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Final Evaluation of the Structured Financing Facility Program

FINAL REPORT

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NOTE:

Minor editorial changes were made to this report in order to prepare the document for posting to the Industry Canada's Website (including removal of standard appendices such as list of interviewees and questionnaires). Readers wishing to receive a copy of the original version of this report should contact the Audit and Evaluation Branch at Industry Canada.

EXECUTIVE SUMMARY

Canadian shipbuilding activities include construction, refit, upgrade, conversion and repair of ships; production of prefabricated ship and barge sections; manufacture of offshore oil and gas well drilling, production platforms and various heavy industrial steel fabrications. During the early 1980's the industry was characterized by overcapacity, poor productivity and low capital expenditures. An industry-led rationalization took place from 1986 to 1993 in which the federal government provided assistance totaling \$197.9 million for expenditures related to capacity reduction, diversification, employee adjustment and financing costs.

The industry continued to decline through the balance of the 90's. Employment declined from 10,000 in 1990 to less than 4,000 in 2005 with annual revenues of about \$525 million. Despite industry rationalization and niche market growth, Canada's shipbuilding and repair industry continues to cope with fluctuating domestic demand and a global industry characterized by overcapacity, fierce competition and a variety of market distorting practices.

On October 20, 2000, the Minister of Industry announced an industry-wide National Shipbuilding and Industrial Marine Partnership Project with representatives from shipowners, shipyards and labour. The partnership focused on identifying solutions to improve the competitiveness of Canada's shipbuilding and industrial marine industry, resulting in *A New Policy Framework for the Canadian Shipbuilding and Industrial Marine Industry*.

The new policy was aimed at: capturing domestic opportunities, pursuing global opportunities, strengthening innovation and competitiveness, financing, and building stronger partnerships. Initiatives to achieve these objectives included: a Buy Canada position to promote Canadian shipyards in national procurement; Accelerated Capital Cost Allowance (ACCA) of 33^{1/3} per cent for new and registered Canadian-built ships for owner/operators and a 25% tariff on imported vessels. The policy also created the Structured Financing Facility (SFF) program to provide non-repayable contributions of up to 15 per cent of the cost of the vessel to defray loan interest and insurance costs as an alternative to the accelerated capital cost provision in the tax regulations.

The initial budget for the SFF was \$150 million over a five year period. A total of \$5 million (3%) was reserved for operating costs. In January 2003, the SFF budget was reduced by \$20 million. As the loan insurance component of the program had not been used, the interest rate support (IRS) component became the primary program element, with the maximum level of interest rate support set at 15% in January 2003. The SFF budget was further reduced by \$15 million in 2003-04, and \$24 million in 2004-05 as part of the government's re-allocation exercises. Further reductions and lapses of funds occurred in subsequent years. As a result, the original budget of \$150 million stood at \$68 million as of March 31, 2007.

Demand for the SFF was not as large as expected in the early years of the program, with less than \$5 million disbursed in the first three years. Domestic owners with sufficient cash flow to utilize the Accelerated Capital Cost Allowance (ACCA) provision in the tax code have little

incentive to take up the program. Using SFF produces roughly the same economic benefit as the ACCA, but entails additional overhead costs to apply for the program and the risk of being rejected because of the program's discretionary nature.

An interim (formative) evaluation of the SFF was conducted in October 2004. The evaluation revealed that the program's level of success had been lower than anticipated, particularly as it relates to the use of the program by domestic buyers. According to the formative evaluation, this result was due in large part to the design of the program, requiring a trade-off between SFF and tax measures (ACCA). The findings pertaining to the management of the program, however, were positive.

The current (final) evaluation covers the period from program inception in 2001 to March 31, 2007. The evaluation methodology included: a review of literature and statistics, project file reviews, case studies, and structured personal and telephone interviews with: program officers; program applicants; shipyard representatives; shipowner representatives; program officers in other government departments and agencies. The final evaluation of the SFF focused on: relevance, success, cost-effectiveness and alternatives in the delivery of programs.

Relevance

Consistency with Departmental, Government-Wide and Industry Priorities

The evaluation found that the SFF is consistent with the government's priority to promote "strong economic growth". SFF program outcomes are also consistent with Industry Canada's priorities to take advantage of market opportunities, promote investments and assisting innovation in key technologies. A key SFF objective is to stimulate demand for new Canadian-built vessels in Canadian shipyards by providing a financial benefit to Canadian and foreign buyers/lessees. The program was expected to assist the Canadian shipbuilding industry to become more competitive and better positioned to respond to opportunities in both domestic and international markets. These objectives and expectations were largely achieved.

Increasing shipyard jobs and sales are primary objectives. Between 2002 -2007, SFF approved contributions of \$55 million for 36 projects (29 of which are completed and 7 other are in-process), generating approximately \$472 million in incremental shipbuilding revenue (of which \$268 million will have been exports) and a reported 3,269 person years of shipyard work. The average SFF contribution is estimated to be \$16,855 per person-year of work. Approximately 44% of SFF disbursements have gone to British Columbia, 32% to the Atlantic Provinces, 18% to Quebec, and 6% to Ontario.

SFF terms and conditions, however, do not match industry priorities – and continued expressed wish – to combine the SFF and the ACCA for domestic sales. As already indicated, a trade-off must be made and Canadian SFF program participants are required to sign a waiver to preclude using the ACCA.

The program appears to have contributed in some measure to innovation in shipbuilding technology and production processes, but results are difficult to quantify because of the complexity of the industry; the indirect nature of the program, with financial incentives being provided to buyers but results (outcomes) measured at the level of the shipyard, which is not a

party to the contribution agreement; the fact that SFF program conditions do not require shipyards to invest in new technologies to improve competitiveness; and difficulties in assessing innovation within the relatively short time frame in which the SFF has been in operation.

Duplication or Overlap with other Government Programs

The evaluation did not identify any federal programs that duplicate or overlap the SFF. The SFF is the only federal program that focuses exclusively on the shipbuilding industry. However, a variety of federal and provincial programs provide complementary financial support to all businesses. These programs sometimes assisted shipyards benefiting from the SFF, thereby indirectly facilitating the completion of specific shipbuilding projects. There is no comprehensive list of provincial programs providing support to business that could impact on the shipbuilding industry. Provincial apprenticeship programs are among some of the most beneficial programs to the Canadian shipbuilding industry.

Success

Success in Achieving Immediate Outcomes

Immediate outcomes were assessed in relation to increased client applications and use of SFF by Canadian/foreign buyers or lessees. Client applications under the SFF program steadily increased from a low of three applications in fiscal year 2001-2002 to a high of fourteen applications in 2005-2006, thereby achieving the goal of increased client applications. These applications resulted in increased use of SFF for both Canadian and foreign buyers, but not lessees. Leasing is an infrequent method to finance acquisition of vessels from Canadian shipyards. The results show that the SFF is particularly attractive to foreign buyers who do not have to make a trade-off between Canadian ACCA and SFF incentives.

The evaluation revealed that the rate of SFF take-up is affected by its indirect mode of delivery to the shipbuilding industry. Unlike other government programs that provide direct support to industry, SFF program take-up is dependent on shipyard awareness of the program; their ability to market the value of the financial incentives in the SFF to potential buyers; and ability to reflect SFF financial incentives to buyers in bids and price quotations.

Respondents indicated that the program is becoming better understood within the Canadian industry and potential purchasers of Canadian-built vessels. Respondents also indicated that without the SFF, many shipowners (especially those building or refitting larger ships) would not have considered building in Canadian shipyards.

Success in Achieving Intermediate Outcomes

Intermediate outcomes for the program were assessed in relation to maintenance or creation of jobs, increased ship orders and purchases of Canadian-built ships. The evaluation indicated that the SFF had a positive effect on maintaining or creating jobs in the industry. This finding is supported by performance information collected from participating shipyards, Statistics Canada

employment figures and shipyard case studies. Respondents from one of the most active shipyards in the evaluation stated that at least one shipyard would not currently be in operation without the SFF.

Active shipyards provide an opportunity for skilled tradespersons to acquire formal certifications that are transferable within the industry, across Canada, and internationally. It is not statistically possible to determine the exact number of shipbuilding jobs that would have disappeared without the SFF, but without the program it is likely that employment in the industry would have continued its historic decline. Many of these jobs were created or sustained in areas where employment for skilled workers is difficult to sustain without an ongoing supply of shipbuilding contracts.

Respondents noted that global demand for vessels has increased in accordance with the growth in international trade, and that most reputable shipyards in the world have a backlog of orders. Canadian shipyard business has also increased because of global demand. The extent to which Canadian shipyard business has increased because of SFF is statistically not possible to determine. However, respondents indicated that SFF assistance in a critical period of decline contributed to the economic vitality of Canadian shipyards, making it possible to become more competitive in the global market.

Overall, respondents indicated that Canadian shipyards have performed reasonably well considering that Canada largely is excluded from its closest market, the United States, because of the Jones Act. This Act requires all ships involved in the United States coastal trade to be built in the United States. Canada does not have a similar law. However, with the SFF assistance, Canadian shipyards successfully have competed in niche markets for tugboats, offshore-related vessels and structures, and refurbishing cruise ships.

Success in Achieving Broader Outcomes

Broader outcomes were assessed in relation to maintenance of industry capacity, increasing innovation, productivity and competitiveness. The evaluation indicated that the SFF contributed to maintaining Canadian shipyard capacity. This finding was supported largely by anecdotal evidence collected during interviews and the development of case studies. No reliable performance information from shipyards or reported by the Canadian Shipbuilding Association or Statistics Canada is available to provide quantitative evidence that the capacity of the industry has been maintained.

Over the period 1993 to 2003, employment in the Canadian shipbuilding industry declined from 8,913 to 3,677 jobs, levelling off in 2004 and 2005. More recent employment statistics in the Canadian shipbuilding industry (i.e., post-2005) are not available; however, increases in the number of SFF supported vessels would suggest that employment should respond to the increase in the number of shipbuilding projects.

Many factors impact on the Canadian shipbuilding industry as well as global demand and the international value of Canadian currency. Not all decisions to purchase a vessel are dependent exclusively on price. Factors of quality, reliability, reputation, dependability of delivery and responsiveness to customer requirements are also important. The ability to sustain relationships

with repeat customers also contributes to profitability, innovation and productivity through the creation of multiple vessels with similar characteristics. The SFF is viewed as an important contributory factor in a shipowner decision to purchase a Canadian vessel, as long as the shipyard also can meet the criteria of quality, competence and reputation for on-time delivery.

In addition, the ability to obtain appropriate “bonding” and guarantees is of growing importance as customers seek improved predictability in the face of growing delays and budget overruns brought on by worldwide demand, straining available capacity. Respondents indicated that smaller shipyards often have difficulty obtaining guarantees for work performed for domestic buyers. Foreign purchasers can obtain such guarantees from EDC when work is performed for the export market.

The lack of a framework of criteria and indicators to help measure and report on longer-term structural outcomes in the areas of innovation and competitiveness in the Canadian marine industry in general (and SFF contributions in particular) has hampered this evaluation’s ability to corroborate anecdotal evidence of innovation and competitiveness advances contributed to by SFF funding. It would be desirable that such a framework be developed at the earliest to support future evaluations.

While SFF funding has been uneven over the last six years, the program has contributed significantly to the Canadian shipbuilding industry and the maintenance of shipbuilding skill levels. With increasing orders for Canadian built ships and successful entry into various niche markets, the SFF program has increased the potential for Canadian shipbuilders to respond to the global market. In the longer term, respondents held the view that increased stability in the Canadian shipbuilding industry is dependent on ongoing demand, leading to increased investments in technology to improve productivity and quality.

Cost-Effectiveness and Alternatives

The evaluation found that the results achieved by the SFF are being delivered in a cost-effective manner. The team works well together and received high praise by program participants for responsive and timely assistance. The program is designed to reduce the level of administration involved in approving project applications. Funding is provided only after the project has obtained loan agreements from financial institutions and the vessel construction completed. The SFF delivery mode places reliance on financial institutions to undertake due diligence investigations to protect their investments, thereby reducing the demand on SFF resources in the project approval process. These procedures appropriately address program risk management by avoiding loss of funds created by failed projects and by placing reliance on financial institutions with an in-depth knowledge of applicant credit history. Respondents indicated a high level of satisfaction with the simplicity of the application process and, for most, with the timeliness in obtaining project approval.

Delivery of the Program

Delivery Improvements: Program participants indicated that the understanding of the SFF is unevenly distributed across Canada. Larger shipyards are better informed than smaller shipyards. Program officers maintain contact with many shipyards across Canada, but there is no formal marketing strategy to advertise the SFF. Knowledge of the SFF is an important aspect of

competition in the Canadian shipbuilding industry. Information about the program tends to be directed to potential shipowners with insufficient attention to shipyards that can use program information to assist the marketing of their shipbuilding capability. Program participants indicated that a more direct relationship between the shipyard and the SFF would be assistance in providing a firm financial commitment to potential ship buyers during the bidding process.

Recommendations

1. SFF funding cycles should be reviewed in conjunction with an “approval in principle” mechanism developed to respond to production cycles in the shipbuilding industry where development from the bid process to launch could take up to four years.
2. Communications with the shipbuilding and shipowner representatives should be undertaken on a regular basis to communicate the benefits and limitations of the program and provide information on complementary programs offered by other government organizations.
3. The Aerospace, Defence and Marine Branch should establish baseline data and ongoing performance indicators/ criteria to assist in measuring longer-term outcomes for the SFF.

1.0 BACKGROUND

1.1 Overall Industry Context

The Canadian shipbuilding and repair industry is composed of shipbuilding, ship repair, small ship conversion, professional services and equipment suppliers. Shipyard activities include the construction, repair and conversion of ships; the production of prefabricated ship and barge sections; the manufacture of offshore oil and gas well drilling, production platforms and various heavy industrial steel fabrications; as well as specialized services when performed in a shipyard.

During the early 1980's the industry was characterized by overcapacity, poor productivity and low capital expenditures. This resulted in an industry-led rationalization from 1986 through to 1993, to which the federal government provided assistance totalling \$197.9 million for expenditures related to capacity reduction, diversification, employee adjustment and financing costs¹.

The 1986-1993 rationalization resulted in capacity shrinkage of some 30 per cent in Ontario, Quebec and British Columbia, a reduction of some 5,480 employees, and improved competitiveness in most of the yards in those provinces. The major Atlantic shipyards did not participate in the rationalization due to the commitment to the construction of frigates for the Department of National Defence². The smaller Atlantic yards were occupied with new construction, repair and overhaul and building vessels for niche markets.

The Canadian shipbuilding industry continued to decline through the balance of the 90's, with lower revenues and employment, except for a small increase in 1999 for the construction of two offshore oil platforms. Employment from shipbuilding declined by more than 50 per cent from 10,000 in 1990, and began levelling off as of 2003. Employment stood at less than 4,000 in 2005, generating revenues of about \$525 million annually from about 30 shipyards across Canada as illustrated in Table I.

¹ 36th Parliament, 1st Session, Edited Hansard • Number 220, Monday, May 3, 1999

² Standing Committee On Finance, Evidence, Thursday, June 8, 2000

Table I: Revenue and Employment for Principal Shipbuilding Establishments*

Year	Total Revenues (Millions)	Production Employees	Total Employees
1993	1,201	6,859	8,913
1994	985	5,711	7,361
1995	978	5,164	6,568
1996	748	4,572	5,820
1997	516	3,976	4,660
1998	430	4,050	4,892
1999	628	5,156	6,122
2000	841	4,954	5,827
2001	563	3,753	4,284
2002	672	3,374	4,044
2003	540	3,149	3,677
2004	554	3,277	3,724
2005	525	3,115	3,541

Source: *Statistics Canada, Annual Survey of Manufactures*

*Incorporated establishments with employees, primarily engaged in manufacturing and with sales of manufactured goods equal or greater than \$30,000. Change in methodology occurred in 2000 capturing more small to medium sized enterprises.

Despite the effort to rationalize the Canadian industry and some success in building niche markets, Canada's shipbuilding and repair industry continues to cope with fluctuating domestic demand and a global industry characterized by overcapacity, fierce competition and market distorting practices.

Japan and Korea jointly dominate about two-thirds of the market, with China emerging as a significant participant. Combined, these three countries effectively control over 80 per cent of the world market which is dominated by large ocean-going ships such as tankers, a market segment in which Canada does not compete. The global market for ships is alleged to be influenced by a wide range of market-distorting practices that include: direct and indirect subsidies, national loyalties, relatively inexpensive labour and high investments by both government and industry in technology and innovation. Despite this environment, the Canadian industry has carved out competitive niches in areas such as tug boats, yachts, offshore supply vessels and ferries in terms of new-build construction and repair.

While Canada is price-competitive within North America and the European Community, Canadian shipbuilders are largely excluded from the United States market by the Jones Act (1920), requiring all ships working in the United States to be flagged, crewed, built and owned in the United States. At the same time, some of the European shipbuilding nations not traditionally considered "low cost" (e.g., Germany and Norway) have raised productivity through investments in technology to levels that make them worthy competitors to their lower labour cost Asian counterparts.

In response to these ongoing international pressures the government undertook a review of the Canadian shipbuilding industry. On October 20, 2000, the Minister of Industry announced an industry-wide National Shipbuilding and Industrial Marine Partnership Project. The “Partnership” comprised of representatives of ship owners, large and small shipyards, offshore establishments and labour, was asked to propose solutions to guide industry and government effort to improve the competitiveness of Canada’s shipbuilding and industrial marine industry, and to capture opportunities for growth.

In response to the “Partnership” consultation, the government announced *A New Policy Framework for the Canadian Shipbuilding and Industrial Marine Industry* in June 2001. The announcement of this five-year policy followed more than a decade of decline and industry rationalization in Canada; a decline mirrored in the United States, Europe and Australia due to the rise of Asian shipyards, trade protectionism and government intervention.

Current Federal Shipbuilding Policy Measures: Established 2001

1. The Federal Government Shipbuilding, Repair, Refit and Modernization Policy (Buy Canada) requires that national, regional or provincial procurement of ships and ship repair services be pursued domestically, subject to operational requirements and the continued existence of a competitive domestic marketplace.
2. SFF is a financing program which provides interest rate support and/or loan insurance with combined support of up to 15 per cent of the cost of the vessel.
3. An ACCA of 33^{1/3} per cent for new and registered Canadian-built ships for owner/operators.
4. A 25 per cent Most Favoured Nation tariff that applies to vessels built off shore, in countries other than those with which Canada has a free trade agreement.

1.2 Description of the Program

The SFF is a key component of the policy framework for the Shipbuilding and Industrial Marine Sector announced in June 2001. The policy framework included a number of measures falling into five categories: capturing domestic opportunities, pursuing global opportunities, strengthening innovation and competitiveness, financing, and building stronger partnerships.

The SFF is positioned within the financing category of initiatives, in response to requests from industry to modify the tax regulations to permit the use of specific tax provisions in situations where Canadian vessels are sold to leasing companies rather than operators.

The SFF provides an equivalent benefit to purchasers of Canadian-built ships in such circumstances, including buyers/lessees and is an alternative to the accelerated capital cost provision in the tax regulations. The SFF is a market-based tool, administered by Industry Canada, intended to address some of the cost-competitive gaps between Canadian and foreign shipyards.

The objective of the SFF is to stimulate economic activities in the Canadian shipbuilding and industrial marine industry by providing financial assistance to buyers/lessees of Canadian-built ships. The SFF reduces the financing costs of ships built in Canada by buying down the interest rate of the loan used for financing vessel acquisitions. SFF support is capped at 15 per cent of the value of the vessel.

The SFF has three distinct elements:

- **Interest Rate Support (IRS):** financial support/assistance within the prescribed limits, up to 15% of the purchase price of a new Canadian built vessel. The support is in the form of a non-repayable contribution.
- **Credit Insurance Contribution (CIC):** credit (loan/lease) insurance which can insure a portion of a loan or lease to acquire Canadian built vessels. The cost to the Government for this insurance cannot exceed 10% of the purchase price of the vessel.
- **Credit Insurance Support (CIS):** insurance support which can provide a non-repayable contribution towards private loan/lease insurance within prescribed limits up to 10% of the purchase price of a new Canadian built vessel.

It should be noted that the SFF program is atypical in its indirect approach: while the direct benefits of the program (financial incentives) are provided to shipowners (buyers), outcome measures relate to increased economic activity, growth in employment and occurrence of innovation in shipyards. This indirect nature of the program presents interesting policy and operational challenges: because the shipyard is not a party to the contribution agreement (which is between the Crown, shipowner and financing entity) there is no lever available to the government to condition (or compel) the shipyard to act in ways that contributes to greater innovation, more employment or increases in other societal benefits which are entirely at the discretion of the shipyard. This built-in “disconnect” between recipient of benefit (shipowner) and locus of measured outcomes (shipyard) will continue to present challenges for program managers and future evaluations.

1.3 Evolution of the Program

The initial budget for the SFF was \$150 million over a period of five years from 2001-02 to 2005-06, of which \$5 million was reserved for operating costs. The program had two elements: IRS and loan insurance. Maximum support under each element was set at 10 per cent of the value of the vessel, with combined support set at 15%.

In January 2003, the SFF budget was re-profiled and \$20 million was removed, resulting in a decrease in the annual average disbursement from \$29 million to \$25 million. As the loan insurance component of the program had not been used, the IRS component effectively became the primary program element.

In January 2003 the maximum level of IRS was set at 15%. The level of 15% was chosen since this was the estimated amount of support needed to equal the value of ACCA. Canadian shipowners cannot utilize both SFF and ACCA at the same time.

The SFF budget was further reduced by \$15 million in 2003-04, and \$24 million in 2004-05 as part of government re-allocation exercises. Further reductions and lapses of funds occurred in subsequent years. As a result, the original budget of \$150 million was reduced to \$68 million in the period ending March 31, 2007.

Demand for the SFF from domestic and foreign shipowners was not as large as expected in the early years of the program. Less than \$5 million was disbursed over the first three years of the program. This partly was because domestic owners with sufficient cash flow to utilize the ACCA have little incentive to take up the program. Using SFF would produce roughly the same economic benefit as the ACCA, but entail additional overhead costs to apply for the program.

While domestic demand for SFF has not been as great as expected, the program has had considerable success in foreign markets, with increased orders in niche markets for tug boats, cargo, offshore supply vessels and specialized refits. Part of this success can be attributed to currently tight global markets where demand for shipbuilding space now outstrips capacity. Global prices have risen, and longer lead times are needed to capture a shipbuilding slot. In this context, and with SFF support, more foreign shipowners have begun to look to Canadian shipyards to fill their needs.

An interim (formative) evaluation of the SFF was conducted in October 2004, with the purpose of looking at results and determining whether the SFF was on track in meeting its objectives. The study focused on issues identified in the Results-Based Management and Accountability Framework (RMAF) for the SFF as at March 31, 2003, which included questions of relevance, alternatives and cost-effectiveness, reach, success and design and delivery.

The evaluation revealed that the program's level of success had been lower than anticipated, particularly in regards to the use of the program by domestic buyers. According to the formative evaluation, this result was due in large part to the design of the program, requiring a trade-off between SFF and ACCA tax measures. The results in respect to the management of the program were positive. A subsequent policy review was conducted in 2005, in which a number of changes were put forward for consideration, but these measures were not acted on because of an election call in late 2005.

The SFF only had approval to disburse funds until 2006. Terms and Conditions were amended in August 2005 to allow disbursements to shipowners/leasees until March 31, 2008. However, the current program's authority to enter into new agreements ended on March 31, 2007.

As of March 31, 2007, 29 shipbuilding projects were completed and 7 others were in-process. Of these, 61% were new constructions while the remainder were either refits, modifications or upgrades to existing vessels (see Table II) The completed and in-process projects represent \$55 million of SFF contributions, \$472 million in additional shipyard sales (of which \$268 million will be exports) and some 3,269 person years of work. Approximately 44% of disbursements have gone to British Columbia, 32% to the Atlantic Provinces, 18% to Quebec, and 6% to Ontario (see Table III).

Table II: Distribution of Projects by Type

Type	Number of Projects	Total SFF contribution \$	Total vessel/upgrade value
New construction	22	26,094,063	191,175,593
Refit/modification/upgrade	14	29,013,248	281,149,157
TOTAL	36	55,107,311	472,324,750

Table III: Distribution of Projects by Region

Region	Number of Projects	Total SFF contribution \$	Total vessel / upgrade value
British Columbia	11	24,243,084	231,840,072
Ontario	3	3,206,562	21,377,081
Quebec	9	10,050,979	98,070,683
Atlantic	13	17,606,686	121,036,914
TOTAL	36	55,107,311	472,324,750

In June 2007 an announcement was made confirming the renewal of the program. The new program will include revised Terms and Conditions as well as an integrated RMAF and Risk-Based Audit Framework (RBAF).

2.0 METHODOLOGY/APPROACH

2.1 Evaluation Issues Covered

This report is a final evaluation of the SFF program, covering the period from 2001 to March 31, 2007. The purpose of the evaluation is to assess program relevance, success, cost-effectiveness and draw lessons learned. The results will provide program management with objective information for future decision-making related to the SFF program. The results of the evaluation will also fulfil requirements as outlined in the RMAF for the program. The key questions to be addressed in the evaluation of the SFF program are:

- **Relevance:** The relevance of a program refers to whether or not there is a continuing need for the program and ultimately whether or not this need has been met through the delivery of the program.
- **Success:** Success refers to long-term outcomes of the program taking into consideration whether the program has had any long-lasting effects on the ultimate needs that the program intended to remedy or address.
- **Cost-Effectiveness & Alternatives:** Cost-effectiveness and alternatives considers the evaluation of alternative forms of program delivery according to both costs and effects with regard to producing a desired outcome or set of outcomes.

2.2 Evaluation Methodology

Effective program evaluation is a systematic way to aid in answering questions about a program; whether it is serving the people it is intended to serve, whether it is reaching its desired outcomes, and where improvements can be made by involving procedures that are useful, feasible and ethical. This approach and the associated evaluation framework ensure that issues are covered in a comprehensive manner through multiple lines of evidence, and the combination of consultation and tailored evaluation tools providing a full range of perspectives, activities, impacts and alternatives.

An initial meeting was conducted with the program authorities to establish a common understanding and agree upon the objectives and scope of the engagement and the nature and timing of our data collection and analysis and our report. These engagement objectives were formally agreed upon and the role of each party established and confirmed. Three groups assisted in the evaluation: Industry Canada's Audit and Evaluation Branch (AEB) managed the project; the Aerospace, Defence and Marine Branch (ADMB) facilitated the progress of the project by providing access to files, documents and individuals, and an Evaluation Steering Committee (ESC) provided input and advice on the project (see Annex A for a list of Steering Committee members).

Methodology

An evaluation methodology and workplan was developed in consultation with the AEB and the ADMB. These included the development of interview protocols for informant interviews and case studies.

The evaluation framework was based on the high-level evaluation questions established by the AEB and ADMB (see Annex B for the list of Evaluation Issues/Research Questions). Supplementary questions were focused on project details identified resulting from the review of files.

Review of Literature, Data and Related Documents

The evaluation commenced with a review of literature (see Annex C for the List of Documents Reviewed) and internal departmental documents impacting on the original program design. This was supplemented with a review of ADMB documents used in the management of the program and to make any amendments in program implementation procedures. Additionally, all available government documents and data bases were reviewed to gain a complete understanding of the program including: Interim Evaluation 2004; RMAF analysis; industry expert interviews; and review of administrative databases and Industry Canada/Statistics Canada websites.

File Reviews

The evaluation team conducted a file review of all projects that received SFF funding. The evaluation also reviewed the files of the 20 projects that had been withdrawn, rejected, cancelled, or affected by bankruptcy proceedings. This review provided the source material to assemble a list of potential interviewees to address the key evaluation questions as well as interviews with a small group of shipyards that had not been participants in the SFF program. It was also used to determine the subjects for the case studies.

Interviews

A final selection of interviewees and alternates was assembled in consultation with the AEB, ADMB and ESC. Interviews were also conducted with SFF program officers to gain a full understanding of specific projects where subsequent interviews were conducted (see Annex D to view the List of Individuals Interviewed).

A total of 38 interviews were conducted with key stakeholders including: Industry Canada program officers; officials with other government departments; applicants; shipyard and shipbuilding representatives. Additional interviews were conducted to complete the case studies. All interviews outside of Ottawa were conducted by telephone. Table IV provides a breakdown of the number of interviewees within each group.

Table IV: Interviewees by Stakeholder Group

Stakeholder Group	Number of Interviewees
Industry Canada Representatives	5
Other Government Representatives (Operating Similar Programs)	11
Shipyard Representatives	11
Applicants	9
Industry Representatives (e.g. Shipbuilding Association of Canada, Canadian Ship-owners Association)	2
Total	38

Case Studies

Five case studies were chosen in consultation with AEB and ADMB program officers and the ESC (see Table V). The unit of analysis for the case studies was the shipyard, since it was expected to be the key beneficiary group of the program. Efforts were made to ensure the case studies chosen encompassed a cross-section of projects (e.g. by type, location, size and ownership). The case studies were developed in order to describe the experiences of program participants utilizing the financial support of the SFF as well as those who either did not participate or had only limited exposure to the program. In those cases where the shipyard benefited from the program, the analysis focused on the projects associated with the shipyard and their aggregate impact. In the other cases, attempts were made to identify the key reasons for limited/non-participation.

Table V: Case Study Subjects

Shipyard	Location	Type of Project	Size of Project	Ownership
Washington Marine (Vancouver and Victoria shipyards)	BC	Construction/upgrade	>\$3M \$1M - \$3M	Domestic and Export
Davie Shipyard (previous ownership)	QC	Conversion	>\$3M	Export
Irving Shipyard (PEI)	Atlantic	Construction/conversion	\$1M - \$3M	Export
Gloverton Marine (NL)	Atlantic	Construction	<\$1M	Domestic
Four shipyards that have had limited/no participation in the SFF - Allied (BC) - Forillon (Qc) - Theriault (NS) - Océan (Qc)	BC, Qc, Atlantic	Various	Various	Various

Integrated Analysis and Reporting

All file review findings and interview results were assembled in structured files. These files were used as the foundation upon which to base preliminary observations with regard to the key evaluation questions.

At the end of the data collection phase the evaluation team assessed the relevance, significance and weight of evidence collected in the course of the evaluation. Results from the various data sources were analyzed and reported for each evaluation issue. Information was placed in rank order of importance and assessed to determine the extent to which there was sufficient support for the primary findings. These findings were discussed with the AEB, ADMB and ESC prior to the preparation of the final report.

2.3 Limitations of the Methodology

There were no significant methodological limitations on the evaluation impacting on the validity of the report. While it would have been beneficial to have interviewed some shipyard representatives on site, the potential benefit of undertaking site visits did not justify the additional expense, nor would it guarantee different results in the assessment of the key

evaluation questions. The absence of Statistics Canada data on the Canadian shipbuilding industry beyond 2005 preventing correlation with data available from the SFF files restricted the production of more complete quantitative assessments on the impact of the program. Additional limitations emanated from the absence of baseline shipyard performance data upon which to assess change. Further, no clearly established criteria exist to assess the impact of innovation in vessel design or production processes in relation to Canadian shipbuilding industry competitiveness in world markets. Lastly, the small population of projects and shipyards participating in the SFF inhibited the development of meaningful statistical results analyses.

3.0 FINDINGS & ANALYSIS

The analyses of findings throughout this evaluation were guided by the impact of the program in relation to the following 2001-2007 SFF objectives:

- Better informed industry and public
- Increased demand for new Canadian built vessels
- Increased/maintained direct and indirect jobs
- Increased ship orders
- Increased cost competitiveness and productivity

3.1 Relevance

Consistency with Departmental, Government-Wide and Industry Priorities

The evaluation of the relevance of the SFF was assessed in relation to the government and industry priorities as expressed in the following documents:

- "Strong Economic Growth" priority of the Federal Government as set out in the 2006 Speech from the Throne and the Budget and the "Strong Economic Growth" outcome of Canada's Performance Report (2006).
- Industry Canada's Report on Plans and Priorities 2006-7 strategic outcomes aimed at ensuring:
 - A fair, efficient and competitive marketplace;
 - An innovative economy; and
 - Competitive industry and sustainable communities.
- Shipbuilding Association of Canada (SAC) November 2006 recommendations:
 - Reinstate the SFF and combine it with ACCA for Canadian owners and operators;
 - Adopt policies consistent with other shipbuilding countries to encourage investment in domestically built ships; and
 - Create a shipyard environment and transformation fund on a 50/50 cost share basis with industry.

Our evaluation indicated the SFF is consistent with Industry Canada's priorities for the Shipbuilding and Industrial Marine Sector. This approach focuses on taking advantage of market opportunities, promoting investments to complement Canadian competencies in areas of market opportunity, and assisting innovation in key technologies. A key objective of the SFF is to stimulate demand for new Canadian-built vessels in existing Canadian shipyards, by providing

financial benefit to Canadian and foreign buyers/lessees (the applicants). Together with the other policy framework components, the SFF was expected to assist the Canadian shipbuilding industry to become more competitive and better positioned to respond to opportunities in both domestic and international markets.

Another SFF objective, consistent with the government priorities, was to increase jobs and sales. The SFF was expected to support \$200 million annually of new business in the shipyards, translating into 3,000 new jobs – 1,740 of which would be direct jobs in existing shipyards.

In the period 2002-2007, SFF funding was provided for 19 domestic and 17 export sales. These shipbuilding projects were a direct response to the SFF objective to expand both domestic and export market opportunities. With total SFF approved contributions of \$55 million, SFF supported projects are expected to generate approximately \$472 million in incremental shipbuilding revenue once all projects are completed in April 2008. This increase in shipbuilding revenue is a positive outcome consistent with meeting the SFF program objectives.

Additionally, the 36 SFF projects anticipated 3,161 person years of work, with actual results totalling 3,269 person years of shipyard work. It should be noted that the employment growth expectation for the SFF program as a whole was 1,740 shipyard jobs annually, i.e., 1,740 incremental person years, every year (or 8,700 person years over the 5 year life of the program). So, while current projected person-years are only 37.6% of the total expected (8,700), they were achieved with program disbursements of \$55 million (37.9% of the original expectation of \$145 million in disbursements). Thus, on an adjusted basis, the SFF program employment growth “yield” is on target, with 37.9% of total disbursements generating 37.6% of the projected targets. These targets were achieved with an average contribution of \$16,855 for each person year of shipyard work, while the average wages (production and non-production combined) for shipyard workers was \$44,788 in 2005.

With regard to the shipbuilding industry priorities, however, the 2001-2007 SFF Terms and Conditions are not consistent with the 2006 priorities of the Shipbuilding Association of Canada. SFF program Canadian participants are required to sign a waiver to preclude using the ACCA.

While the program contributed to innovation in shipbuilding technology and production processes, the overall results are difficult to measure because of the complexity of the industry. The SFF program conditions do not require shipyards to invest in new technologies that would contribute to improved competitiveness. Further, shipbuilding is a competitive industry where innovation may translate into a longer-term competitive advantage, but such innovation is difficult to assess within the relatively short time frame in which the SFF has been operational. Nevertheless, one example of innovation which could have long term impact on the fishing industry and the environment is illustrated in the SFF supported shipbuilding project at Glovertown Marine, Newfoundland.

Glovertown Marine – Focused on Innovation

With a capacity to construct vessels of up to 120 feet, Glovertown Shipyards has developed a reputation for technology advancement and structural sturdiness. This reputation has been further enhanced with the construction of a new fishing vessel for AMP Fisheries offering significant advances in on-demand power management propulsion systems: a first in the industry. The new system designed by Terra Nova Marine, Newfoundland, supported by a contribution from the National Research Council Industrial Research Assistance Program (IRAP), entails the installation of three 645 hp. diesel electric engines each generating 435 KW of power that can be configured to provide power to the propeller and meet all additional power requirements for the operation of the vessel. The new power management system enables the vessel to operate the minimum number of engines to meet its requirements. This improved system differs from the traditional method of using one 1,000 hp diesel engine directly connected to the propeller by a drive shaft. While the propeller may not be engaged the large diesel engine must also be run constantly to meet other electric power requirements regardless of the function being performed. The new system is expected to provide significant savings in fuel and reduced emissions to the environment. This technologically innovative vessel would not have been built without the financial assistance provided by the SFF.

Duplication or Overlap with Other Government Programs

The evaluation did not identify any federal programs that duplicate or overlap the SFF. However, a variety of federal programs can provide complementary financial support to all businesses. These programs sometimes assisted shipyards receiving SFF, thereby indirectly facilitating the completion of specific shipbuilding projects, for example:

- *Federal Government Programs:* The Industrial Research Assistance Program (IRAP) administered by the National Research Council provides financial support to technological innovation. A similar program exists within the Atlantic Canada Opportunities Agency (ACOA), which can provide support to specific industry sectors such as tourism, thus indirectly assisting the construction of tour boats that are also eligible to receive SFF. The Canada Economic Development for the Quebec Region agency, similarly, can contribute funds toward shipyard expansion and marketing.
- *Export Development Canada (EDC):* EDC is a potential partner in any SFF supported shipbuilding project. EDC performs due diligence investigations similar to private commercial financial institutions involved in financing of projects such as: review and analysis of historical financial statements, forecasts, business plans, assessments of management, repayment ability, commitment, security and business risk. As in all financing transactions, the structure and terms and conditions applied are a function of the assessed risks. EDC played a substantial role in the SFF supported \$75 million “Midnight Express” built by Davie Shipyard in 2003-4.
- *Provincial Government Programs:* There is no comprehensive list of provincial programs providing support to business that could impact on the shipbuilding industry. Some examples of these programs include the Nova Scotia Business Enterprises Inc.; PEI

Business Development Agency; PEI Department of Development and Technology; Government of Quebec Refundable Tax Credit for the construction of vessels; and a wide range of provincially supported apprenticeship programs for skilled workers in the shipbuilding industry. It is unlikely that these provincial programs and organizations, identified through the review of SFF files, represent the full range of provincial programs available to the shipbuilding industry. A comprehensive listing of provincial programs available to industry is outside the scope of the evaluation.

3.2 Success

The SFF RMAF notes that “The main objective of the SFF is to encourage the purchase of Canadian built ships by foreign and domestic buyers. Sale of ships will generate activity in Canadian yards and will lead to increased shipments and employment. These are the two key results against which the success of the policy framework, including the SFF can be measured”.

Success in Achieving Immediate Outcomes

Immediate outcomes for the programs were assessed in relation to the following indicators:

- More client applications; and
- Increased use of SFF by Canadian/foreign buyers or lessees.

Our evaluation revealed that client applications under the SFF program steadily increased from a low of three applications in 2001-2002 to a high of fourteen applications in 2005-2006, thereby achieving the goal of increased client applications (see Table VI). These applications also resulted in increased use of SFF for both Canadian and foreign buyers, but not lessees (see Table VII). Leasing was reported to be an infrequent method of financing to acquire vessels from Canadian shipyards.

Table VI: SFF Enquiries and Applications by Year

Fiscal Year	Recorded Enquiries	Applications brought forward for recommendation
2001-2002	36	3
2002-2003	26	9
2003-2004	31	10
2004-2005	44	11
2005-2006	50	14
2006-2007	28	5
TOTAL	231	52

Notes: Funding was not available for projects from the last quarter of 2005-2006 to the fourth quarter of 2006-2007. Of the 52 projects brought forward for recommendation, two were rejected and one was withdrawn.

Table VII: Distribution of Projects by Buyer Origin

Projects	Domestic buyer	Foreign buyer	TOTAL
Number of projects approved	26	23	49
Number of projects completed/in progress	19	17	36

The evaluation of program success also indicated that the rate of SFF take-up was affected by the indirect mode of delivery to the shipbuilding industry. Unlike other government programs that provide direct support to industry, SFF program take-up is dependent on:

- Awareness of the program and its benefits by potential shipowners and lessees in Canada and around the world;
- The ability of shipbuilders to market the value of the financial incentives in the SFF to potential buyers; and
- The ability of shipbuilders to reflect this value in bids and price quotations.

While the SFF had three potential financial support mechanisms, the Interest Rate Buydown component has been the only element accessed by program applicants. The loan insurance component, while attractive, was difficult to make work in practice. The credit insurance element did not prove to be attractive once the full 15% contribution could be applied to the interest rate support component.

Respondents contacted during the evaluation, who knew about the SFF, indicated that the program is becoming better understood within both the Canadian industry and potential foreign purchasers of Canadian-built vessels. This view is supported by the increasing frequency of applications to the SFF by domestic and foreign purchasers. Respondents also added that without the SFF, shipowners (especially those building or refitting larger ships) would not have considered using Canadian shipyards.

Respondents commented that the extent to which SFF was accessed was negatively affected by reductions in funds available at various times over the life of the program. In at least one case, shipyard operators indicated that the lack of available funds resulted in having to absorb the cost of the projected SFF assistance in order to retain the ship building order.

The rate of SFF take-up was also affected by the required trade-off between the ACCA and the SFF for domestic shipowners. Respondents indicated that the program is more attractive to buyers who either pay no tax in Canada (i.e., foreign buyers and special-status corporations, like BC Ferries) or those without sufficient net income to pay taxes (e.g., start-ups) (see Table VIII).

Table VIII: Distribution of Projects based on ACCA eligibility of applicant

Type of Applicants	Number of Projects	SFF contribution \$	Percent of Total Contribution
Canadian Taxable Applicants (i.e. eligible for ACCA)	13	8,740,957	16%
Other applicants*	23	46,366,354	84%
TOTAL	36	55,107,311	100%

*Other applicants include all foreign applicants, BC Ferry Services, Centre Nautique de Istorlet (not-for-profit) and North Co-Corp Ferry Services (aboriginal company)

Respondents also stated that the impact of the program on job maintenance and job creation could have been greater had the SFF been applicable to a broader range of shipyard projects. For example, further benefits could have been achieved if the program was available to “borderline commercial” craft construction (such as pleasure crafts that may be used for limited or short-term commercial purposes).

Success in Achieving Intermediate Outcomes

Intermediate outcomes for the programs were assessed in relation to the following indicators:

- Maintenance or creation of jobs;
- Increased ship orders; and
- Increased purchases of Canadian-built ships.

Our evaluation findings indicated that the SFF contributed to maintaining or creating jobs in the industry. This finding is supported by performance information collected from participating shipyards and Statistics Canada employment figures and shipyard case studies. Respondents from one of the most successful shipyards in the evaluation stated that at least one shipyard would not currently be in operation – nor a significant number of vessels constructed – without the SFF. Respondents also stated that the program has helped enhance the capacity, skills and future prospects of at least one large shipyard in British Columbia that is now internationally competitive, being aided by SFF assistance in eight shipbuilding projects.

Victoria Shipyards

Building on Success

Victoria Shipyards (VSL) started operations on April 27, 1994. Formerly known as Vancouver Shipyards (Esquimalt) Ltd., the company is part of the Washington Marine Group. Utilizing the Esquimalt Graving Dock operated by Public Works and Government Services Canada, VSL is able to dry dock and repair vessels up to 100,000 tons on approximately 7,000 square meters of leased land. The Dry-dock has one 150 ton crane, two smaller cranes, one mobile crane and access to other services as required from the adjoining Graving Dock as required. Since 1994 Victoria Shipyards has completed work for government, commercial and international customers at a value in excess of \$400,000,000. VSL's areas of expertise range from navy refits, to new construction, to cruise ship repairs. Over the last several years, at least one navy vessel per year has been dry-docked and refitted. VSL has also built 35 other vessels; 24 Canadian Coast Guard 47 ft. lifeboats, 5 Orca Class Navy training vessels delivered to date on an Eight (8) Ship program, and the Superstructure along with other components for BC Ferries.

Employment at VSL has grown from 150 workers in 1994 to a current level of more than 700 skilled trades people at peak times including: ship-fitters, welders, machinists, pipe-fitters, riggers, joiners, sheet metal, electricians, clerical workers and painters. Washington Marine Group currently employs 100 apprentices, 74% of whom are being trained and schooled through VSL. Typical apprenticeships last for 4 years, with classroom studies interspersed throughout. Forty per cent of the tradespeople are under 40 years old, providing a strong labour base for future VSL shipbuilding.

With the aid of SFF contributions in 2005, VSL obtained a contract with the Holland America to undertake a major dry dock refit of 4 ships. Through successful completion of these projects, managing up to 700 trades people supported by approx 1000 sub contractors on the site at any one time, with a very tight 18 day turnaround, VSL has now become known as a shipyard of choice for major upgrades and modifications to cruise ships. VSL subsequently has undertaken similar projects on the Crystal Harmony and assisted Celebrity's Millennium Class cruise ships. In December 2007, VSL will be providing similar services for Carnival Cruise Lines with other cruise ship contracts on the horizon with the support of SFF funding. As a result of SFF contributions that were critical in helping VSL win foreign flag cruise ships contracts; these projects have provided VSL's employees and related area businesses with consistent, steady, high-quality employment. The expansion of VSL's client base is a reflection of its established reputation as a high quality, competitive North American shipbuilder and repairer of sophisticated vessels, with excellent potential to increase its share of the global market.

Through the Holland America contracts, innovations were achieved in the areas of logistics, project management and more efficient lean type processes. Tight timelines in particular presented a challenge that needed to be overcome through better planning, more streamlined processes, more effective logistical approaches and tight coordination through excellent project management.

Active shipyards provide an opportunity for skilled tradespersons to acquire formal certifications that are transferable within the industry, across Canada, and internationally. While it is not statistically possible to determine the exact number of shipbuilding jobs that would have disappeared without the SFF, it is nonetheless likely that without the support of the SFF employment in the industry would have continued to decline despite the increase in global

demand for vessels.³ With \$55 million in SFF support over a six year period, industry participants reported a total of 3,269 jobs were created or maintained in those shipyards which participated in the program.

It is difficult to ascertain which of these jobs were temporary or permanent, and thus able to be sustained over the long term. Many of these jobs were created in areas where employment for skilled workers is difficult to sustain without an ongoing supply of shipbuilding contracts such as PEI and NFLD.

Respondents noted that global demand for vessels has increased in accordance with the growth in international trade, and that most viable yards in the world have a backlog of orders. Canadian shipyard business has also increased because of global demand. To what extent this Canadian shipyard growth has been due to the SFF is statistically not possible to determine. However, respondents indicated that SFF assistance in a critical period of decline contributed to the economic vitality of a number of Canadian shipyards, making it possible for these shipyards to become more competitive in the global market.

Overall, respondents indicated that Canadian shipyards have performed reasonably well considering that Canada is largely excluded from its closest market, United States, because of the Jones Act, which requires all ships involved in the United States coastal trade to be built in the United States. Canada does not have a similar law.

A further constraint on the Canadian shipbuilding industry was pointed out by the Canadian Shipowners Association (CSA) who indicated that for price, timing, and sometimes quality reasons, most large ships and other bulk carriers for use in eastern Canada are built abroad. The association notes that their member companies have not bought a Canadian-built ship for a number of years. They prefer to purchase their ships offshore and indicate that this preference will continue for the foreseeable future. While the Association has stated its desire to see the 25% duty on foreign purchased ships eliminated as soon as possible, it adds that even with the duty it is often less expensive to purchase ships built in Asian shipyards.

In support of its “buy foreign” position, the Association contends that Canada’s shipbuilding industry is characterized by excellent workmanship performed by niche market players who are limited in what they can undertake, since they often operate with old infrastructure and older technology, and have lower productivity compared to many European and Asian shipyards. In their view, the competition, particularly in Asia, has newer, more state-of-the-art shipyards. The Association contends that Asian shipyards are more cost-effective, reliable suppliers than Canadian shipyards.

³ The global demand for hulls has led to an unprecedented world order book: as of July 2004 there were 3,338 vessels on order totaling 183.8 million Dead Weight Tons, an increase of 11% since January 2004. In the international marine industry, Canada ranks 23 (out of 35 countries) with relatively insignificant 0.76% of world tonnage. Source: Captain R.W. Greenwood, *Globalization, Maritime Strategy, and the Survival of the Canadian Marine Industry*, May 2005, pp. 4, 6.

As noted in the mid-term evaluation, 2004, the SFF has been helpful in developing some international niche markets. These now include building tugboats and offshore-related vessels and structures, and refurbishing cruise ships. The latter has been a particularly important source of innovation and new market opportunities on both the east and west coasts.

Success in Achieving Broader Outcomes

Broader outcomes were assessed in relation to the following indicators:

- Maintaining capacity of the industry;
- Increasing innovation in Canadian shipyards; and
- Increasing productivity and competitiveness.

Our evaluation indicated that the SFF contributed to maintaining Canadian shipyard capacity. However, this conclusion is supported largely by anecdotal evidence collected during interviews and development of case studies. No reliable performance information from shipyards or reported by the CSA or Statistics Canada is available to provide quantitative evidence that the capacity of the industry has been maintained. Performance information collected from participating shipyards is generally inconclusive and difficult to verify. Over the six year life of the SFF, certain shipyards have closed and reopened under new management. A definitive assessment of changes in capacity is not available without a detailed examination of the industry.

Over the period 1993 to 2003, employment in the Canadian shipbuilding industry declined from 8,913 to 3,677 jobs. Statistics Canada indicates that employment in the shipbuilding industry actually declined further to 3,541 in 2005, having briefly increased to some 3,724 in 2004. Employment statistics in the Canadian shipbuilding industry beyond 2005 is not available from Statistics Canada, but the increase in number of vessels supported by SFF strongly suggests employment has started to respond to the growing demand for ships.

Many factors impact on the Canadian shipbuilding industry. Global demand for vessels has risen dramatically with the expansion of international trade. At the same time, the value of the Canadian currency has increased the price of Canadian-built vessels. But not all decisions to purchase a vessel are dependent exclusively on price. Factors of quality, reliability, reputation, dependability of delivery and responsiveness to customer requirements are also important. The ability to sustain relationships with repeat customers also contributes to profitability, innovation and productivity through the creation of multiple vessels with similar characteristics. In addition, the ability to obtain appropriate “bonding” and guarantees is of growing importance as customers seek improved predictability in the face of growing delays and budget overruns brought on by worldwide demand, straining available capacity. Respondents indicated that smaller shipyards often have difficulty obtaining guarantees for work performed for domestic buyers. Foreign purchasers can obtain such guarantees from EDC when work is performed for the export market.

The shipbuilding industry is not homogeneous in the types of vessels being built in Canada. Atlantic Canada has been highly successful in creating a well-established niche in the construction of high quality tugboats for both the domestic and export markets. The competitiveness of the East Isle Shipyard, PEI, has been greatly enhanced, particularly through the increase in the numbers and diversity of skilled employees. The SFF has contributed to the success of this market niche by providing contributions toward 5 of the 29 tugboats it has built.

In assisting the industry to adapt to future competitive pressures in the industry, respondents indicated that the SFF has encouraged innovation in a number of shipyards. The SFF files revealed that its funds have contributed to “High Innovation” at a number of shipyards such as: Glovertown, Davie and Vancouver shipyards. However, this information cannot be reliably corroborated using accepted criteria and indicators. According to respondents SFF funds have also strongly supported Ocean and Victoria shipyards in contributing to innovation and high quality vessel construction, for example:

- Victoria shipyard successfully planned and organized the refit of three cruise-ships; 18 day turnaround with up to 1,500 trades people from all over the world; and
- The Davie-built “Midnight Express” (a highly complex, innovative shipbuilding project) enhanced Davie’s reputation making the shipyard more attractive to new owners.

Davie Shipyard, Quebec

Founded in 1825 by the Captain Allison Davie, Davie Quebec became the largest shipyard in Canada, located in Levis on the south shore of St-Lawrence River. Over the years, Davie Québec established the reputation of having the ability to deliver new vessels, and construct and deliver high-end, state of the art vessels with a wide variety of end uses. Employing up to 3,000 workers in peak periods in the mid 1990s, the company completed the construction of 12 offshore drilling jack-up rigs, and the construction of 700 ships of all types and capacities of up to 80,000 deadweight tons. Davie Quebec Inc. developed its expertise in both the marine and heavy industrial sectors.

In 2003 Davie Shipyard won an international competition to build the \$75 million Midnight Express (ME), a prototype vessel for deep sea pipe laying. The project was supported by a \$7.5 million SFF contribution and an Export Development Canada loan. The ME was one of three of the 37 SFF funded projects categorized as “High Innovative”, integrating both design and sophisticated pre-built systems.

The ME project allowed Davie to demonstrate its expertise in undertaking complex projects and solidified its reputation as an expert builder. Today, owned at 100% by Davie Yards ASA, a Norwegian company, Davie Quebec employs around 500 employees for its order book amounting to \$635 million for the construction of 3 offshore vessels and 2 multi-purpose accommodation vessels.

While SFF funding has been somewhat uneven over the last six years, the program has contributed significantly to the Canadian shipbuilding industry and the maintenance of shipbuilding skill levels. With increasing orders for Canadian built ships and successful entry into various niche markets, the SFF program has increased the potential for Canadian shipbuilders to respond to demands in the global market. In the longer term, however, respondents generally held the view that increased stability in the Canadian shipbuilding industry is dependent on ongoing demand that would lead to increased investments in technology to improve productivity and quality.

3.3 Cost-Effectiveness and Alternatives

Cost-Effectiveness in the Delivery of the Program

Our evaluation found that the results achieved by the SFF are being delivered in a cost-effective manner given the resource levels available. The program is administered by a team of 7 employees: 2 regional program officers, 2 Ottawa program officers, 2 support staff and a Director. The team works well together and received high praise by many program participants for responsive and timely assistance in accessing the SFF. When workloads vary, team members operate in a flexible working environment that capitalizes on the collective knowledge of the team with regard to the operating characteristics of the Canadian shipbuilding industry.

The program is appropriately designed to reduce the level of administration involved in approving project applications. Funding is provided only after the project has obtained loan agreements from financial institutions and the vessel construction completed. The SFF delivery mode places reliance on financial institutions to undertake due diligence investigations to protect their investments, thereby reducing the demand on SFF resources in the project approval process. These procedures appropriately address program risk management by avoiding loss of funds created by failed projects and by placing reliance on financial institutions with an in-depth knowledge of applicant credit history. Respondents indicated a high level of satisfaction with the simplicity of the application process and, for most, with the timeliness in obtaining project approval.

Delivery of the Program

Program Communication: Program participants indicated that the understanding of the SFF is unevenly distributed across Canada. Larger shipyards with a substantial number of shipbuilding projects are sufficiently knowledgeable about the program to include the potential savings to the ship purchaser in the bidding process while some smaller and mid-size yards had no knowledge of the SFF.

Program officers maintain contact with many shipyards across Canada, but there is no formal marketing strategy to advertise the SFF. Initial information about the program was disseminated by the Minister of Industry's announcement of SFF in 2001. Subsequent information on the availability of the SFF to shipbuilders and ship owners has been largely disseminated through various press releases that frequently accompany new shipyard contracts. While the interim evaluation concluded that "further targeted marketing is necessary", the recommendation focused on shipowners, not shipyards who are better positioned to include this information in their communication with potential ship purchasers. A number of shipyard operators who were

unaware of the program indicated they would not have lost several vessel purchasing opportunities had they known of the SFF.

Knowledge of the SFF is an important aspect of competition in the Canadian shipbuilding industry. Consequently, there is no incentive within the industry to ensure potential competitors are informed of the existence of the SFF. The Shipbuilders Association of Canada (SAC) does not represent all Canadian shipbuilders and may not be an adequate source of SFF information to all potential participants.

The absence of comprehensive knowledge of the SFF and various provincial programs that could indirectly assist shipbuilders in Canada is an impediment to the future growth in the industry. Overall, while some SFF supported projects have accessed funds from other provincial and federal programs, there is no coordinated effort to link all available programs to reduce the final cost of constructing a vessel in Canada.

Continuity of Funding: Respondents indicated there have been cases when the value of the SFF was included in the cost of the bid, but subsequent application to the SFF was unsuccessful because of insufficient program funds. In these cases, the value of the potential SFF contribution in the bid could not be withdrawn without the loss of the contract, thereby, reducing the profit margin available to the shipyard in order to fulfil its contract obligations to the ship purchaser.

Canadian Shipyards with Minimum SFF Involvement

Industry Canada provided a list of possible contacts with minimal contact with the SFF. The evaluators contacted eight firms that provided the following reasons for not having more fully utilized the SFF to assist their shipbuilding operations:

Several shipyards focused on repairs, smaller builds, conversions and refit operations that did not qualify for the SFF. Other shipyards indicated they had no capacity for additional business.

Two shipyards had inaccurate or no information about the program. The shipyard with inaccurate information stated that they thought the program was only for export markets in which it did not participate. Both shipyards indicated that accurate information could have prevented lost business opportunities.

Most shipyards contacted were relatively small operations, revealing that they tended to avoid communication with other shipyards for competitive reasons and, therefore, were unlikely to share information on the SFF.

All shipyards stated they did not have a central source of good information. Most did not belong to the Shipbuilders' Association and did not have potentially useful information on the industry such as the SFF.

Three yards had participated in the SFF at least once. All three stated they lost money on their projects through no fault of the SFF. Two of these shipyards made subsequent attempts to use the SFF in their marketing without success. The third shipyard was a financially unstable business when it signed its SFF contract suffering serious losses in the process. The shipyard subsequently was bought by a new owner who has not utilized the SFF to date.

All shipyards using the SFF, unsuccessfully, emphasized the importance of carefully researching new projects. Factors warranting detailed assessment included the complexity of the project, the size of the shipyard to adequately undertake the work and the availability of skilled workers. Without detailed analysis the potential for failed projects greatly increases with or without assistance from the SFF.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Relevance

Government Priorities: Our evaluation indicated the SFF is consistent with departmental and government priorities. It helps take advantage of market opportunities, and promote investment and innovation in Canadian shipyards. A primary SFF objective, consistent with the government priorities, was to increase jobs and sales. In a six year period, \$55 million in SFF funding supported 19 domestic and 17 export shipbuilding projects, generating \$472 million in Canadian shipbuilding revenue. The 36 SFF projects anticipated 3,161 person-years of work, with actual results totalling 3,269 person years of shipyard work. While this is far short of the employment growth expectation for the SFF program as a whole (1,740 shipyard jobs annually, or 8,700 person years over 5 years of the program), these targets were predicated on disbursements of \$145 million over the same period. On an adjusted basis (i.e., actual disbursements of \$55 million over the five years of the program), the SFF program employment growth “yield” is actually on target, with 37.9% of total disbursements generating 37.6% of the projected targets. The average contribution for each person year of shipyard work was \$16,855, while the average wages (production and non-production combined) for shipyard workers, according to Statistics Canada, were \$44,788 in 2005.

Respondents indicated that the SFF continues to be relevant to assist shipyards in a highly competitive marketplace.

Duplication: The evaluation did not identify any federal programs that duplicate or overlap the SFF. However, a variety of federal programs provide complementary financial support to all businesses. These programs sometimes assisted shipyards during 2002-2006, thereby indirectly facilitating the completion of specific shipbuilding projects. A comprehensive list of these programs is beyond the scope of this evaluation.

Success

Immediate Outcomes: The evaluation revealed that client applications under the SFF program increased over a six year period. The program was particularly attractive to foreign buyers for whom ACCA does not apply, and thus did not have to make a trade-off between the ACCA and SFF. Further, the rate of program take-up was affected by the indirect mode of delivery to the shipbuilding industry; shipbuyers are direct recipients of SFF funds, shipyards benefit from more orders. Awareness of the program was unevenly distributed across Canada. While the SFF has three potential financial support mechanisms, the Interest Rate Buydown component has been the only element accessed by program applicants. Respondents also commented that the extent to which SFF was accessed was negatively affected by reductions in funds available at various times over the life of the program.

Intermediate Outcomes: The evaluation indicated that the SFF contributed to maintaining or creating jobs in the industry. Respondents from one of the most successful shipyards stated that at least one shipyard would not currently be in operation without the SFF. Respondents also stated that the program has helped enhance the capacity, skills, and future prospects of the industry. Active shipyards provide an opportunity for skilled tradespersons to acquire formal certifications that are transferable within the industry, across Canada, and internationally. Overall, respondents indicated that Canadian shipyards have performed reasonably well considering that Canada is largely excluded from its closest market, United States, because of the Jones Act, requiring all ships involved in the United States coastal trade to be built in the United States. The SFF has been helpful in developing international niche markets such as tugboats, offshore-related vessels and cruise ship refurbishment.

Broader Outcomes: The evaluation indicated that the SFF contributed to maintaining Canadian shipyard capacity. However, this conclusion is supported largely by anecdotal evidence collected during interviews and development of case studies. No reliable performance information from shipyards or reported by the Canadian Shipbuilding Association or Statistics Canada is available to provide quantitative evidence of that the capacity of the industry has been maintained. Over the period 1993 to 2003, employment continued to decline, but started to level off in 2004 and actually declined slightly in 2005. More recent employment data (post 2005) is not available, but the increasing number of builds supported by SFF strongly suggests employment would reverse the declining trends over the previous years.

The Canadian shipbuilding industry is not homogeneous in the types of vessels being built, but some regions have been highly successful in securing orders for vessels in niche markets while others have strengthened their infrastructure for future business. The SFF has contributed to building on the success of these shipyards by providing funds in a critical period of time for the Canadian shipbuilding industry.

While anecdotal evidence – as indicated through the case studies – points to innovation and competitiveness occurring in the context of SFF-supported projects, the inability to corroborate this evidence using accepted criteria and indicators makes it difficult to make a conclusive assessment in this regard.

Cost Effectiveness and Alternatives

Cost-Effectiveness: The evaluation concluded that the results achieved by the SFF are being delivered in a cost-effective manner. The program is administered by a team of 7 employees that work well together and have a flexible approach to work sharing as required. The administration of the program and its design received high praise from program participants for responsive and timely assistance. The program is designed to reduce the level of complexity for project applications. Funding is provided only after the project has obtained loan agreements from financial institutions and the vessel construction completed, thereby reducing program risk. Most respondents expressed a high level of satisfaction with the simplicity of the application process and timeliness in obtaining project approval.

Delivery Improvements: Program participants indicated that the understanding of the SFF is unevenly distributed across Canada. Larger shipyards are better informed than smaller shipyards. Program officers maintain contact with many shipyards across Canada, but there is no formal marketing strategy to advertise the SFF. Knowledge of the SFF is an important aspect of competition in the Canadian shipbuilding industry. Information about the program tends to be directed to potential shipowners with insufficient attention to shipyards that can use program information to assist the marketing of their shipbuilding capability. Program participants indicated that a more direct relationship between the shipyard and the SFF would be assistance in providing a firm financial commitment to potential ship buyers during the bidding process.

4.2 Recommendations

1. SFF funding cycles should be reviewed in conjunction with an “approval in principle” mechanism developed to respond to production cycles in the shipbuilding industry where development from the bid process to launch could take up to four years.
2. Communications with the shipbuilding and shipowner representatives should be undertaken on a regular basis to communicate the benefits and limitations of the program and provide information on complementary programs offered by other government organizations.
3. The Aerospace, Defence and Marine Branch should establish baseline data and ongoing performance indicators/ criteria to assist in measuring longer-term outcomes for the SFF.

