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# SPAR Scuttlebutt

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April 2016

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## Royal Canadian Navy & Canadian Coast Guard

SPAR continues to support the Royal Canadian Navy and the Canadian Coast Guard providing a third party review for the earned value management ("EVM") reporting of the non-combatants under the Canadian National Shipbuilding Procurement Strategy ("NSPS").

SPAR was awarded a three (3) year contract, with three option years, to provide Canada, as represented by Public Works and Government Services Canada, under the NSPS, with Earned Value Management support services during the construction of new government vessels: a series of three OFSV Offshore Fisheries Science Vessels, one OOSV Offshore Oceanographic Science Vessel, a series of three JSS Joint Support Ship fleet oilers, and a polar icebreaker. These ships are currently planned to be built at the Vancouver Ship Yard, Vancouver, BC.

SPAR continues to be an active participant in the EVM Integrated Product Team at the shipyard, reviewing shipyard EVM reports and data each week, providing independent EVM reports and forecasts each month using SPAR's shipbuilding PERCEPTION® ERP/EVM system, and providing briefings and attending meetings as required by the Canadian Government.

## Cost Estimating Contracts

SPAR has been awarded several more contracts to provide cost estimates and price to win services for designing and building various U.S. military vessels. These estimates were generated using SPAR's parametric cost models, each customized to meet the requirements for the specific types of vessels being estimated.

In addition to the lead vessel cost estimate, services were provided to estimate costs for a multiple vessel production run from lead vessel to limited production rates and finally to a full production rate within a program overall delivery plan. These services generate estimates of annual funding requirements as well as estimated delivery schedules.

SPAR continues to provide third party assessments of change order pricing and cost estimates for a number of shipyards.

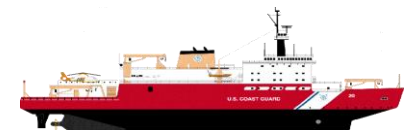
SPAR estimates costs for design and engineering, new construction, ship repair, maintenance, modernization and for life cycle operations. SPAR has provided independent cost estimates for design agents, shipyards, shipping companies, and for government agencies (U.S. Navy, USCG, for MARAD, the Royal Canadian Navy and Canadian Coast Guard).

SPAR's cost estimating includes assessments of cost risk from technical, design and engineering, build strategy and shipyard management and production performance considerations.

SPAR's more recent cost models provide options for minimizing life cycle costs via selections of alternative ship systems, changes in ship mission/operations requirements, and differences in construction and maintenance strategies. These cost models generate estimates of cost implications for maximizing operational readiness and achieving or exceeding service life.

## Ice Breaker Cost Model Release

SPAR has released its new estimating cost model for ice breakers design, engineering and construction, generating estimates at approximately the SWBS three (3) digit level of detail.



The cost model is an extensive Excel workbook that provides a very wide range of equipment and ship system selections and options as well as a variety of structural materials including high strength steels, aluminum and composites. All material

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costs are linked to commodity-based escalation tables to provide consistent material costs relevant to the anticipated year for contract award. the cost model has been designed to provide quick cost estimates for various concept and preliminary design trade-off studies.

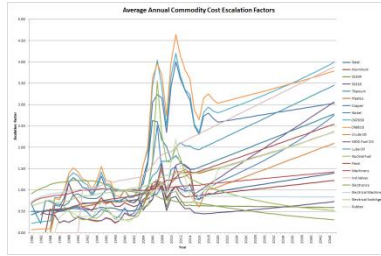
The model provides easy-to-use cost adjustments to accommodate the impact of design complexity, special operating requirements, and anticipated build strategy.

The cost model generates estimates of cost risk based on expected levels of engineering, shipbuilding and schedule performance criteria.

The cost model has options for estimating life cycle costs ("LCC") using a unique approach for estimating operating, maintenance and repairs, and future upgrade costs. Extended features generate LCC cost estimates, including annual funding projections, for not only a lead ship, but also for a fleet of such vessels planned for the program. A [presentation](#) of the LCC features can be viewed from SPAR's web site.

## **SPAR Commodity Escalation Tables Updated**

SPAR completed the semi-annual updating of its commodity-based escalation tables used by the SPAR cost models. These tables track past commodity costs that have changed year by year and forecast annual changes for a range of future years.



There are 32 commodity tables currently in use. All material costs cataloged in the SPAR cost models are individually linked to their appropriate commodity escalation table.

## **On-Line Software Demos & Training**

SPAR has provided a series of on-line software demos and training exercises to shipyards in Asia, India, the Middle East and within the U.S. using the WebEx system over the Internet. WebEx provides a very clear and responsive transmission of on-line demonstration and training details, video and audio features between SPAR staff and shipyard personnel.

## **Estimating Higher Cost of High Outfit Density Ships**

SPAR has been involved in a number of industry projects for developing new methods for planning and estimating ship design and construction.

SPAR has developed cost models that estimate the impact of ship outfit density on production costs. Ships packed with significant outfitting within very confined spaces tend to require many more labor hours

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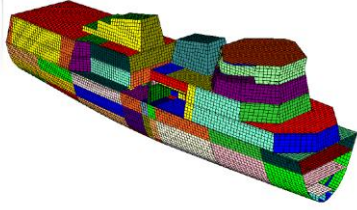
to install, whether on board or even earlier on block. In addition, such heavily confined spaces often are more difficult for conducting operations and maintenance activities. They further severely limit the amount of space and weight margins available for future upgrades. New ship volume density functions related to production labor cost have been fully implemented as options within SPAR estimating cost models.

Modern European shipbuilders have been successfully working on solving these problems and are more often now producing designs with larger hulls and outfit spaces. The larger ship volumes are reducing outfit labor hours, and better accommodate maintenance activities and future upgrades.

The added cost for larger ship structures is often much smaller than the resulting cost savings in construction and life cycle.

## **Integrating Cost Estimating into the Optimization Analysis of Ship Structures**

SPAR has been working with DRS Power & Control Technologies Advanced Marine Technology Center to integrate cost estimating functions into the DRS MAESTRO ship structures analysis and optimization system.



MAESTRO has features for optimizing ship structures within acceptable limits of strength, weight and vertical center of gravity. The optimization can focus on minimizing shipyard inventory requirements for plate and shapes while improving or maintaining basic ship design criteria.

Further work is planned to incorporate into the optimization functions additional considerations for minimizing production costs as well.

There is a current link between the MAESTRO system and SPAR's estimating cost models that produces production cost estimates for the ship structures, from fabrication through erection and welding. Another link produces production cost estimates for ship coatings that are determined for each major

areas of the ship, both external and internal spaces.

## **SPAR Associates, Inc.**

SPAR has been providing shipyard production planning and management control software since 1972. In addition to its software products, SPAR offers a variety of support services, including custom software design and development; training and software maintenance services; independent cost estimating; supplemental shipyard planning and scheduling services; and management consulting to various interests in the marine industries.

We are always available to address whatever questions that you might have. Your success is ours.

## **SPAR Wins "Best" Award**

ANNAPOLIS March 23, 2016 -- Spar Associates has been

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selected for the 2016 Best of Annapolis Award in the Computer Software Development category by the Annapolis Award Program.



Each year, the Annapolis Award Program identifies companies that they believe have achieved exceptional marketing success in their local community and business category. These are local companies that enhance the positive image of small business through service to their customers and their community. These exceptional companies help make the Annapolis area a great place to live, work and play.

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