

The Canadian Hydrographic Association  
Association canadienne d'hydrographie



## NEWSLETTER

\*\*\* September/October 1997 \*\*\*

Vol. 11, No. 5

### Canadian Hydrographic Association

#### Central Branch

#### 1997 Executive

Vice-President: Terese Herron (905) 336-4832  
Secy.-Treasurer: Andrew Leyzack (905) 336-4831  
Executive Members: Jon Biggar (905) 336-4832  
Chris Gorski (905) 336-4835  
Mike Johnston (905) 336-4833  
Al Koudys (905) 319-6907  
Jacqueline Miles (905) 336-4836  
Paola Travaglini (905) 336-4847  
Sam Weller (905) 336-4732

#### Addresses:

Canadian Hydrographic Association  
P.O. Box 5050  
Burlington, Ontario L7R 4A6

FAX: (905) 336-8916 or 336-4819

Our Internet address: [lastnamefirstinitial@dfo-mpo.gc.ca](mailto:lastnamefirstinitial@dfo-mpo.gc.ca)

### Central Branch Committees

#### Membership/Nominations/Elections

T. Herron, C. Gorski, J. Biggar, A. Koudys,  
M. Johnston.

#### Lighthouse

T. Herron, C. Gorski, P. Travaglini, M. Johnston,  
J. Weller.

#### Social Events

H<sub>2</sub>O: J. Miles, B. Power, P. Travaglini.  
BBQ: J. Miles, J. Biggar, C. Gorski, P. Travaglini,  
A. Koudys.  
AGM: T. Herron, J. Miles, P. Travaglini,  
A. Leyzack, J. Biggar, A. Koudys.

#### International Members

T. Herron, J. Weller, L. Robbins.

#### NewsLetter/Web site

J. Weller, M. Johnston, C. Gorski, L. Robbins,  
K. Weaver.

#### Seminar

C. Gorski.

#### Wade Essay Award

P. Travaglini, A. Leyzack.

#### Heritage Launch

A. Leyzack, W. Warrender, J. Dixon, B. Power,  
H. Duller.

Notes from the Branch Vice-President

Now that the field season is coming to a close here in Canada, Central Branch entered the fall schedule with a well attended BBQ on Sept. 20th, followed by an evening business meeting October 1st. Many thanks to BBQ hosts Sean and Lynn Hinds. The hospitality of our members ensures that meetings and activities are successful. The evening meeting was well attended and it was great to see several of our new members. After a very interesting video, we had time for pizza, beer and socializing. Thanks for the hospitality Brian!

As is customary in September, we begin the process of Branch elections for the executive for the new year. Nominations for the 1998 Central Branch executive opened at the meeting. To have a successful election, the nominations committee must have your nominations no later than the next meeting. Please think about who you would like to have on the executive, and give your nominations to one of the committee. If you are asked to stand, please give it some thought. It can be very rewarding and enjoyable serving on the executive. For the executive to work efficiently, everyone on the executive must be prepared to spend some time to help with the various duties. Positions available for 1998 include V-P, Sec'y-Treas., and seven executive members.

The Branch AGM will be on December 11 at the Mimico Cruising Club. We will have a short business meeting where the 1998 Branch executive will be introduced, followed by dinner and a guest speaker. This is a social event for members and partners so mark the date on your calendar and come on out for the evening.

I do hope everyone had an enjoyable summer and I look forward to seeing you at the fall meetings.

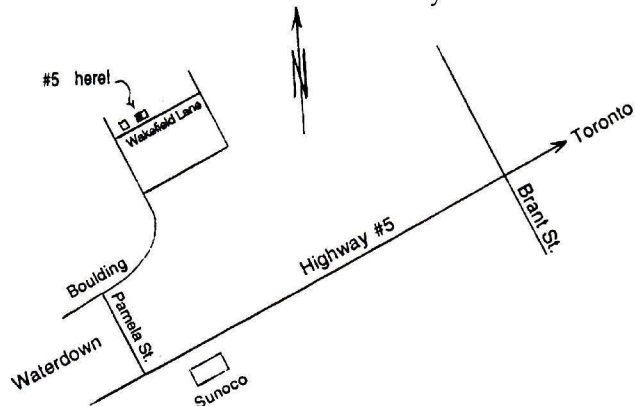
- Terese

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Next meeting

Our next meeting is at 19:00 on Thursday 30 Oct. 1997 at Terese Herron's home: 5 Wakefield Lane, Waterdown. There will be a guest speaker and beer and pizza.

This meeting will receive the Nominations Committee report with names of people nominated for election to the Central Branch Executive for the year 1998.



Central Branch Treasurer's Report

31 December 1996 to 30 June 1997

Balance forward 31 December 1996: \$ 2,741.59

Receipts

Membership Dues (1996)	\$ 30.00	
Membership Dues (1997)	2,394.53	
Seminars (cost recovery)	37.80	
H2O Bonspiel	1,488.02	
Launch Print Draw	85.00	
Postage Refund	22.50	
Heritage Launch	1,000.00	
		\$ 5,057.85
		\$ 7,799.44

Expenditures

National Dues	\$ 1,340.00	
Postage	328.48	
Seminars	172.14	
H2O Bonspiel	1,704.59	
Professional Development	250.00	
Heritage Launch:		
Maintenance	\$ 493.80	
Print Draw	45.00	
Tarpaulin	525.00	
		1,063.80
		\$ 4,859.01
Balance 30 June 1997:		\$ 2,940.43

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**[Note: To assist the Editorial team, some Lighthouse income and expenditures (reported below) are handled by the Central Branch treasurer. The balance is held available and will be passed to Lighthouse on request.]**

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Lighthouse "Convenience" Account

31 December 1996 to 30 June 1997

Balance forward 31 December 1996: \$ 1,655.38

Receipts

Subscriptions (1996)	\$ 97.93	
Subscriptions (1997)	1,030.41	
Subscriptions (1998)	25.00	
		\$ 1,153.34
		\$ 2,808.72

Expenditures

Transfer to Lighthouse	\$ 1,800.00	
Postage	331.11	
		\$ 2,131.11
Balance 30 June 1997:		\$ 677.61



Minutes of General Meeting of CENTRAL BRANCH held on 1 October 1997

1) This year's 4th General Meeting was held at Brian and Anna Power's residence in Burlington. Terese welcomed everyone, thanked Brian for his hospitality and called the meeting to order at 7:05 pm.

Attendees:

Terese Herron - V.P.- Chair  
Andrew Leyzack - Secretary-Treasurer  
Shawn Cook Dan Dixel Ken Dixel  
John Dixon Heimo Duller Tim Janzen  
John Medendorp Brian Power Carol Robinson  
Ab Rogers Bill Warrender Keith Weaver  
Jim Weedon Sam Weller Dave Willis  
Speaker: Ken McMillan - CHA National President.

2) Minutes of 24 April, 1997 Meeting were circulated in the newsletter and available at the meeting.

- Moved S. Weller/J. Dixon CARRIED

3) Treasurer's Report: (A. Leyzack) Members should note that the Branch's money wire account will be open until the end of the fiscal year, December 31, 1997. Andrew presented 2nd quarter statements, December 31, 1996 to June 30, 1997. Andrew called attention to the Heritage Launch convenience account, saying he has projected a positive balance by the end of October from revenue for participation at Hamilton's Aquafest (\$500), the Canadian National Exhibition (\$500), the Canada Centre for Inland Waters BBQ Fund Raiser (\$250) and the Rindlesbacher Print Draw (\$200).

Motion to accept the 2nd quarter statements:

- Moved D. Dixel/B. Warrender CARRIED

4) Correspondence: (T. Herron) Terese reported on membership enquiries and requests for back issues as well as two requests for information, one on Sonobuoy positioning and the other on LIDAR, which were referred to G. Lachapelle and terra Surveys respectively. We have had a request from West Coast Publishing to reprint a paper by D. Wells. We have also heard from Peter Knight who is submitting a paper to Lighthouse as well as the *Ends of the Earth* column. Adam Kerr has also been in touch and has submitted an article for Lighthouse. Adam is retiring to the UK.

5) Committee Reports:

Membership: (A. Koudys) Membership stands at: 27 International; 30 Out-house; 43 In-house; 3 Sustaining. Terese said membership is up from last year. Dues letters will be included in the December NewsLetter.

Outstanding Action: Membership committee still to report back comments from former sustaining members.

Action: Membership committee to draft a letter of inquiry to past sustaining members by year-end.

Wade Essay: (P. Travaglini) Andrew reported that the mailings for the 1997 Wade Essay Award will be prepared and sent out this month.

Lighthouse: (T. Herron) Terese reported that papers are in for the fall edition, No. 56, which should go to press in December. We need someone to prepare the *News from Industry* column which was previously compiled by Peter Knight. The task involves coordinating company press releases which have been received. This commitment requires 10-15 hours of work per issue and provides a good insight into development and new products in government and the private sector.

Social Events: (J. Miles) Jackie reported on this year's **CHA Summer BBQ**. [See report on page 5].

Terese said the **1997 Central Branch AGM and Dinner** will take place on 11 December at the Mimico Cruising Club, Etobicoke. Cocktails to be served at 4:30 pm and dinner at 7:00 pm. Speaker to be announced.

Admiralty Launch Surveyor: (A. Leyzack) Andrew reported that Surveyor and crew have enjoyed a somewhat quieter year, with the Aquafest weekend at Hamilton Harbour and a static display in the Oceans exhibit at this year's Canadian National Exhibition.

The third and final event of the year will be on Thames River in Chatham this coming weekend; *The Faire at the Forks* is a recreation of an 18th Century "pleasure fair", and *Surveyor* and crew will join in the 1812 encampment. Andrew thanked those who volunteered to help with the Launch BBQ fund raiser at Canada Centre for Inland Waters: Jackie Miles, who organized the event, and John Dixon, Fred Oliff, Les Peer, Brian Power and Bill Warrender for their help at the grills. Andrew congratulated Ken Dixel, winner of the Rindlesbacher print entitled *Burlington Races*. Thanks to all who purchased tickets to support the Launch!

6) Nominations for 1998 Executive: Terese asked for a motion to open nominations to the 1998 Branch executive. Nominations can be submitted by email or in writing to any of the membership committee. Nominations will close at the next meeting, 30 October. Ballots will be sent out with the next newsletter.

- Moved B. Power/H. Duller CARRIED

7) Other Business:

No other business, meeting adjourned at 7:35 pm.

- Moved T. Janzen/S. Weller CARRIED

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Terese introduced the CHA National President, Ken McMillan, who spoke informally on his involvement with hydrographic training and business in Malaysia.

Brian then introduced a video purchased by Sean Hinds entitled *Alone in the Night*, a fine documentary on the lighthouses and lightkeepers of Georgian Bay, Manitoulin Island and the North Channel.

After the film, members were treated to pizza and beer.



The International Column

Guest Columnist: Peter Knight

*We are glad to welcome Guest Columnist Peter Knight to our International Column. Peter recently accepted a position with the University of Otago, New Zealand.*

The 26th of September 1997 became a watershed for me as I struggle to make something of the hydrographic position at the University of Otago. The 26th of September was the day on which I was introduced to the New Zealand hydrographic establishment i.e. the Royal New Zealand Navy.

Kevin Smith from the Naval Hydrographic Office in Auckland arrived in Dunedin on the evening of the 25th Sept. HMNZS Monowai (the RNZN survey ship), under Commander Larry Robbins, arrived at Dunedin's Victoria Wharf at 8:00 am on the morning of the 26th.

Many Canadian hydrographers and cartographers will know Kevin Smith who has had extensive contact with the CHS in Ottawa over the past several years. Kevin's lecture to the hydrography students on the morning of the 26th included reference to at least two CHS products which he had on hand to show the students, along with many verbal references to initiatives undertaken by the CHS. We were treated to a cascade of information, the climax of which was Kevin's assertion that we would soon be able to survey the Ross Sea (the Southern Ocean's corollary to the Beaufort Sea) in a few days using Australia's new airborne 'blue-green' laser technology.

Proudly clutching my formal invitation to lunch on the Monowai, I made my way at a run over the rail yards and through the warehouse section until I glimpsed her smokestack and crane above the wharf-side sheds. The Monowai had twenty years of service as an island trader before becoming a naval survey ship and she retains the classic lines of a ship from a more romantic period; slightly older and smaller than the Hudson or Baffin, she lay alongside looking as happy as a yacht, the sun reflecting brilliantly from her white topsides.

A gangway led to the stern of the ship where young uniformed naval officers were gathered to welcome the guests; I was escorted to the bridge where Larry Robbins was presiding over the introductions and libations of the occasion. We dined on venison in the Captain's cabin after which I joined the Operations Officer, Peter Monday, together with the students, now also arrived, for a tour of the ship's hydrographic capabilities.

Peter Monday stressed the use of an Integrity Monitoring technique for differential GPS surveying, in which a secondary receiver is placed on a known station adjacent to the base station and receives hard-wired differential corrections from that station. Continuous monitoring of the health of the system is thereby achieved.

We spent the afternoon aboard ship and two groups of students were given the tour. Highlights included the examination of the Seagull a wooden sounding launch that I was assured was much stronger and more resilient than the aluminum hulled launches.

I returned to the Monowai that evening and Larry and I walked back through the warehouses and over the railway footbridge to the Dunedin downtown and company that awaited us at the Tangentia Café. That evening it was decided to resuscitate the New Zealand district of the Australasian Branch of the Hydrographic Society. Stan Lusby and Chris Spencer, my predecessors at the university; Kevin Smith; Anna Leslie, a student of hydrography; Larry Robbins and myself were present for the occasion. Larry Robbins has accepted the role of chairman, and I the role of Secretary. We shall present our proposal to the Australasian Branch later this year.

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*News & interesting items from (or about) International Members are always welcome. Send to: Larry Robbins 42 Knights Road, Rothesay Bay, Auckland 1310, NEW ZEALAND. Or on the Internet: larry@robbins.gen.nz.*

**Canadian Hydrographic Association**

**\*\*\* Central Branch \*\*\***

**1997 ANNUAL GENERAL MEETING & DINNER**

Thursday 11 December 1997 at

Mimico Cruising Club  
Humber Bay West Park  
Etobicoke (Toronto)

CHA Members and Guests: \$25.00 per person

Cash Bar

Cocktail Reception 4:30 pm  
Annual General Meeting 6:15 pm  
Dinner 7:00 pm  
Guest Speaker 8:00 pm

A Registration Form will be in the next NewsLetter.

For reservations and information please contact

*Canadian Hydrographic Association  
P.O. Box 5050  
Burlington, Ontario L7R 4A6  
FAX: (905) 336-8916*

Last day for Registration: Thursday 4 December

INTERNATIONAL MEMBERS of CHA [4 October 1997]

Rhea Metin Alkan	Turkey
Capt. F. Angelini (ItN)	Italy
Peter Barr	Australia
Guenther Bellach	Thailand
Fosco Bianchetti	Italy
Guiseppe Biscontin	Italy
Gary Chisholm	New Zealand
Luis Leal de Faria	Portugal
Ir. Eka Djunarsjah	Indonesia
Nick Emerson	Hong Kong
Randall Franchuk	U.S.A.
Ronald Furness	Australia
George Goldsteen	Australia
Instituto Hidrographico	Spain
Chih Ping Hu	Taiwan
Adam Kerr	United Kingdom
Peter Knight	New Zealand
Karl Kieninger	U.S.A.
Charles Meador	U.S.A.
Capt. Keith Millen	United Kingdom
Rumlan Bin Mukhtar	Malaysia
Rr Adm Steve Ritchie (Ret'd)	Scotland ( <b>Life Member</b> )
Cdr. Larry Robbins	New Zealand
Dr. Shiahn-wern Shyue	Taiwan
Reid W. Stanford, III	U.S.A.
Paul Stern	United Kingdom
Jack Wallace	U.S.A.

Central Branch Nominations

Dear Member,

This is a call for nominations to your 1998 Central Branch Executive. International and Out-House Members have had a growing voice in our Branch in recent years and we hope this will encourage input to the Nominations Committee.

The positions available this year are:

Vice-President  
Secretary-Treasurer  
7 Executive Members

Members eligible for nomination are listed above and on Page 6. Please mail or fax 905-336-8916 or phone in or mail nominations as soon as possible to one of us:

Terese Herron	(905) 336-4832
Jon Biggar	(905) 336-4832
Chris Gorski	(905) 336-4835
Al Koudys	(905) 319-6907
Mike Johnston	(905) 336-4833

Nominations close at the meeting on 30 October 1997. Ballots will be distributed in the Newsletter and election results announced at the Annual General Meeting.

We look forward to hearing from you!

Terese Herron,  
Nominations Committee



Meeting of the Working Group to Establish the Minimum Standards for Recreational Vessels Safety Courses

by Andrew Leyzack, CHS representative on the committee

The Canadian Coast Guard, in cooperation with other federal, provincial & private sector agencies, initiated a working group to develop a set of minimum standards for recreational vessels safety courses. The objective of the standards is to provide the groundwork for the implementation of a recreational vessel operator's licensing program. Through such a program, the Coast Guard hopes to attain consistent, safe boater behaviour and improve boating safety to reduce the loss of life, injuries and property damage due to boating accidents.

The third meeting of the Working Group was a video conference held November 21, 1996 at 4900 Yonge Street, Toronto. Over thirty participants were linked from 12 conference sites coast to coast.

At the Toronto site were: Brian Burch (Canadian Power and Sail Squadron), Issie Goldman (bereaved parent), John Hambige (Toronto Harbour Commission), Andrew Leyzack (CHS/DFO), James Lowe (Georgian College), Larry Smith (Watercraft Training Centre), Bill Taylor (W. F. Taylor & Associates), and Allen Will (Ontario Sailing Association).

Other conference sites were St. John's NF; Moncton NB; Charlottetown PEI; Dartmouth NS; Sydney NS (CCG College); Québec QC; Montréal QC; Ottawa ON; Sarnia ON; Vancouver BC; and Victoria BC.

Prior to this meeting, members were asked to review the latest Discussion Package, a document which originally had over 200 pages but at the time of this reading had been reduced to 52 pages of task listings. The task listings are divided into four function groups:

1. Comply with laws, acts, regulations, codes & rules;
2. Respond to emergencies;
3. Act responsibly; and
4. Operate a recreational vessel.

The task listing exercise was once again the focus of the meeting, and the group had succeeded in reviewing the entire document with the exception of one task when our allotted conference video time frame came to an end and we began losing sites. Ironically, what appears to be one of the more contentious issues still remains to be thoroughly discussed: "Use charts, maps and marine publications". However, positive feedback continues to come from participating members of the Coast Guard and Master Mariners with respect to endorsing the use of charts as an integral part of boating safety.

The task "Use the Canadian Aids to Navigation System" weathered well throughout the discussions. Many of the knowledge base points I had earlier submitted were echoed by other members and will carry forth to the performance objectives. I hope this will also be the case with respect to the use of charts etc.

The issue of exam delivery is another contentious issue which plays a strong role in judging what skills could or should be measured in a test situation. An example could be "Know how to put on a PFD and/or a life-jacket when in the water". Would an oral or written answer show proficiency, or should a candidate have to demonstrate? This sort of conflict has been the greatest set-back in terms of forward progress.

The results of this meeting will be posted on the Coast Guard College's WEB site. The next meeting will be scheduled for sometime in the new year, and hopefully with enough notice we'll have the site at McMaster University. The latest Discussion Information Package is in my office, H113, if anyone would like to view it.

For more information, those with Internet access can browse the Canadian Coast Guard College WEB site at <http://www.cgc.ns.ca>

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Eleventh Annual CHA Barbecue

Jackie Miles reported on this year's **CHA Summer BBQ**, which was held September 20 at Sean and Lynn Hinds' residence in Georgetown, Ontario. Twenty seven members, friends and families got together for a great day of eating, drinking and laughs.

The burgers and dogs were cooked to perfection, thanks to Andrew Leyzack and Bill Warrender, and were accompanied by many delicious potluck dishes. The temperature was on the chilly side but the merriment and games kept our minds off the weather. Once again, everyone enjoyed watching the kids bob for apples.

Hats off to Sean and Lynn Hinds for hosting the event and for their warm hospitality.

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Hot News Items!!!

The summer of 1997 ended with exciting news: While in the Arctic this summer, on 26 August at 17:40 CDST on board CCGS Henry Larsen just off Bent Horn, Cameron Island, Terese Herron (CHS Burlington, Ont) and Shawn Cook (CCG St. John's, NF) got engaged.

Also while in the Arctic, on 2 September at 20:00 MDST during an outing ashore where the Arctic Circle crosses Bathurst Inlet, Pete Wills (CHS Burlington) and Patty Parkhouse (CHS Pacific Region) got engaged.

Congratulations! Must be something in the Arctic air... Now can we just pull in the ends of the country so these happy folk don't have so far to drive?

And Kent and Jennifer Campbell (CHS Burlington) are delighted with the anticipated arrival of their first baby in March 1998! Something in that sushi, Jen?

MEMBERS of CENTRAL BRANCH [4 October 1997]

CCIW in-house (43 people)

Mike Bennett  
Raj Beri  
Jon Biggar  
Jennifer Campbell  
Daniel Brousseau  
Mike Crutchlow  
Paul Davies  
Dan Dixel  
Ken Dixel  
John Dixon  
George Fenn  
Helen Fuchs-Trapp  
Chris Gorski  
Terese Herron  
Sean Hinds  
Tim Janzen  
Mike Johnston  
Al Koudys  
Andrew Leyzack  
Ed Lewis  
Mike Marsden  
John Medendorp

Jackie Miles  
Hermo Nepomuceno  
Fred Oliff  
Brian Power  
Dave Pyatt  
Paul Read  
Bruce Richards  
Carol Robinson  
Dennis St. Jacques  
Laura Sandilands  
Rick Sandilands  
Al Shepherd  
Brad Tinney  
Glenn Toldi  
Paola Travaglini  
Ray Treciokas  
Keith Weaver  
Jim Weedon  
Sam Weller  
Arnie Welmers  
Dave Willis

Private Industry etc. (30 people)

James Berry  
Earl Brown  
Joseph Delle Fave  
Ron Dreyer  
Heimo Duller  
Jan Egerdee  
Peter Fox  
John Halsall  
Dr. J. Scott Holladay  
James Ikkers  
Ryk Karczuga  
Anthony C. Knott  
Don Knudsen  
Barry Little  
George Macdonald (**Honorary Member**)

Robert Marshall  
Tom McCulloch (**Life Member**)  
Bruce McGowan (Atlantic)  
R. Ken McMillan  
J.W.L. Monaghan  
Ken Paul (Atlantic)  
Roger Robitaille  
Ab Rogers (**Life Member**)  
Mike Romanchuk  
John Smart (Atlantic)  
S. James Statham  
Eric Topple (Atlantic)  
Wm. Warrender  
Dave Wells (Atlantic)  
David Wright

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SUSTAINING MEMBERS of CENTRAL BRANCH

Kongsberg Simrad Mesotech Ltd., 202 Brownlow Avenue, Dartmouth, NS, Canada B3B 1T5  
[contact: John Gillis, Manager (East Coast) and Manager of Marketing, at (902) 468-2268]

NovAtel Inc, 1120-68 Ave N.E., Calgary, AB, Canada T2E 8S5  
[contact: Art Silver, Manager Marine Products, at (403) 295-4500]

Seatex Inc., 1111 Third Avenue, Suite 2500, Seattle, WA, USA 98101-3263  
[contact Karl Kieninger, Hydrographer, at (201) 295-1443]



## Tales of a Navigation QC

by Bruce Calderbank

*Bruce is V-P of the CHA Prairie Schooner Branch, based in Calgary, Alberta. When trolling for "News from Other Branches" at the beginning of August, Sam Weller caught Bruce on his way to the airport enroute to an assignment in Indonesia.*



*MV Seisventurer. Photo: Geco-Prakla*

Greetings from Northern Sumatra. So how was your summer? I seem to have spent mine in and out of Canada travelling to various parts of the world. Last year I worked continuously overseas from late June until the New Year working off Angola and in the North Sea. Since March of this year I have worked in the North Sea, Australia, and now in Indonesia.

Though I spent some time in Australia visiting friends, usually I don't get to see much of the places I visit, just the airports and lots of sea. This time I got to step ashore in Indonesia when the vessel cleared customs. You know, you can't see much of a place from the dockside at night!

Perhaps I should explain what it is I actually do... Mostly, I am involved with marine 3D seismic surveys, rig moves and offshore construction. For various oil company clients, I provide on-site supervision for all aspects related to survey, navigation and positioning.

My brief is to work with the contractor to achieve the goals of the survey, and to ensure compliance with the contract (which I am usually empowered to modify as circumstances dictate). I also get in as much exercising, sun tanning, reading (presently, amongst others, "The Dilbert Principle" by Scott Adams), and watching the dolphins as I can.

And how do I do this (the work I mean) well... For marine 3D seismic surveys the vessel is towing from 2 to 10 seismic cables up to 4,500 metres long, with two or more towed source arrays. The arrays provide the energy source which is reflected off the various geological strata and picked up by the hydrophones in the seismic cables.

Of course, differential GPS is used for the vessel positioning, usually with a main and back up positioning systems, each with their own separate differential link to at least 2 or more differential GPS reference stations.


Relative GPS systems are used to determine the separation vector between the vessel and each tailbuoy. Usually at the front and tail (and sometimes in the middle as well) there are acoustic networks forming a series of brace quadrilaterals. Magnetic compasses mounted at regular intervals along the seismic cables are used for heading of the streamers. (That's an abbreviated version, but I hope you get the general idea.)

Using information supplied by the contractor I confirm that the specifications and requirements are being met. Also I ensure that the data set collected is consistent for the line in question, and for the survey as a whole. With the amount of redundant data collected it is usually clearly evident when the data is out of specification.

I spend my time collating and entering data for analysis of trends in the survey data; examining the currents and tides to find if there is any pattern which can be taken advantage of to reduce the costs of the survey; and checking the data set, the final version of which is usually produced on board.

So what do I like about the job... I enjoy the analysis I get to do, and meeting different people on the various vessels (as seldom do you get the chance to return to the same vessel on a regular basis), and apparently racking up lots of airmiles.

I am looking forward to getting home soon, seeing my family, and taking off in our RV. The latest forecast I have heard from Calgary was for snow. Yikes! So much for my summer in Canada. See ya!



**HYDROGRAPHIC SURVEY  
CONSULTANTS INTL. LTD.**  
Chartered Surveyors

**Bruce Calderbank, FRICS, CLS, P.Eng.**  
Bachelor of Surveying, University of N.S.W., Australia  
Diploma in Hydrographic Surveying, Plymouth Polytechnic, England

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