

Joseph T. Kummer of the FoMoCo battery. It could be 60% recharged in about two hours, and completely recharged "easily" overnight, without the need for special, heavy-duty wiring.

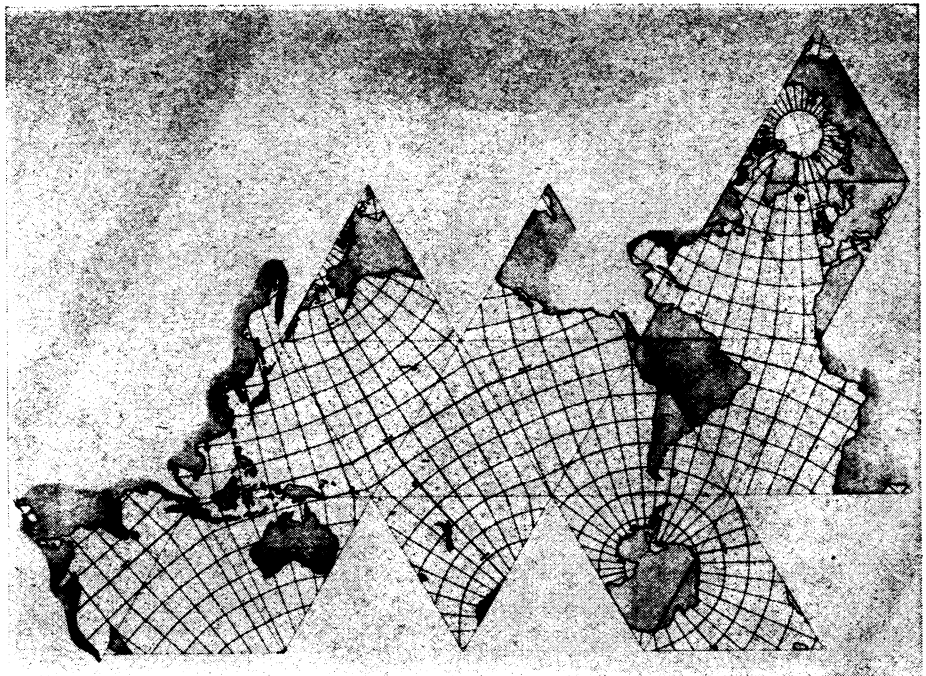
There have been electric cars before, some of which are now eagerly-sought antiques. Others have been tested from time to time by various electric and power companies, to whom they were lent for the purpose by the manufacturers. All, however, have been severely limited in performance by their batteries.

Two prototypes are now being built by Ford of England, one of which will remain there while the other is shipped to the U.S. for evaluation. Intended as low-speed, limited-range vehicles for either suburban errand-running or downtown operation in crowded cities, the vehicles will be little more than hopped-up golf carts.

Since they are intended primarily to test the motor and vehicle concepts, rather than new power sources, they will first be fitted with conventional lead-acid batteries. Not until late 1968 will large enough sodium-sulfur batteries be available.

About six feet long and four feet wide, the cars will hold two adults and two children.

They should be running by next spring.



Lockheed-California Company

"FORECAST" MAP—A new map projection that "flattens" the earth and its oceans with minimum distortion will be used for wave forecasting throughout the world. It accurately converts the globe into 20 triangular map segments joined together in this icosahedral-gnomonic projection. →

TECHNOLOGY

New 'Window' for Planes

See Front Cover

➤ SOME DAY a pilot may fly from New York to Los Angeles without ever looking through the windshield of his plane.

Instead he will rely on the "eyes" of a tiny computer that generates synthetic pictures of the ground, clouds and other objects on a television screen in front of him.

The computer determines how these objects should look to the pilot on the basis of altitude, speed and attitude of the plane in the air.

Designed by General Electric Company's Electronics Laboratory in Syracuse, N.Y., the computed display system is now being used on the ground to train astronauts and pilots at the Houston Manned Space Flight Center and the U.S. Navy Missile Center at Pt. Magu, Calif.

As the astronaut or pilot moves the control stick in his ground training vehicle, he watches the television screen. Objects grow larger as he "flies" closer, the ground falls away as he "takes off" or the deck of an aircraft carrier looms ahead as he prepares to "land." He can even crash a few times to get the feel of it.

The picture, although composed of

computer-made symbols, is in the same perspective as if the pilot were looking out the window. It changes constantly as the plane moves.

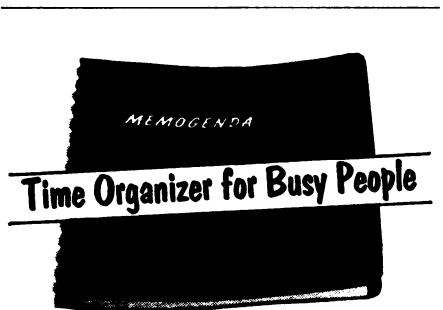
The symbols can give the pilot additional information, such as direction. Clouds, for example, may be represented as arrows pointing north. By checking the position of the arrows on the screen, the pilot learns his direction.

In addition to training pilots and astronauts and simulating flight, the computed display systems can be applied to the design and evaluation of new aircraft and spacecraft.

The National Aeronautics and Space Administration uses its display to evaluate new space guidance and control systems, while the Navy's is used to investigate the control and information requirements of future high performance aircraft.

In the cover photograph, the clouds are seen as airplane-shaped symbols headed toward the viewer. The "L's" at the bottom represent land and also help the pilot judge the direction in which the airplane is moving. The black box to the left is the computer's representation of the aircraft carrier on which the plane will "land."

(Cover photograph by General Electric.)



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