GETTING AROUND

Jack Cox

Taking Off: An ultralight plane rally drew 450,000 people in a week last summer.

GO-CARTS IN THE SKY

"I think that within the next five years it will become common to see people drive out into the country, unstrap an airplane from the car and take off for a cruise."

Dave Gustafson, spokesman for a recreational aircraft company called Weedhopper of Utah, speaks for many in the infant ultralight-aircraft industry when he makes that prediction.

The small planes manufactured by Weedhopper and others have open cockpits, weigh less than 200 pounds, are powered by small two-cycle engines and, importantly, are not yet regulated by the Federal Aviation Administration. Anyone with about $3,500 can buy an ultralight plane, find a runway (a field will do) and take off. Which is just what sales have been doing. One dealer in Texas is selling 25 to 30 planes a week.

Where will all these weekend pilots fly? Berwick, Maine, for one, where Bob Ring is building what he believes is the nation's first flight park, a sort of aerial go-cart track where ultralight flyers can buzz around at 500 feet without facing Piper Cubs or 747's. Ring, a pilot for American Airlines, cleared a 400-foot-long takeoff and landing pad out of Maine forest. He plans to offer basic flight training to all comers, an important step for a sport that involves unlicensed airplane pilots.

"Thus far flight parks have been limited to a few motel owners in open country who attract the ultralights on an informal basis," says Gustafson. "But with sales going the way they are, plans are being made all over the country to set up centers for the ultralights."

DON'T DIG THESE CANALS

Canals are by far the cheapest, most energy-efficient way to move bulk cargo, such as coal and iron ore. Unfortunately, canals are also very expensive to dig. Now an engineer claims to have come up with a way to cut construction costs in half. Instead of moving earth to make room for new waterways, he suggests just letting the water flow on top of the ground, held in by a mammoth, elongated bathtub.

Ernst Frankel, professor of marine systems at the Massachusetts Institute of Technology, has already developed a short-distance version of his idea, now being used to shuttle heavy tankers around shipyards in Europe and Japan. "We've found that the method is inexpensive and flexible," he says. It consists of erecting two 15-foot walls of five-inch steel or reinforced concrete, buttressing each side with sand held in place by a second wall, lining the interior with plastic sheeting, then flooding it with water. Frankel's construction costs are the same whether it's 30 feet wide or 300.

TWO ON THE ENTRY RAMP

Once upon a time, an economy car meant a Volkswagen Bug. Now, however, an array of fuel-savers beckons to the motorist. Here are two developments perhaps only a few years down the road:

Energy-conscious motorists who want that Mercedes image will get a charge out of the Electric Auto Corporation's Silver Volt *(bottom)* when it rolls onto the market. It's a luxury electric car with a range of 100 miles, a top speed of 74 miles per hour and a battery that recharges in 45 minutes. It comes with all the trimmings, and will probably cost about $25,000.

By mid-decade, people who place conservation over comfort (but aren't ready to go electric) may be zipping around in one of the various commuter cars now on the drawing boards of American auto makers. For instance, General Motors' version, pictured here, will seat two, reach a speed of 93 miles per hour and get 60 miles to the gallon on the highway. The "deluxe" model will have such fancy features as air-conditioning and automatic transmission.

FILL 'ER UP WITH TAP WATER

A different kind of electric car battery—one that runs on air, water and aluminum—holds promise for

GETTING AROUND

matching the acceleration, speed and range capabilities of today's engines. Best of all, a car powered by such a battery wouldn't need to be taken off the road for recharging.

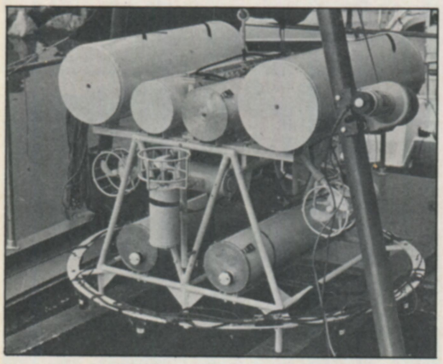
Scientists at California's Lawrence Livermore National Laboratory say they have successfully tested one cell of the planned 60-cell battery, which works through the submersion of aluminum plates in a solution of sodium hydroxide. When air is pumped in, a chemical reaction produces electricity and a powdery byproduct. Refueling would simply mean adding fresh water and removing the powder every 250 miles, and replacing the plates every 1,000 miles.

The inventors say that gasoline will have to cost more than two dollars a gallon for the battery to be competitive. But it may look pretty good by 1989, when a full-scale prototype is expected to be on the road.

UNDERWATER AUTONOMY

Computers can do all sorts of jobs pretty well, but can they swim?

Not too well as of yet, but there are people working to change that. Researchers at the University of New Hampshire are testing a self-propelled, driverless vehicle with computer on board that they expect will one day inspect and test underwater structures. Thus far they have gotten their machine, which is electrically powered by propellers, to submerge in Lake Winnipesaukee and follow a convoluted pipeline laid on the lake bed. The next test, which they hope to carry out this year, will be to drop their "autonomous vehicle" into the lake and have it find and swim through a three-dimensional structure, carry out an inspection assignment and return to the ship. Ocean testing should begin in 1982.



Funny, It Doesn't Look Like a Robot: But underwater, it acts like one.

Says Dick Blidberg, project manager: "This is where we get into the really exciting developments—where an instrument can sense its environment and modify its action accordingly. We're conducting a three- to five-year program to prove that this can be done. Meanwhile, we're in very close contact with many of the ocean-industry people, oil companies and the like, who may want to pick up what we are developing."

ONE MORE FOR THE ROAD

The toy business, like any other, depends on its ability to spot (or create) trends, and a company called Tyco Industries, of Moorestown, New Jersey, is convinced that Now Is The Time for little electric trucks on little electrified tracks.

So Tyco is creating an electric truck line, which will come in five sizes—from the two-station Big City Trucking set to the five-station Coast-to-Coast layout.

Whatever happened to electric trains? They're still around, to be sure, but Tyco believes that their day in the roundhouse of American childhood is over. Just as Lionel fascinated their parents, Smokey and the Bandit are the obsessions of today's kids.

Banking on this perceived trend, Tyco's new "U.S. 1 Electric Trucking" will be endlessly expandable. Acquisitive tykes can shift through a whole catalogue of roadside attractions and accessories.

WALKING ON AIR

A lot of folks around Mountain View, California, are treading lightly—thanks to a local inventor's unique new line of footwear.

George Cole's brainchild is the world's first inflatable shoe. His moccasins, oxfords and running shoes have air pockets under the heel and ball of the foot. The pockets are inflated through a valve at the side of the sole. Pump and pressure gauge are included.

Monko Algora

Podiatrists have not yet rendered a formal verdict, but Cole has numerous testimonials to the comfort of his shoes from dentists, hairdressers, waitresses and others who spend lots of time on their feet.

SEEING THROUGH THE SOUP

Driving through a fog is dangerous. Which is to say, driving in England is dangerous much of the time. But there's hope on the hazy horizon. Researchers at Lancaster University are developing a device that may provide safer passage through the thick English atmosphere—radar for cars.

M. J. Lazarus, director of the research project, says that a radar unit would be installed on a car's front bumper, like a third headlight. The radar would monitor an area 100 yards long and two yards wide directly in front of the car, and trigger a sound and light alarm to warn the driver of upcoming hazards. The cost of the system should be about $500.

Car radar does have a drawback: It is effective only on the straightaway. But Lazarus points out that the most gruesome pileups take place on straight, foggy stretches of highway.

ON THE HORIZON

• A race to be the cheapest. The Future Fuels Challenge Rally will be run from Los Angeles to Rochester this September. Only vehicles using nonfossil fuels are eligible, and the winner will not necessarily be first over the finish line: Lowest fuel cost will take the $25,000 prize. ■