

CONFERENCE MARI-TECH EXHIBITION & CONFERENCE 2012

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The Navy's Technical History: Should the Past guide the Future?

by

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Canadian Naval Technical History Association

- Mission is to capture and preserve Canada's oral and written naval technical history
- Endorsed by Department of History & Heritage (DHH)
- Actively gathering information on ship programmes and their effect on the Canadian industrial base
- Conducted 46 oral and written interviews to date



RCN and Shipbuilding

- Successively through its ship programs in 60 or so years Canada established a naval ship design, construction and equipment/payload infrastructure
- Industrial infrastructure was not sustained between each ship program
- Various organizational and project management discipline changes made in response to problems it recognized in the ship programs



RCN and World War II

- After WWII the shipbuilding capability dwindled from lack of government support and uncompetitive costs.
- WWII shipbuilding legacy was a robust steel production industry, machine tool industry, cadre of trained workers
- RCN did not design ships or payload equipment. UK designs and equipment
- RCN had a significant cadre of technical personnel and a modest ship repair capability



DDE/DDH 205/257/261/265 Class

- By 1949 RCN recognized the need for shipyards to produce vessels rapidly
- Innovative design - US weapons/electronics
- Ships and as much equipment as possible built in Canada
- Canadian design - Naval Central Drawing Office established to do design
- Naval Engineering and Test Establishment set up to test machinery system
- 7 shipyards participate in builds



DDE/DDH 205/257/261/265 Class

- Very good design with reserve for growth
- Joint departmental panel set up to exercise oversight of programme
- Industrial capacity for shipyards and equipment withered afterward



OSS - PROVIDER

- Canadian design, commercial standards
- Innovative design
- Provided valuable experience for construction of other AORs



AOR - PROTECTEUR Class

- Canadian design, commercial standards
- Navy insistence on inspections in addition to Lloyd`s inspections caused additional cost
- Shipyard finds it impossible to do commercial work and naval work in parallel because of the differences in methodology and documentation

FHE - BRAS D'OR

- Canadian design, innovative design - included automated digital command and control system with VDS
- Ushered in new acquisition management (Glassco Commission)
- Department of Defence Production given government procurement
- Joint interdepartmental project office for project management
- Lessons learned on risk management and insurance after fire



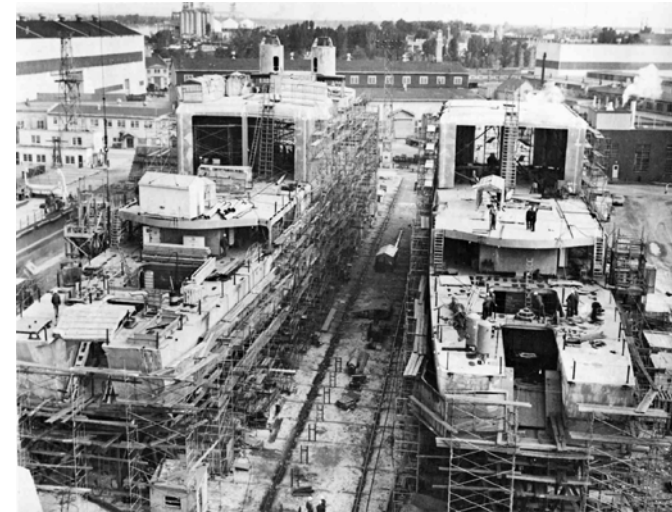
DDH 280 Class

- Canadian design, innovative design – all gas turbine propulsion, major advance in Combat System integration
- High degree of both combat and propulsion systems and equipment were Canadian designed and manufactured
- Project begun before the concepts introduced by the *BRAS D'OR* were put in place
- Central project authority did not have full control on all the design and cost areas



DDH 280 Class

- Scope creep and hence additional cost from the original concept approved by government resulted in severe criticism from government by the Pennefather Commission
- Highly capable ships and excellent value (despite criticism and perceived cost overruns)



CPF - Halifax Class

- Acquisition strategy and project management of this project reflected lessons from DDH 280
- Joint Departmental Management Review Board
- Joint project office to manage project (DND/DSS/DOI) under a total project management basis
- Shipbuilder given Total Systems Responsibility under a Target-Ceiling-Incentive contract
- Canadian design and shipbuilder to meet Industrial & Regional Benefits requirements

CPF - Halifax Class

- Design reflected many advances in ship construction and in system integration
- Command and Control System with its distributed architecture was innovative
- The contractor's use of Canadian technology in its prototype phase added risk but proved to be worthwhile
- Despite building up a world class shipyard the facility and naval equipment manufacturing infrastructure most was lost when follow-up contracts did not materialize

TRUMP

- Innovative design for combat systems
- USN had good confidence in Canadian industry to permit use of state of the art USN equipment
- Prime Contractor given Total Systems Responsibility
- Government designated the shipyard. This proved to be difficult and resulted in delays and increased costs

MCDV - Kingston Class

- Cost reduction measures taken prior to awarding the contract to keep the project within the cost ceiling
- Total Systems Responsibility under a fixed price contract
- Off the shelf commercial equipment except for the Route Survey system and Mine Warfare system
- Ships delivered on time, within budget, met industrial benefits requirements



Observations

- Need for appropriate Risk Management between government and industry
- Technical advancement led by naval technical innovation
- Establishment of both sustained shipyard infrastructure and payload infrastructure
- Government funding for sustainment of industrial infrastructure may be necessary when there are gaps in procurement activity



