



HEAVY LIFT CARGO AIRSHIPS FOR NORTHERN OPERATIONS

Presentation: Aero Montreal Innovation Forum



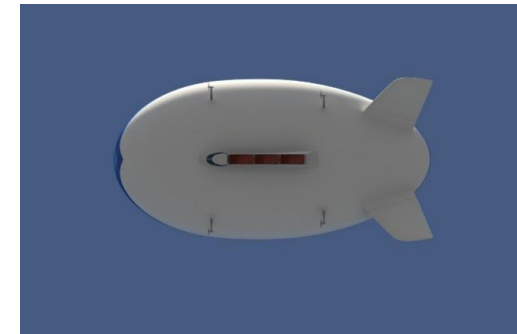
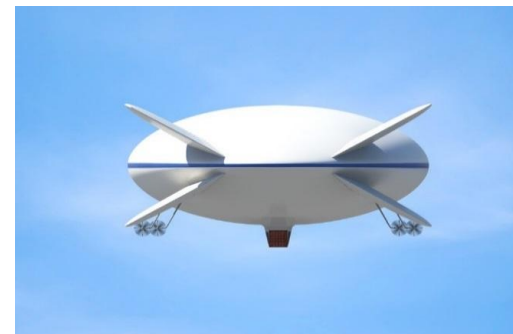
April 25, 2016



Background

- ❑ The world is entering a new era of widespread availability and use of cargo airships
- ❑ Heavy lift cargo airships are a “Green” technology, and can serve the Arctic year round with a low carbon footprint
- ❑ Communities and industries in Canada’s north are ready for heavy lift cargo airships:
 - ❑ Mining: Equipment
 - ❑ First Nations: Housing, food
- ❑ Cargo airships are now being designed and built in Canada

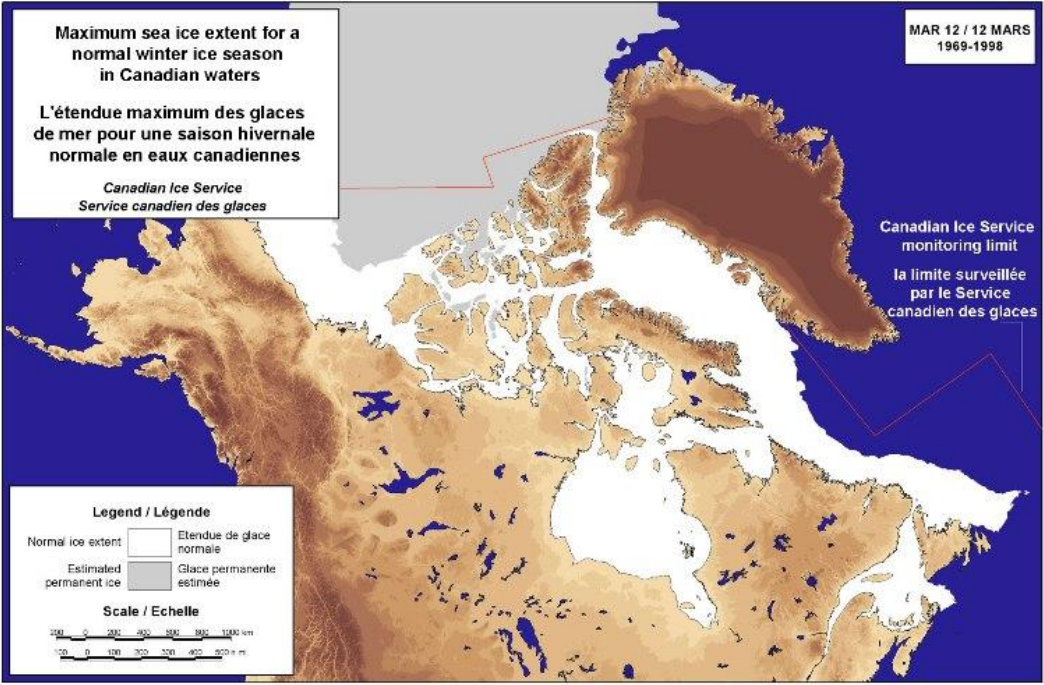
LTA Aerostructures (“LTAA”) “Patented” lenticular cargo airships



Payload 10 Metric Tonnes (22,000 lb)



Striking Limitation of Roads, Year-Round Waterways



Une étendue de glace de plus de 4 millions de km carré à l'intérieur de la limite surveillée par le Service canadien des glaces
Over 4 million sq.km total ice extent within Canadian Ice Service monitoring limits



INNOVATION

Incremental
Breakthrough
Transformational



Innovative Projects and Programs

Electric Propulsion Systems

- ❑ Description:
 - ❑ Convert fossil fuel to electricity (diesel APUs on board) which drive highly efficient electric vectoring propulsion motors
 - ❑ Augmentation with fuel cells
- ❑ Benefits:
 - ❑ Clean, with 95+% efficiency
 - ❑ Power for all shipboard uses
- ❑ Partners and Collaboration:
 - ❑ Industrial: Honeywell, Siemens, Zeppelin
 - ❑ Universities: ETS, others TBD
 - ❑ Programs: GARDN

Lenticular Aerostructure Design/Fabrication

- ❑ Description:
 - ❑ Lenticular shape, coupled with sophisticated load exchange system,
 - ❑ Structural ring assembly
 - ❑ Unique hover capability in difficult Arctic weather
- ❑ Benefits:
 - ❑ Improved number of operating days per year
 - ❑ Precision placement of heavy payloads
 - ❑ Hover in windy conditions
- ❑ Partners and Collaboration:
 - ❑ Industrial: Airbus/Stelia, Zeppelin, Honeywell
 - ❑ Universities: U. of Manitoba, others TBD
 - ❑ Programs: SADI, SDTC



Questions



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