

# Capturing Canada's Naval Technical History

By Tony Thatcher

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## Abstract

The Canadian Technical History Association (CNTHA) was initiated in the early 1990s by a small group of enthusiasts who were determined to record the impressive technical history associated with the Canadian Navy. The CNTHA Mission is to capture and preserve Canada's oral and written naval technical history. The CNTHA Vision is to encourage the establishment of a culture in which Canada's naval technical heritage is preserved and made accessible to future generations.

We are gathering evidence to show how the navy has contributed to the country's development. We are helping to realize a comprehensive historical archive and contributing to a lasting legacy for future authors, researchers, students. We feel it is one's social responsibility to preserve our heritage and the Navy has a major role in this too; we are trying to encourage the Navy to fulfill its cultural responsibility. We hope to capture the national imagination by helping to showcase interesting events and making it easily accessible for students, authors, researchers and historians. We want to show that the Navy's technical services has, and is, leaving a lasting technical heritage for future Naval Engineers which can help instill some national pride.

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The Canadian Technical History Association (CNTHA) was initiated in the early 1990s by a small group of enthusiasts who were determined to record the impressive technical history associated with the Canadian Navy. A subcommittee, CANDIB, was formed in the late 1990s to document the impact of naval procurement on the Canadian Defence Industrial base.

The CNTHA Mission is to capture and preserve Canada's oral and written naval technical history

The CNTHA Vision is to encourage the establishment of a culture in which Canada's naval technical heritage is preserved and made accessible to future generations.

What are we doing?

- Gathering evidence to show how the navy has contributed to the country's development
- Helping to realize a comprehensive historical archive
- Contributing to a lasting legacy for future authors, researchers, students

Why are we doing this?

- We feel it is one's social responsibility to preserve our heritage and the Navy has a major role in this too; we are trying to encourage the Navy to fulfill its cultural responsibility
- We hope to capture the national imagination by helping to showcase interesting events and making it easily accessible for students, authors, researchers and historians. (One can debate the desirability of providing quickly available material for student assignments)
- We want to show that the Navy's technical services has, and is, leaving a lasting technical heritage for future Naval Engineers which can help instill some national pride.



NIPIGON on the Marine Industries Ltd. (Sorel) marine railway in the late '60's – photo courtesy of LCdr Don Wilson

### Our History

- 1992 – CNTHA inauguration
- 2001 – CANDIB sub-committee formed
- 2004 - Oral History project started
- 2005 - CNTHA website [cntha.ca](http://cntha.ca) online
- 2010 – Technical Working Groups established

### Our Activities

- Retain a contact list of potential interviewees
- Actively approach persons of interest
- Accept paper records, small memorabilia
- Conduct oral interviews and transcribe into paper format
- Convene group sessions on a particular technical topic in the following categories: Combat Systems, Marine Systems, Naval Architecture and personnel. We find this format helps people's recall. Our aim is to produce a timeline of events and linkages.

We submit archive material to DND's Directory of History and Heritage (DHH). This archive material is arranged by DHH in Six "Series" and currently consists of 518 files:

- I Naval Technical History Project material
- II Marine/Naval Architecture Books and Magazines
- III Ship's Technical Drawings
- IV DDH 280 Main Propulsion Proposal
- V Oral and written Interviews
- VI Support Documentation for Sonar Paper

We host a website to showcase our material under the domain name "cntha.ca" where we present the following information;

- CNTHA Documents Collection listing;
- Maritime Engineering Journal & CNTHA Newsletters;
- CNTHA Oral & Written History transcripts (over 30 to date);
- Research Results in the following areas; Design; Build; R & D; Ship Classes; Combat Systems

There is a photo Gallery linked to site. We welcome comments/constructive criticism.

In closing, I can say that our job is still unfinished and there is much more work to be done. I welcome any comments and can be reached by email at [tony@cntha.ca](mailto:tony@cntha.ca) .

## SNIPPETS FROM THE ORAL HISTORY COLLECTION

### GAS TURBINE PROPULSION

ADM Welland

I'd been the Captain of [HMCS] Shearwater for three years and then I was sent to Ottawa in 1960, in the autumn of 1960. My job was the Director of Operational Requirements.

So at that time, earlier on I started talking to the engineers about 'let's have a look at gas turbines'. Now at that time, no warship in anybody's navy was propelled by gas turbines. I had raised the issue, and I say 'I' not with any [pride], but I was the instigator. I know I was because I had lots of accusations made later and not very many were complimentary.

I'd always been interested in airplanes and I knew a lot about gas turbines. I'd just come from Shearwater where we a lot of them on the station. We'd ordered new helicopters, the Sea King and it was a turbine and so on.

Now the GP Frigate was pretty well along; people knew what we wanted. I started agitating for gas turbines. I was told to shut my mouth several times about this by the engineering department

[I contacted] United Aircraft (Pratt & Whitney) in Montreal and I told him about this and he said; "Well you know, why don't you come down Hartford Connecticut because it just happens we have a 25,000 horsepower gas turbine on a test bed

Jack [Caldwell, Chief Engineer of the Navy] and I were pretty good friends. Well, he was really pissed off with me about me going on with this gas turbine thing... "It's a fine "xxx" navy when some executive officer tells the chief engineer what kind of engines he ought to have".

Royal Navy had put a Rolls Royce, I think it was an Olympus engine, into a destroyer along with - they substituted one of the steam engines - they went to a lot of trouble.... [but the] Royal Navy could see their whole industry turning into rat shit [so] the Royal Navy decided they weren't going to do it

Anyway, the naval board decided that we go for gas turbines and not only main propulsion but the whole damn thing. I'm not sure that I lobbied for that!



HURON on contractor's sea trials - DND Photo

## HMCS PRESERVER/PROTECTEUR

a) John Shepherd, Project Manager PRESERVER/PROTECTEUR, Saint John Shipbuilding

...You had this two-phased/ two-pronged approach coming from government; the contractual and the technical, [PWGSC and DND] especially on PRESERVER/PROTECTEUR. This was initially started out as a commercial vessel to be built to Lloyd's. Contractually that sounded great, technically from the Navy point of view it was a disaster. They did not want Lloyd's approval. They wanted Navy approval.

Saint John Shipbuilding came out with good technical staff, a good production workforce and a good group of management for the production. So all in, that's what Saint John Shipbuilding gained from that project. They made no profit.

b) Andy McArthur, Technical Manager, Saint John Shipbuilding

One of the major problems was that in fact the contract had been stated to be a commercial contract and everything would be built to Lloyd's Register of Shipping rules which it started off with, but very soon thereafter the government introduced their own inspection services and we had many instances where Lloyd's would inspect a steel unit, mark up the corrections they wanted then afterward the Navy would come along and mark up everything they expected over and above Lloyd's.

We objected to this and we expected to be recompensed if it is shown that we in fact were correct and the government is wrong so basically that's what we did and carried on, we adhered to the additional work the Navy required.

It went to court and the government refused to pay and it was going to the Supreme Court and eventually walking up the steps going to the Supreme Court of Canada it was finally settled, the government saying we will pay, long time, money, time wasted.



Photo courtesy of Shaun Perry

## **ORIGINS of NEDIT and NETE**

VAdm Stephens, Head of the Boiler Section in the Engineer in Chief Dept, NSHQ

In the '51- '54 period, [For the design of the Saint Laurent Class ships] we put together NEDIT [Naval Engineering Design Investigation Team] and NETE [Naval Engineering Test Establishment]. ....as we were moving..... to much higher steam pressures and steam temperatures. ... the basic idea of NEDIT; we didn't think we had the design capabilities in the headquarters. It was better to leave this somewhat to a separate group. We recognized that the Yarrows Admiralty Research Department [Y-ARD] had done a lot of good work in the British Navy. George Raper...was very much involved with Y-ARD... He was one of the RN's brightest engineers. We managed to talk the British Admiralty .....[into] lending us Raper and he came over and put together NEDIT.

NETE we decided at the same time, we needed something to do testing. We didn't know how to do shock testing, so we had to have shock machines. We wanted to make sure that the performance of the feed pumps was up to scratch and although the contractors had to do this when they were doing a multiple supply, at the beginning if you had problems we would check things out at NETE... it was every kind of testing imaginable. And it grew. ... we had a naval officer in charge of NETE, but all the others were civilians from Peacock [Peacock Brothers Ltd, Montreal]. We purposely put it there because NEDIT was there and we thought NEDIT and NETE could work together in a nice, tidy package.



The original NCDO drawing office set up in Canadian Vickers, Montreal – DND Photo

## **PROJECT MANAGEMENT**

Brian McNally, FFE 400 Project, Management Control Office, Department of Defence Production

After some procurement disasters (eg BONAVENTURE) the GLASSCO Commission investigation into the state government procurement set up DDP as the sole procurement agency

There had been a lot of literature in the US about the management of projects and consolidating management and all the major players into one PMO.

Why not establish a hydrofoil office jointly staffed by DDP and DND? A joint Management Board at the ADM level was put in place after a lot of discussion about the level of such a board.

A Master Plan was to be the primary tool in the management of the project. It contained project objectives, a master schedule and overall cost estimates to completion and was instantly approved by the Management Board. The format of the original plan and the progress review system were to provide the basis of the planning and control for many of the major projects that were subsequently commissioned.

Project management would have arrived on the scene eventually but the hydrofoil project office made it come sooner.



Canadian Patrol Frigate – DND Photo