerful high-speed cartridges.

"These rifles represent the first major change in caliber since World War II," Burt T. Miller, ArmaLite vice president and a retired U.S. Air Force lieutenant colonel, told SCIENCE SERVICE.

Although the .22 caliber high velocity cartridge has been used by sportsmen for some time, the AR-15 and the AR-18 are the first lighter weight military rifles using the smaller cartridge.

Both rifles weigh 6.3 pounds, compared to older standard military rifles that vary between nine and 11 pounds.

The primary difference between the AR-15 and -18 is that it costs half as much to make the AR-18—less complicated machinery is required and less expensive welding techniques are used, Col. Miller said.

• Science News Letter, 85:78 Feb. 1, 1964

## ASTROPHYSICS

**Presence of Hydroxyl To Chart Galaxy Oxygen**

➤ THE PRESENCE of part of the water molecule, called the hydroxyl radical, in space has been confirmed both by U.S. and Australian scientists.

Determining the characteristics of the radiation from hydroxyl radicals in space should help astronomers chart the distribution and abundance of oxygen as well as hydrogen throughout the Milky Way galaxy.

Hydroxyl was discovered in the space be-

tween the stars last October, using the technique of tuning in on radio waves combined with analysis of results by a computer. (See SNL. 84:323, Nov. 23, 1963.)

Now scientists at the Air Force Cambridge Research Laboratories, Bedford, Mass., and Ewen Knight Corporation, East Natick, Mass., and at the Commonwealth Scientific and Industrial Organization's radiophysics laboratory, Sydney, Australia, have confirmed the discovery. The detection was considered one of the outstanding accomplishments of U.S. observers during the last ten years.

The hydroxyl was found at a wavelength of 18 centimeters, the U.S. and Australian scientists reported in Nature, 201:279, 1964. Drs. H. I. Ewen and N. H. Dieter are the U.S. scientists; Drs. J. G. Bolton, K. J. van Damme, F. P. Gardner and B. J. Robinson are the Australians.

The discovery of the OH radical was further confirmed by Drs. H. F. Weaver and D. R. W. Williams of the Radio Astronomy Laboratory, University of California, Berkeley, in Nature, 201:380, 1964.

• Science News Letter, 85:78 Feb. 1, 1964

**Do You Know?**

The so-called gooney bird is an *albatross*,

*Trident* is a ten-year plan to revitalize the American fishing industry.

A *mile* in the jet age of air transport is only six seconds long.

Contrary to an old wives' tale, breast *cancer* is not common during pregnancy, cancer researchers believe.

The basic structural units of teeth enamel and *dentin* are tiny rock-hard mineral crystallites.

No other major academic field in 1962 had a rate of increase in doctoral output equal to that of *engineering*.

• Science News Letter, 85:78 Feb. 1, 1964

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