Safety Alert: Failure to avoid a cyclone

What happened?

Recently, a construction vessel was unable to avoid a cyclone because the operator failed to initiate preparations to retrieve anchors and evacuate its location in a timely manner.

A tropical low formed 250 nautical miles from the location of the vessel and, inconsistent with the predicted forecast track, approached the vessel. The weather deteriorated and the high winds and seas halted operations to retrieve the anchors, attach tow lines and tow the vessel away from its location to avoid the course of the tropical low which formed into a cyclone.

The vessel weathered the storm until its final anchor parted, at which point the vessel was able to make way under its own limited capability to a safe location. Fortunately no one was injured during the incident, although had the cyclone intensified in strength, the outcome could well have been more serious.

The incident took place in the Timor Sea, an area sometimes known as the cyclone "nursery" because cyclones typically form there from tropical low pressure systems before heading toward the North West Shelf. On the North West Shelf, sometimes known as cyclone "alley," it is typically easier to predict the track of cyclones than in the Timor Sea, as they are already established by the time they get to the North West Shelf.

What went wrong?

The factors that contributed to the late decision to evacuate include:

1. Lack of adequate planning for location specific risks and anticipated cyclone scenarios.
2. Lack of consideration for operational limitations of support vessels with critical roles during their cyclone response.
3. Failure of the Cyclone Response Procedure (CRP) to identify and address the risk of tropical lows rapidly developing into cyclones

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4. Inappropriate planning of the required evacuation task times with an adequate safety margin.
5. Failure to consider worst case cyclone track scenario of weather forecasts.
6. Failure of the operator to conduct adequate cyclone response drills and exercises.

Key Lessons:

1. Consideration of location specific cyclone scenarios is critical in the Cyclone Response Procedure (CRP), including;
    - Designated safe mooring areas
    - Escape route/sail away restrictions
    - Responses for Cyclones/tropical lows approaching from various directions.
    - Helicopter availability
    - Key construction activities and their required evacuation preparation times
2. Clear and concise instructions and required actions should be contained in the CRP
3. The CRP must identify the time required to complete critical tasks prior to sail away, with an adequate safety margin
4. The consideration of operational limitations of support vessels required to perform key roles during the emergency response is critical. Evaluation of their required time to complete their functions, against worsening weather conditions is essential
5. The CRP should identify and address the risk of tropical lows rapidly developing into cyclones
6. Worst case cyclone tracking and forecast predictions should be taken into consideration
7. This incident highlights the importance of drills and exercises - practice makes perfect!

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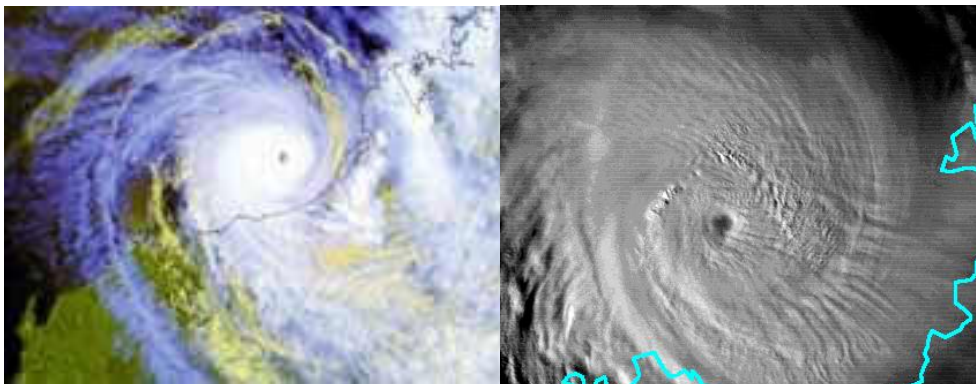

Tropical cyclone images: (left) from the Bureau of Meteorology and the National Oceanographic & Atmospheric Administration (NOAA) ; (right) Cyclone Thelma image originally processed by the Bureau of Meteorology from the geostationary GOES-9 operated by the NOAA for the Japan Meteorological Agency.

Contact

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