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INTERNATIONAL ASPECTS OF POSSIBLE FUTURE CANADIAN PARTICIPATION IN SPACE PROGRAMS

An Address by the Honourable C.M. Drury,
President of the Treasury Board, to the
Canadian Aeronautics and Space Congress
and Exposition, Montreal, November 17, 1970.

The Canadian Aeronautics and Space Congress and Exposition is an international gathering *par excellence*. Among the audience tonight are the representatives of French, British and United States aerospace transportation industry, government officials, as well as scientific and technological experts from many countries. This fact offers me a unique opportunity to explore with you the kind of options which Canada could pursue in the near future in the field of space activities. My purpose this evening is to place our space program within its international framework in relation to Canadian resources and Canadian objectives. Most of my remarks will be exploratory and even hypothetical, but I think you will agree with me that much hypothetical and exploratory thinking is necessary before actual decision-making is to take place, particularly when large sums of taxpayers' money may be committed by governments to highly expensive programs.

The conduct of space programs is very much a "rich-man's" game. Only the United States and the Soviet Union have sufficient resources to apply to a comprehensive program without unacceptable sacrifices of other objectives. Only a few other countries (Britain, China, France, Germany, Japan) have devoted resources to the development of a satellite-launcher capacity. India recently announced the intention to do so, but it remains to be seen whether this is an over-ambitious aspiration. An additional small group of countries have engaged in space activities without embarking on the luxury of attempting launcher development, and among these Canada's achievements have been recognized internationally as occupying a leading position.

Now that man has actually gone out into space, several conclusions can be expressed as reasonable certainties:

- (1) That space activities will continue on an increasing scale;
- (2) that the overall expenditures will continue to rise;
- (3) that increased effort will be devoted to developing useful applications for space technology in parallel with scientific investigation;

- (4) that world space activities will continue to be dominated by the United States and the Soviet Union.

In the situation which I just described, those technologically-advanced countries desiring to pursue active space programs appear to have three practical options open to them in the short- and medium-term:

- (1) Individual countries could work out bilateral co-operative arrangements with one of the super-powers (the Canadian *Alouette* program, the proposed earth-resource satellite "read-out" arrangements and the proposed launch of a domestic-communications satellite are typical of this kind of co-operative endeavour with the United States).
- (2) A number of countries could join forces to provide the necessary resources for a full-fledged space program comparable to those of the super-powers (there are proponents of this approach within the European Space Conference).
- (3) A group of countries could work out a joint approach to provide a framework for co-operation with the United States.

The United States is now proceeding with the so-called post-*Apollo* program, the principal feature of which would be the development of a re-usable launch-vehicle, described as the "space shuttle", designed to place large payloads in orbit (for space-stations and other uses) at substantially reduced cost. In late 1969, Dr. Paine, the former head of NASA, outlined in very general terms a proposal to a number of countries which would permit co-operative participation in the post-*Apollo* program. This offer has led most advanced countries to review the scope of their space activities.

There were indications at the July ministerial meeting of the European Space Conference that they may be inclined to adopt the third option of a collective approach to the post-*Apollo* offer as they have been encouraged to do so by the United States, provided they can negotiate for the provision of a guaranteed launcher service for their own scientific and applications satellites. While not losing sight of the great disparity between the United States and European space efforts, they are also anxious to identify some discrete and essential components which Europe could contribute to the future space system so that the general relationship would embody a measure of true interdependence between the partners.

However, at a recently concluded 13-nation conference of the two European organizations for space and launching research, Britain took the lead in rejecting the United States proposal for a European contribution to the post-*Apollo* program. Only France, West Germany and Belgium appear to be prepared to open talks with NASA at this time. This new development must be seen in the context of the currently accelerating evolution towards a single European space organization.

This unifying trend coincides with the reopening of negotiations for Britain's (and other) applications to join the European Economic Community, and this pressure of political and economic motivation could result in remedying some of the shortcomings of the past disjointed efforts in space.

All these developments have relevance for Canada and for the future of Canadian aerospace programs. Canada could well be in the very fortunate position of being able, if so desired, to adopt several parallel and complementary courses of action at the same time.

There would appear to be no obstacles to continuing with bilateral arrangements of the kind now existing with the United States (launches for scientific satellites such as *Alouette*; ground-stations for "reading-out" earth-resource satellites, launches for communications).

Moreover, a relatively modest expenditure of federal research and development funds could enable Canadian industry to participate in contracts for the development and production of sub-systems in the post-*Apollo* system -- in effect a space-shuttle production-sharing program. A Canadian research and development effort of this kind would presumably entitle Canada to access to the post-*Apollo* facilities when they come into being.

Significantly, the draft convention now being considered for the future European Space Organization makes provision for associate membership for non-European countries. There is good reason to believe that under such an arrangement it would be possible to elect to participate in only those programs in which Canada had a real interest and that financial obligations would only arise with respect to those particular programs.

The propositions of continuing bilateral relationships with the United States and of research and development sharing need little explanation here. However, the case for seeking an association with the future European Space Organization calls for greater amplification on several points.

It is strongly suggested in *Foreign Policy for Canadians* that to ensure a continuing independent existence Canada should seek to develop countervailing influences to offset the dominant bilateral relationships with the United States. Continued Canadian co-operation with the United States in various space activities is undoubtedly desirable and probably inevitable. For this very reason there is a real political need to look beyond the continental relationships. Association with Europe offers such an opportunity and, it is to be hoped, could be achieved at a tolerable cost.

Most discussion of future space programs has focused on the short and medium term. I feel that it is necessary to look forward to the 1980s and beyond to a period when space activities will almost certainly have become much more international in scope than today. The European Space Organization will probably show signs of developing in the direction of a broad-based international space institution. This desirable objective would be fostered if Canada (and Australia and Japan as two other likely candidates) should be associated with the Organization from the outset. A Canadian voice, if it is raised now among the Europeans, would probably have more influence in the process of evolving an international institution, than if Canada should later try to influence the United States on the strength of what would necessarily be a relatively very modest contribution to the overall NASA program.

A space-shuttle production-sharing program could have demonstrable benefits for Canadian industry and could materially advance Canadian technological competence, but it would lack much public visibility. Association with the European Organization could perhaps open the possibility of working among countries more of our size on some identifiable project such as the so-called "space-tug" to be designed for inter-orbital travel within the post-Apollo system. Associate membership would, however, carry no commitment to do so, since it would rest entirely with Canada whether or not to join such programs.

Association with Europe could provide Canada with an *entrée* to commercial opportunities in Europe to employ the technological capacity which should be developed through the post-Apollo research and development arrangements with the United States. This would reinforce efforts now in the active planning stage to foster more intensive scientific and technological relations with Germany, as well as what has been set in train in Belgium.

Under proposals advanced in ICAO, arrangements are going forward for the development of a traffic-control satellite. Canada has a large stake at present in the management of the transatlantic air-traffic control system. Association with the European Space Organization would give Canada an option to participate from the outset in the research and development phase of the traffic-control satellite project. This would give important advantages later on when tackling the production, organization and management phases of the development of the systems. The history of INTELSAT suggests that we should enter the arena early.

To sum up, association with the European Space Organization would offer both present and future political benefits as well as the option to participate in interesting and useful practical programs, and would not preclude beneficial arrangements with the United States.

Let me conclude by stressing again that my purpose this evening was to share with you some of my thoughts on this very complex and difficult subject. The governments and people alike are beginning to perceive that the application of science through technological development is likely to be a critical factor -- perhaps more important and certainly more desirable, in my view, than ideology -- in bringing about transformations in human society. The Canadian Government shares this perception and it intends to pursue a space policy consistent with Canadian resources and Canadian objectives.

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