

NWC
ESSAY
91-32

TAKING A DIVE FOR A FRIEND--
THE DECISION TO TRANSFER NUCLEAR SUBMARINE TECHNOLOGY TO CANADA

GERALD L. BRUBAKER
National War College
December 10, 1990

Report Documentation Page

*Form Approved
OMB No. 0704-0188*

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 10 DEC 1990	2. REPORT TYPE	3. DATES COVERED -			
4. TITLE AND SUBTITLE Taking a Dive for a Friend - The Decision to Transfer Nuclear Submarine Technology to Canada		5a. CONTRACT NUMBER			
		5b. GRANT NUMBER			
		5c. PROGRAM ELEMENT NUMBER			
6. AUTHOR(S)		5d. PROJECT NUMBER			
		5e. TASK NUMBER			
		5f. WORK UNIT NUMBER			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) National War College, 300 5th Avenue, Fort Lesley J McNair, Washington, DC, 20319-6000		8. PERFORMING ORGANIZATION REPORT NUMBER			
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)			
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)			
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT see report					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified		11	

Late on an April afternoon in 1988, the long awaited word from the White House reached the U.S. national security bureaucracy: President Reagan had approved the transfer of U.S.-developed nuclear submarine propulsion technology to Canada and would inform Prime Minister Brian Mulroney during his visit to Washington later that month. The opponents of the transfer, the Department of Defense, the United States Navy and the Department of Energy (the home of naval reactors), were stunned. In spite of luke warm support from State, the NSC staff, and the Arms Control and Disarmament Agency (ACDA) for approval, how, in the face of seemingly compelling national security arguments against it, could the President say yes?

Yet it had happened and there were to be no appeals. The Secretaries of State, Defense, and Energy were instructed to negotiate the necessary agreements to allow the transfer--conditioned only to protect classified nuclear technology design information. It appeared that the issue had been lost--or had it? The dance which was to follow between the bureaucracies of the United States and Canada, and to a lesser extent the United Kingdom and France, eventually was to result in a decision by Mr. Mulroney not to seek nuclear submarines at all. What follows is an analysis of the issues involved in the approval and the final Canadian decision.

THE SETTING

The matter began in June, 1987, with the publication of a Canadian *White Paper on Defence* which announced that Canada would

spend \$8 billion to build 10 to 12 nuclear attack submarines (SSN's) to defend the Arctic against the Soviet submarine threat, and, importantly, for patrolling the Northwest Passage and territorial waters over which it claimed sovereignty. Canada, not wanting to design an SSN from the keel up, would buy existing hull and nuclear propulsion technology designs and build them under license in Canadian shipyards.

Three potential sources, the U.S., the United Kingdom (U.K.), and France, were to be considered. The U.S. Navy, which steadfastly challenged Canada's claim to the territorial waters of the Arctic archipelago and routinely refused to request Canadian permission for its nuclear submarines to transit the Northwest Passage, was understandably opposed to any Canadian SSN acquisition, especially one which could be used to monitor the passage of American SSN's in disputed waters. The Navy quickly ruled out any direct sale of United States nuclear submarine designs or propulsion technology by U.S. firms.

That left France with its RUBIS-Class, and the U.K.-built TRAFALGAR-Class, designs as the only contenders. But with the latter there was a hitch; the TRAFALGAR's nuclear propulsion system was based on a U.S. design transferred 30 years earlier under license to manufacture from the Westinghouse Corporation. More importantly, the further transfer of this technology could occur only if the Mutual Defense Agreement (MDA), a bilateral agreement required by the Atomic Energy Act between the United States and the United Kingdom, allowed it. If Canada was to receive TRAFALGARS, the 1957 MDA with the UK would have to be

revised. In addition, a 1959 U.S. bilateral agreement with Canada on Cooperation for Mutual Defense Purposes would have to be re-negotiated. It was in this agreement that the details and necessary conditions for transferring and protecting U.S.-origin SSN technology from unauthorized release had to be spelled out.

Although the Canadian decision on whether to build a French or British sub was some way off, State, Defense and Energy were to negotiate promptly the necessary agreements to allow the U.K. to compete, fairly and without prejudice to the Canadian decision. For the U.K., the sale of 10 to 12 TRAFALGAR SSN'S would be a multi-billion dollar shot in the arm for its ailing defense industry which, in addition to supplying all the nuclear fuel reactor cores, would construct in the U.K. the first prototype submarine for Canada and participate jointly with Canadian firms in future construction in Canadian shipyards.

THE ISSUES

Some but not all of the reasons behind the various positions taken by the involved U.S. government agencies are readily apparent.

Predictably, State was concerned with maintaining good relations and wanted to avoid having to say no to our closest allies and NATO partners. But State really had no other strong arguments in favor of the transfer. Proposals by diplomats to share sensitive U.S. nuclear submarine technology for worthwhile objectives were not unknown. In a 1970 report the Joint Committee on Atomic Energy had "noted with concern...the persistent efforts of elements within the Executive Branch to

disseminate sensitive and strategically vital U.S. naval nuclear propulsion technology among foreign governments as diplomatic 'currency' in cooperative arrangements of marginal military value. The Committee has reviewed the arguments favoring such cooperation,....and has found them lacking in appreciation for both technical complexities and strategy value of this critical technology."

Although concerns about the proliferation of nuclear technology and submarines had been raised by DOD, neither State nor ACDA (after a fierce internal debate) saw any bad nonproliferation precedent being set, even though the transfer of nuclear technology explicitly was for military purposes. State's view was that because of Canada's excellent nonproliferation credentials and its membership in the Nonproliferation Treaty (NPT), Canada obviously was not a cause of proliferation concern. Nor were other countries likely to follow Canada's lead.

Defense, led by OSD with participation of the JCS and Navy, was of the view the proposal threatened a wide range of U.S. security interests. Although the NPT did not proscribe "nonexplosive military nuclear uses," i.e., nuclear propulsion, and although Article 14 of the NPT Safeguards Agreement permits the withdrawal of nuclear materials from NPT safeguards inspections for those purposes, Defense believed that a damaging precedent would be set because no nation since the Treaty had entered into force (a period of 20 years) had ever exercised that provision. Defense was also mindful of the unsafeguarded

nuclear programs of Brazil and Argentina that were being officially justified by nuclear submarine development but which Defense feared would also move them to a "near nuclear weapon capability." Moreover, the Soviets had recently transferred a "Charlie-class" SSN to India (referred to in DOD as a "Chernobyl-class" because of many operational problems) and the People's Republic of China (PRC) had threatened a similar SSN transfer to Pakistan. To DOD, the problem of nuclear weapon and submarine proliferation (especially in the Western hemisphere) would only be exacerbated by such a large scale SSN deal carried out by the West. Defense also was concerned with steadily declining Canadian defense expenditures, and Secretary Weinberger had recently stated his concerns over Canadian cutbacks on NATO commitments. The widespread view in DOD was that the very high cost of an SSN program and concomitant adverse impact on its commitments to fund conventional forces were not fully appreciated by the Canadian Department of National Defence.

The Navy did not believe the Canadian-operated TRAFALGARS could perform adequately against increasingly superior Soviet submarine technology such as the titanium hulled "Alpha-class" which they would encounter in coming decades. In addition to the dispute over territorial waters, the Navy particularly wanted to avoid the possibility of having to conduct combined submarine operations under the Arctic. In short, it wanted to preserve the condition that it had always enjoyed,--knowing that

apart from its own subs, all unknown submarine contacts under the arctic ice would be Soviet.

The Department of Energy interests were more institutional. As a consequence of the development of American nuclear propulsion led by Admiral Rickover, the responsibility for naval nuclear reactor development is shared between the Department of Energy (DOE) and the U.S. Navy and resides in an organization in DOE known as "Naval Reactors." As with the submarine arm of the Navy (the "Silent Service"), Naval Reactors is one of the least known and most closed organizations of the U.S. government. Protected by congressional committees, personnel of Naval Reactors are the nuclear high priests of DOE who hold tightly to their nuclear crown jewels--highly classified nuclear technical know-how--which they zealously guard against any release which could narrow the margin with the Soviets.

It is not surprising then that the strongest opposition to the U.K.-Canadian SSN deal within DOE came from Naval Reactors, which wanted no part of any nuclear propulsion transfer deal. For DOE the issues were simple. For Canada to build SSN's, large amounts of sensitive classified nuclear propulsion technology would have to be transferred to the Canadian government and industry. The question was would it be protected? Second, Canada did not have the critically important technology infrastructure which Naval Reactors knew was necessary for the safe application of naval nuclear propulsion. Their greatest concern, one shared by all in DOE and DOD, was that a reactor accident aboard a Canadian SSN using U.S.- design nuclear

technology could severely damage public confidence in the safety of all nuclear vessels, severely curtailing the operational freedom and port access of the U.S. Navy, 40% of whose vessels were nuclear.

THE DECISION

Against this backdrop of issues it is interesting to note that, as far as anyone in the bureaucracy knows, no formal decision memorandum for the President was ever prepared; agencies were simply asked to submit their formal views on the proposal in writing to the White House. Shortly after Mr. Reagan's decision was announced, however, it was revealed that the President's decision had been influenced by a personal letter he had received from Mrs. Thatcher which urged his approval. The decision had been handed down, and the only remaining expectation of the bureaucracy was, in the parlance of the Navy, "...to make it so."

THE NEGOTIATIONS

The revision of the 1957 U.S./U.K. Mutual Defense Agreement, an important first step in implementing the President's decision, was conducted with some difficulty. The British view was that the technology had greatly changed over the 30 year period, and they were openly resentful of continued U.S. controls. For their part the U.S. negotiators were miffed that the U.K. had already concluded a Memorandum of Understanding (MOU) to cover the transfer which had not been coordinated with the U.S. and which appeared to give concessions to Canada in areas of U.S. interests, especially on safety-related matters.

Nevertheless, the MDA was successfully amended, but left many of the specific concerns of Naval Reactors (especially about safety) for resolution in negotiations with Canada.

Discussions on revisions to the U.S./Canadian Mutual Defense Agreement involved far more than just negotiations and resulted far more than in just an agreement. They were an educational experience. For more than 6 months, meeting in three rounds of marathon sessions (twice in Washington and the final session in Ottawa), long and painful lessons about the full implications of the Canadian SSN proposal, especially the high costs and what was necessary to safely and responsibly run and operate nuclear submarines, were inflicted on the Canadian representatives. The sessions, which were largely dominated by Naval Reactors, dealt in great detail with industrial infrastructure and numerous other details known to be essential to safely operate and maintain naval nuclear reactors. For days on end the U.S. side described measures required by the U.S. government involving safe reactor operations, training and certification of operators, manufacturing and testing of components, licensing and regulation of firms, and countless other things that guarantee the satisfactory performance of private U.S. firms involved in the navy's submarine program, and the U.S. negotiations attempted (with some success) to require the same standards and infrastructure of the Canadians.

Only in the area of nuclear nonproliferation did negotiations go smoothly. Highly sensitive themselves to the non-proliferation precedent that would be set, Canada readily

accepted the tough terms sought by OSD, agreeing to exempt enriched uranium from International Atomic Energy Agency (IAEA) safeguards only at the point when the fuel cores were actually loaded in an SSN reactor.

While the U.S. side did not obtain all the conditions it sought, the *ad ref* agreement contained conditions so demanding on the Canadian government that few thought they finally would accept them--but they did.

AFTERMATH

Whatever additional understandings the tough negotiations may have imparted, the education of the Canadian Department of National Defense and the Mulroney government was continued by critics of the SSN proposal, Canadian and otherwise. Papers and analysis soon appeared which revealed the military flaws in the plan and the substantially overlooked industrial infrastructure costs that would have to be paid, costs which would add billions of dollars to the price of the SSN program. The Mulroney government eventually reduced to 5 or 6 the number of SSN's it wished to buy but even then the costs seemed prohibitive. Public opposition, fueled by a growing number of negative editorials, continued to grow. By February 1989, polls showed that fully 71% of Canadians opposed the Canadian SSN option.

The high cost to Canada's conventional forces soon became an issue and support for the SSN among the Canadian military establishment (not all of which had strongly embraced the proposal) became even weaker.

Although France continued to press its case strongly, even the less costly option of purchasing the lower cost RUBIS-Class SSN became less attractive as the capabilities (or deficiencies) of less sophisticated French SSN technology became better understood.

Finally, in May 1989, the proposal to acquire SSN's was quietly dropped by Canada, but not before the Senate Armed Services Committee had imposed tough conditions that would had to be met by any revised U.S./Canadian Mutual Defense Agreement if it were to gain congressional approval. The protectors of American nuclear technology in the bureaucracy and the Congress had prevailed--the intentions of Margaret Thatcher, Ronald Reagan and Brian Mulroney notwithstanding.

A PERSONAL NOTE

As a representative of the Office of the Secretary of Defense, I participated throughout the decision process and in the subsequent negotiations. Two observations came to mind. One is that the Canadian government had indeed committed itself (through its political announcements) to SSN's, while largely uninformed of the real implications, benefits, risks, and especially high costs of its proposal. The second is that the Canadians truly did receive an education on nuclear submarines and what would be needed to build them. What influence this education may have had on the final Canadian decision to drop the proposal is not known.

G. L. B.