

## **IACS places emphasis on uniformity**

**The International Association of Classification Societies is paying special attention to the issue of formulating uniform scantling requirements and wastage limits. Progress is being made, writes Robin Bradley, permanent secretary of IACS**

On July 1 last year, the International Association of Classification Societies (IACS) introduced its post-Erika package of measures. These initiatives had a common theme: "tankers shall not pollute". The actions included the application of a new edition of IACS' Unified Requirement (UR) Z10.1, introducing more demanding Enhanced Survey Programme (ESP) requirements for oil tankers, linking increasingly tougher survey regimes with advancing vessel age.

While this package was put in place on a fast-track basis, IACS' continuing longer term programme of technical work is progressing a number of significant projects that are likely to have a substantial impact on future tanker design and requirements governing repair and remedial works for vessels in service.

Activities in this area involve the active participation of all IACS member societies and the projects under way reflect a general consensus, across the industry, that more robust ships are required, both as delivered from the yard and throughout their lifetimes. IACS technical programmes are designed to produce a harmonised and more uniform set of scantling requirements and wastage limits which will provide for more robust ships.

### **Unified scantling standards**

The introduction of unified scantling standards for oil tankers and bulk carriers is a major IACS objective. This work, by its very nature, is long term in character, yet progress has been made over the past year and certain milestones have been reached.

The case for a proactive approach was set out in a statement made in June by Igor Ponomarev, the immediate past-chairman of IACS. He said: "At present, each classification society applies its own structural evaluation criteria to determine scantling requirements. Although there are URs governing longitudinal strength that are currently applied by all IACS societies, the minimum scantlings are, at present, sufficiently different to encourage efforts by some shipyards to seek approval of ever lower steel weights for new construction.

"Safety may be compromised if commercial parties remain free to 'shop around' for lower cost solutions for newbuildings which, in some cases, can undermine prudent standards of structural strength. The new IACS URs will largely remove the potential for such undesirable practices. In taking action, we are responding decisively to calls by shipowners' associations and other parties for an end to competition on standards to achieve ever lower steel weights."

In order to foster greater harmonisation of scantling requirements, all IACS members are now engaged in scantling evaluations of two study ships, a VLCC and a Panamax bulk carrier. This project requires every member to identify the scantlings required to satisfy its Rules. This information is being used to identify the areas of substantial similarities and differences among member societies. In a second phase of work, IACS members have been asked to assess each study ship using 'first principles' as basis for their strength evaluation. This second comparative study is now well advanced, and it is hoped that the analysis of similarities/differences will be completed by the end of this year.

In the next phase of this programme, IACS will develop a more detailed plan for the progressive development of new URs and the establishment of unified requirements

for scantlings. The aim is for a number of the new unified scantling URs to be ready for consideration by the IACS Council in mid-2004.

Historically, vessels have been designed on the basis of gross scantlings that include the corrosion margins required by the given classification society.

The net scantling approach, i.e. without a corrosion margin considered, will be used in developing the new unified requirements. The required scantling for new construction will be the net scantling plus a corrosion addition.

An important milestone in the IACS drive for uniform scantlings and wastage limits was reached in 2001, with the completion of a six-year project involving the collection and analysis of over half a million sets of corrosion data. This was an international undertaking, with participation across the IACS membership. The project designers were far-sighted, as the work began in 1995 prior to the current debate on the need for stronger ships. This corrosion data is now being applied, together with results from new research on sea wave loads, in the establishment of new scantling requirements.

### **The context**

New URs concerned with unified scantlings, based on the net scantlings approach, will deliver a higher degree of transparency into the actual structural capacity of individual ships. This will provide a common foundation, which will result in ships with better controlled strength.

While this work has priority, its profound importance to future ship design means that the pace should not be forced. There are a number of decisions to be made which will influence the shipping industry for the next 10-20 years. IACS will retain its leadership role in these areas, but we also attach great importance of liaison with other industry associations, such as the International Association of Independent Tanker Owners (INTERTANKO) and the Oil Companies' International Marine Forum (OCIMF). After all, the ships must be fit for their purpose and serve the needs of the market. Furthermore, some of the technical work has an intergovernmental dimension and may be used to address some concerns of the International Maritime Organisation (IMO) and its committees and sub-committees.

The important thing, of course, is to maintain the momentum of the trend towards stronger ships. A relevant example of the important work now under way is, therefore, the project to revise UR S11, the longitudinal strength standard. This project has the objective of incorporating a revision of the hull girder sea loads, defining hull girder strength criteria based on yielding and ultimate strength checks and preparing a new UR that defines the criteria for the buckling checks of local structures. It is hoped that this work will be finalised by the IACS working group in the third quarter of 2003, with a view to adoption by Council in 2004.

### **Access for survey**

Ultimately, the continued effectiveness of these initiatives hinges on the ability to gain ready access to internal structures, in order that efficient inspections can be performed by the ship's personnel and that require overall and close-up surveys and supervised thickness measurements can be carried out by surveyors.

Currently, IMO is considering technical provisions associated with amendments to SOLAS Regulation II-1/12-2, concerned with improved ease of access to the cargo and ballast spaces of oil tankers and bulk carriers.

The amendments have been approved by the Maritime Safety Committee (MSC). It is hoped that the next MSC meeting (MSC 76, December 2002) will adopt the revised regulation and the technical provisions, with a view to entry into force on January 1, 2005.

Under the new SOLAS requirements, means of access must be specified in a 'Ship Structure Access Manual'. This manual will include all information and plans on access in the cargo area, in order to carry out close-up inspections and thickness

measurements. Ship-builders are responsible for the production of such manuals. The plans within the manual must show the locations from which each area in the space can be inspected (including close-up inspections).

Plans will also be expected to identify critical structural areas - known to require particular monitoring due to their sensitivity to cracking, buckling, deformation or corrosion.

IACS has been fully involved in developing the technical provisions. To resolve one potential problem which IACS raised concerning the need to provide adequate lead time for the industry to be aware of the minimum required access details, IMO has agreed to extend the entry into force date by one year and apply it to ships constructed (keel laid) on/after January 1, 2005.

In conclusion, IACS will continue to pursue the objective of formulating and enforcing technical standards which contribute to safer tanker shipping and a cleaner environment.