GENERAL SCIENCE

Science: World Solution

➤ A NEW APPROACH to international problems—entrusting scientific experts with finding solutions in limited, specified areas—is urged by the editor of the *Bulletin of the Atomic Scientists* (Oct.).

Dr. Eugene Rabinowitch of the University of Illinois said success of scientists at the Geneva conference in agreeing on methods of monitoring any future atomic or hydrogen bomb test ban pointed the way to this new approach. It would be based on the "supremacy of the common interests of mankind over specific political and strategic interests of individual nations or groups of nations."

The mutual problems of nations could be broken into "technically significant packages," Dr. Rabinowitch recommends, and the solution of each then assigned to scientific experts from the countries involved. Once an international problem has been formulated in scientifically significant terms, scientists from all countries should be able to find a common language and arrive at an agreed solution, despite their different political or ideological backgrounds. They did this in Geneva for detecting nuclear weapons explosions.

Whether the nations of the world are ready to accept such an approach is not known. It may be a "more radical innovation" than the leaders of the major nations are willing to undertake, despite the disastrous experience of traditional diplomacy in the last ten years.

Nevertheless, Dr. Rabinowitch argues, "no essential progress toward world security can now be made without adopting an entirely new approach to international problems."

He urges assignment of a "key role in the search for a way out of the deadlock to the [relatively] objective scientific and technological experts."

Dr. Rabinowitch bases his recommendations on the assumptions that the ultimate aims of all nations are ending the arms race and achieving maximum security from the outbreak of an unwanted war at every stage of this process.

His approach to the fundamental problems of the arms race and world security uses the criterion of what is technically the most feasible means to a common aim, instead of what satisfies national interests.

Science News Letter, November 8, 1958

ASTRONAUTICS

Draw Plans for First Moon Building

➤ PLANS HAVE been drawn for the first permanent building on the moon.

The proposed moon building will have living quarters for moon explorers and space pilots, laboratories for scientific research, maintenance shops for space vehicles and stations for earth-moon communications. It would be a cigar-shaped corrugated metal cylinder covered by a protective metal "meteorite shield."

The moon building was designed and engineered by the Wonder Building Corporation of America, Chicago, under the technical direction of Dr. John S. Rinehart, director of the Mining Research Laboratory of the Colorado School of Mines and former associate director of the Smithsonian Astrophysical Observatory, Cambridge, Mass.

Dr. Rinehart said that because of the present lack of knowledge and great divergence of opinion concerning the moon's surface, the moon building was designed for the worst condition anticipated. This would be a sea of dust upon which the building would float, anchored by heavy weights suspended by cables from the structure. If the moon's surface proves to be sufficiently solid, it could then provide normal support.

If built to Dr. Rinehart's specifications, the moon building would be 340 feet long, 160 feet wide and 65 feet high. An air lock and plastic observation bubble would make it 520 feet long. It would be made of aluminum alloys that combine high strength and low weight with ease of fabrication. Aluminum also provides a good reflecting surface to aid in the cooling problem.

Above and separated from the roof would be a slightly curved, umbrella-shaped meteorite shield to protect the building from the unceasing rain of interplanetary dust.

Any building constructed on the moon, Dr. Rinehart noted, must be internally pressurized with an atmosphere in which humans can survive since the moon has no atmospheric pressure. It must also be able to withstand extreme temperature changes, ranging from 214 degrees Fahrenheit at lunar midday to 243 degrees below zero Fahrenheit at lunar midnight.

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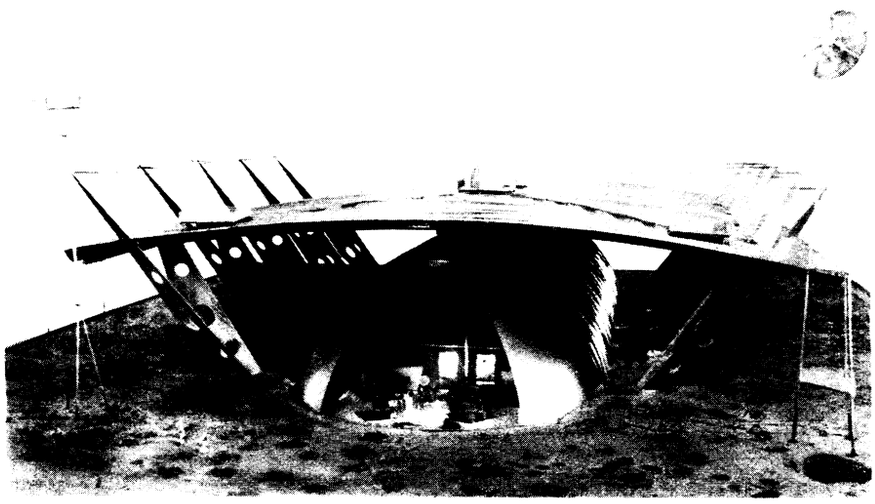

MOON HOUSE—A detailed five-by-six-foot scale model of the moon building designed and engineered under the direction of Dr. John S. Rinehart shows the plastic observation bubble and the slightly curved meteorite shield above the roof. It would be constructed of aluminum alloys.

METALLURGY

New Titanium Alloy Withstands High Heats

➤ A NEW titanium alloy, which exhibits strength properties exceeding most steels, can withstand extremely high temperatures during long periods of time.

The alloy has long-time strength properties at 1,100 degrees Fahrenheit and short-time strength properties up to 1,500 degrees Fahrenheit.

Named MST 881, it was developed by Mallory-Sharon Metals Corporation of Niles, Ohio. The designation was arrived at from the percentages of its alloying elements; eight percent aluminum, eight percent zirconium, and one percent tantalum and columbium combined.

The new alloy is expected to expand the use of titanium in construction of Mach 3 jet engines, missiles, and in manned aircraft. Current titanium alloys lose strengths rapidly at prolonged temperatures of more than 800 degrees Fahrenheit.

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ENGINEERING

Machine Automatically Tests Missile Mechanism

➤ A MACHINE tests in minutes whether the electrical, hydraulic and pneumatic systems of guided missiles and airplanes are ready for take-off.

ASCAT, which means analog self-checking automatic tester, developed by Bell Aircraft Corporation, allows one technician to do in two minutes the operations that formerly required a crew of ten working more than an hour.

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