

SLEDGE FOR CONTAINER

To support traverses

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1. PREAMBLE



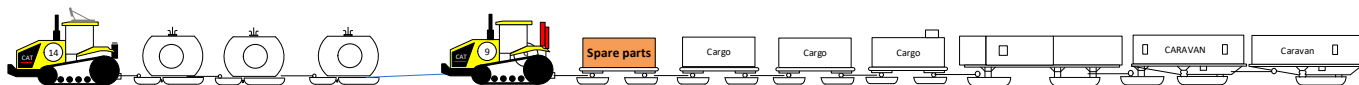
Picture of the container that is use as a storage during our traverses across Antarctica.

IPEV wish to purchase a new sledge dedicated to this store to replace the old one, and increase capabilities and versatility.

2. OPERATION CONTEXT.

The sledge is to be used in Antarctica on French traverses:

- 1) Sled will be towed on snow by tracked tractor.
- 2) The sled must be able to travel both on a road laid out in the snow and on rough terrain where there is no road.
- 3) Temperature of use can be from 0°C to -50°C.
- 4) Sledge should be able to be repaired (welded) at a very low temperature. (up to -50°C)
- 5) Sled will be towed in a train. Should be able to resist to the towing force of the complete convoy.



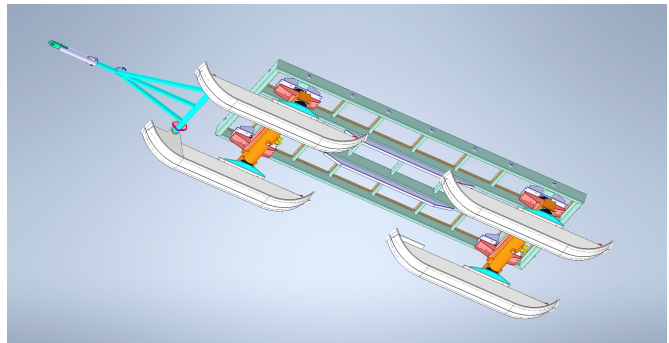
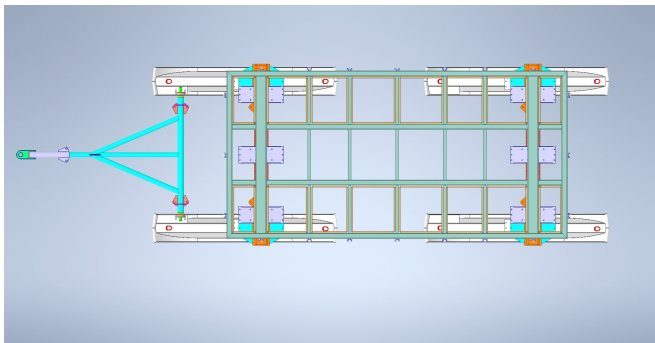
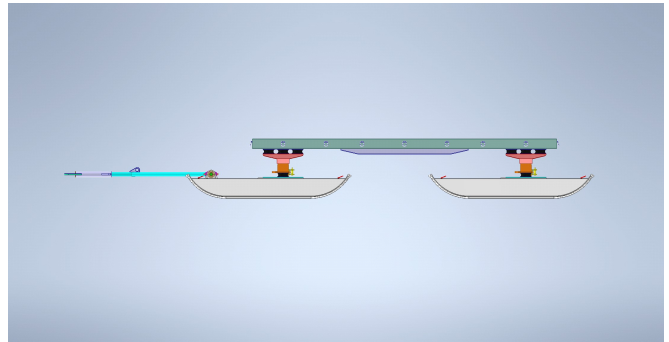
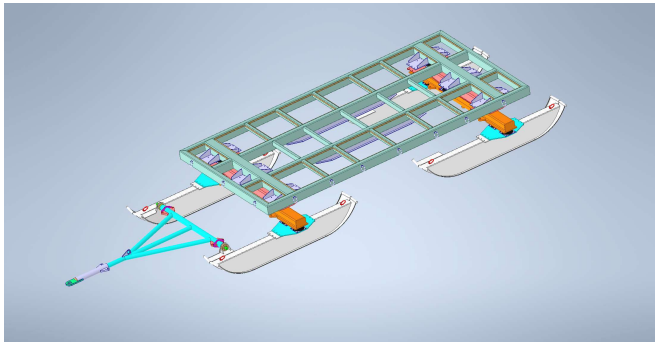
Typical convoy design with different kind of sledges

3. DESCRIPTION OF THE SLEDGE

Global design

The global description of the sled we need is a flat deck for 20-foot container seated on a 4 articulated skis. The front axle must be steerable to steer the sled.

Few pictures of similar sled



Here are general views of the sled we are looking for. The drawbar is shown attached to the skis, but on our future sled it will need to be attached to the front beam, not the skis.

Chassis specifications

- 1) The flat deck should be designed with container foundation to receive an ISO 20 foot container and lock it.
- 2) The chassis should be a welded steel frame.
- 3) Materials for the sled should be steel able to operate at -50°C. We are able to weld steel on cold temperature, not aluminium.
- 4) The 4 skis should be identical. Size requested is 3.5m X 0.77m to get low ground pressure. The surface of the ski that is touching snow, have to be covered with low friction plastic.
- 5) The skis should have individual trunnion articulation on their beam. Maintenance parts for trunnion should be available on the market.
- 6) No rubber and no chains wished to assemble the sled.
- 7) The front drawbar should be attached to front beam, not to skis. (The images are not accurate on this point)

Chassis capabilities

- 1) The sled should be design for 15 ton payload
- 2) Sled should support towing force for a train up to 9 sleds
- 3) Front beam should be on a seat to steer sled and help to turn.

Chassis accessories

- 1) Rear tow hook.



- 2) Length of drawbar should be enough to hook same sled with 2m free between walkways of first and second sled.
- 3) Walkways on 4 sides, with retractable stairs on rear right hand side of the sled.
- 4) Walkways should be equipped with retractable handrail on left hand and right hand side. No handrail on front and back walkways