

GENERAL SCIENCE

Military Plans A-Mines

► AS POLITICAL LEADERS seek to hammer out a ban on the spread of nuclear weapons, military leaders divulge plans for an atomic scorched-earth policy to slow a possible invasion.

Possibly this paradox partially explains the difficulty in achieving an effective ban.

Recently, for example, it was reported that Western nuclear powers plan to approach the Soviet Union early in the new year to work out a weapons ban. Almost simultaneously it was reported that NATO now has plans to plant atomic mines to slow an invasion. Obviously, Russia has the same cabability.

Supreme Headquarters of the Allied Powers in Europe (SHAPE) devised the idea of placing atomic mines near the Iron Curtain if war appears likely. Top political authorities presumably would decide at what stage of an emergency the mines would be placed.

According to West German authorities, the mines are low yield devices with little radioactivity that would be used to gain time against invaders. The devices are not pressure triggered—that is they could not be touched off by an animal stepping on them. Their primary usage is seen in sealing off mountain passes or heavily forested areas.

Against this backdrop, British and United States leaders are reported to be increasingly perturbed by the prospect of gradual nuclear proliferation.

Red China's recent explosion and France's determination to have her own nuclear force have heightened Anglo-American interest in cooperating with Russia in a ban.

Certainly the nuclear club is no longer an exclusive fraternity. Aspiring nuclear scientists from all over the world can now find in their own public libraries most of the information they need to build a bomb. This, plus great reductions in the costs of equipment and raw materials, has removed most of the difficulties of A-bomb construction.

One physicist, Dr. Bernard T. Feld, a professor at the Massachusetts Institute of Technology, Cambridge, sees a new twist to the problem. It is not how many nations can make the bomb but how many can and will resist increasing pressures to do so.

Writing in the Bulletin of the Atomic Scientists (Dec.) Dr. Feld asks, "It is possible to discourage, to forestall, to impede or perhaps even to prevent further proliferation beyond the fifth country?" The United States, Britain, France, Russia and Red China, now have the bomb.

According to Dr. Feld, the impediments are partly economic, partly moral and political and partly due to lack of conviction that an A-bomb would do them any good. "However," he points out, "with each addition to the number of nuclear nations, or just with the passage of time, these impediments are being eroded and the inhibitions are becoming ever weaker."

Dr. Feld finds the fundamental problem

is that "the nuclear superpowers continue to rely on nuclear weapons as a major ingredient of their military forces, and the threat of the use of nuclear weapons remains one of the main components in the conduct of international relations."

The physicist sees the negotiation of a nuclear umbrella agreement as the most important advance against the spread of nuclear weapons.

But in the last analysis, Dr. Feld finds "the problem is one of restraint: self-restraint, on the part of the non-nuclear powers and the nuclear powers as well, and the development of those mutual restraints which come under the heading of international law and order."

• Science News Letter, 87:45 January 16, 1965

Nature Note

Tarantula!

► TARANTULA! Mere mention of these hairy spiders is enough to give many persons the shakes.

The name tarantula is loosely used to designate a number of large spiders found in Europe, South and Central America, and the southwestern United States.

The largest of these species, the Brazilian *Lasiodora*, has a body up to 3.5 inches long and a leg-span of up to 10 inches. This spider lives in trees in the jungle, and has been known to eat small birds—hence the name "bird spider," by which it is sometimes called.

Aphonopelma, the species most common to the American Southwest, is only about half the size of *Lasiodora*, but is still the largest spider found in the United States.

Despite its large size and fearsome reputation, it is a shy and retiring creature, and will not attack humans unless greatly provoked, if for no other reason than it is blind. It can even be tamed and kept as a pet.

Ordinarily, *Aphonopelma* lives in a burrow in the ground, and never strays far from its home except during the mating season, when the males will venture abroad in search of females. Immediately after mating, they depart hurriedly, for tarantulas are cannibalistic.

The female lays several hundred eggs per mating, and keeps them in a cocoon in her burrow. The young leave home a few days after hatching and set up their own homes nearby.

Only one or two of these hundreds will survive long enough in the cruel world to reach maturity, seven to ten years later. When left unmolested, however, tarantulas have been known to live a quarter-century. The bite of the tarantula is seldom if ever fatal to humans.

• Science News Letter, 87:45 January 16, 1965

FREE LIVE SEAHORSES

Guaranteed LIVE SEAHORSES sent Air Mail PPD. The educational hobby everyone enjoys, easy to keep in jar or bowl. FREE food, catalog and simple instructions for raising these fascinating unusual bizarre aquatic pets. MATED PAIR \$2.25—3 PAIR SPEC. Order TWO PAIR \$4.48 receive another PAIR FREE. (one address)

F. F. MARINE LIFE
P.O. Box 626-SL-68 DANIA, FLA.



HIGH VOLTAGE

New! Spark-gap system. Delivers power in short bursts of 10 k.w. or more. Coil Secondary is 40" long, spark discharges are over 12" long. SEND \$1.00 for Plans, theory, experiments, directions, and QUESTIONNAIRE.

Sorry: Due to high voltage and current involved, no orders will be filled unless accompanied by above questionnaire filled in to our satisfaction.

KITS: \$75

for the CLASSROOM
• St. Louis Motors
• Student Cell
• Inclined Plane
• Dissectable Leyden Jars
• Vacuum equipment,
gauges and a complete
line of low priced
scientific equipment.
SEND FOR FREE
CATALOG. Enclose
15¢ to cover mailing.



MORRIS and LEE

Dept. NL-18, 1685 Elmwood Ave., Buffalo 7, N.Y.

SURPLUS SATELLITE

99¢ each

BATTERIES



These Government surplus storage battery cells are nickel-cadmium sintered plate type used in satellites and missiles due to characteristics not possessed by any other battery, i.e.: Lifetime service, constant voltage during discharge, extreme temperature ranges, discharges in any position, compact, high discharge rates (up to 25 times ampere hour capacity), no corrosive fumes, not harmed by storage, overcharging and freezing.

CELLS ARE 1.25 V. EA. REGARDLESS OF TYPE. Replace with these cells to operate any equipment using dry or wet batteries where portability, dependability, and ruggedness are requisites. Select cells from list to best fit application.

NICKEL-CADMIUM PLASTIC CASED CELLS:

Esse Type	Ampere Hours	Dimensions Height Width Depth	Inches	Wt. Ozs.	Condi- (N) New (U) Used	Esse Price
AH4	4-6	6.00 2.00 .5	6	U*	\$.99	
AH4C	4-6	6.00 2.00 .5	6	U	1.49	
AH4R	4-6	6.00 2.00 .5	6	N	2.49	
AH6	6-10	4.00 2.12 .937	8	N	4.95	
AH20N	20-30	8.12 3.12 1.06	40	U*	4.95	
AH34N	30-40	9.38 3.12 1.38	52	U*	9.95	
AH60N	60-80	11.25 5.00 1.38	104	U	14.95	

*Types ending in 'N' are nylon cased; others are acrylic plastic.

NICKEL-CADMIUM STEEL CASED CELLS:

Type M-30, size 8.875 x 3 x 1.750, Wt. 3 1/2 lbs. 30 AH. Used* \$2.95, New \$5.95 per cell.
Aircraft 28 V. Battery made up with 20 of these cells
Used* \$60, New \$125. Overall size 10" x 10". Wt. approx. 60 lbs.

IRON-NICKEL:

Type B-4 Edison. 30 AH. 6 V. battery of 5 cells in hardwood rack, used—\$25. Overall size approx. 18" x 10" x 6". Approx. wt. 50 lbs.

CHARGER FOR 6 V. OR 12 V. BATTERIES. Charges at 1 amp. rate which is ideal for all types of cells above or auto batteries—\$4.99 ea.

Guarantee: All cells are guaranteed for satisfaction or your money back except cells marked with an asterisk (*) which are sent as received from used Government stocks and not checked before shipping.

SEND FOR FREE PAMPHLET.

ESSE RADIO COMPANY

368 S. Meridian St., Indianapolis, Indiana 46225