

Canada still taking the

There is a story that is told in Canada about the young visitor from the UK who was planning his first visit. He would be landing in Toronto, but his parents in London were worried that he would not be able to find his way around on his own. They wired a relative in Vancouver and asked her to meet his plane. A day later, they received a wire back, saying, 'You meet him. You're nearer.'

Unless they have visited Canada, few people in the UK realise just how big the country is. They may know that it is the second biggest country in the world. But they don't have a *feel* for what that really means.

Canadians do. They are also aware that with a population of 25 million, they live in one of the least populated countries in the world.

Because of this, Canada has always regarded transportation and communications as being extremely important in terms of linking the various parts of the country together. For this reason, it has developed a world reputation as a leader in these fields.

In the past, *Canada Today* has reported on a number of Canadian developments in transportation and communications. In this issue, we report on some of the latest ones — to give an indication of the range of activities in which Canada is still taking the lead.

Microwave landing system promises safer flights

Range comparison of microwave and instrument landing systems
1. MLS proportional coverage
2. ILS proportional coverage

Micronav Limited of Sydney, Nova Scotia, is the Canadian entry in the upcoming multi-billion-dollar world market for microwave landing system (MLS) airport equipment.

MLS has been adopted by the International Civil Aviation Organisation as the future electronic guidance aid to bring aircraft to safe landings in bad weather. Over the next ten years, all of the world's airports will replace their earlier-generation instrument landing system (ILS) guidance equipment with the new MLS units.

The microwave signals offer much higher accuracy than today's ILS, and provide a number of other major benefits to pilots, who will use special receivers in their aircraft.

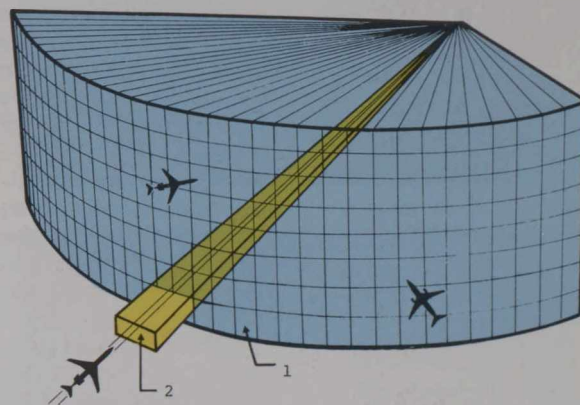
Canada is in the forefront of the international conversion to MLS. The Department of Transport has stated its intention to install over 150 systems at airports across Canada. The first of these will be installed next year at the Toronto Island Airport, to guide commuter de Havilland Dash-7 and Dash-8 STOL aircraft.

The new MLS, using the latest electronic technology and linked to computers aboard aircraft, will greatly extend the use of airspace around airports by establishing several approach paths for landing instead of a single ILS path.

The range of the new system is 70 nautical miles wide (to an altitude of more than 6000 metres), out to a distance of 20 nautical miles. This compares with a range of 27 nautical miles for the ILS.

The basic MLS elements are an approach azimuth antenna, an approach elevation antenna and distance measuring equipment. They provide information on the angle of an aircraft's elevation with the runway, as well as continuous data on distance from touchdown.

This information is transmitted to computers on the airplane, allowing the pilot to use curved,



segmented and high-angle approaches to landing, in contrast to the low angle, straight-in approach of the ILS.

Another benefit is that below 60 metres, ILS signals are subject to ghost signals reflected from buildings or other large objects, whereas the microwave signal is not affected by geography and it cannot be bent by an obstruction. It is also less sensitive to environmental conditions, which can disturb ILS signals.

A test MLS unit has been installed at Ottawa International Airport to gain technical and operating experience. An MLS system is also operating at Jasper, Alberta, to provide accurate aircraft guidance in mountainous terrain. In addition, five private MLS installations are under consideration by companies and provincial governments for use in remote airports.

Installation of the units in Canada is being undertaken along with the federal government's new radar modernisation program, which will eventually lead to the pre-programming of an aircraft's flight from take-off to landing with many stages of the flight under the supervision of computers.