CRUISE SHIP EXPEDITIONS

Ship Operation General Overview

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OPERATIONAL CHALLENGES

- On the general operational side, we normally have to consider some points:
- - Expedition cruises, by definition, go to remote destinations, where larger ships can not go. The ports that we visit are, normally, short on resources.
- - One case-study is Antarctica and we will make the presentation based on that specific área.
- - Most cruises start and end at Ushuaia, a port that is hardly able to handle 4 Expedition ships. Reality is that, during the high season, the port must handle more that this number, everyday.
- - So, sometimes ships have to leave the pier to anchor, then return to the pier (if lucky) and, as a result, many fundamental operations have to be performed with assisting boats.

OPERATIONAL CHALLENGES

- Embarking and disembarking luggage and passengers on small boats is not easy and, sometimes, there is no pier available ashore.
- The services available ashore are not unlimited and the service providers are very much aware that there is not other option. To be fair, all materials, spares, equipment, food, etc., need to be received from other parts of Argentina. The prices are not cheap.
- Once off port, the medical assistance is limited to the ship's capacity to assist, very commonly. Some other rare possibilities, from specific Antarctica bases, include plane transport to Ushuaia or Punta Arenas, anyway.

OPERATIONAL CHALLENGES

- Of course that any technical problem, damage in need of repair or maintenance operation requiring shore side assistance is also a challenge.
- The Drake Strait is also notoriously prone to bad Weather conditions. Waves over 5 metres are common and anything bellow 3 metres is considered good weather. Since these are mostly smaller ships, the passengers need to be very well informed, in advance, of the possibilities. Also the crew must be instructed, regarding bad weather preparation. The more common accidents are related with falls, hitting doors, slippery toilets and similar.
- Embarkation and disembarkation of passengers and crew, ashore and on top of ice, is challenging and requires well trained crew, normally employed as Expedition Team.
- Ok, now, for the fun part…

CRUISE SHIP EXPEDITION IN ANTARCTICA

ANTARCTICA TREATY

Since 1959, Antarctica has been governed internationally by the provisions of the Antarctic Treaty and its subsequent agreements.

Under this Treaty, Antarctica is a natural reserve dedicated to peace and science.

CRUISE SHIP EXPEDITION IN ANTARCTICA

ANTARCTICA TREATY

Antarctica is the largest wilderness area on Earth and, to preserve this pristine area, the **International Association of Antarctica Tour Operators was created - IAATO**

CRUISE SHIP EXPEDITION IN ANTARCTICA

IAATO

Founded in 1991, to advocate and promote the practice of safe and environmentally responsible private-sector travel to the Antarctic.

CRUISE SHIP EXPEDITION IN ANTARCTICA

IAATO Members support the work of the Treaty System through their participation in the development of guidelines and operational procedures to manage Antarctic tourism and wildlife.

CRUISE SHIP EXPEDITION IN ANTARCTICA

IAATO Guidelines and Rules:

Biosecurity - inspect and clean clothing and equipment before going ashore.

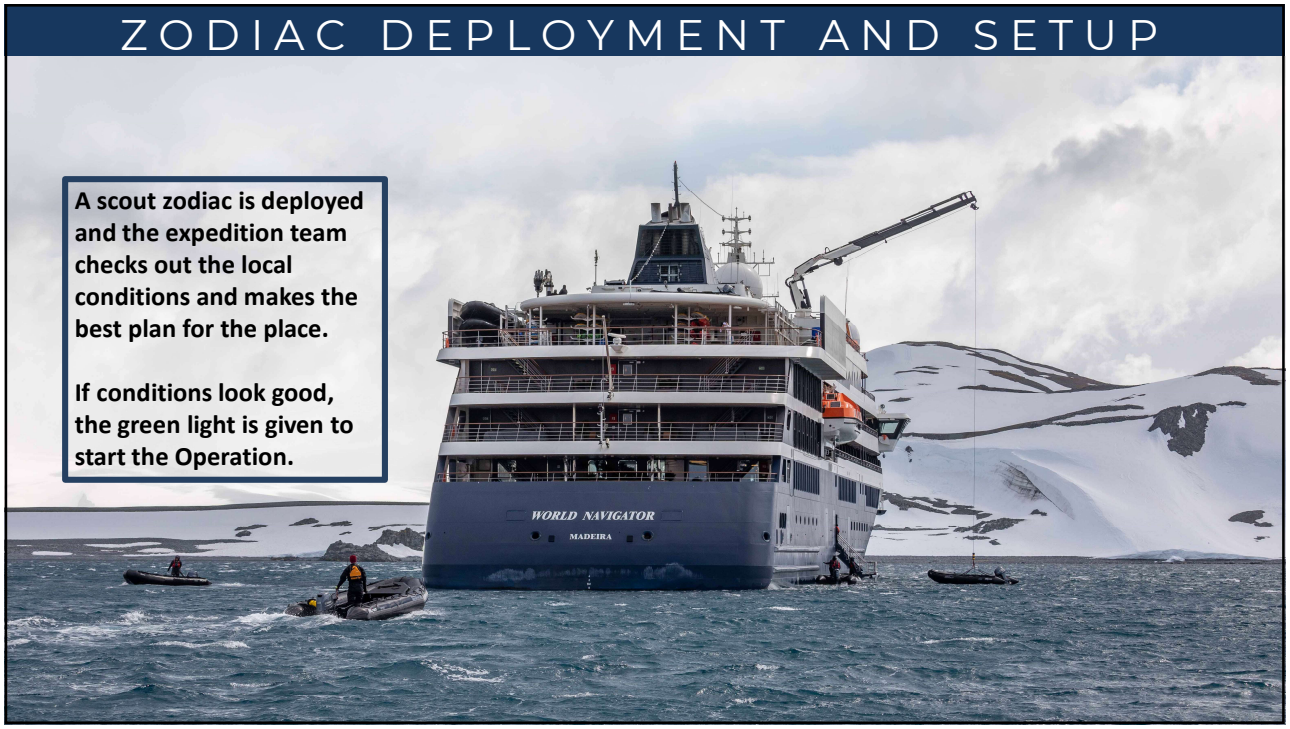
Wash and disinfect boots before and after each landing.

CRUISE SHIP EXPEDITION IN ANTARCTICA

Boot Wash Machine Placed on Zodiac Platform prior to leaving or boarding the ship – in order to prevent the introduction of non-native species between places in Antarctica.

ARRIVAL ON SITE

ZODIAC DEPLOYMENT AND SETUP



A scout zodiac is deployed and the expedition team checks out the local conditions and makes the best plan for the place.

If conditions look good, the green light is given to start the Operation.

CRUISE SHIP EXPEDITION IN ANTARCTICA

Guests can perform different operations depending on the **Landing Site Specific Rules, Guidelines, or Weather Conditions**

- LANDING
- ZODIAC CRUISE
- KAYAKING
- STAND-UP PADDLING

LANDING

ZODIAC CRUISING

KAYAKING

STAND UP PADDLING

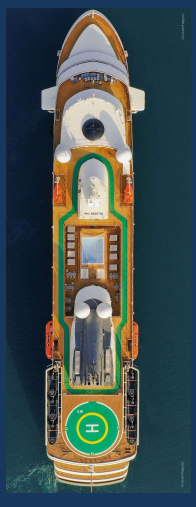
ZODIAC PLATFORM

DISEMBARKATION ON LAND

CRUISE SHIP EXPEDITION IN ANTARCTICA

SHIP OVERVIEW

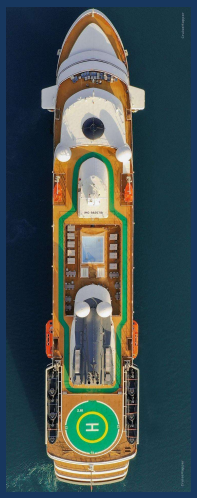
- Ice Strengthened hull
- Polar Cat- C
- Ice Class- IB
- LOA- 126m
- Draft -4.75m
- 9930 Gross Tonnage
- Max. PAX- 180
- Max. Crew- 117



CRUISE SHIP EXPEDITION IN ANTARCTICA

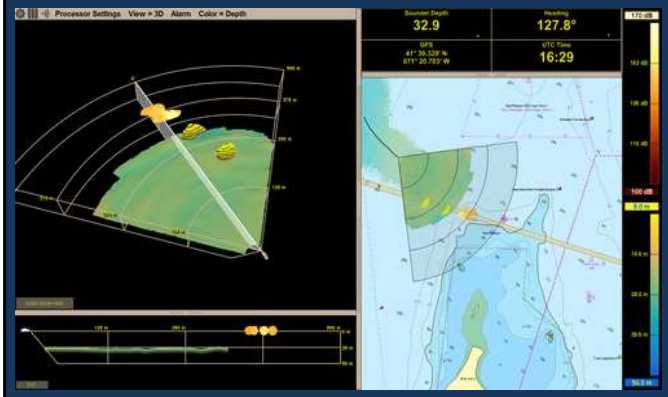
BRIDGE EQUIPMENT

Despite the usual Primary Means of Navigation equipment found on board a modern cruise ship. Safe navigation relies on some secondary equipment but yet very important due to **low accuracy** and hydrographic data from paper charts or ENC.



CRUISE SHIP EXPEDITION IN ANTARCTICA

FARSOUNDER 500

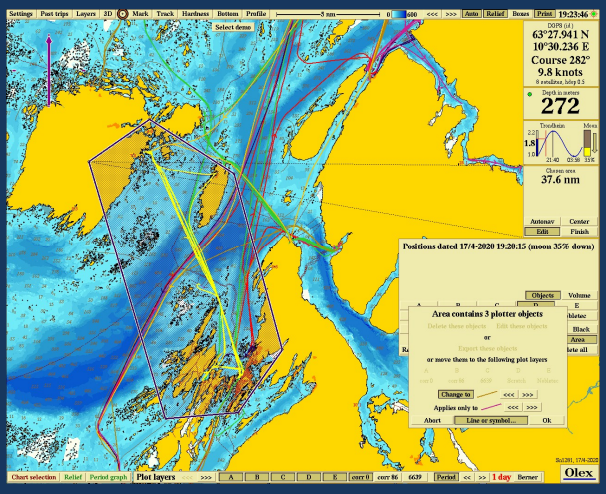


Forward-Looking Sonar system- Located on the bulb it detects objects in the water column up to 500 meters ahead and a range of 90º up/down.

Since the ship operates in remote areas of the world that are especially vulnerable to ice and shallow shoals. This system warns before a dangerous situation occurs like an uncharted underwater rock.

CRUISE SHIP EXPEDITION IN ANTARCTICA

OLEX NAVIGATION SYSTEM



Using GPS and sonar, depth data is collected which is continuously calculated and added to previous measurements from previous ships.

The result is visualized, in real-time, as a 3D map of the seabed and past tracks with depths, this is particularly important in the challenging and often poorly-charted waters surrounding Antarctica.

This Past tracks can be uploaded to the OLEX database or shared between the same company ships.

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IBERIA BRANCH