State and Outlook of the Canadian Icebreaker Fleet

4th Symposium – June 21, 2011
OUTLINE

• Canadian Coast Guard Arctic Fleet Operations

• Canadian Coast Guard Arctic Icebreaker Fleet
  – Vessels and condition

• Polar Icebreaker
  – CCGS JOHN D. Diefenbaker
CCG ARCTIC FLEET OPERATIONS

- Icebreaking
  - Escorting commercial ships
  - Harbour breakouts
- Search and Rescue
- Environmental Response
- Aids to Navigation
- Marine Security and Sovereignty
- Re-supplying isolated northern settlements
CCG ARCTIC ICEBREAKER FLEET

• 2 Heavy Icebreakers
  – Louis S. St-Laurent and Terry Fox

• 4 Medium Icebreakers
  – Henry Larsen
  – Pierre Radisson, Amundsen, and Des Groseilliers

• 1 High Endurance Multi-Tasked Vessel – Light Icebreaker
  – Sir Wilfrid Laurier
• Heavy Icebreaker

• Particulars
  – Length: 119.8m
  – Breadth: 24.4m
  – Power: 20142kw

• Year Built: 1969
  – 42 years old

• Tentative Retirement Year: 2017
CCGS TERRY FOX

• Heavy Icebreaker
• Particulars
  – Length: 88m
  – Breadth: 17.8m
  – Power: 17300kw
• Year Built: 1983
  – 28 years old
• Tentative Retirement Year: 2023
CCGS HENRY LARSEN

• Medium Icebreaker

• Particulars
  – Length: 99.8m
  – Breadth: 19.6m
  – Power: 12174kw

• Year Built: 1987
  – 24 years old

• Tentative Retirement Year: 2031
CCGS AMUNDSEN
• **Medium Icebreakers**

• **Particulars**
  – Length: 98.2m
  – Breadth: 19.2m
  – Power: 10142kw

• **Years Built: 1978, 1979, 1982**
  – 29 to 33 years old
  – Amundsen modernized 2003 (science)

• **Tentative Retirement Years: 2027-2029**
• High Endurance Multi-Tasked Vessel – Light Icebreaker

• Particulars
  – Length: 83m
  – Breadth: 16.2m
  – Power: 5250kw

• Year Built: 1986
  – 25 years old

• Tentative Retirement Year: 2020
• Budget 2008 allocated $720 million

• CCGS John D. Diefenbaker

• Delivery in 2017 – in time to replace CCGS Louis S. St. Laurent

• Government of Canada’s Northern Strategy
  – Federal programs in the North
  – Canadian Sovereignty
CCGS JOHN D. Diefenbaker
• 9 month Arctic operational season

• Concept vessel particulars:
  – ~140m length; ~28m breadth; ~10m draft;
  – ~22,000 tonne displacement; and
  – ~40000kw installed power (diesel electric 3 shafts)

• Detailed design contract Fall 2011

• Construction contract Fall 2013
Questions?

Brian LeBlanc
Regional Director Fleet
Central and Arctic Region
Canadian Coast Guard
Search and Rescue
M/V Clipper Adventurer
4th Symposium – June 21, 2011
Incident

- **August 28 0103 UTC – P/V Clipper Adventurer reported:**
  - Hard aground (on “Uncharted shoal”)
  - 34nm east of Kugluktuk, Coronation Gulf
  - In 3 meters water (draft 4.6 meters)
  - No pollution or damage
  - No immediate danger
  - 128 passengers and 69 crew
Port Epworth
Clipper Adventurer
Kugluktuk
SAR Tasking

• JRCC Halifax and JRCC Trenton
• NGCC Amundsen
  – 511nm away, 70nm north of Tuktoyuktuk
  – ETA August 30
• Private Tug
• CCGS Sir Wilfrid Laurier
Questions?

Brian LeBlanc
Regional Director Fleet
Central and Arctic Region
Canadian Coast Guard
Response

• Non-essential passengers and crew removed.
• Transfer of fuel to internal secure tanks.
• Preliminary damage assessment.
• Bilge processing (through oil/water separators).
• Minor oil releases:
  – September 2, unrecoverable volume
  – September 12, unrecoverable 200l
Salvage and Recovery

- Company engaged a salvage master and initiated a salvage/recovery plan
- Transport Canada provided oversight
- CCG monitored
- Plan objectives:
  - Re-float vessel, ensuring structural stability and limiting pollution
  - Undertake repairs
  - Transit from Arctic for final repairs
Post Re-floating

- Tow to safe anchorage – Port Epworth
- Secondary damage assessment
- Preliminary repairs and transit clearances
- Tow to Cambridge Bay
- Secondary repairs to prepare vessel for longer transit out of the Arctic
- Tow to Pond Inlet
- Transit/Tow to Nuuk Greenland
INITIAL DIVE SURVEY AFTER REFLOATING - SEPT 15, 2010
PORT ELWORTH

ALL FRAME NOS & SIZES APPROXIMATE

FRAME 60-70
CRUSHED & PEELED
OPEN 2m WITH SMALL
FRACTURES LEADING OFF
# TOADSDIE FRACTURE A
FUD & G'DH
SEAM

FRAME 84
HEAVY INSET
41.5m TOADSDIE

FRAME 87
LONG FRACTURE
400mm

THIS AREA OK

FRAME 108-118
1m x 1m
KEEL STRAKE
PEELED OPEN & CRUSHED

FRAME 120-126
3m x 0.75m
KEEL STRAKE
PEELED OPEN & CRUSHED

ME ROOM LOW BUT
SEA CHEST & SURROUNDING
AREA INDEBTED (CUT 48)
HEAVILY BURDENED & WEST

FRAME 74
LONG FRACTURE
1.2m LOA
SMALL
LONGITUDINAL
FRACTURES
~ FR 80-90

FRAME 72
STABILIZED
FR 40-70

FRAME 60-70
STABILIZED
FR 72-80

TRUMIDUE
BOX CRIPLED OPEN &
CRUSHED AGAINST HULL

THIS ENTIRE AREA OF FLAT BOTTOM
HEAVY INSET & ASHED UNTIL 200mm
WITH FIELDS & CIRCLES CIRCULAR
DEPRESSED, THERE ARE NUMEROUS
DEEPER INSETS UP TO 500mm.
LRIT – from CCG NCC

- Pond Inlet
Clipper – CCG in Summary

- **CCGS Sir Wilfrid Laurier**
  - Aug 30 to Sept 24: 24 Days
  - 80 m3 Fuel

- **CCGS Henry Larsen**
  - Sept 25 to Oct 9: 15 days

- **ER**
  - 2 Senior Response Officers 23 days
  - RAT 150 in Kugluktuk
  - Vessel Spill Response Kits

- **Ice Recon Aircraft CFR**
Questions?

Brian LeBlanc
Regional Director Fleet
Central and Arctic Region
Canadian Coast Guard