

Fermilab

SDC SOLENOID DESIGN NOTE #168A

TITLE: Air Shipment of Prototype Vacuum Vessel

AUTHOR: Ron Fast

DATE: Dec 6, 1991

I also corresponded with HeaviLift regarding air shipment of the prototype vacuum vessel from O'Hare to Japan. Their cost estimate for shipping it in their AN-124 is \$392,000. Presumably this would also be the cost of air shipping the complete prototype magnet from Japan back to Fermilab or the SSCL, should that happen at some time. A copy of this correspondence is attached.

I also asked Carol Weissert-Jagger of the Fermilab shipping department to investigate land/sea shipment of the prototype vacuum vessel. She learned that the cheapest embarkation point for a trans-Pacific boat shipment is Long Beach, California. The cost of shipping a container from Long Beach to Yokohama by sea is \$120 per cubic meter. Assuming a crate 5 m x 5 m x 9 m = 225 m<sup>3</sup>, the cost of the sea leg would be \$27,000. Carol also got several quotes for truck shipping the vessel from Fermilab to Long Beach; the lowest was \$7266 including escorts and permits. The total cost of such a land-sea move would be about \$35,000. Note that the prototype vessel is smaller in diameter and length than the liquid argon cryostats for the D0 detector, which were shipped by truck to Fermilab from vendors in Indiana and New Hampshire.



Fermi National Accelerator Laboratory  
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December 3, 1991

Richard Smith  
HeaviLift Cargo Airlines, Ltd.  
301 E 51st St.  
Kansas City, MO 64112

Dear Mr. Smith,

Thank you very much for your prompt reply to my inquiry regarding the superconducting solenoid; you gave me exactly the information I needed.

A prototype of the final solenoid is being designed and will be built in Japan. The prototype will have the same radius as the final solenoid and will be about 30% its length. Fermilab is providing the vacuum vessel for this prototype magnet. We will ship the assembled vacuum vessel to Japan where the superconducting coil will be inserted and the system tested. The present schedule calls for our vessel to be shipped in January or February of 1993.

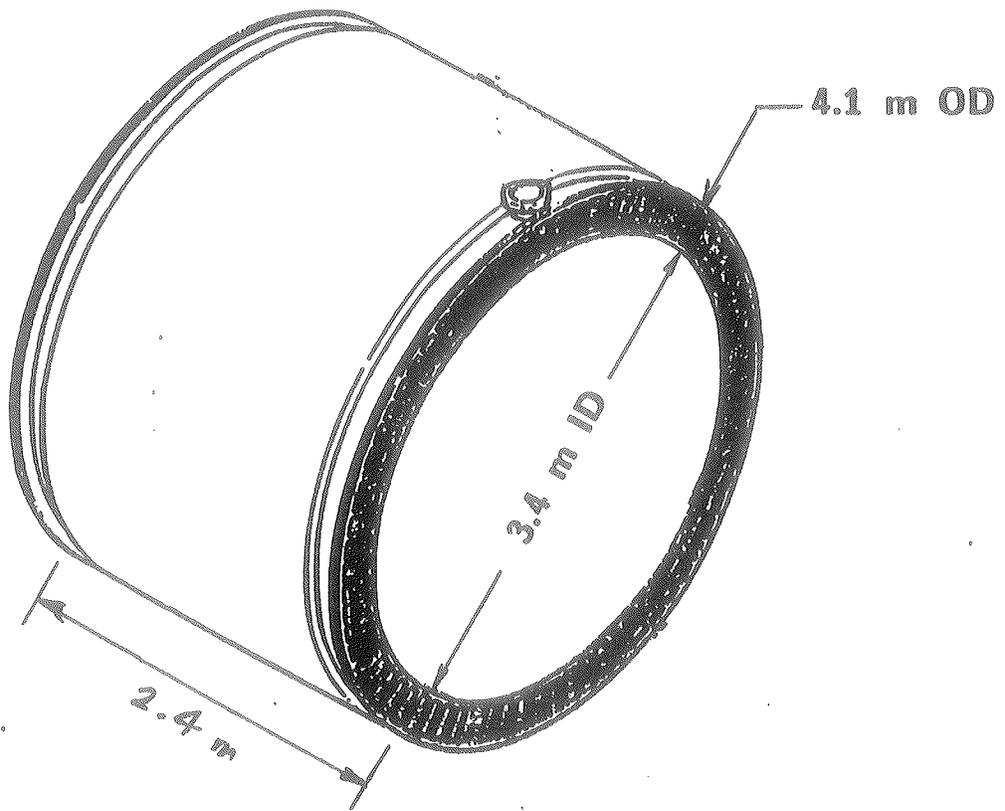
Could you give me an estimate for the air shipment of the prototype vacuum vessel from O'Hare Airport to Narita or Haneda airports in Japan? I have attached a sketch of the vessel. It will weigh about 11 metric tons and can be oriented with its axis either horizontal or vertical.

Thank you very much for your assistance.

Sincerely,

A handwritten signature in cursive script that reads "Ron Fast".

Ron Fast

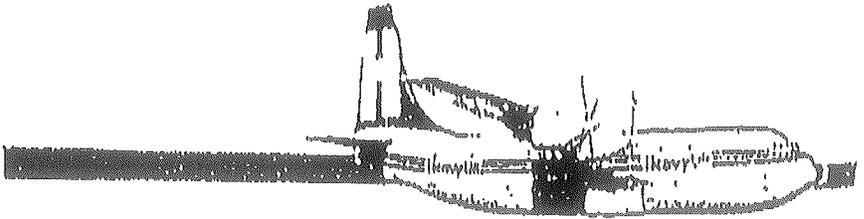


Orientation: horizontal or vertical axis

Estimated weight: 2.5 metric tonnes

# HeavyLift

CARGO AIRLINES



## FACSIMILE TRANSMISSION SHEET

TO: RON FAST DATE: 3<sup>RD</sup> DEC 91  
FERMI NATIONAL TIME: \_\_\_\_\_  
ACCELERATOR LAB. FAX NUMBER: \_\_\_\_\_

FROM: RICHARD SMITH NUMBER OF PAGES: 1

### MESSAGE:

THANK YOU FOR YOUR FAX OF TODAY  
AGAIN THIS CARGO IS LOADABLE ONLY  
ONTO HEAVYLIFT'S ANTONOV 124 AIRCRAFT.  
AS AN INDICATION OF COST THE  
CURRENT CHARTER PRICE FOR A  
FLIGHT WOULD BE \$392,000  
IF YOU REQUIRE ANY FURTHER HELP,  
PLEASE CALL ME

Regards  
Richard Smith

HEAVYLIFT CARGO AIRLINES LTD.  
301 EAST 51ST STREET  
KANSAS CITY, MO 64112  
TEL: (816) 753-3337  
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