# NATIONAL SHIPBUILDING RESEARCH PROGRAM

## Shipbuilding Opportunities in Short Sea Shipping: Building Short Sea Shipping

### Reducing Vessel Financing Costs: MARAD Program Assisted Financing

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## INTRODUCTION

Why we are here

Merchant Marine Acts of 1920, 1936 & 1970

Vessel financing options

This presentation

# WHY WE ARE HERE

America's Marine Highway

Department of Defense

Shipbuilders Construction Costs

Ship Owners Financing Costs

MERCHANT MARINE ACTS OF 1920, 1936 &1970

# VESSEL FINANCING OPTIONS

Purchase / Equity & Debt

Lease / Demise Charter

Expectations & Contracts

## THIS PRESENTATION

Commercial & MARAD Assisted Financing

Title XI & Capital Construction Fund Programs

CCF Program Examples

MARAD Program Analysis & Comparisons

Conclusions

COMMERCIAL & MARAD ASSISTED FINANCING

Commercial Financing

MARAD Title XI & CCF Assisted Financing

Comparisons

COMMERCIAL FINANCING

MARAD TITLE XI & CAPTIAL CONSTRUCTION FUND "CCF" ASSISTED FINANCING

MARAD’s TITLE XI LOAN GUARANTEE PROGRAM
ASSISTED FINANCING

The Title XI Program provides debt financing for vessel owners matched to vessel lives for up to 25 years -- at below commercial market, government guaranteed interest rates.

## MARAD's CAPITAL CONSTRUCTION FUND "CCF" PROGRAM ASSISTED FINANCING

The CCF Program provides tax deferral benefits for up to 25 years – for vessel owners and operators, and for leasing company owner-lessors and for shipyards.

## MARAD’s CCF PROGRAM ASSISTED FINANCING – OWNERS & OPERATORS

For vessel owners and operators – the Program provides for the deferral of tax on income from vessel operations – allowing the owner or operator to accumulate equity for vessel purchases, and to pay down vessel debt with before tax dollars and – to operate on a tax “free” basis over extended periods of years where the owner or operator is in a fleet expansion mode.

## MARAD's CCF PROGRAM ASSISTED FINANCING – LEASING COMPANY OWNER-LESSORS

For leasing company owner-lessors – the Program provides for the deferral of tax on investment income – allowing the leasing company to create tax sheltered interest rate arbitrage profits – to materially enhance its leasing transaction returns and/or to reduce lease hire charges to vessel operators, and to capture vessel transactions that might have otherwise gone to competitors.

## MARAD’s CCF PROGRAM ASSISTED FINANCING – SHIPYARDS

For shipyards – the Program provides for the deferral of tax on profits from vessel sales – allowing the shipyard to accumulate working capital on a before-tax basis to finance the shipyard’s own future vessel construction and/or to provide construction period financing for customer projects that the shipyard might not otherwise capture – and to function as an owner lessor.

## MARAD’s CCF PROGRAM: OWNER-OPERATOR EXAMPLES

We will examine CCF Program use by an established vessel owner-operator -- in accumulating equity funds for new vessel Purchases -- in retiring existing vessel debt -- and in negotiating long term charters with a financial institution owner-lessor.

## MARAD’s CCF PROGRAM: OWNER-OPERATOR EXAMPLES

Alpha Corp, a U.S. Citizen owner-operator of container vessels now wishes to initiate a U.S. East Coast Marine Highway Corridor “W-95” Roll/on-Roll/off (“Ro/Ro”) service that will require a fleet of at least four Ro/Ro vessels.

## MARAD’s CCF PROGRAM: OWNER-OPERATOR EXAMPLES

First, we’ll see how Alpha obtains a potion of the equity to purchase its four Ro/Ro vessels by accumulating before-tax dollars from current container vessel operating income.

Second, we’ll see how Alpha obtains the balance of the equity to purchase its four Ro/Ro vessels by using before-tax dollars to pay down existing container vessel debt.

## MARAD’s CCF PROGRAM: OWNER-OPERATOR EXAMPLES

Third, we’ll then see how Alpha leases two additional Ro/Ros at an attractive demise hire rate from a non-citizen owner-lessor that will establish a CCF before-tax dollar interest arbitrage portfolio investment fund.

# ALPHA CORP: THREE CCF EXAMPLES

Alpha Corp wishes to contract for Ro/Ro deliveries commencing in 2013. Alpha has discussed its project with shipyard Gamma and believes that prices may be as high as $120 million for each Ro/Ro, for a total cost of $480 million.

Alpha expects to use MARAD Title XI debt financing for 80 per cent, or $360 million, of the Ro/Ro costs. But Alpha will still need to provide $120 million for Ro/Ro equity.

## ALPHA CORP: EXAMPLES 1A & 1B: ACCUMULATING EQUITY FROM CURRENT EARNINGS

## EXAMPLE 1A: ACCUMULATING EQUITY WITHOUT CCF

Alpha's planning staff has calculated that Alpha can only afford to put aside about $12 million per year from its current container vessel earnings to fund the equity for this expansion plan.

If Alpha attempts to accumulate its needed equity with only these $12 million set asides, Alpha will accumulate only $43,040 million over the next 5 years – enough equity for the purchase of only one Ro/Ro vessel.

# EXAMPLE 1A: ACCUMULATING EQUITY WITHOUT CCF

## Accumulating Equity without CCF: $43.0 million – One Ro/Ro

| *Year* | *Taxable Income[(a)]* | *Tax Payable[(b)]* | *Non-CCF Account Deposits (Jan 1)[(c)]* | *Income on Non-CCF Account Balance (Dec 31)[(c)(d)]* | *Tax Payable on Non-CCF Account Income[(b)]* | *Non-CCF Account Balance (Dec 31)* |
|---|---|---|---|---|---|---|
| 1 | $12,000,000 | $4,800,000 | $7,200,000 | $720,000 | $288,000 | $7,632,000 |
| 2 | $12,000,000 | $4,800,000 | $7,200,000 | $1,483,200 | $593,280 | $15,721,920 |
| 3 | $12,000,000 | $4,820,000 | $7,200,000 | $2,292,192 | $916,877 | $24,297,235 |
| 4 | $12,000,000 | $4,800,000 | $7,200,000 | $3,149,723 | $1,259,889 | $33,387,069 |
| 5 | $12,000,000 | $4,800,000 | $7,200,000 | $4,058,707 | $1,623,483 | $43,022,293 |

Equity funds available for fleet expansion: $43.0 million – One Ro/Ro

a) Taxable income from prior tax year.
b) Assuming a federal tax at Alpha’s highest marginal rate, and a combined federal and state tax rate of 40 percent.
c) Taxable income remains taxable in the absence of CCF account deposits.
d) Assuming a 10.0 percent rate of return on deposited funds.

# EXAMPLE 1B: ACCUMULATING EQUITY WITH CCF - SHELTERING CURRENT EARNINGS

Alpha's tax counsel has suggested the use of MARAD's CCF Program as a means of accumulating the equity for the purchase of at least three of the four Ro/Ros.

Alpha enters a CCF Program contract and deposits $12 million of available container vessel earnings in each of the next five years for use as Ro/Ro vessel equity.

## EXAMPLE 1B: ACCUMULATING EQUITY WITH CCF - SHELTERING CURRENT EARNINGS

At the end of the five years, this $60 million, together with $15,012 million of investment income, will provide Alpha with $75,012 million for Ro/Ro vessel equity; sufficient equity for the purchase of three of the four planned Ro/Ros.

# EXAMPLE 1B: ACCUMULATING EQUITY WITH CCF -- SHELTERING CURRENT EARNINGS

Accumulating Equity with CCF: $75,012,620 – Three Ro/Ros

| *Year* | *Taxable Income[(a)]* | *CCF Account Deposits (Jan 1)* | *Tax Payable* | *Income on CCF Account Balance (Dec 31)[(b)]* | *Tax Payable on CCF Account Income* | *CCF Account Balance (Dec 31)* |
|---|---|---|---|---|---|---|
| 1 | $12,000,000 | $12,000,000 | -0- | $1,200,000 | -0- | $13,200,000 |
| 2 | $12,000,000 | $12,000,000 | -0- | $1,320,000 | -0- | $26,520,000 |
| 3 | $12,000,000 | $12,000,000 | -0- | $2,652,000 | -0- | $41,172,000 |
| 4 | $12,000,000 | $3,000,000 | -0- | $4,117,200 | -0- | $57,284,200 |
| 5 | $12,000,000 | $3,000,000 | -0- | $5,728,420 | -0- | $75,012,620 |

Equity funds available for fleet expansion: $75,012,620 – Three Ro/Ros

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a) Taxable income from prior tax year.
b) Assuming a 10.0 percent rate of return on deposited funds.

# EXAMPLES 1A & 1B: ACCUMULATING VESSEL EQUITY – SHELTERING CURRENT EARNINGS

With CCF -- $75 million

Without CCF -- $43 million

ALMOST DOUBLE

# EXAMPLES 2A & 2B:  ACCUMULATING EQUITY -- RETIRING EXISTING DEBT

## EXAMPLES 2A & 2B: ACCUMULATING EQUITY -- RETIRING EXISTING DEBT

Alpha's existing container vessels have been financed, on a vessel by vessel basis, with long-term vessel-associated debt.

Assume that Alpha has annual debt service (principal payment) obligations that total $12 million per year. In order to make these $12 million payments with after-tax income (Alpha's income is taxed at 40 percent) Alpha must earn $20 million before-tax.

Over a five-year period, Alpha will require $100 million in before-tax dollars to service its $60 million in debt payments.

# EXAMPLE 2A: ACCUMULATING EQUITY – RETIRING EXISTING DEBT WITHOUT CCF

Retiring Debt without CCF - Additional funds for Ro/Ro fleet expansion $ 0

| ***Year*** | ***Taxable Income[(a)]*** | ***CCF Account Deposits (Jan 1)[(b)]*** | ***Tax Payable[(c)]*** | ***Debt Payments (Jan 1)*** | ***CCF Account Balance (Jan 1)*** | ***Income on CCF Account Balance (Dec 31)*** | ***CCF Account Balance (Dec 31)*** |
|---|---|---|---|---|---|---|---|
| 1 | $20,000,000 | -0- | $8,000,000 | $12,000,000 | -0- | -0- | -0- |
| 2 | $20,000,000 | -0- | $8,000,000 | $12,000,000 | -0- | -0- | -0- |
| 3 | $20,000,000 | -0- | $8,000,000 | $12,000,000 | -0- | -0- | -0- |
| 4 | $20,000,000 | -0- | $8,000,000 | $12,000,000 | -0- | -0- | -0- |
| 5 | $20,000,000 | -0- | $8,000,000 | $12,000,000 | -0- | -0- | -0- |

Additional funds available for Ro/Ro fleet expansion: $ 0

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a) Taxable income from prior tax year.
b) Taxable income remains taxable in the absence of CCF account deposits; thus, eliminating funds available for fleet expansion.
c) Assuming a federal tax at Alpha's highest marginal rate, and a combined federal and state tax rate of 40 percent.

## EXAMPLE 2B: ACCUMULATING EQUITY – RETIRING EXISTING DEBT WITH CCF

Alpha's tax counsel has suggested that rather than making its debt service payments from general funds, Alpha should deposit sufficient vessel operating income in its CCF Program account to make these debt service payments with funds taken from its Program account in qualified withdrawals.

In this fashion, Alpha's container vessel debt service can be made with before-tax dollars, the funds required for the debt service can be accordingly reduced, and the funds available for the Ro/Ro purchases can be correspondingly increased.

## EXAMPLE 2B: ACCUMULATING EQUITY – RETIRING EXISTING DEBT WITH CCF

Making use of the CCF Program, Alpha will need only $60 million in before-tax dollars to service its container vessel debt during the same five-year period.

If this savings is deposited and invested in Alpha's CCF Program accounts, Alpha will have an additional $53.7 million for Ro/Ro fleet expansion at the end of five years – enough to purchase two additional Ro/Ros.

# EXAMPLE 2B: ACCUMULATING EQUITY – RETIRING EXISTING DEBT WITH CCF

Retiring Debt with CCF **-** Additional funds for Ro/Ro expansion  $53,724,880

| ***Year*** | ***Taxable Income[(a)]*** | ***CCF Account Deposits (Jan 1)*** | ***Tax Payable*** | ***Debt Payments (Jan 1)*** | ***CCF Account Balance (Jan 1)*** | ***Income on CCF Account Balance (Dec 31)[(b)]*** | ***CCF Account Balance (Dec 31)*** |
|---|---|---|---|---|---|---|---|
| 1 | $20,000,000 | $20,000,000 | -0- | $12,000,000 | $8,000,000 | $800,000 | $8,800,000 |
| 2 | $20,000,000 | $20,000,000 | -0- | $12,000,000 | $16,800,000 | $1,680,000 | $18,480,000 |
| 3 | $20,000,000 | $20,000,000 | -0- | $12,000,000 | $26,480,000 | $2,640,000 | $29,128,000 |
| 4 | $20,000,000 | $20,000,000 | -0- | $12,000,000 | $37,122,000 | $3,712,200 | $40,840,800 |
| 5 | $20,000,000 | $20,000,000 | -0- | $12,000,000 | $48,840,800 | $4,884,080 | $53,724,880 |

Additional funds for Ro/Ro expansion:  $53,724,880

a) Taxable income from prior tax year.
b) Assuming a 10.0 percent rate of return on deposited funds.

# EXAMPLES 2A & 2B: ACCUMULATING EQUITY – RETIRING DEBT WITH BEFORE-TAX DOLLARS

| | | | |
|---|---|---|---|
| With CCF | $53,724,880 | Without CCF | $0 |

## EXAMPLES 1A & 1B SHELTERING CURRENT EARNINGS AND EXAMPLES 2A & 2B RETIRING DEBT WITH BEFORE-TAX DOLLARS

With CCF $129 million

Without CCF $43 million

Alpha will have accumulated equity sufficient to fund the equity requirements for its entire proposed four vessel Ro/Ro fleet.

VESSEL LEASE FINANCING

Coastwise shipping developments were such Alpha did not contract until 2013, and then for 2015 deliveries. It is now two years later, the new Ro/Ro venture has succeeded and Alpha wishes to acquire two additional Ro/Ros.

# VESSEL LEASE FINANCING & EXAMPLE 3: REDUCING CHARTER HIRE

Alpha's planning staff believe that lease financing may be the best financing choice for Alpha's two additional Ro/Ros because this will –

reduce Alpha's immediate capital requirements needs, providing 100 percent Ro/Ro financing; and

allow the Ro/Ro vessel depreciation deductions' current use by an owner-lessor, which can share these benefits by offering Alpha an attractive lease hire rate.

EXAMPLE 3:  REDUCING CHARTER HIRE

Alpha approaches Delta, a Norwegian financial institution vessel leasing company.

Alpha and Delta agree to a 20 year vessel leasing transaction in which Delta will establish a CCF Program and share its tax deferral benefits with Alpha through a reduction in the demise charter hire payments that Delta would otherwise charge Alpha.

## EXAMPLE 3: REDUCING CHARTER HIRE [a]

Delta will use the MARAD CCF Program to create a tax-sheltered interest rate arbitrage fund with a 7% yield, that over the 20 year MARAD Title XI financing will decrease Delta's vessel cost, so as to effectively reduce Delta's net present value cost from $115 million to $95 million, and its total cash cost from $143 million to $127 million, saving Delta $20 million and $16 million respectively from what would have been its cost using commercial financing.

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(a) Commercial 12 year term financing has been used as the basis for all Program comparisons in this slide and all of the slides that follow.

## EXAMPLE 3: REDUCING CHARTER HIRE

If Delta is successful in increasing its return on investment yield to 14%, it will effectively reduce its Ro/Ro net present value cost from $115 million to $81 million, and its total cash cost from $143 million to $108 million, saving Delta $34 million and $35 million, respectively.

Delta agrees to share this benefit with Alpha by lowering what would otherwise have been Alpha’s Ro/Ro demise hire payments by an amount to be negotiated by the parties.

MARAD PROGRAM ANALYSIS & COMPARISONS

## TITLE XI – NET PRESENT VALUE & TOTAL COST ANALYSES

The Title XI program benefits the vessel owner by virtue of the availability of the debt financing itself and the longer term which results in lower annual debt service payments which may be of significant importance to a start up operation.

The measure of the Title XI benefits will depend upon the difference between the Title XI and commercial interest rates when the transaction is financed.

## TITLE XI – NET PRESENT VALUE & TOTAL COST ANALYSES [(a)]

The following two slides show the benefits of Title XI financing over 12-year and 20-year commercial financing alternatives.

The commercial financing alternatives are shown as priced with LIBOR plus 300 basis points and LIBOR plus 600 basis points alternatives.

Title XI financing is shown as priced at the 10-year Treasury rate plus 100 basis points in each comparison.

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a) The Title XI and CCF computations that follow are based upon commercial financing at LIBOR plus 300 and 600 basis points and Title XI at the 10-Year Treasury rate plus 100 basis points.

## TITLE XI FINANCING – NET PRESENT VALUE ANALYSIS

Title XI financing can be used to lower the net present value cost of a vessel over its financing lifecycle versus LIBOR + 300 basis point commercial financing by:

**approximately 2.0%** when compared to 12 year commercial financing; and

**approximately 1.8%** when compared to 20 year commercial financing.

## TITLE XI FINANCING – NET PRESENT VALUE ANALYSIS

Title XI financing can be used to lower the net present value cost of a vessel over its financing lifecycle versus LIBOR + 600 basis point commercial financing by:

**approximately 14.7%** when compared to 12 year commercial financing; and

**approximately 15.4%** when compared to 20 year commercial financing.

# TITLE XI FINANCING – TOTAL COST ANALYSIS

Title XI financing would <u>increase</u> the total cost of a vessel over its financing lifecycle versus LIBOR + 300 basis point commercial financing by:

**<u>approximately 9.0%</u>** when compared to 12 year commercial financing; and

**<u>approximately 4.6%</u>** when compared to 20 year commercial financing.

## TITLE XI FINANCING – TOTAL COST ANALYSIS

However, Title XI financing would decrease the total cost of a vessel over its financing lifecycle versus LIBOR + 600 basis point commercial financing by:

**approximately 4.3%** when compared to 12 year commercial financing; and

**approximately 9.5%** when compared to 20 year commercial financing.

# TITLE XI & CCF COMBINED FINANCING – NET PRESENT VALUE & TOTAL COST ANALYSES

When the CCF and Title XI program are used in combination the 20 or more year Title XI term loans provide an extended period for the operation of the CCF tax deferral investment income shelter. And, the vessel cost reductions become significant.

## TITLE XI & CCF COMBINED FINANCING – NET PRESENT VALUE ANALYSIS

Title XI & CCF can be used in combination to lower the net present value cost of a vessel over its financing lifecycle by:

**more than 15%** on the basis of a CCF investment return of 7% (e.g., Baa bonds); and

**more than 29%** on the basis of a CCF investment return of 14% (e.g., receivables factoring).

# TITLE XI & CCF COMBINED FINANCING – NET PRESENT VALUE ANALYSIS

| | 12-year Commercial Financing | 20-year Commercial Financing | 20-year Title XI Financing |
|---|---|---|---|
| % Advantage of Title XI & CCF (7% CCF ROI) | 17.4% | 17.2% | 15.7% |
| % Advantage of Title XI & CCF (14% CCF ROI) | 29.8% | 29.6% | 28.3% |

# TITLE XI & CCF COMBINED FINANCING TOTAL COST ANALYSIS

Title XI & CCF can be used in combination to lower the total cash cost of a vessel over its financing lifecycle by:

**more than 18%** on the basis of a CCF investment return of 7% (e.g., Baa bonds); and

**more than 31%** on the basis of a CCF investment return of 14% (e.g., receivables factoring).

# TITLE XI & CCF COMBINED FINANCING TOTAL COST ANALYSIS

| | 12-year Commercial Financing | 20-year Commercial Financing | 20-year Title XI Financing |
|---|---|---|---|
| % Advantage of Title XI & CCF (7% CCF ROI) | 11.3% | 15.0% | 18.7% |
| % Advantage of Title XI & CCF (14% CCF ROI) | 25.1% | 28.1% | 31.3% |

# TITLE XI & CCF COMBINED FINANCING TOTAL COST ANALYSIS

| | 12-year Commercial Financing | 20-year Commercial Financing | 20-year Title XI Financing |
|---|---|---|---|
| % Advantage of Title XI & CCF (7% CCF ROI) | 11.3% | 15.0% | 18.7% |
| % Advantage of Title XI & CCF (14% CCF ROI) | 25.1% | 28.1% | 31.3% |

## TITLE XI & CCF COMBINED FINANCING
## TOTAL COST ANALYSIS

I noted earlier (on slide 35) that Alpha’s building plans had been delayed. It is now 2012 and Alpha wishes to go to contract.

Using lessons learned in the National Shipbuilding Research Program, Alpha’s Ro/Ro shipyard, Gamma has improved its productivity. It now offers its four of its Ro/Ros to Alpha for a contract price of $100 million per vessel for the series.

Alpha accepts and plans to use the MARAD Title XI and CCF financing assistance programs.

## TITLE XI & CCF COMBINED FINANCING TOTAL COST ANALYSIS

Alpha will employ the MARAD Title XI program to achieve 20 year financing at 87.5% at an interest rate of 5.11% for each of the four Ro/Ro vessels. Alpha will also set and fund a CCF tax deferred sinking fund to be used to retire the vessel debt. Alpha anticipates that its sinking fund investments will yield an average return of 7% over the 20 year financing life.

Alpha calculates that it’s total actual cost will be $127.2 million, or on a net present value basis $95.0 million, for each $100 million Ro/Ro vessels that it has purchased.

# CONCLUSIONS

We began our CCF discussion by observing that:

"The CCF Program provides benefits – for vessel owners and operators, and for leasing company owner-lessors and for shipyards."

Returning to this proposition, what conclusions can we now draw concerning the potential usefulness of these MARAD programs as a means for reducing owner and operator vessel financing costs for Short Sea Shipping?

THANK YOU

QUESTIONS & ANSWERS

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ADDITIONAL INFORMATION: For background and follow-on reading you may wish to refer to my Marine Money International articles on the MARAD CCF Program and non-citizen vessel leasing in the U.S. domestic trades: Cook, “Financing the US Market via MARAD’s “CCF” Program,” Marine Money International, October 2007; and Cook, “Why German K/G Funds Can Now Lease U.S. Flag Assets,” Marine Money International, July/August 2004.

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