

Appendix 1: Operational Considerations Tabular Iceberg Landings

Operational Considerations: Vessel Helicopter Landings on Tabular Icebergs

These operational considerations act as a mental checklist for Expedition Leaders considering landing a helicopter on a tabular iceberg.

Iceberg

Only large tabular icebergs (>1 sq. km) should be considered. A large and level tabular berg indicates balance and stability. It is not suitable to land on a tilted tabular berg or any type of irregular berg i.e. an iceberg that has rolled previously.

The tabular berg should be straight sided on all sides, free of irregularities (caves, arches, crevasses), and have a flat regular surface.

During the inspection of the iceberg, check for recent signs of activity (a trail of floating debris). The presence of brash ice in the debris trail is acceptable, but bergy bits and smaller bergs indicate the berg is dynamic and should be avoided.

Vessel must remain in the immediate vicinity of the iceberg (<5 nm) during the operation. Iceberg landings should not be conducted at long range from the vessel.

Environment

Seas should be calm (< 1m swell). Tabular Icebergs in open ocean (with the absence of pack ice) should be avoided and only considered for landing if exceptionally large i.e. >10 sq km

Wind should be moderate (less than 15kts).

Areas of strong current where the iceberg may move rapidly or suddenly ground should be avoided.

Cloud, wind and visibility should be within normal parameters for helicopter landing operations and with a stable or improving forecast.

Landing Zone (LZ)

The entire iceberg should be inspected from the air. A landing zone (LZ) should be selected in an area devoid of cracks and ridges that might indicate crevasses or indications of pressure/stress.

LZ should be in the center of the iceberg. If the iceberg is very large (>5 sq km) it is acceptable to land nearer to an edge, but not closer than 100m.

Helicopter landing should follow normal procedures for glaciated terrain landings:

- Initial inspection from the air to check for visible crevasses.
- Landing with minimal load on skids and pilot keeping power on.
- Roped guide disembarks helicopter and probes the area 10m out in all directions forward of the rear fuselage (Caution; tail rotor).
 - **The helicopter should deploy the guides and then depart the landing site (preferably remaining in oversight). The guides should then rope up and probe a 20m diameter LZ.**
- If the area is deemed safe pilot may power down to idle and the remainder of the team can disembark.
- **After the helicopter departs, roped guides probe a Safe Corridor to a Muster Point, and from here establish and probe a Safe Area where people may walk un-roped.**
- Any walking outside the probed crevasse-free perimeter must follow normal procedures for travel on glaciated terrain.



Operations

As with any other helicopter landing away from the coastline, landings may only be conducted if two helicopters are available.

Exposure should be kept to a minimum in terms of the number of people and their duration on the iceberg. It must be possible to recover all people and equipment on the iceberg quickly (within several helicopter rotations).

Crevasse rescue kit & stranding kit must be always available on the iceberg.

Extended walking on the berg should be avoided, even when roped up, and should not approach within 50m of the edges.

Guides on the iceberg, as well as helicopter pilots and bridge crew on the vessel must monitor the berg continuously throughout the operation for any sign of change in stability (cracks forming, calving, tilting, grounding, cracking or creaking noises, etc.) or changes in environmental conditions.

Only one helicopter at a time should land on the berg and helicopters should not shut down (eg. engine off) whilst landed.

Normal biosecurity and landing operations are conducted to ensure minimal disturbance the surface of the iceberg.