

Ride on a Cushion of Air

This modern "magic carpet" flies 18 inches off the ground on a cushion of air and looks like a cross between a boat and an airplane—By Elizabeth Hall

See Front Cover

➤ FASTENING MY SEAT belt I settled back, waiting to find out how women of the future will enjoy traveling in strange machines, called hovercraft, that ride on cushions of air.

The operator, Walter McMurry, of Bell Aerosystems Company, Buffalo, N. Y., who has taken the extraordinary craft over ice floes in Lake Erie and through the marshes of the Everglades, pushed the throttle between the bucket seats to start its aircraft engine and the ear-splitting propeller in the rear.

He pushed another lever on the left to start a second engine and a huge lift fan beneath us. The fan drew air downward and up under three circular cells, pressurizing the cells and creating a cushion of air. We were off!

To spectators, this unusual craft, which has the hull of a boat and the tail of an airplane, rising on its air cushion looks like a lady in a hoop skirt rising from a chair. There is a small flourish of "petticoats" as the plastic curtain surrounding the three cells, each eight feet in diameter, unfolds with a spray of water or dust.

As the first woman ever to ride in the "Carabao" (pronounced cara-bough), developed by Textron's Bell Aerosystems Company, I had reservations beforehand about the smoothness of my ride. But it was wonderful!

Except for looking through the windshield, it was impossible to tell when we left the muddy field at Bolling Air Force Base, Washington, D. C., and began to "fly" at an altitude of almost two feet over the

river. The Carabao is seen on this week's front cover as it "flies" over the Potomac.

There was no friction between the machine and the surface, and we soon were speeding over the Potomac River at 60 miles an hour, past all conventional boats. Even the seagulls were surprised at the apparition, which might have been a prehistoric monster or something from another planet.

We passed over chunks of ice and partly-submerged logs with scarcely a bump, although we did rock slightly when we skimmed over the wake of another boat.

There is no steering wheel since the operator guides the machine with two rudder pedals under the dashboard. The pedals control twin rudders on either side of the propeller in the tail section and are used for braking and maneuvering.

Even with the rudders, the tail section spins around and the craft skids slightly as it makes a 90 degree turn, similar to the tiny cars that "crack the whip" at carnivals.

Instead of riding up onto the ground, when we stopped by the dock, Mr. McMurry turned off the fan, collapsing the cushion, and the craft settled down in the water folding its skirts beneath.

Although it is almost 19 feet long and 10 feet tall, its operating width of 16 feet can be cut in order to tow it on conventional roads. The side extensions of two of the huge cells on which it rests can be folded up to make it 9.7 feet wide. The craft is named after the huge water buffalo of the Philippines.

A wide variety of jobs is foreseen for the Carabao. The military sees it, among other things, as a valuable means of air-sea rescue and travel on the frozen tundra of Alaska.

It is being considered as an amphibious means of aquatic plant control in the Florida Everglades. Oilmen think of it as a rapid means for travel to and from offshore drilling rigs and inland wells in marshes.

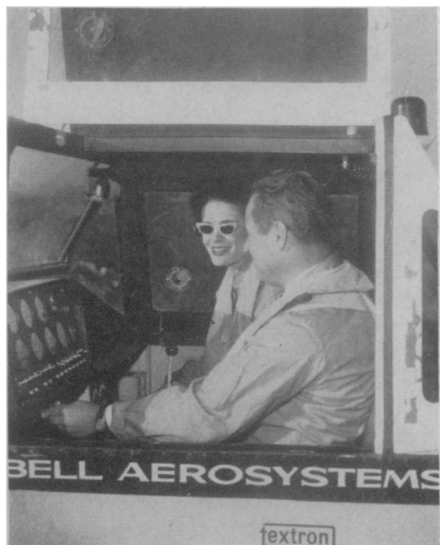
Other countries interested in the machine at this time are Australia and the Philippines. Australians find it a possible answer to traveling over the rough, barren flatlands to check on far-flung herds of cattle and unmanned windmills.

Groups in the Philippines are considering the machine for ship-to-shore transport over harbors filled with sunken World War II vessels. Bell Aerosystems Company has signed a licensing agreement with Westland Aircraft Ltd. of Great Britain to manufacture hovercraft in the United States. A U.S. patent on the device is expected to be issued in several months.

But do not be in too big a hurry to buy one. At present, only the one "magic carpet" exists. It was developed experimentally by Bell for military and commercial applications.

No special license is required to drive the machine, although it may need to be certificated by the Coast Guard.

• Science News Letter, 85:91 Feb. 8, 1964



Tom Lennon

IN THE "CARABAO"—Walter McMurry of Bell Aerosystems Company shows Elizabeth Hall how to maneuver the Carabao.

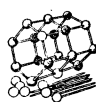
SCIENCE BARGAINS

Order by Stock No.—send check or M.O. shipment same day received—satisfaction or money back.

NEW! SCIENCE FAIR PROJECT KITS



Edmund Kits are carefully planned to give any boy or girl the fun and excitement of discovering science facts. Such carefully planned projects can lead the student to awards or scholarships. Adults too will find them an excellent introduction to the various fields of science. Write for Free Bulletin 47-Q "Your Science Project" covering all phases of Science Fair projects.



MOLECULE KIT—This low-priced kit can be used to make many molecular and crystal models. Consists of 50 sponge-rubber balls, 1 inch in diameter and 50 wooden sticks $6'' \times \frac{1}{4}''$ that can be cut to any desired length. Balls may be painted, after assembly, to standard molecular colors. With this one kit, molecules with up to 50 atoms can be made. Several kits can be used to make up more complex models.

Stock No. 30,413-Q.....\$2.50 Postpaid



BUILD A SOLAR ENERGY FURNACE

A fascinating new field. Build your own Solar Furnace for experimentation—many practical uses. Easy! Inexpensive! Use scrapwood! We furnish instructions. This sun powered furnace will generate terrific heat—2000° to 3000°. Fuses enamel to metal. Sets paper aflame in seconds. Use our Fresnel Lens—14" diameter . . . f.l. 14".

Stock No. 70,130-Q . . . Fresnel Lens . . . \$6.00 Postpd.
11" Sq. Fresnel Lens F.L. 19". Slight 2nd.

Stock No. 70,533-Q.....\$6.00 Postpd.



SCIENCE TREASURE CHESTS

For Boys—Girls—Adults!

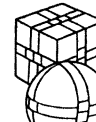
Science Treasure Chest—Extra-powerful magnets, polarizing filters, compass, one-way-mirror film, prism, diffraction grating and lots of other items for hundreds of thrilling experiments, plus a Ten-Lens Kit for making telescopes, microscopes, etc. Full instructions included.

Stock No. 70,342-Q.....\$5.00 Postpaid

Science Treasure Chest Deluxe—Everything in Chest above plus exciting additional items for more advanced experiments including crystal-growing kit, electric motor, molecular models set, first-surface mirrors, and lots more.

Stock No. 70,343-Q.....\$10.00 Postpaid

WOODEN SOLID PUZZLES



12 Different puzzles that will stimulate your ability to think and reason. Here is a fascinating assortment of wood puzzles that will provide hours of pleasure. Twelve different puzzles, animals and geometric forms to take apart and reassemble, give a chance for all the family, young or old, to test skill, patience and, best of all, to stimulate ability to think and reason while having lots of fun. Order yours now.

Stock No. 70,205-Q.....\$3.00 Ppd.



CRYSTAL-GROWING KIT

Do a crystallography project illustrated with large beautiful crystals you grow yourself. Kit includes the book "Crystals and Crystal Growing" and a generous supply of the chemicals you need to grow large display crystals of potassium aluminum sulfate (clear), potassium sulfate (purple), potassium sodium tartrate (clear), nickel sulfate hexahydrate (blue green) or heptahydrate (green), potassium ferricyanide (red), and copper acetate (blue green).

Stock No. 70,338-Q.....\$9.50 Postpaid



Terrific Buy! American Model

OPAQUE PROJECTOR

Projects illustration up to 3" X 3 1/2" and enlarges them to 35" X 30" if screen is 6 1/2 ft. from projector; larger pictures if screen is further away. No film or negatives needed. Projects charts, diagrams, pictures, photos, lettering in full color or black-and-white. Operates on 115 volts, A.C. current. . . . 6-ft. extension cord and plug included. Operates on 60 watt bulb, not included. Size 12" X 8" X 4 1/2" wide. Weight 1 lb. 2 ozs. Plastic case.

Stock No. 70,199-Q.....\$7.95 Postpaid

TEACHERS! Write for Educational Catalog Q-2
Edmund Scientific Co., Barrington, N. J.

MAIL COUPON for FREE CATALOG "Q"

Completely new & enlarged 148 pages. Nearly 4000 BARGAINS. EDMUND SCIENTIFIC CO. Barrington, New Jersey Please Rush Free Catalog "Q"

Name.....
Address.....
City.....Zone..State.....

