REEFREP NEWS - 1st Edition

SHIP REPORTING SYSTEM

November 2003

A Newsletter?

With many changes proposed for REEFCENTRE over the next year or so, this Newsletter has been initiated as a mechanism to insure key stakeholders are kept informed.

This newsletter will focus on APR via Inmarsat C and DSTI. Subsequent editions will describe other developments and provide updates on trials currently underway.

Moving to a Coastal VTS?

Following the *Review of Great Barrier Reef Ship Safety and Pollution Prevention Measures* in 2001 (the GBR Review), Australia is progressively upgrading REEFREP to a Coastal Vessel Traffic Service (VTS).

In order to deliver a Coastal VTS in accordance with the IMO resolution A.857(20), REEFREP must have the capacity to:

- Compile a timely and accurate traffic image of shipping throughout the region
- Interact with traffic, and
- Respond to traffic situations developing

The changes proposed to the existing ship reporting requirements are currently being progressed through the IMO and are expected to be in place by December 2004.

There have been a number of trials conducted over the past 12 months to evaluate mechanisms to enhance REEFREPs ability to compile a timely and accurate traffic image of shipping and provide better Ship Traffic Information to vessels throughout the region.

Some of the key developments being evaluated include:

- APR via Inmarsat C
- Dynamic Ship Traffic Information (DSTI)
- Highways (Standardised Routes)
- Broadcasts

Voluntary APR via Inmarsat C?

Preliminary trials in 2002/03 demonstrated that Automated Position Reporting (APR) via Inmarsat-C provides a cost effective mechanism for REEFREP to obtain timely and accurate position reports. This has already significantly enhanced the reliability of ship traffic information.

Since October 2002 ships transiting the Torres Strait and Great Barrier Reef region have been encouraged to participate in Automated Position Reporting (APR) via Inmarsat-C.

Up 70% of vessels transiting the reef on a daily basis now provide position reports via APR. Vessels participating in APR are automatically programmed from REEFCENTRE to forward a position report every 15 minutes.

The support from pilots, agents and shipping companies has been instrumental in achieving such a good result in such a short period of time.

With the proposed introduction of a Coastal VTS in December 2004 APR via Inmarsat C will become the preferred mechanism for all vessels to provide En Route position reports to REEFCENTRE.

Dynamic STI - Preliminary Trials

Through the use of positional data from APR, combined with existing information obtained via Radar and the VHF Reporting Points, REEFREP now has the capability to generate dynamic ship traffic information (DSTI) and disseminate this to individual ships transiting the region, including the provision of updated information as it becomes available.

This is a quantum change from the current reliance on Dead Reckoning (DR) to generate ship traffic information. Under the DR model, the information provided by ships at the VHF

Reporting Points (location, speed and nominated route) is used to predict the position of vessels along their nominated route and the associated ship traffic information (e.g. the time and location of predicted ship encounters) between the Reporting Points.

As the VHF Reporting Points are typically eight to sixteen hours steaming apart there is an inherent level of uncertainty in the predicted ship traffic information provided by the DR model. This has resulted in a credibility issue for REEFREP and as identified in the Holden Report and the GBR Review this model can, in some instances, result in the provision of incorrect information.

Some of the reasons why the DR model is subject to uncertainty include:

- Changing traffic situations such as:
  - New vessels entering the system after traffic information was provided to a vessel
  - A vessels actual speed differs significantly from their nominated speed, or
- Vessels not accurately reporting at the mandatory VHF Reporting Points as required.

A DSTI model has been developed in consultation with pilots and trials commenced with the QAL vessel, the *River Embley* in August this year. The key principles of DSTI model being evaluated are:

- When a vessel first enters REEFREP they will be provided with the STI for vessels they will encounter in the first 6 hours.
- A constant 2-hour bubble monitors any significant changes to DSTI such as a new vessel, a change in ETA due to an increase or decrease in speed.
- After a period of 5 hours if no new traffic is encountered then the vessel will receive a new STI for the next 6 hours.

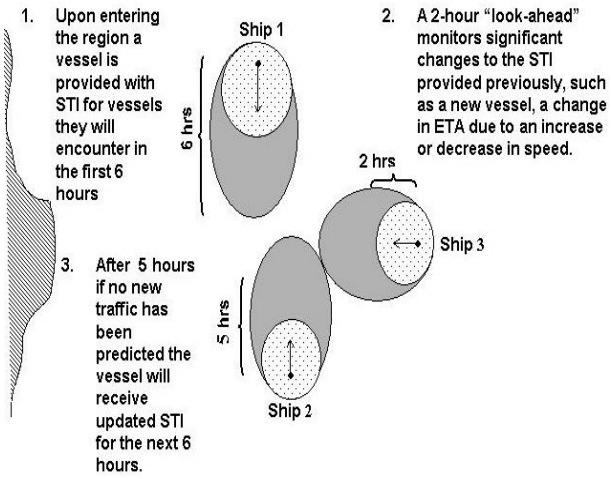

Figure 1. Principles of DSTI

In the current DSTI trial the *River Embley* is receiving DSTI under this model and has been exempt from the mandatory VHF Reporting Points. Feedback to date has been extremely positive. General comments included:

- DSTI provides a mechanism to ensure ship traffic information is credible and that changed traffic situations are monitored and communicated with ships transiting the region.
- DSTI provides a reliable mechanism for REEFCENTRE to monitor ships previously identified as "Ships in the Area" and advise if and when circumstances changed and they should be included as ship encounter information.

Over the coming months gradually more ships will be invited to participate in the DSTI trial.

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