

GSCHIS-A015.pdf

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Title: Chronology of Canada's Ocean Drilling Program (ODP) Membership, Administration and Funding Arrangements 1983–2003

Date of this version: January 18, 2010

Number of pages in document: 4 pages

Author Biography:

After a Bachelor's in Geology at Kings College, London in 1959, Robin Riddihough went on to complete a Master's and PhD in Geophysics at Imperial College, London. His subsequent research career, largely in marine magnetic and gravity surveying, continued through Italy, UK, Ireland, Canada and the USA and resulted in over 90 publications.

He first came to Canada in 1970 on a post-doctoral fellowship at the Earth Physics Branch (EPB) in Ottawa. After another spell in Ireland, he moved to Victoria in 1975 as a Research Scientist at what was then the Victoria Geophysical Observatory – later to become the Pacific Geoscience Centre. He moved to Ottawa in 1984 and with the merger of the EPB with the Geological Survey of Canada (GSC) in 1985, became Senior Scientific Executive Officer. He became Acting Chief Scientist (GSC) in 1987 and was then Chief Scientist from 1989 – 1993. He remained in senior management for the rest of his career, retiring as Senior Communications Advisor in the Assistant Deputy Minister's Office of the Earth Sciences Sector in 2001.

He was the Canadian representative on a number of Panels of the international Ocean Drilling Program, including its governing Council, from 1983 - 2001. He was Chairman of the Canadian Council for the Ocean Drilling Program from 1989 – 93.

An instructive Chapter in the support for “Big International Science” in Canada in the 1990s.

**CHRONOLOGY OF CANADA’S OCEAN DRILLING PROGRAM (ODP)
MEMBERSHIP ADMINISTRATION AND FUNDING ARRANGEMENTS
1983 - 2003**

by Robin Riddihough (former Chair of the Canadian Council for ODP (1989-1993), and Canada Representative on the International ODP Council from 1990 - 2001),

1983-84: Canada participates in the ODP planning phase at a cost of \$250k.

1984: Cabinet decision that Canada would become a full member of ODP. Energy, Mines and Resources (EMR) designated as the adhering agency for the payment of the annual fee of US \$2.7M.

40% funding was to come from EMR, 8% from Dept of Environment, 18% from Minister of State for Science and Technology (MOSST/NSERC), 9% from Fisheries and Oceans (DFO), 15% from Dept of Regional and Industrial Expansion (DRIE) and 9% from External Affairs. A complex funding arrangement until 1988-89 was approved that took account of inflationary increases in membership and the US Exchange rate.

Note that this distribution tried to reflect what was assumed would be the value to Canada of being a member of ODP.

1985: Because of funding problems in some departments, Cabinet was asked to approve a revised funding arrangement with a reduced number of partners and a shortfall to be covered by EMR while seeking other partners. In 1986 this resulted in the following payments: (\$Can), EMR \$2.1M (57%); MOSST/NSERC \$700k (19%); DFO \$300k (9%); DRIE (Industry Canada) \$560k (15%).

ODP membership agreement signed with the US National Science Foundation (NSF) specified one US fiscal year’s notice of withdrawal (partial years not refundable).

1989: Australia agreed to join in an ODP Membership Consortium at a one third level. This was based on a comparison of the GNP’s of Australia and Canada. The contributions of the four Canadian partners were reduced accordingly with EMR providing 33%, NSERC 12%, DFO 8% and Industry Canada 13%. The Consortium was to be managed by Canada as the senior partner. The Consortium Agreement specified one year’s notice of any changes.

- 1992: Actual payments (\$Can) during 1992/93 were: Australia \$1.1M; EMR \$1.1M; NSERC \$391k; Industry Science and Technology (formerly DRIE) \$444k; DFO \$277k (total \$3.312M Can).
- 1992: For long term planning, all ODP partners were asked to make 5year membership commitments for the period 1 October 1993 until September 30 1998. Commitments were to be made by September 30 1992 (1 year in advance). Because of looming budget cuts, Canada gave notice (September 28 1992) that it wished to stay a member but could not guarantee full funding.
- In the light of the government budget cuts in the late fall (Program Review), Industry Canada decided it could not commit its continuing contribution of \$450k. Under similar pressure, EMR decided (December 23, 1992) that it could not provide its contribution and that therefore Canada would withdraw from ODP as of April 1 1993.
- 1993: Considerable protests were received by the GSC and EMR on the substance and legality of this announcement both from the national and international community. In response EMR agreed to withdraw its notice, replace some funding and try to negotiate a revised membership arrangement from October 1993 onwards.
- After a round of international and internal discussion, ODP accepted that the Canada/Australia Consortium could continue its membership at the two thirds level provided that it made every effort to find new partners and bring the Consortium up to a full membership level as soon as possible.
- New Consortium and Consortium-ODP Agreements were signed on this basis for 1993-98 with Canada and Australia as equal partners at one third each. Australia became the Head of the Consortium.
- The agreed funding partnership within Canada was now: Natural Resources Canada (formerly EMR and actually the GSC) \$250k; DFO \$250k; NSERC \$660k. In practice because of the US exchange rate, NRCan also made up the currency shortfall (c.\$150k) to produce a one third contribution of the US\$ 2.95M membership fee.
- The events of 1993 were widely regarded as a “bell weather” of Canada’s poor commitment to international science. ODP was cited in documents and position papers as an example of Canada’s weakness in funding “Big Science”.
- 1996: South Korea joins the Consortium at a one twelfth level indicating that it will increase its contribution to one sixth after one year.

All ODP members were again asked to provide a written statement of their membership intentions for the 5 years from October 1998 to September 30 2003 before September 30 1997. Oral declarations were requested for the ODP Council meeting of June 1997 with preliminary status reports requested at a special meeting of ODP Council meeting in February 1997.

A review process was triggered within Canada and DFO indicated that it could not contribute to ODP membership for 1998 –2003. NRCan did however confirm that it would be able to continue its annual contribution at current levels (Can \$250k plus the exchange shortfall).

1997: Taiwan National University confirmed that it would join the Consortium at a one sixth level on January 28 1997. At this point the so-called PACRIM Consortium would be theoretically back to full membership (Australia, one third; Canada, one third; South Korea, one sixth; Taiwan, one sixth). However with the removal of DFO funding in 1998, funding in Canada would now have to come from only NRCan (GSC) (10%) and NSERC (23%).

Other sources of funding from within Canada were not obvious. Less than one-third membership would be internationally embarrassing coming after all the difficulties that Canada had caused to date. One opinion was that because Canada's membership in ODP was the result of a Cabinet decision, any outright ODP withdrawal should go back to Cabinet for approval. However, this would carry the possibility that, under international pressure, Cabinet might instruct departments to "find the money".

It was decided that Canada would go to the ODP Council with a firm commitment in Canadian dollars only. In the event, it emerged that other ODP members (particularly in Europe) were having the same problem with the strong US dollar. The position was accepted, as a pragmatic, if far from satisfactory, arrangement. Shipboard participation of Canadian scientists in the program would be pro-rated and the US National Science Foundation would make up any shortfall in total ODP costs.

1998-2001: The pro-rated agreement with ODP continued (the Canadian dollar was 75c US or less). Negotiations between NRCan and NSERC resulted in NSERC carrying a larger proportion of the Canadian subscription (no data on the actual figures available at this time) and joining NRCan in representing Canada on the ODP Council.

2001-2002: The ODP was due to officially terminate its drilling operations 2003 and be replaced by a new program called the International Ocean Drilling Program (IODP). This was to use a new Japanese drilling vessel plus the US drilling ship that had been used for ODP. Membership would thus be

considerably more expensive. It was decided to abandon the insecure funding formula of government departments used for ODP, and try and obtain funding for full Canadian membership in IODP through the new International Access Fund of the Canadian Foundation for Innovation (CFI).

The preparation of the proposal was lead by the Atlantic Canada Petroleum Institute (ACPI). A project outline was submitted in July 2001 and accepted. A full proposal was then prepared and submitted in February 2002.

The full proposal included \$31.3M over 5 years (to CFI) for the funding of IODP membership. It also included \$7.1 M over 5 years (to NSERC) for the funding of related Canadian research. ACPI committed to provide an additional \$2M per year in direct and in-kind support. On June 14th 2002 CFI announced that the proposal was not successful.

2003: Canada continued its partial membership to the end of ODP with funding from NSERC and NRCan (GSC) only. Ironically, the last drilling leg of the ODP included a port call at St John's, Newfoundland in September 2003.

2007: In the fall of 2007, NSERC agreed to provide 2 years funding for Canada's participation in the 24 country European Consortium for membership in the IODP.

Afterword:

In retrospect, although the scientific program of the Ocean Drilling Program was outstanding and its results had a direct bearing on our understanding of plate tectonics, mineralization, hydrocarbon resources, earthquake generation and global change, Canadian "decision makers" consistently felt that it did not have enough impact in Canada to warrant the funding. The constant questions were "when is it going to be drilling off Canada?", why should we be funding drilling off Japan?". Nevertheless individual Canadian scientists made a contribution to ODP that was proportionately much greater than Canada's modest financial, contribution.

After many years of arguing the case, I still came away puzzled as to why astronomy could get funding in Canada - but not Ocean Drilling.

RPR, January 18, 2010