Class

Rina to weigh up effect of new damage stability rules

Cost implication of design changes for existing vessels is causing concern among cruiseship operators, writes **Sandra Speares**

ITALIAN class society Rina is considering the implications of proposed rules on damage stability that are causing considerable concern to large cruise ship operators.

Large passenger ship safety is on the agenda for discussion at the next meeting of the Maritime Safety Committee at the International Maritime Organization in December.

One issue will be the means of maintaining stability in a damaged condition, with options including increasing the depth of the ship or increasing its breadth on the waterline. Such proposals would obviously have cost implications, particularly if modifications were required to existing ships.

Francesco Fanciulli, technical manager for passenger ships in Rina's marine division, said: "It might be necessary to reduce the number of decks" and in consequence the number of passengers that could be carried, as a means of compliance.

Clearly this will be of concern to cruise lines operating ever larger ships, which offer enhanced economies of scale.

Further work needs to be done to evaluate the proposals and to understand how the rules would impact on the design of new ships and the modification of existing ones, Mr Fanciulli said.

For some ships, he said, the new rules might be impossible to comply with.

Similar concerns were raised at the 1995 IMO conference when modifications to existing and new ro-ro passenger ships were considered in the wake of the *Estonia* ferry disaster.

Speaking at the recent Seatrade Med conference, Costa Crociere chairman Pier Luigi Foschi also warned that the proposed damage stability regulations if implemented as they stand could, if applied retroactively, hamper the operation of existing ships.

As cruiseship passengers become more demanding, opportunities exist to upgrade the level of safety, comfort or environmental friendliness by retrofitting new technology during a upgrade, Rina believes.

Mario Dogliani, head of the innovation and research section in Rina's marine division, said the class society has undertaken research to see which technology can be retrofitted to ships to improve performance in these areas.

While upgrading is obviously necessary for commercial reasons, with average cruiseship upgrades costing $30m, additional measures can be taken that would add significantly to the ship's performance for relatively small additional cost.

In one case where Rina was recently involved, it was possible to retro-fit technology during the course of a cruise, involving minor structural changes that greatly reduced vibration on the ship, Mr Dogliani said.

Rina is evolving a voluntary certification scheme for those companies that decide to take up its upgrade options.

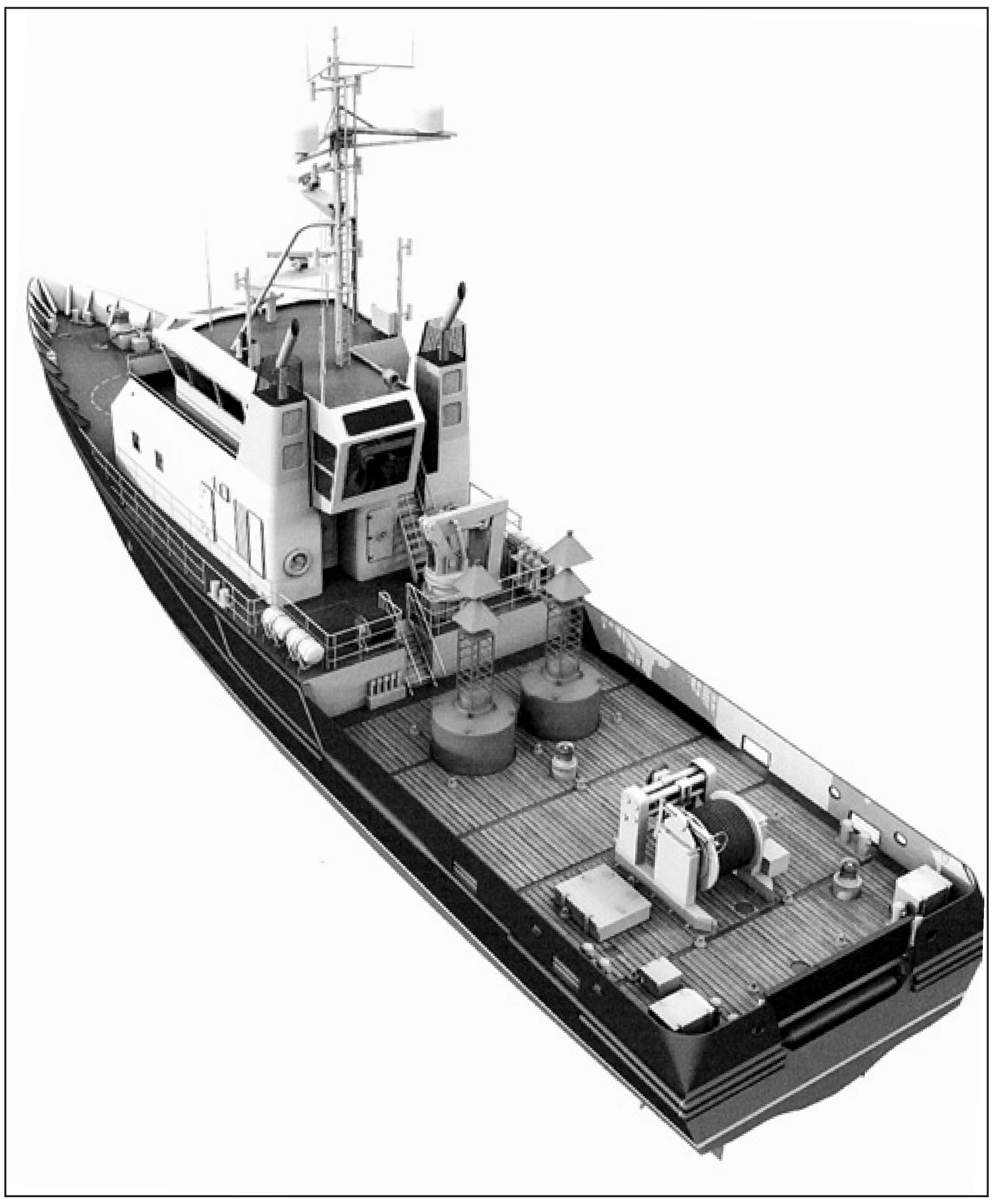
This, Mr Dogliani believes, could be a powerful marketing tool for cruise operators with demanding passengers wanting to choose a ship, which is proven to be environmentally friendly.

Research and development includes means of reducing emissions from existing boilers on board ships as well as levels of noise and vibration.

Passenger expectations are much higher as far as issues like vibration are concerned, he said, and this could be a problem on new ships because of their more powerful propulsion systems.

Former IMO secretary-general William O'Neil launched an initiative to study the safety of large passenger ships in 2000. It followed a spate of cruiseship accidents, which included Royal Caribbean's *Monarch of the Seas* in 1998 when the damage stability of the ship was compromised after it hit rocks off St Maarten and the ship had to be deliberately put ashore.

Given the difficulties of evacuating thousands of passengers — many of whom might be elderly — from cruiseships at sea, the emphasis has been on improving ship survivability and minimising the need to abandon ship.



Remontowa wins lighthouse deal

PICTURED is an artist's impression of a rapid intervention vessel ordered last week from Polish shipbuilder Remontowa via the General Lighthouse Fund, *writes Hugh O'Mahony.*

It is due for delivery in November 2005, has also been ordered through the fund for Trinity House. This vessel will be 39.3 m long, 8 m wide and draw a draft of 2.5 m, achieving 16 knots. Also ordered were two multi-function tender vessels. These — one each for Trinity House and the Northern Lighthouse Board — will be 84 m long, 16.5 m wide, draw a 4.25 m draft and achieve 13.5 knots. The first tender vessel will be delivered in September 2006, with the second following two months later.

Trinity House likened the design for the new tenders to *Granuaille*, built by Damen for Irish Lights, which lifts buoys working off the stern, where its forebears work off the bow. Remontowa won the order after a tender observing the European Public Services Directive, stipulating that the contract should go to the bidder tabling the most economically advantageous offer.

Repair Roundup

United Kingdom

THE port of Falmouth has welcomed its third Royal Fleet Auxiliary vessel of the year, with last week's arrival of the 196 m *RFA Wave Knight* for a 40-day maintenance job at A&P Falmouth.

The 30,000 dwt tanker will be repaired afloat, with more than 120 workers employed in general maintenance tasks and painting work.

Peter Child, managing director of A&P Falmouth said: "Our competitive tendering for MOD [Ministry of Defence] contracts has meant that we have been successful in securing a number of significant contracts to keep a steady flow of work passing through the yard."

The vessel was built at BAE Systems Marine Ltd at Barrow-in-Furness in Cumbria and commissioned in March 2003.

At the beginning of the year, A&P Falmouth carried out a 110-day refit on *RFA Argus,* which was followed in the summer by the *RFA Fort Victoria.*

Bahrain

ASRY has four large tankers in the yard simultaneously. Kuwait Oil Tankers' *Al Samidoon* (284,889 dwt) and *Al Shuhadaa* (285,117 dwt), Dynacom's *Progress* (238,898 dwt) and Vela International Marine's *Orion Star* (305,783 dwt) are in the yard.

Asry also reports that two more 'big boys' have already been booked, one for later in 2004, and one for next year.

Other vessels in the yard include Pakistan National Shipping Company's tanker *Shalamar* (99,358 dwt), Odfjell's chemical tanker *Bow Clipper (*37,221 dwt), the Belden-managed cement carrier *Mariana III* (16,960 dwt) and Gulf Dragon Trading Co's *SD Severn (*1,235 dwt).

Singapore

THE buoyant marine and offshore markets have been reflected in latest results for Total Automation. The company, which focuses on ship and offshore repairs, maintenance and conversion, has posted third-quarter results showing turnover and net earnings up 96.2% and 53.2% respectively against the same period last year.

For the three months to September 30, it recorded turnover of S$20.04m (US$12.1m) and net earnings of S$2.49m.

Turnover for the first nine months of the year was up 61.9%, at S$55.51m, with net earnings reaching S$6.36m.

Total Automation chairman R E Willenbrock said market conditions looked likely to remain positive in the fourth quarter. "For the full year, barring unforeseen circumstances, the group should achieve a higher turnover and profit for the current year as compared to the result of the last financial year," he said.

Clipboards and pens set to make their engineroom exit

By Mark Warner

THE phrase 'systems integration' does not automatically spark interest in the majority of the shipping fraternity.

Add to the mix 'automatic data capture' and it seems there is little relevance to life at sea and the arduous grind of ship engineers.

But data capturing is set to change the nature of engineroom maintenance procedures for ever as clipboard and pencil look set to be replaced by electronic tags, rugged personal digital assistants and digital pens.

WIRED WORLD

"Shipping needs such technology to meet the ever increasing regulatory demands," says Jennefer Tobin, director of Datatrac.

The UK-based firm first caught the eye at the start of 2004 with the launch of its system for the digital Anoto pen, but has recently entered the tracking market with Assettrac.

"Radio frequency identification is developed through radio waves and is used for assets that are moving. This product captures information from static devices and has a life of over 100 years.

"It does not matter what surface it is used on."

As a systems integrator, Datatrac does not manufacture the hardware, but develops the software for integration and use in the shipping industry.

"The actual hardware for the system was developed by the Ministry of Defence for the British Army. Our role was to apply and integrate it for shipping by developing software and readers," explains Ms Tobin. This means traditional clipboard and pen will be replaced by tag and rugged PDA.

"This solution eliminates the need for all handwriting for ship engineer reports. Everything can be downloaded straight to a spreadsheet," says Ms Tobin.

"The data collected is 'clean' and therefore can be used for trend analysis."

Dobson Fleet Management of Cyprus, is the first ship-management company to use the new system.

DFM is buying the Assetrac system, initially for six vessels, to collect engineroom data. It is fitting tags in machinery spaces.

Engineers use a rugged PDA handheld reader and electronic tags to track assets, their location, status, maintenance, certification and history.

Uniquely, the asset tracking system allows each tag to be specific to the equipment; the relevant menus for reporting condition or a number keypad are presented.

The handheld reader generates an electronic digital record and proof of presence at equipment through the tag/reader interface and is suitable for machinery data management, where again there is no keying of data.

Ms Tobin also says that demand for the Anoto digital pen and paper has picked up after initial testing with Stena Line.

The pen offers an alternative from typing data into a computer.

"This is a once-only capture of data, which can be extracted from the original watchkeeping logs, without transcribing data or producing fair copies," says Ms Tobin.

"Using only pen-stroke data also has significant savings for communications costs by eliminating unnecessary templates and text."

Newbuildings

Vessels Launched

Builder	Yard	Name	Launched	Launch Date	Type	GT	DWT	Flag	Built for
Aker MTW	101	Cabo Prior	Wismar	B 01 Oct 2004	ccc	23408	33500	LBR	Hartmann S.
Aker MTW	104	CSAV Rio Lontue	Wismar	B 01 Oct 2004	ccc	23360	33500	LBR	Hartmann S.
Alstom Chantiers	M32	Gaz de France energY	St. Nazaire	B 01 Oct 2004	lng	43700	34500	ATF	Messigaz
Asakawa	437	Hartall	Imabari	B 01 Oct 2004	tch	8250	14000	SGP	Berlian
Bodewes	533	Flinterbelt	Hoogezand	B 03 Nov 2004	ggc	2980	5400	NLD	Amasus AFS
Damen	509507	Furnace	Gorinchem	B 28 Oct 2004	ytg	300		BLZ	OEM Group
Damen S.G.	511211	Stanford	Gdynia	B 01 Nov 2004	ytg	331	280	XON	Petra T.L.
Hyundai H.	1544	COSCO Seattle	Ulsan	B 01 Nov 2004	ccc	83133	100000	PAN	E.R. Schiffahrt
Hyundai M.D.	229	Delphi	Mipo	B 01 Oct 2004	tpd	28124	37000	GRC	Tsakos
Hyundai Samho	8236	APL Beijing	Samho	B 01 Oct 2004	ccc	54309	66310	LBR	Ofiesca
Imabari (Marugame)	1423	Phoenix Leader	Marugame	B 01 Nov 2004	cve	62300	20050	PAN	NYK
Koa	523	Shin Kyokuho Maru	Takamatsu	B 28 Oct 2004	tch	499	660	JPN	Kinki T.W.
Kvaerner (Turku)	1351	Color Fantasy	Turku	B 03 Nov 2004	prr	75500		NOR	Color L.M.
Nanjing	FDBT 1103	SMBV 2703	Nanjing	B 01 Oct 2004	opo	2345	5200	SGP	Pacific Ocean E.
Nanjing	FDBT 1104	SMBV 2704	Nanjing	B 01 Oct 2004	opo	2345	5200	SGP	Pacific Ocean E.
Odense	193	Laura Maersk	Lindo	02 Oct 2004	ccc	50657	43700	DIS	Moller
Rosnes	435	Nordmeland	Rosnes	B 01 Nov 2004	ggc	3183	4250	GIB	Hase
Samsung	1484	CMA CGM Wagner	Geoje Is.	B 27 Oct 2004	ccc	69022	72500	BHS	CMA-CGM
Sanoyas	1222	Medi Genova	Mizushima	B 27 Oct 2004	bbu	38800	75500	PAN	Hiroshima K.
Sasebo	T13	Med Star	Sasebo	M 01 Oct 2004	bbu	40300	76500	HKG	MOL
Sasebo	T16	Maritime Anita	Sasebo	B 01 Nov 2004	bbu	40300	76500	PAN	Art D.L.
Shanghai	193	MSC Delhi	Shanghai	B 31 Oct 2004	ccc	39697	34100	LBR	Norddeutsche
Shin Kurushima	5245	Stavanger Eagle	Onishi	B 20 Oct 2004	tpd	23100	42500	PAN	Eagle Oce
Thyssen	548	COSCO Sydney	Emden	B 00 Oct 2004	ccc	30000	37300	LBR	Hartmann S.
Yangzhou D.	WYZC-2003	Marco Polo 263	Yangzhou	B 00 Nov 2004	opo	4052	—	SGP	Sing Tm.
Yangzhou D.	WYZC-	Tropical Swan	Yangzhou	B 00 Oct 2004	opo	2623	—	SGP	Tropical S.&T.

Information extracted from Shipping Information Database.

Design

Grefco concept to drive home economic advantages of air-cushion technology

Engineering team claims competitive tonne-kilometre costs relative to conventional craft, writes **David Tinsley**

FRENCH aeronautical engineers have devised a new concept in high-speed vessels, which use both ground effect and the air cushion technique, claiming to offer competitive tonne-kilometre costs relative to conventional cargo carrier and ferry designs.

The team proposing the 'Grefco' solution has been at work for15 years. Its programme has included the building of several prototypes and the development of a powerful calculation and simulation tool.

Groningen-based sales, marketing and design company Conoship International is acting as a contact point and intermediary for the Grefco interests. However, the Conoship link does not necessarily imply Dutch construction.

Initial Grefco designs have been formulated for ro-pax and supply ship applications, and future targets include the feeder container vessel and trailership sectors.

Cornerstones of the concept include comparatively low power in relation to attainable speeds up to 50 knots or more, high stability and seakeeping properties, predisposition towards standard marine propulsion systems and diesel engines, and a fully amphibious capability.

The promoters have tried to obviate shortcomings associated with previous air-cushion craft. It is claimed that the overall costs of the design in its 62 m ferry version would amount to just $0.03 per ton deadweight-km — less than the $0.045 tdw/km attributed to road freight, and substantially less than other high-speed ferries and projected fast ships.

Plans are now being laid to start the Grefco business. It is understood that the financial requirement is in the order of €50m ($64.7m). Although the innovators are French, the company could be established outside France. It would focus on research and development and would oversee projects for the first two vessels of each new type.

The Netherlands is a possible operating base and a total of four production and assembly sites worldwide would ultimately be required.

A distinguishing technical feature of Grefco is the division of the air support system into a minimum of four cushions, with segregated air inputs.

The width of the cushion overall is much greater than that of the hull, so as to realise full air cushion efficiency potential. The air flow into each compartment is regulated in such a way as to confer a very large righting moment, contributing to stability characteristics.

The skirt suspension and control system is based on pressure fields, restricting air leakage, and thereby trimming power requirements for maintaining the air cushion. At the same time, the arrangements induce a very low skirt and surface friction factor, reducing propulsive power needs for a given speed.

An active control system has been devised to dampen vertical motions, to the benefit both of cargo security and of rising expectations among passengers and ferry operators as to onboard levels of comfort.

Grefco's promoters claim that it will outstrip other types of high-speed vessel in terms of passenger comfort.

The designers have opted for mass produced, economical diesel engines as the prime movers, with propulsive effect at sea delivered through either waterjets or maritime propellers, rather than air propellers.

Conventional ground propulsion will serve the craft on land or on ice.

Initial proposals include a 50-knot ferry of 62 m length overall, laid out for 600 passengers and 120 cars, or eight buses plus 80 cars, and a 57-knot, 148 m ro-pax design, in a number of variants, including a load capacity for 2,500 passengers, 60 trucks and 800 cars. Fast, small ferry or supply vessel manifestations of the Grefco concept range from an 18-passenger or personnel carrier with a 350 tonne cargo intake on a large open deck, and a freight ship for 18 trailers.

Grefco's developers have set their sights on capturing around 10-15% of the fast vessel market over the next 15 years.