

Minutes of the West Coast Shipbuilding and Repair Forum
Held at HMCS MALAHAT, 20 Huron St, Victoria, BC
10:30 AM TUESDAY, MAY 15 2012

Chair: Capt(N) Don Smith, Commanding Officer FMF CAPE BRETON

Secretary: Mr. Tom Percy, Industrial Engineering Manager FMF CAPE BRETON

Recording Secretary: Mrs. Brenda-Lee Deveau, Project Support Clerk FMF CAPE BRETON

Attendees:

3GA Marine

Mr. David Stocks – President

Beaver Electrical Machinery LTD

Mr. Mark Rapanos – Sales Representative

BMT Fleet Technology

Mr. Mike Williamson - Vice President

British Columbia Ferry Services Inc.

Mr. K.S Ng – Executive Director, Fleet Maintenance Engineering

Mr. Frank Camaraire – Business Manager, Engineering

British Columbia Institute of Technology (BCIT)

Mr. John Dymond - Program Head, International Business Management

British Columbia Ministry of Jobs, Tourism and Innovation

Mr. Sylvia Selig – Director, Business Analysis

Mr. Glen Scobie – Senior Director Business Analysis

Camosun College

Mr. Chris Edley, Business Development Officer, Applied Research & Innovation

Dr. Eric Sehn – Dean, School of Trades & Technology

Canadian Welding Bureau Group (CWB Group)

Mr. Lawrence Parkinson, Marine Advisor

Mr. Ken Pearce – Manager, Corporate Sales

Corvus Energy

Mr. Ron Burchett – Commercial Marine Manager

Defence Research & Development Canada

Mr. Christopher Bayley – Defence Scientist Corrosion and Metallurgy Group

Federal Government Dockyard Trades & Labour Council (West)
Mr. Randy Defrane – Vice President

Economic Growth Solutions Inc.
Mr. John Murray – Managing Director

Fisheries & Oceans Canada/ Canadian Coast Guard
Ms. Louise Anne Granger – Superintendent, Marine Engineering
Mr. Cliff Hunt – Regional Director, Integrated Technical Services

Fleet Maintenance Facility CAPE BRETON
Mr. Greg Eyre – Service Officer

Guido Perla & Associates Inc.
Mr. Chris Chuhran – Vice President

International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers &
Helpers, Local 191
Mr. Jim Fitzpatrick – Business Manager

Industrial Marine Training & Applied Research Centre
Mr. Geoff Stevens – IMTARC Project Consultant

Jastram Technologies Ltd
Mr. Val Korbut – Technical Sales & Support Specialist

Levelton Consultants Ltd.
Mr. Peter Reid – Materials Engineer, Materials and Corrosion Engineering

McRae Electric Ltd (Island Division)
Mr. Nick Folino – Operations Manager
Mr. John Stamatiou – Island Manager

Ocean Initiatives BC
Mr. Patrick Marshall – Chief Executive Officer

OceanWorks International
Mr. Keith La Rose - Sales & Marketing Manager

Public Works Government Services Canada
Mr. Daryl Lawes – Environmental Coordinator

Seaspan Victoria Shipyards
Mr. Malcolm Barker - Vice President and General Manager

Surety Association of Canada
Mr. Bob Sloat – Director, Business Development, Western Region

Western Diversification Canada
Mr. John Briggs – Senior Business Officer

DISCUSSION

Call to Order

1. Capt(N) Donald Smith called the meeting to order at 10:30 AM.

Opening Remarks and Introductions

2. Capt(N) Smith summarized some of the topics to be discussed and began the meeting with a round table allowing each attendee to introduce themselves.

Meeting Logistics and Acceptance of Agenda

3. Tom Percy introduced himself as secretary of the forum and let everyone know of the venue's facilities. The agenda was reviewed and accepted.

Previous Minutes

4. The minutes from January 24, 2012 were accepted.

Examples of Applied Research in Support of Shipbuilding– Dr. Chris Bayley

5. Mr. Bayley explained that he represents Defence Research and Development Canada (DRDC) which is a federal agency within the Department of National Defence responsible for ensuring that the Canadian Forces are technologically prepared and operationally relevant. He presented slides (enclosed) which outlined the forums, research, and current new products being incorporated into the fabrication of the Naval surface vessels.

6. While discussing the recommendation for coated propellers as a solution to high current demand, Mr. Camaraire asked who applies the product during the research and whether it was Fleet Maintenance Facility (FMF). Mr. Bayley explained that it was not performed by FMF, but rather by an outside contractor.

7. Mr. Stevens asked if the Ship Structures Committee mentioned earlier in the slides were similar to the National Shipbuilding Research Program (NSRP) in the USA. Mr. Bayley explained that the NSRP has funding and this forum does not have particular funding and is more of a congregation of shipbuilding industry leaders and a venue for technical discussions. Capt(N) Smith noted that this type of information is hard to obtain and there is a need for these forums.

Keynote Presentation: Feasibility Study into the Conversion of a BC Ferry from Diesel to LNG – Frank Camaraire

8. Mr. Camaraire introduced Bruce Patterson as the Fleet Technical Director for BC Ferries and explained that he has attended today to help Mr. Camaraire answer some of the tough questions. Mr. Camaraire gave a presentation (enclosed) explaining the benefits and consequences to converting a vessel used by BC Ferries from diesel to Liquefied Natural Gas (LNG).
9. He explained that BC Ferries took interest in this idea about a year and a half ago. They conducted a study to see if this made sense for BC Ferries. Mr. Camaraire explained that they are not experts on this subject but they've done considerable research and participated in many discussions on the topic. This study was completed with efforts from BC Ferries, Rolls Royce Canada, and Fortis BC.
10. Mr. Camaraire went on to explain the feasibility study completed by BC Ferries using Queen of Capilano as the example vessel. Queen of Capilano currently operates out of Horseshoe Bay to Bowen Island; it is a half hour trip. The ship fuels two times a week and with LNG she could maintain the same fuelling schedule.
11. Mr. Camaraire talked about what LNG is and how it can work for other ship owners. To address the perception of this fuel being more dangerous, first aid responders, firefighters and other members who know about working with this fuel have spoken to communities about these misconceptions. Dealing with limited experience with LNG in Canada is an issue. Training and education will be needed.
12. During the presentation Mr. Camaraire and Mr. Patterson were asked if this fuel was harder on the ships as LNG has a higher combustion level than diesel. They explained that LNG is not harder on the vessel as it burns cleaner.
13. They began giving community presentations which were positively received. As this project progressed, the timeline became more aggressive and BC Ferries felt that the timeline may be too aggressive for Rolls Royce and other key participants so they have gone back to the original scheduled timeline as they need this to succeed.
14. Mr. Stevens asked if there would be an expected drop of price for this fuel as more facilities are built. The reserves for this fuel are so huge that even with the volume of this fuel being exported to Asia, where spot prices are higher, they don't expect this to affect local cost to any significant extent.
15. Mr. Parkinson asked if BC Ferries' research was related to the presentation recently given by TK Shipping. Mr. Camaraire responded by saying that Teekay Shipping has 17 ships in operation today and is ahead of BC Ferries in this initiative. BC Ferries is consulting with Teekay Shipping.

16. Mr. Camaraire used this opportunity to mention the Canadian Ferry Operators Association having a conference on 17-18 September, 2012 at the Victoria Conference Center and invited forum members to attend (<http://www.cfoa.ca/agm/index.php>).

Welding Certification and Applying New Welding Technologies to Shipbuilding – Larry Parkinson and Ken Pearce, CWB Group

17. Mr. Parkinson explained how the Canadian Welding Bureau (CWB) originally started as a government organization and evolved in the 1980s and 90s to what it is today, a not-for-profit organization. CWB Group is the largest welding service provider in Canada and has almost 7000 facilities over 34 countries around the world.

18. A hand out was provided (enclosed) to outline the history of the group, the focus and practices of this organization, the mission, auditing and other services they provide to the marine community, the education provided by the group, and the Insight Speakers Series (a forum for learning the latest technologies and processes in welding).

19. Mr. Barker asked how many audits have been completed by CWB. The response was over fifty.

Relationship Diagram for Various Shipbuilding & Repair Initiatives – Tom Percy, Secretary

20. Mr. Percy provided a diagram (enclosed) put together by Capt(N) Rueben that loosely describes the relationships between the various shipbuilding and repair industry forums and groups. Capt(N) Rueben, as chair of the BC Workforce Table, will be progressing the development of this diagram as part of the Workforce Table mandate.

21. Capt(N) Smith added that this diagram is important for forum members to understand. It is meant to provide context and assist in building synergy between the various groups.

Hybrid Propulsion Systems in Service and In Design – Ron Burchett

22. Mr. Burchett presented a brief (enclosed) outlining the benefits of using hybrid propulsion systems including their design and how they can be used in vessels as a back up or main source of propulsion.

23. Mr. Burchett explained that they performed energy audits on vessels to determine what the boat does, how often, and what amount of energy is needed. Diesel propulsion isn't necessarily needed or optimal for ships that are just working around the harbour. He also noted that the ferries they have tested this on can complete a 16 minute run with the back up generator and still have enough power left for an extra run if needed. This ensures a vessel won't get stranded without power to return a shore. Electric drives came into play originally in 1921 and are coming back now.

24. A question was asked regarding the time it takes to charge the batteries and how frequently this is needed. Mr. Burchett explained that you could charge and discharge a battery at frequent rates but he wouldn't recommend this. If you take a battery to 10% and re-charge it, this battery will likely last 20 years. If a battery is charged on and off for most of its life, it will last 7 to 10 years.

Skills Canada British Columbia: Industry Benefits – Amber Papou

25. Ms. Papou provided a presentation (enclosed), which described Skills Canada BC as an organization and how it works with stakeholders of the skilled trades and technology industry. The focus of this organization is to open the door to the trades to young audiences through communication, education, and mentoring.

26. Skills BC also gives youth the opportunity to experience some of these trades hands on by hosting 14 Olympic style trade and technology competitions across BC every year and by working with almost every secondary and post secondary school in the province.

27. Ms. Papou emphasized that this program can be beneficial to the Shipbuilding industry by bringing awareness to the upcoming workforce of trades skills and technology which are needed in the marine industry. There may be youth with these skill sets which will be told about these opportunities and trades.

28. There are a couple of opportunities coming up in Vancouver, BC when a national competition is hosted in 2013. The winners of this competition go to the world competition in Germany. This may be a huge opportunity to highlight careers which are needed within the shipbuilding industry.

29. A representative from the CWB Group mentioned that they would be interested in discussing this opportunity for the welding industry. They have produced two videos to attract youth to the welding industry and would be happy to loan these videos to Skills BC to help bring awareness to this trade.

30. It was asked whether Skills BC was working to get shop teachers back into the schools as there has been some attention in the media regarding the need for this. Ms. Papou explained that the government is aware of the need. In her experience with this subject it seems that it's not the school boards who are rejecting these ideas, the government is closing the door.

31. Mr. Defrane stated that when people have trades skills they often go to Alberta because there is not enough heavy industry here. He asked if Skills BC helped to bridge the gap between these kids and the industry. Ms. Papou indicated that they try to get kids interested in the trades although it is not specifically their mandate to bring attention to certain trades. They do communicate what they hear from industry to the students and educators they meet with to help spread the word of what the industry requires.

MARPAC Marine Education Outreach – Margot Cutcher

32. Ms. Cutcher provided a presentation (enclosed) and explained that she was here to seek the forum's endorsement on hosting another Marine Industry Education Outreach a marine industry event this year. She went on to describe the goals of this event, the target audience, the date and time, and the investment from industry members.

33. Ms. Cutcher asked that if any of the forum members were interested in participating in this event, they would need to identify someone from their organization as a contact to arrange this. Margot can be contacted at 250-363-7987 and/or Margot.Cutcher@forces.gc.ca

34. Capt(N) Smith added that although the focus during this event in the past was placed on technical trades, they would like to broaden this audience to benefit all aspects of the marine industry.

35. It was asked whether this event would be open to the public. Ms. Cutcher confirmed that it would not. This would be open to specific grades of children in schools which would bus the student in for the event.

36. The benefits of having a range of opportunities in the key message of this presentation and having this event open to youths and their parents was discussed.

37. Capt(N) Smith asked if there was an interest by forum members and there was a generous show of hands

Members Round Table

38. Capt(N) Smith asked that all remaining attendees (some members had left) give a short note on today's topics. He also asked that members let him or the secretary (Tom Percy 250-363-7650 or Thomas.Percy@forces.gc.ca) know if there were topics they would like to have presented at the next forum.

Frank Camaraille: BC Ferries will host the next forum 18 Oct 12, here in Victoria. I do have over 30 sponsors from the marine industry at the upcoming Canadian Ferry Operators Association and I will see if any of these organizations have anything to contribute to the Marine Industry Outreach Event in November. I will see what I can do and get back to you.

John Stamatiou: This was my second time at these meetings and I have found them to be very informative, I feel that the shipbuilding and marine industry's future looks very bright and for our future as younger individuals we look forward to a busy and promising career ahead of us. The new technology that is being developed and implemented on new vessels also makes it very interesting as we learn new ways and skills that are needed to

build, maintain and operate these new vessels here on the west coast and also taking our environment into consideration.

Nick Folino: Today we brought to light, as an industry, the challenges we have ahead of us. Knowing we have to build up the management teams and the field level as well. It is up to us to overcome challenges and build the industry.

Eric Sehn: Coming from a post secondary perspective, we are very interested to participate in the Marine Industry Outreach Event in November. We will be interested in the labor needs assessment documents being produced by Malatest. The data will be key in helping Camosun to plan for what skilled labor industry will need, when they will need it, and how many workers will be required? As trainers, we don't want to over or under train in relation to this final point.

Keith La Rose: This is my first time personally attending the forum meetings, although our company has now attended two. It is great to see the strength of the industry and the diverse players who are attending the forum meeting. Although OceanWorks is not a traditional "shipyard" we are very involved in the local marine market (supporting shipyards and ship repair) and look forward to continued participation in the industry locally, and we hope to be able to deliver value to the industry with our unique technical and engineering skill sets and experience.

Ken Pearce: Thank you for the invitation to attend. I feel that we are only scratching the surface of the knowledge in this room. I look forward to being part of this forum next time.

Larry Parkinson: I would like to thank you for inviting CWB Group to make a presentation and to contribute to the forum. We do look forward to fulfilling the role of one of your essential resources for the rebirth and sustainability of Canada's Shipbuilding Industry, particularly the West Coast Shipbuilding Industry.

Daryl Lawes: I am pleased to represent Jim Milne and the Esquimalt Graving Dock, I thoroughly enjoyed the diversity of speakers, and particularly appreciated the technology presentations.

Michael Williamson: It was nice to see the range of technical presentations, followed up with personnel and HR related issues in the afternoon. Skills and personnel resource availability will probably be the challenge we all face moving forward so it is important to address a range of topics. It is also good to see the variety of attendees, some constant, some new faces, which highlight how dynamic our industry is.

Sylvia Selig: Thank you for the invitation to attend. I had participated in the forum a couple of years ago and I appreciate the continued energy of group and the work of folks participating.

Glen Scobie: My side of the ministry (Economic Development Division) is very much interested in industry development issues, and in particular in leveraging the Seaspan success in the NSPS in ways that would enhance the productivity and competitiveness of the broader marine sector in BC. My colleagues in the Labour Market and Immigration Division (usually represented by Joan Westran at WCSRF meetings) are very much interested in the human resource issues such as workforce recruitment and training.

Chris Edley: (See attached memo from Chris). Camosun College applied research group is eligible for \$2.3 million in federal funding to develop a five year applied research program with \$200,000 required from industry in years four and five. We train people in the trades, and as a component of this, we teach workplace safety. We plan to submit a letter of intent to develop a centre of excellence in workplace safety. This doesn't mean more audits and regulations, rather innovative means to improve safety to make safety easier to manage and improve productivity. To illustrate, one example might be to apply our expertise in electronic monitoring of human performance to working in confined spaces. A monitor worn by a person can monitor the person's stress level, providing an early warning that a break is needed, reducing the occurrence of overexertion injuries. According to WorksafeBC, the commercial shipbuilding and repair industry lost 39,000 days to injury between 2007 and 2011 in BC. We feel there is likely room for improvement and are looking for letters of support from industry to accompany our application.

Ron Burchett: What we need to take away from this forum today is that we have to climb a hill and put pieces together. We are capable of doing this. We have enough horse power in this room to do whatever we want. We just have to apply it. We have to get on with it.

Val Korbut: This is my first time in this type of meeting. I found it interesting to see what goes on in the industry from different perspectives. I'm looking forward to participating in future meetings.

Jim Fitzpatrick: I have had four years in this forum. It's exciting. This is huge. Once everyone gets involved in the training aspect, we will see growth in the industry. I receive applications everyday for work within the industry.

Randy Defrane: Thank you for the invitation to attend. We've been participating since Capt(N) Rueben's time as chair of this forum. I agree we will build the industry back up but we need to get something started for people on the side lines and get them in before they take off to the prairies where there's more work.

K.S. Ng: Our Spirit vessels will be life extended from 2015 - 2017. Work will include usual life extension work as well as ship system efficiency upgrade on hull and machinery.

Christopher Bayley: I appreciate the opportunity to present and be part of this forum and look forward to attending the next meeting.

Chris Chuhran: Thanks for invitation. I am both a Canadian and US citizen. I am surprised to hear similar issues are being faced within the Canadian and US shipbuilding industries. I think it is good that some ideas are being spread between countries, for example, BC Ferries and Washington State Ferries are looking at LNG propulsion, and there are other examples at this table as well. Good job integrating technologies around the world. I am a relatively young person in an engineering firm and examine the future of this industry with great interest. I note that it does seem to be hard to find talent in the shipbuilding industry. I am excited about the future but there is a lot of risk. Canada is taking a big step in the industry. Hope you can sell the young folks on the merits of this industry and that it is an industry with a good future. Recent history does not present many good examples to help support this point.

John Murray: Our firm is currently working on drafting a report on competitiveness and productivity of BC's shipbuilding and repair industry. In our study we are really looking at two dimensions of technology transfer: the shipbuilding process itself, as well as ship technologies, which are also changing. As a result I found the presentations to be particularly informative and I appreciate the opportunity to attend this forum.

David Stocks: I have attended the WCSRF a number of times in the past representing OIBC and welcomed the opportunity to be here this time as part of the team developing the Competiveness and Productivity Road map with John Murray. I found the presentations to be very interesting and thank the chair for the invitation.

Patrick Marshall: I represent Ocean Initiatives BC which was formed in 2005 when two groups were asked to merge by then Premier Campbell. Unfortunately, by the time they got organized, an "Inconvenient Truth Arose" by former Vice President Al Gore. This caused the majority of members to step away from the mandate of promoting offshore oil and gas development in British Columbia Waters.

The "Ocean and Marinspace" economy is supported by more than 100 non-government associations and more than 7,000 businesses in British Columbia. This economy is made up of small and medium enterprises that employ less that 25 people. It represents about 98% of the number of businesses. The remaining 2% are major public and private sector employers like DND, Seaspans and BC Ferries which do not join associations as a rule, as we have been advised by participants in this forum.

Ocean Initiatives BC is focusing on a new initiative which is designed to link buyers and sellers, the procurement part of the equation. We are not a lobby group, but an industrial development group. The association has more than 50 members and continues to support efforts to connect the education and training community with employers. Just last week, Ocean Initiatives BC hosted the British Columbia Pavilion at the Offshore Technology Show in Houston Texas, the largest ocean and marinspace hardware show in the world. OIBC does so because the Province of BC deleted this function 4 years ago.

In addition, it was OIBC that introduced the earlier presenter Corvus Energy, to the key people in each of the groups that make up the Shipbuilding and Repair Forum. It's what we do.

We have suggested ways that OIBC can support the forum in a letter to the Chair date last November and we are prepared to support this effort. We just need people around the

table to join us and support the larger community that makes up the ocean and marinespace community. You can find us at www.oceanmarinespace.com Make sure you join so that we can include you in the Directory or People, Products and Organizations.

John Dymond: Thank you to all who arranged hosted and presented at the forum. This is a remarkable and wonderful time. I learned a great deal. BCIT is creating a Centre of Excellence in Manufacturing and, within that, a Centre of Innovation for Shipbuilding and Repair. Our plan is to partner with Camosun College to provide training and education that meet the Trades and the Operations Management needs of the industry over the next several years so that young people moving into the industry can be trained on the island or in the lower mainland. I am pleased that there was some mention of project management, supply chain management, lean and total quality as well as talk of training needs within the general and marine trades.

Peter Reid: I've learned a lot today and am still processing some of the information. A lot of technological information was shared as well as HR information. We are on the outside and it's hard for us to forecast the state of the industry, but I'm excited about what I've seen and look forward to participating more.

Bob Sloat: I was impressed with content of today's forum. This forum is a great way for me to monitor the development of industry for the new era of service providers. Fundamentally we will keep qualifying small, medium and large enterprises. I will continue to participate in this forum, if I may, as I look forward to being part of this for the next few years.

Malcolm Barker: It has been a while since we sat down at the first forum some 5/6 years ago to discuss how we would rebuild and maintain this industry. I like this forum as it brings together a diverse bunch of individuals. Every day we learn more about the challenges we face in the shipbuilding and repair industry. We can and need to let people know what things are going on as this truly is an exciting time to be a shipbuilder. I'm thrilled at how this forum has evolved and am pleased to be a part of it.

Louise Ann Granger: This is my second time attending this forum. I did not attend the meeting in January when Capt(N) Smith gave a presentation about the Navy's fleet renewal programme. I am working on a Coast Guard presentation similar to that one.

Cliff Hunt: The disadvantage of going second last is having someone else say what you had planned to say. I thought I was going to talk about the original vision of this forum. This forum is impressive and I found today fascinating. This is my third time attending this forum. I like the depth of the group as well as the layers of expertise. The energy coming to us is amazing. I applaud you all, this is a unique group. Attending this forum is a financial investment in the future.

Mark Rapanos: Glad to attend this forum again. This forum is an excellent resource for someone in the industry to gain information and meet people. Thank you for the welcoming atmosphere. I enjoyed the presentations.

Summary and next steps

39. Capt(N) Smith noted that the agenda for today's forum was structured to discuss the "what" topics (technology and process) in the morning and the "so what" topics (people and what makes this work) in the afternoon. The forum agenda's will continue to be structured this way.

40. Capt(N) Smith thanked those who contributed today and BC Ferries for hosting the next forum.

41. Next meeting: Thursday, 18 Oct 2012 on Vancouver Island. Hosted by BC Ferries in Victoria, BC.

42. Meeting adjourned at 3:00 P.M.

//Original signed on 4 Jun 12 by//

Capt(N) Donald Smith
Chair
250-363-2315

//Original signed on 1 Jun 12 by//

Brenda-Lee Deveau
Recording Secretary
250-363-1013

Enclosures: 2



WCSRf 15 May 12
Presentations.pdf



Camosun Applied
Research.pdf