

IN SEARCH OF A SPACE POLICY FOR CANADA

The government will soon have some important decisions to make on the future of our civilian and military space programmes.

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CANADA IS CURRENTLY EXPERIENCING ITS second space age revolution which, thanks to an array of space programmes – military and civilian, on-going or at the development stage – will propel it into the twenty-first century. This revolution will enhance civilian and military communications, remote sensing and surveillance of Canadian territory, as well as advancing space sciences in the economic, technological and medical fields.

Ranking eighth among the space powers of the world, Canada will have to make important choices at the beginning of the next century. Civilian space activities in this country will reach a plateau a few years from now, while a growing part of the country's space budget could well be allocated to military activities. The militarization of the space programme remains a possibility, albeit a remote one, and is subject to the vagaries of international politics.

By the year 2000, the government will have allocated some three billion dollars to the civilian programme. Last March, it created the Canadian Space Agency to coordinate all civilian space activities, which until then had been scattered among a half-dozen departments and research institutes. The Department of National Defence (DND) runs a small military space programme, whose projects are nevertheless extremely ambitious; this programme will grow considerably if the military gets what it wants.

Since the launching of Alouette in 1962, Canada's contribution to space activities has mostly been of a civilian nature. The prosperous 1960s and 1970s, when eight satellites were put into orbit and the space industry was growing at a rate of fifty percent a year, was followed by a period of stagnation. The Canadian civilian programme regained some vitality in the late 1980s with the launching of three major projects and a handful of others of lesser importance. According to a major plan developed by the Mulroney government in 1986, Ottawa will spend more than \$3 billion between now and the year 2000 to take part in the US space station programme, in a mobile telecommunications system (M-SAT) and in a remote sensing satellite using a synthetic aperture radar (RADARSAT) which will allow

transmission and reception of signals all over the planet, in cloudy conditions or in the dark. The government's plan includes several other projects to be implemented with the participation of Europe, Japan, the United States and the Soviet Union.

During the 1980s, Canada has spent on average some \$160 million a year on civilian space activities; this amount should reach \$230 million in the 1990s. (We trail far behind France, \$1 billion; Japan, \$900 million; and the United States, \$10 billion.) According to the Ministry of State for Science and Technology, thirty-seven percent of the civilian programme budget will be allocated to the space station, thirty-five percent to RADARSAT, ten percent to M-SAT, and eighteen percent to the other projects.

CENTRAL TO THE CIVILIAN PROGRAMME IS CANADA's participation in the US space station, a project begun by President Reagan in 1984. Canada, Japan and the European Space Agency's members were all invited to take part in this endeavour which will culminate, between 1995 and 1998, with the deployment in space of a permanent base that will be managed by eight astronauts. After three years of negotiation, Ottawa agreed, in April 1988, to allocate \$1.2 billion over a fifteen-year period to a programme whose total costs should reach \$40 billion; we will build the station's mobile maintenance and repair centre. This centre will be equipped with a new Canadarm, previously installed on American space shuttles, which will be used to handle the satellites. Moreover, a Canadian astronaut will work for six months every second year on board the station.

Last year, all the partners in the space station signed a memorandum of understanding spelling out the terms of their participation; an agreement whose negotiations were hindered by conditions specified by the Americans regarding the military elements of the stations' functions. We will come back to this later.

While the civilian space programme is well known and widely accepted by the Canadian population, the military space activities of the country remain obscure. In fact, they are still very much in their infancy. All that should change in a few years when DND completes

its numerous studies in the fields of communications, surveillance and early warning. The government will then have to free up significant amounts of money to give the country a true military space programme.

Long neglected in favour of civilian activities, the military use of space became a concern to the government at the beginning of the 1980s. Yet, the Canadian military is not discovering space: it is rediscovering it. John Kirton, of the University of Toronto, has written that at the end of the 1950s, the military played a key role in the creation of the Canadian space programme. The Alouette satellite was built at the Defence Communications Research Centre. And until 1966, according to Kirton, Canadian space projects administered by the military represented forty-one percent of total Canadian expenditures in the field.

After a period where, for political and commercial reasons, the space programme was "demilitarized," interest in the military side has resurfaced. Taking up ideas expressed by the Defence Management Committee in 1974, the Senate Special Committee on National Defence (1985) and the authors of the White Paper on Defence (1987) revived the concept of an independent military space effort.

After long hearings on the air defence of Canadian territory, the Senate Committee recommended in 1985 that the government establish its own military space programme to concentrate on early warning, surveillance and communications tasks necessary to protect national security. Based on the evidence gathered at the hearings, the Committee concluded that DND would need eight to twelve satellites to do the work and that this programme should be allocated at least \$150 million per year for five years, and \$350 million each year during the 1990s.

THE SENATE REPORT DID NOT GO UNHEEDED: DND took up its main elements two years later in the 1987 White Paper. Here, Perrin Beatty, then minister of National Defence, announced an ambitious programme of rearmament and strategic repositioning. The new defence policy rested on the acquisition of a fleet of ten to twelve nuclear-powered submarines. While in