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CNTHA News

CANADIAN NAVAL TECHNICAL HISTORY ASSOCIATION

Editorial

I guess you know that you've really "arrived" when you have so much material that you have to set some aside for the next edition. That is the happy situation in which we find ourselves with this newsletter! So what is happening?

This edition features an article by retired Cdr "Dickie" Dickinson on his recollections of the early development of the beartrap. It's the very kind of raw material that we are seeking! Of course, we are publishing it in part to encourage others of you to make similar contributions from your past. As a follow-up to Bob Grosskurth's item, Rear Admiral (Ret'd) Bob Welland tells us in a letter how the LN-27 radar came to be delivered to *Athabaskan*, in Japan during the Korean War. Ask and you shall receive. Mil-specs, and all that. Some things never seem to change.

Once again the CNTHA is making a contribution to the accompanying *Maritime Engineering Journal*. Sam Davis recounts a moment in history in which he participated (the *Bismarck* action of 1941). It's a great read. Hal Smith has a report on the West Coast Naval Engineering Seminar where a CNTHA representative presented our first paper. Hal puts the challenge to us all to carry this example into future seminars. LCdr Richard Gimblett is requesting specific information, as a follow-up to his article in the last newsletter. The population of those who served in the 1945-50 time frame is small to begin with, and dwindling. Any help you can give to Richard, no matter how seemingly trivial, would be gratefully received. And lastly, Phil Munro gives his regular update on the Collection.

Your committee was pleased to hear of the promotion of Wayne Gibson to Rear Admiral. Unfortunately, he has also been posted to Washington as the Defence Attaché. Wayne has been a strong supporter and participant in our activities. It is through his actions that you are receiving this newsletter and the *Journal*. We wish him well, and welcome Commodore Jim Sylvester who has taken up the reins and pledged DGMEPM's continuing support to the CNTHA.

Enjoy the read, and don't forget to contact us.

Mike Saker

Inside this issue:

CNTHA News is the unofficial Newsletter of the Canadian Naval Technical History Association, published by the Directorate of History and Heritage, NDHQ Ottawa, Canada, KIA OK2, tel. (613) 998-7045, fax 990-8579. Views expressed are those of the writers and do not necessarily reflect official DND opinion or policy.

Recollections of Beartrap

Cdr RJS Dickinson RCN(Ret'd)
CF Photo Unit DNS 23478

Helicopter trials in HMC ships *Buckingham* and *Ottawa* had already been completed by August 1961 when I was posted to the Directorate of Aircraft Design and Production with responsibility for the helicopter landing system. At that time, DG Air was Capt. John Doherty; DADP, led by Cdr John Frank, included LCdr Bill Frayn, LCdr Don Cruikshank and Mr. Ron Drinkwater, among others. In late 1962 I was to take over from John Frank, with LCdr Jim Atwood replacing me.

In the fall of 1961 we received two proposals for the helicopter landing system. The better proposal, from Fairey Aviation of Canada (FAC), was chosen. This proposal was based on the Kaman HU2K, with the landing system probe mounted at the aircraft centre of gravity (C of G). The HU2K was originally the front-runner to replace our existing helicopters, but it was becoming increasingly obvious that it was not capable of carrying all the equipment required and still having a useful fuel load. I believe it was shortly after my arrival that it was decided we would have to switch to the Sikorsky HSS-2 (Sea King). Unfortunately, the HSS-2 sonar well was at the C of G and so the probe had to be placed forward, about halfway between the C of G and the main wheel axis. This meant that when the helicopter was secured by the probe and the ship rolled, the force on the probe would be about twice that which would have been exerted at the C of G. This was considered unacceptable, so a reinforced helicopter tail probe was specified, one that would engage holes in a steel plate fitted in an appropriate location on the flight-deck.

It was also at this time that we realized that tail-guiding winches would be desirable when moving the helicopter from its landing position to the hangar. It was visualized that the main probe load would be sensed and that the winches, whose lines were attached to the helicopter after landing, would automatically relieve the sensed load as they straightened the helicopter.

The system specification was based in part upon a two-second helicopter trap period, that being considered a requirement for operating in moderately severe North Atlantic sea conditions. Ship installation details were defined in discussions with DG Ships personnel.

In the spring of 1962 we asked Sikorsky at Bridgeport, Connecticut to set up a shore-based hauldown system to test its feasibility with a real HSS-2. They produced a jury rig that involved a snatch block, winches and a hauldown cable attached at one end by a quick-release mechanism to the helicopter, and at the other end to a tractor which acted as the hauldown winch. Part of the trial was to hover the helicopter at 30-50 feet and simulate a rolling ship by traversing the hauldown point from side to side. The other part of the test was to haul down the helicopter from various positions to a stationary hauldown point to simulate a landing during a lull in the ship's motion. As it was a Sikorsky aircraft being used, their test pilot had to fly the trials, and it took some persuading by Bill Frayn to get him to fly a helicopter while tethered to the ground.

FAC had produced a small model to demonstrate the trapping and straightening of the helicopter. It consisted of a T-frame with two main wheels, a castering tail wheel and a probe, all simulating a helicopter; and, to simulate the flight-deck, a piece of plywood with a centre slot and chevrons, engaged by a trap with locking rails. This set-up went to Bridgeport as part of the trials.

At the end of the week the trials were declared successful, the test pilot reporting that the hauldown method of landing seemed feasible, and having demonstrated it not only to our headquarters personnel, but also to interested parties from the USN, USMC and Sikorsky. As a result of these trials, FAC was awarded a contract to build a prototype beartrap, a dummy helicopter and a mock flight-deck to test the straightening operation, with the dummy helicopter also to be available for later sea trials. In December 1962 a separate contract saw Dowty being selected to produce the constant-tension winch.

With the system as it was designed, the control and hauldown cables had to move with the shuttle from its position in the hangar to the flight-deck landing position. As the control cables were of fixed length, something was needed to keep the slack out of them as the shuttle moved. A second shuttle was suggested by LCdr Rod Houston, Don Cruikshank's successor. This shuttle moved at half the speed of the main shuttle and carried the bight of the control cable. We nicknamed this second shuttle the "Houston Bicycle." Later this had to be modified as it was found that overstressed and broken hauldown wires resulted from the system sheaves introducing too much inertia, even under constant tension. As I remember, this modification was suggested by Craig Balson, who by this time had joined the project. One further modification was to attach the probe to the helicopter and only release the hauldown line in an emergency (it being realized that a 30-pound probe released under tension could do considerable damage to a flight-deck).

As development continued, numerous other changes were made to the system, causing funding concerns. The problem was that FAC reacted more quickly in carrying out the work than they did in costing it, resulting in an overspent situation. Naval Board approved more funds, but directed that no additional work was to be authorized prior to DDP accepting and approving a firm quote. As it was difficult for FAC to give firm quotes in many cases, our progress slowed considerably. Luckily, now supported by VX10, we had progressed to landings in fairly heavy weather and the system had been proved practical. Consequently, we didn't fall by the wayside as did some other Canadian development projects which proceeded so slowly that they were overcome by events.

Extracted from an article by: Cdr RJS Dickinson RCN(Ret'd)

Further reading:

The VX10 Story; Chapter 15, The Hauldown System
Certified Serviceable: From Swordfish to Sea King; Chapter 18, The Helicopter Carriers

Letters

Gabrielle Nishiguchi, Directorate of History and Heritage, DND

LN-27 Radar

You asked if I could provide some background info on the arrival of this radar set in Sasebo, Japan, in 1950, consigned to *Athabaskan*. Lieutenant Grosskurth never asked me why it suddenly arrived, so that explains why he doesn't know!

Captain William (Bill) Strange was Director of Information in Ottawa. On sailing, in July 1950 for Korea, he assigned one of his people, Lieutenant McNair (a friend of mine), to cover the activities of the three destroyers, and Mac sailed with me. He got sick and we landed him in Guam, a day or so before we arrived in Japan. Bill immediately got on the radio (high speed Morse, direct from Canada to our antennas) and more or less ordered me to do Mac's job. I negotiated and wound up being paid for a few stories that were published in the Toronto Star. Bill never replaced Mac during my 16 months there.

I knew that Marconi in Montreal had developed a new 3 centimetre radar for fishing boats, and that it could 'see'objects as close as 50 yards, whereas our 10 cm radar lost them at 300 yards. We were always working close inshore, blockading the west coast of Korea, and I thought the fisherman's radar would be very useful. So I asked Bill to fix it so we got one, ASAP.

Bill sent the radar, Grosskurth and the Japanese dockyard crew installed it (in one day), and everybody was happy.

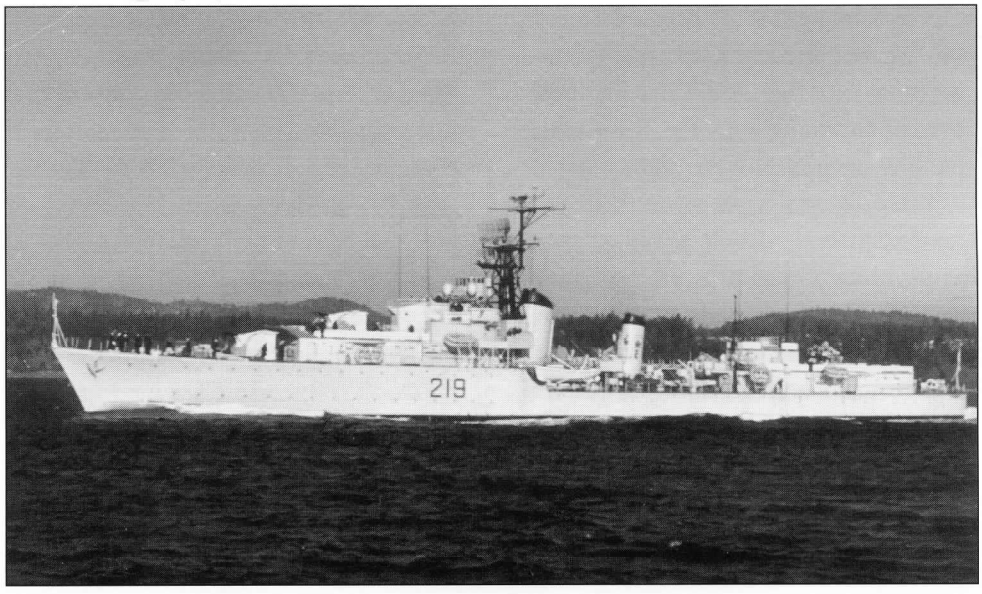
Best regards,
Robert Welland

17 December, 1997

P.S. The technical people in Naval HQ knew this radar existed, and we operators had promoted it before. But it was not Mil-Spec and Grosskurth's technical brothers in Ottawa could not have such a dubious piece of hardware on an HMCS ship. So.

Future Events

The next **Marlant Technical Support Seminar** will take place in the Maritime Warfare Center, in Halifax, 21 and 22 April 1998. Once again, members of the CNTHA are invited to join in this event. It is an opportunity to meet some of your former colleagues and to hear about what's going on in the navy today. There will be a no-host Meet and Greet at 1630 in the Stadacona Wardroom, 21 April, and a Mess Dinner the following evening. Those interested in participating in any part of these events please contact LCdr Brad Anguish, (902) 427-0550 Ext. 2658. Our thanks to Capt(N) Gerry Humby, CO of the Fleet Maintenance Facility, for this cordial invitation.



West Coast Naval Engineering Seminar, January 1998

This year, for the first time, retired members of the naval engineering community were invited to this annual event. All CNTHA members on Vancouver Island were informed of this—unfortunately quite late owing to the mail strike. Seven of us attended all or part of the two day program, which provided a good insight into the technical, administrative and personnel issues that concern today's naval engineers.

The seminar was attended by Commodore James Sylvester, recently appointed as Director General Maritime Equipment Program Management, and senior MARE officers from NDHQ and both coasts. The turnout of MARE officers and CPOs from the Command and across the country was impressive. Both the program format and the two social events afforded many chances for informal exchanges. I found it a most interesting two days.

The CNTHA was invited to present an historical paper at the seminar - 'How the DDH 280 Began' - outlining the series of decisions that led to the design of the Navy's first gas turbine ship in the mid-60s. This paper used material from the CNTHA collection to add some little-known sidelights to basic information drawn from documents held by the National Archives and DHH. It was very well received, and the CF Naval Engineering School (Officer Training Division) has asked for copies of the paper and associated slides as material for use in its courses. A shortened version of the paper has been requested by the *MEJ*.

It was encouraging to find that many of today's officers would like to know more about how Canadian naval technology developed. We plan to continue with historical papers at future naval engineering seminars in Ottawa and on both coasts. Ideally, these should be presented by local people. Some research assistance can be provided. Those interested in exploring this activity should get in touch with their local coordinator or directly with me. Addresses are elsewhere in this newsletter.

Hal Smith

The Collection

Since our last newsletter we have received three items for the Collection.

- **Canadian Technical Involvement in the Design and Construction of the Canadian "O" Class Submarine Program,** an article by Ferguson Finlay. This item is an update of previous work by Fergie and is well appreciated.
- **How the DDH 280 Got Gas Turbines,** an article by Hal Smith & Shawn Cafferky prepared for the West Coast Naval Engineering Seminar, 21–22 January 1998.
- **Messdeck Lighting HMCS *Haida*,** a reminiscence by Pat Barnhouse from the days of the original Tribals when each DDE carried an Electrical Officer.

These items are very different, not only in scope and length, but in character. Nevertheless, each adds its own flavour to the technical story of the Canadian Navy.

The Gas Turbine story has evoked comment from several people "who were there" and who wished to add anecdotal and personal information. *This is all grist for our mill!*

Our collection now stands at 321. Much data is missing and most likely squirreled away either in dusty boxes or in comparably dim memories. Don't forget to write!

By mail: 673 Farmington Ave., Ottawa, Ont., KlV 7H4
By fax: (613) 738-3894

Phil Munro

How to Access the Collection

A prime purpose of the Collection is to make its information available to researchers and casual readers alike. So how can you get to read some of it? Good question!

For the moment, there is only one copy of the collection, situated at the Directorate of History and Heritage located at 2429 Holly Lane (near the intersection of Heron and Walkley Roads) in Ottawa. DHH is open to the public every Tuesday and Wednesday from 0830 till 1630. Staff is on hand to retrieve the information you request and to help in any way. Xerox facilities are available on a self-service basis. Access to the building requires a visitor's pass, easily obtained from the commissionaire at the front door.

Copies of the index to the Collection (Accession No. 93/110) may be obtained by writing to DHH.

Drop by. Give us a look.

Follow-up: The Interim Navy, 1945-50

In the last Newsletter, I described the scope of the investigation I am undertaking for the Directorate of History and Heritage (DHH) into the early years of the post-war Navy. The coincidental appearance of my piece in the same issue as Bob Grosskurth's letter highlights just how much there is to learn from that era. Now, let me pump your memories with some specific vintage engineering questions related to the '45-'50 timeframe:

- What was the state of the engineering plants of the ships, and their maintenance? Was the O&M budget sufficient, or did cutbacks impinge on efficiency?
- What was the state of habitability, especially of messdecks and galleys, and heating and ventilation?
- How easily could engineering ratings shift from one class of ship to another, i.e. from carrier to cruiser to destroyer to frigate? What was the average length of tour in a ship?
- What was the effect of harmonization of terms of service with the Army and Air Force, as reflected in reorganization of trade groups, rank structure and enrolment educational requirements?
- How did the recruiting intake rate compare to the 'wastage' rate?

In other words, what was the health of the Engineering Branch?

The documentary evidence on these issues is either silent or conflicting and, of course, there was some variation over time. Any assistance would be invaluable, and greatly appreciated.

LCdr Richard Gimblett,

Either write to DHH, or telephone (613) 998-7061

We'd love to hear from you...

If you have information, documents or questions you'd like to pass along to the Canadian Naval Technical History Association, please contact:

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We look forward to hearing from you.

About the CNTHA

The Canadian Naval Technical History Association is a voluntary organization working in support of the Directorate of History and Heritage to preserve our naval technical history. It is directed by a committee whose members are:

- RAdm (Ret'd) M.T. Saker (Chairman)
- Dr. W.A.B. Douglas, DG History (Ret'd)
- Cmdre J. Sylvester, DG Maritime Equipment Program Management
- Capt(N) (Ret'd) R.G. Monteith
- LCdr (Ret'd) P.R. Munro (Executive Director)
- Dr. H.W. Smith, Cdr (Ret'd) (Research Director)
- Dr. R. Sarty, Senior Historian (DHH liaison)
- Mr. R. A. Spittall (DGMEPM liaison)
- Capt(N) (Ret'd) J. Nash (Supply Director)
- Cdr (Ret'd) P.D.C. Barnhouse
- Mr. Brian McCullough (*Maritime Engineering Journal* liaison)
- Ms. Gabrielle Nishiguchi, DHH (Secretary)
- Capt(N) (Ret'd) J.G. Dean (Ottawa Coordinator)
- Capt(N) (Ret'd) H.W. Schaumburg (West Coast Coordinator)
- Capt(N) (Ret'd) T. Brown (East Coast Coordinator)

Membership is open to anyone interested in Canadian naval technical history. The CNTHA newsletter and a copy of the *Maritime Engineering Journal* are sent to a CNTHA list of serving and retired military personnel and civilians. Names may be added or deleted from the mailing list by contacting DHH.