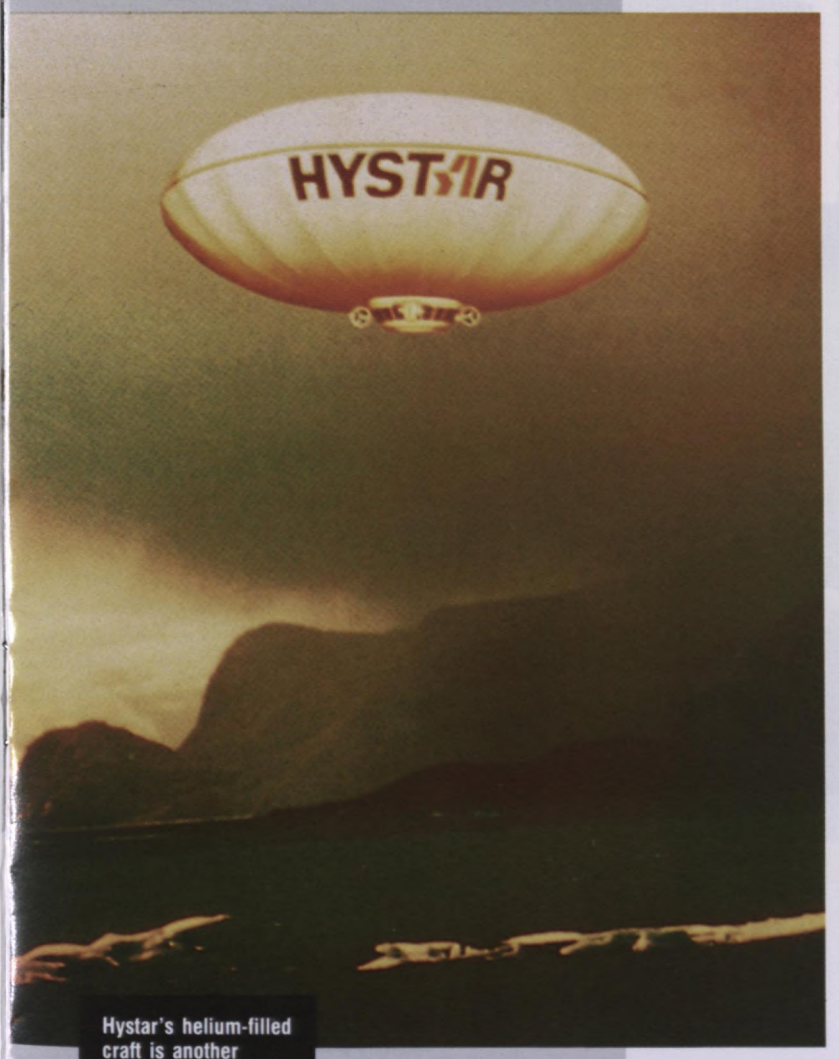
The Lazair "ultra-light," which has a flight endurance of four hours, is sold in kit form by Ultraflight Sales Limited. (Photo courtesy of Ultraflight Manufacturing Ltd.)



Hystar's helium-filled craft is another modern-day dirigible that would be economical for hauling large, heavy goods.

Dirigibles

Some people will remember the airship disaster on May 6, 1937, when the German dirigible *Hindenburg* ignited and crashed to the ground in a fireball at Lakehurst, New Jersey, U.S.A. That tragedy might never have happened if the use of a safer gas — helium — had been considered earlier. John Cunningham McLennan, a Canadian, suggested the use of helium for airships and found a way to produce it cheaply.

Transporting resources economically from remote and inaccessible areas has always been a priority for Canadian engineers and designers. The result is the development of a new generation of dirigible like the *Van Dusen* and *Hystar* which can haul up to 80 tonnes — four times the payload of the largest helicopter — and do it for a tenth of the cost.

The Van Dusen looks like a giant manta ray floating through the air, its upswept wings cradling an 18-storey sphere. To help it stay up, even when carrying heavy loads, the sphere slowly spins backwards around an axle that runs between its two small engines. Air passing over the spinning sphere helps lift it (much like a golf ball), while maintaining the cabin at the base of the sphere in a stable, fixed position.

The Hystar is a donut-shaped craft filled with helium. It has thrusters in its central core so that it can move up and down, and even hover like a helicopter. The passengers sit in a gondola underneath the craft.

Flight simulation

Aircraft simulators have all but replaced conventional methods for training pilots. CAE Electronics Ltd. *flight simulators* use versatile modular components to suit the needs of individual customers. These simulators provide a setting so realistic that government licensing authorities consider one hour of flight training on a simulator equivalent to an hour in a real aircraft. Canada now supplies 40 per cent of the commercial flight simulators in the world.