SYNOPSIS

Narrative

On 27 January 2006, while on passage from Le Havre, France to Newark, USA, the British registered container vessel *P&O Nedlloyd Genoa* encountered heavy weather in position 50° 15' N 034° 02' W.

The passage was part of the vessel's regular trading pattern between northern Europe and the east coast of North America. The master, who had extensive container ship experience, had been employed on the route since 1999.

After departing Le Havre, the master decided on the vessel's route across the Atlantic based upon weather routing information supplied to the ship. The vessel's design made it susceptible to the effects of swell approaching within an envelope three points either side of the bow. The master consequently chose a northern combined great circle and rhumb line route which he subsequently modified further, because of the forecast swell direction, taking the vessel north of his planned track.

On 27 January, weather conditions deteriorated and the vessel encountered wind speeds up to 68 knots and an estimated swell height of 5 to 6m. During the day, the master adjusted course and speed to reduce rolling and slamming. Late afternoon, aware that the prevailing conditions could induce parametric rolling, he altered course directly into the swell at slow speed.

At 1718, after a succession of larger swell waves approached from the port and starboard bows, the vessel took a series of five large rolls. While returning to the upright from the fourth roll the master and chief officer saw a steep sided swell wave estimated between 10 to 12m in height. The wave struck in the vicinity of bay 14 on the port bow, and created a significant increase in acceleration forces back to the upright.

As the vessel returned to the upright, she suffered a container collapse in bay 34, directly in front of the bridge, which resulted in 27 containers lost overboard, 28 containers collapsed on deck, and 9 containers remained secured in position.

Analysis

The nature of the accident, lack of precise dynamic information on the vessel's actual pitch and roll accelerations, and the wide spectrum of damage sustained by the affected containers and lashings has meant that an exact cause of accident could not be determined with certainty.

However, the investigation has found that the requirements of the cargo loading manual were not followed, such that the weight distribution in bay 34 was out of tolerance. The lashings on the affected containers in bay 34 were destroyed, but it is considered probable that the stow was sufficiently out of tolerance for the excessive heavy rolling to cause the refrigerated container lowest in Row 07 to buckle and collapse, resulting in a progressive collapse of the rows to port.

The investigation also found that:

- The current container inspection requirements do not assess structural strength and rigidity.
- The process of lashing containers is physically highly demanding and potentially dangerous, and if the process is not closely supervised then shortfalls are likely to occur.
- The cargo planning programme used by Blue Star Ship Management met statutory requirements, but it did not provide the chief officer with the information necessary to identify weaknesses in the loading plan.
- No mechanism existed for verifying declared container weights.
- In countering the effects of heavy weather, the master was generating the pre-conditions for parametric rolling.

Recommendations

Blue Star Ship Management has been recommended to:

- Undertake a risk assessment on the vulnerability of its vessels to parametric rolling. Should significant risk exist, implement control measures to include vessel specific guidance to masters on when parametric rolling might be encountered, and instructions on how to avoid it.
- Emphasise to its crews the importance of lashing checks to ensure compliance with the cargo securing manual and, when correct lashing can not be achieved, identify alternative arrangements or impose limitations as necessary to ensure the safety of the cargo.
- Introduce an independent check of lashing arrangements on all vessels, as part of its internal ISM audit regime.

The Maritime and Coastguard Agency has been recommended to:

- Consult with the United Kingdom Chamber of Shipping and representatives from the marine insurance industry, with the objective of including in the ship's stability information for the use by the ship's crew, vessel specific parametric rolling data.
- In consultation with MARIN , review the contents of container vessel cargo securing manuals and, if appropriate, issue further guidance on their minimum required content.
- Use the data from the current MCA/HSE study into container damage, to review container structural strength and rigidity standards, and the need to improve container inspection regimes.