

“To be **credible**,
class must be

INDEPENDENT”

Frank J. Iarossi

1996

ANNUAL REVIEW

ABS

T H E C H A L L E N G E

“The Case for the Regulator” 2
 William A. O’Neil
 Secretary-General, International Maritime Organization

“Ship Ownership in a Highly Regulated Environment” 4
 Richard du Moulin
 Chairman, INTERTANKO
 Chairman, Marine Transport Lines
 Council Member, ABS

“Class – An Independent Arbiter of Standards” 6
 Frank J. Iarossi
 Chairman, ABS

T H E I S S U E S

Bulk Carrier Safety9

Port State Control12

ISM Compliance14

Deep Water Exploration16

ISO 14000: Environmental Standards18

Technical Innovation20

Enhanced Surveys22

Information Management24

A C T I V I T I E S

1996: The Year in Review27

1997: Looking Ahead31

Classification Activity34

O F F I C E R S

American Bureau of Shipping38

ABS Group of Companies.....40



Our Mission

The mission of the American Bureau of Shipping is to serve the public interest as well as the needs of our clients by promoting the security of life, property and the natural environment primarily through the development and verification of standards for the design, construction and operational maintenance of marine-related facilities.

Quality Policy

It is the policy of the American Bureau of Shipping to provide quality services in support of our mission and to be responsive to the individual and collective needs of our clients as well as those of the public at large.

All of our client commitments, supporting actions, and services delivered must be recognized as expressions of quality.

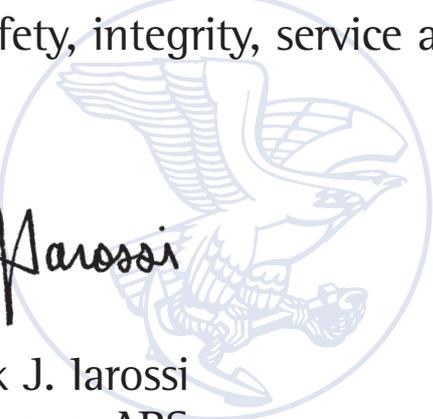
We pledge to monitor our performance as an on-going activity and to strive for continuous improvement.

ABS is a unique, mission driven organization. It faces the daily challenge of satisfying the multiple interests of the public, of industry and of its clients.

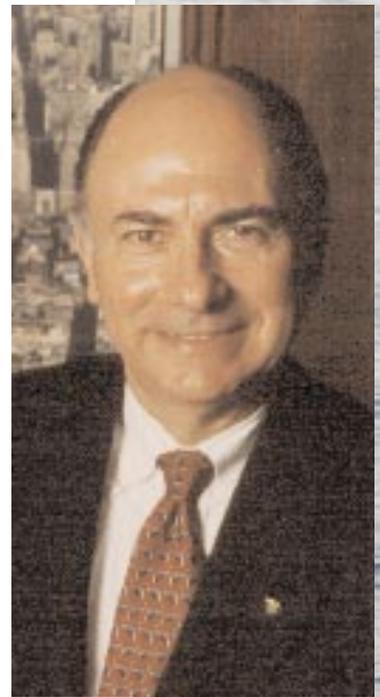
Within our traditional mission of “promoting the security of life, property and the natural environment” our obligation is to an even wider range of interests including shipowners, shipbuilders, underwriters, charterers and both Flag State and Port State administrations. Each of these relies on the impartial application of our expertise. So, too, does the public and, perhaps most importantly, the seafarers who entrust their lives to vessels classed by ABS.

During this past year, the diversified ABS Group of Companies also defined a unique vision. It’s mission is to assist its clients to “improve the safety, enhance the quality and minimize the environmental impact of their activities.”

These two missions define the ABS organization, one which is committed to the highest standards of safety, integrity, service and quality.



Frank J. Iarossi
Chairman, ABS



the CASE for the **REGULATOR**

“The age of control by regulation is almost over — the idea that problems can be solved simply by adopting a convention is no longer credible.”



William A. O'Neil

Secretary-General,
International Maritime
Organization

When IMO met for the first time in 1959 its first concern was to examine existing regulations dealing with maritime safety and marine pollution from ships and fill in any gaps. There were so many that the Organization was kept busy for the next thirty years adopting new conventions, protocols and codes and amending the ones that already existed.

It was a busy period which established IMO as a respected legislative body, but most delegates who attend IMO meetings would agree that the age of control by regulation is almost over. It will occasionally be necessary to adopt a new convention and it will always be important to keep existing regulations under review and to update them when necessary. But the idea that problems can be solved simply by adopting a convention is no longer credible.

What we have to do now is to make sure that the regulations that already exist are properly implemented. That sounds obvious enough, but our experience shows that it is also very difficult to do.

Ratifying an IMO convention imposes certain obligations. Parties to a convention in effect guarantee that all ships flying their flag meet the standards laid down in the convention. Since nowadays the great majority of maritime nations have accepted all the most important IMO treaties, that should mean that their shipping accident rates are more or less the same. But in practice we know that the rates in some fleets are a hundred times worse than in others. That can only be because of the way the conventions are implemented by the governments

concerned and by the shipowners who choose to fly their flag.

Implementation involves setting up a proper legal system and a good administration. It requires surveyors and inspectors, proper training and good procedures. All of this costs money and takes time and effort to develop. In some countries most of these are absent and it is the failure of Flag States to implement measures properly that has led to the rise of Port State Control around the world with IMO's strong support.

In these circumstances there is little point in adding new laws to the ones that we know are not being properly enforced. And in any case, the danger with relying solely on regulation is that legislative solutions often have little to do with the cause of the accident.

The EXXON VALDEZ spill was caused by a navigational mistake. The most celebrated outcome was the introduction of mandatory double hulls on tankers — which do nothing to improve navigation and might not even have prevented the Alaska spill in any case.

If the shipping community wants to avoid similar actions in the future it will have to make sure that existing measures are properly enforced. Although it is the government that ratifies the convention and agrees to implement its provisions, it is the shipowners and the industry in general that have the greatest practical responsibility.

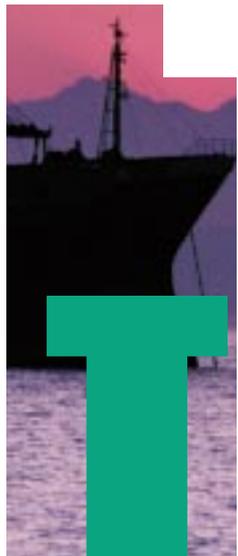
It is the shipowner who best knows the condition of the ships and who selects the flag of registry, not the other way round. Can we honestly deny that some shipowners register their ships in certain countries because they know their procedures relating to quality are lax?

The importance of implementation has been recognized by IMO for many years, but just recently there has been a change of emphasis. The amendments to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers

[STCW], 1978, which entered into force on 1 February this year, have given IMO the power to audit governments' abilities to implement the treaty. They will have to be able to prove to the IMO Membership that they have the administration, educational system and certification procedures required to put the amendments into effect. If they succeed they will be able to issue certificates to their seafarers that the whole world will accept. If they fail they could face problems, because other governments could refuse to accept certificates issued on their behalf.

This is a powerful incentive to conform to international standards. And although it has been introduced by means of regulation, in effect it represents a new determination by IMO to make sure that regulations are enforced. Nobody – especially the shipowners who have complained about too many regulations in the past – can object to that, can they?

“Problems can no longer be solved by regulations alone. What we have to look for is a change of attitude within the industry as a whole. We have to insist that standards are not only maintained but raised. We have to ensure that countries and companies wishing to profit from shipping all have to play by the same rules.”



marpol

s o l a s

ISM

STCW



“The reality is that about 20 per cent of the cost of a new tanker is earmarked for safety and environmental features, double the level of the commitment made by land-based manufacturing industries.”

No other sector of the shipping industry is faced by such a proliferation of constantly evolving regulatory controls as is the tanker operator. No other sector carries such a negative perception in the eyes of the general public. In large part it has been that public opprobrium which has

CANYON and which had been reinforced by regular incidents thereafter, was cemented in place by the EXXON VALDEZ as the last decade drew to a close.

Tankers had become the visible face of the shipping industry to the general public. To them tankers carry oil and it is this oil which soaks seabirds and blackens beaches. The fact that the tanker industry had been able to reduce the volume of oil reaching the sea, both operationally and accidentally combined, by 85 per cent over the previous 25 years, received scant public attention and made little impact with regulators.

The reality is that about 20 per cent of the cost of a new tanker is now earmarked for safety and environmental features, double the level of the commitment made by land-based manufacturing industries.

We have been inundated with a flurry of new regulations which have created fundamental changes in the manner in which ships are

ship OWNERSHIP in a HIGHLY REGULATED environment



Richard du Moulin

Chairman, INTERTANKO
Chairman, Marine
Transport Lines
Council Member, ABS

turned the tanker sector into a lightning rod for regulatory control. Owners of other vessel types, ranging from ferry operators to our bulk sector brethren, are finding that similar, high profile incidents to those which have driven the regulators' response to the transportation of oil are increasingly affecting their own operations.

It was the tanker industry's inability to regulate itself effectively in the 1980s that has brought us to this juncture. With hindsight, it was far from an unblemished record. Speculators and asset players became involved. The maintenance budgets of some fleets were cut, perhaps too far.

The entire industry became tarred by a brush wielded against a few. The generally negative perception of the tanker industry, one which had formed thirty years ago with the TORREY

built, maintained and operated. Some of these regulations have been aimed squarely at the tanker industry. But many of them, spawned by an increasingly activist official oversight, have much wider application.

All shipowners are now wrestling with the implications of the International Safety Management Code (ISM). All shipowners are now subject to vastly more stringent Port State scrutiny.

The International Maritime Organization (IMO) has led this regulatory revolution. It has found willing allies in the most prominent Port States and the most professional Flag States. Class has rediscovered its core mission of interpreting these new requirements through the imposition of reasonable safety standards, and is pursuing that intent with renewed zeal.

There are many owners who resent this intrusion. Some of them are highly professional, responsible operators who have always acceded to the highest standards. Their operations have been made more complex and costly as they are forced to implement additional safety and quality layers upon those they already have in place. Regrettably other owners are equally resentful but for the opposite reasons. They would prefer to operate in a free and unfettered manner, marching to the beat of their own safety drum which, too often, is little more than a muffled tap.

Member owners of INTERTANKO have adopted a more pragmatic response to this changed environment. To deflect punitive regulations and to aspire to the zero defect standard which legislators and the general public insist upon, the tanker industry must prove that, not only is the regulatory regime by which it is governed a rigorous and demanding one, but also that it believes in this regime, lives by it, and will not tolerate those who do not.

INTERTANKO has met this challenge by maintaining a broad based association with firm criteria for membership. These criteria, which apply to all tankers controlled by each member, include classification with an IACS member society, such as ABS, good standing in a P&I Club, adequate pollution coverage and completed ISM certification before the July 1998 implementation date. The fact that our association has expelled a large member for failing to comply with accepted quality assurance and ship classification criteria is testament to our commitment to these standards.

Easy as it may be to lament this trend towards increased regulation, I believe that the tanker sector's experience should be taken as a role model for the manner in which the entire shipping industry conducts its business as we approach a new millennium.

While much of the shipping industry continues to stonewall in its acceptance of the ISM standards, almost 80 per cent of INTERTANKO's members are within schedule for full compliance by July 1997, a full year ahead of the deadline. We have stressed to the remaining few that the process of compliance cannot be underestimated and that future membership rests upon their doing so.

The association firmly believes that the ISM Code marks an important step forward in the pursuit of the dual goals of safer ships and cleaner seas. The Code is a universal standard that our industry can hold up to the public as evidence of its commitment.

Its authority stems from the major commitment which it demands from everyone in the transport chain, from crews and office staff to customers. Since the class societies are the predominant group certifying ISM, it is critical that they are rigorous and consistent when certifying operators. Any slack will damage the entire shipping industry.

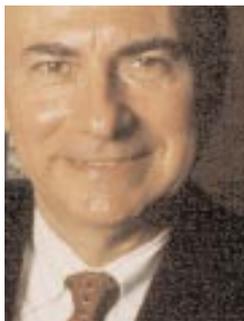
But we, as responsible owners, must participate in the future regulatory process. The sweep of the current regulatory changes is so broad that it is serving to unite once disparate parts of the industry. Trade organizations and business groups have banded together to speak with a common voice to ensure that rulemakings are based on solutions that are sound from a practical, safety and commercial point of view.

Industry also sees merit, now more than ever before, in leading by example and promoting its own initiatives to preclude the need for further regulations that may be unnecessarily onerous or unilateral in nature.

“The challenge is to utilize these latest developments to optimum effect to deter new, overly strict or misguided well-intentioned regulations. And we must, as an industry, replace the negative perception which shadows our operations, with an awareness of the reality which is that of a safe, responsible, efficient and professionally self-regulated shipping industry.”

an INDEPENDENT CLASS arbiter of standards

“Classification is the mechanism by which the international shipping industry has traditionally regulated itself. If, in the future, the shipping industry is loath to regulate itself, there is no shortage of legislative and regulatory bodies eager to fill that role. A strong, independent system of classification is the industry’s best defense against such an intrusion.”



Frank J. Larossi
Chairman, ABS

There is no disputing that the shipping industry is more tightly regulated now than at any time in its history. Yet there is also little dispute that the operation of ships has never been held to higher, or safer standards, requirements which are reflected in declining casualty statistics and reduced loss of precious life. Yet it is often the system of classification which is castigated by shipowners for imposing new safety standards, rather than the regulators who frame those standards, or the less scrupulous owners who encourage such legislative initiatives.

Rarely have the regulations which have led to these improvements been welcomed by all shipowners. Initially each has been seen as either an infringement on time honored operating methods or an additional cost burden of sometimes arguable efficacy. Yet, in time, each new regulatory initiative has been absorbed by the industry to become the new and accepted standard of operation. This is a tribute to the industry’s ability to adapt to changing circumstances, albeit reluctantly.

As an industry we are both blessed and cursed by a short memory. Adaptability is our strength. In so quickly adapting to each new set of standards, we tend to forget the forces which led to their formulation. It is this passivity which breeds still further regulation. At the present time the bulk carrier sector risks such a response as it wrestles with proposed new standards for the construction and maintenance of dry bulk vessels.

Even a short memory would arouse warning signals to such an approach. Less than ten years ago, with the reputation and credibility of class sadly tattered, port state authorities increased their oversight of shipowners’ operations to ensure acceptable standards were applied, monitored and achieved by the industry. Class, quite simply, was not doing its job. At ABS, and within IACS, we have learned from that chastening experience. Safety, quality and protection of the environment have been the watchwords which have governed our subsequent conduct.

We have recommitted to our obligation to the industry to assist it in meeting those standards through self-regulation. That obligation is to a much wider range of interests than shipowners. The insurance industry, Flag States, Port States and charterers rely on the impartial application of our expertise, as do the public and the world’s mariners. To be credible to each of these interests, class must be independent. It cannot be the servant of the shipowner.

Nor is it the unquestioning servant of the regulator. Perhaps no issue better exemplifies the unique role of class than does the unfolding debate over bulk carrier safety. To some owners class is currently viewed as a high-handed imposer of unreasonable standards. We take a different perspective.

Ships which, when they were designed and built, we believed to be structurally sound on the basis of the empirical knowledge and technology available to classification societies at the time, began to experience greater effects from corrosion and fatigue than would have been expected from industry history. Some ships were lost. Many seafarers tragically lost

their lives. The industry's antennae quivered, none more so than the regulators at the International Maritime Organization (IMO) and the management at the handful of leading classification societies. Quite clearly something was wrong. Quite clearly we, as an industry, needed to take appropriate steps to reduce the level of risk.

It is not up to class to determine the acceptable degree of risk associated with shipping. It is also not possible to mandate an error free operating environment. There will always be a degree of risk associated with navigating the uncertain waters of the world's oceans. It is the task of our industry and of society in general to determine, so far as is possible, what level of risk that should be. It is the regulators who accept the burden of assessing that risk on behalf of society. They must take into account the degree of technical expertise available at the time. It is the role of classification to provide that technical advice, to help the regulators frame a philosophical demand for safety into practical, implementable standards. And it is that role which class has played within the bulk carrier debate.

The IMO will codify the new standards. They have sought technical guidance from the members of IACS as they grapple with that task. As a result of an exhaustively detailed combined research program conducted by an IACS administered task force, class has offered that guidance to the IMO. And as a result of that research, the members of IACS have unanimously concluded that enhanced standards, not just for new bulk carriers, but retroactively applied to existing vessels, are essential if safety of life and property at sea is to be effectively provided for. IACS members have elected to include these standards within our own technical rules since, once aware of the dangers, we could not leave it to chance.

In taking this action class has reasserted its absolute adherence to its basic mandate and mission of the protection of life and property at sea. In attempting to undermine these actions, certain organizations have elected to risk seriously, perhaps critically, damaging the independent credibility of the

primary self-regulating body within the industry. Should such an approach prove successful, it will mark a retreat to the dark days of the eighties when the shipping industry left itself exposed to the intrusive and overly zealous interference of well-intentioned but technically naïve legislators.

“All shipowners should share our concern at the efforts of some of their colleagues to force class, and IACS, into retreat and disunity. Classification is the mechanism by which our industry should continue to regulate itself. The alternatives are unacceptable.”





BULK ^{carrier} SAFETY

“Open warfare is close to being declared between IACS and the bulker owners’ representative group, Intercargo”

Fairplay editorial

IMO’s intent that 1996 be “the year of the bulk carrier” was emphatically realized. The debate continues in such a manner that 1997 and 1998 may create a trilogy of concern for this vessel type. Efforts by the leading classification societies, which comprise the membership of the International Association of Classification Societies (IACS), to ensure the continued safe operation of bulk carriers as they age have been vilified by some organizations.

Editorial writers within the trade press have stressed the irony of the dilemma in which class now finds itself. A *Lloyd’s List* editorial summarized the situation: “*Long lambasted for endangering safety by being too eager to please their shipowner clients, the societies are now attacked by owners for pursuing this target too vigorously.*”

All IACS members have a very clear understanding of the concerns of the shipowners. But each, individually, also has an equally clear understanding of its responsibility for ensuring safety of life and property, vested in them by their members and expected of them by the industry in its entirety.

The actions of IACS must be viewed within context. In the five year period 1989-94 more than thirty bulk carriers were lost, taking with them more than seven hundred seafarers. Such an incidence of loss was unacceptable. Regulators demanded action. Class, as the repository of technical expertise within the industry, responded. As the research into the problem by the IACS members expanded, new directives were

“At stake are not only the lives of seafarers, but possibly hundreds of millions of dollars in modification costs.”

Lloyds List analysis

“The IMO sets the objectives. Our job is to set the technical standards. It would have been an abnegation of our responsibility if we had just washed our hands of it and left it to the IMO. We had to come to a decision.”

James Bell, Permanent Secretary, IACS

issued in an attempt to forestall further casualties. Each of those responses has had immediate and identifiably beneficial effect, none more so than the Enhanced Survey Program (ESP) for bulk carriers.

Since the implementation of that program in July 1993 there has been a significant improvement in the casualty record of bulk carriers. The program became the centerpiece of the classification bodies' immediate response. Unfortunately, some owners came to believe that ESP, by itself, would be sufficient.

There was an operational reaction. Class is beholden to different demands. Effective as the ESP program has proven to be, it has not curtailed the increasingly wide-ranging and complex research upon which IACS members have embarked.

Some of this research has been conducted in tandem with industry organizations, particularly BIMCO and Intercargo. The research has harnessed the very latest and most sophisticated technology, including ABS' unique SafeHull structural analysis, jointly pooled by the IACS members. It is technology which far outstrips that which was available at the time that the rules which, almost two decades ago, governed the construction of the aging bulk carriers which are now most at risk.

And that research has indicated that structural modifications would improve the operational

safety of some of these ships when carrying high density cargoes. It is expected that forthcoming unified IACS' requirements for new vessels will be accepted by the industry, despite the capital cost penalty attached to their implementation. Opposition has been centered on the amendments to class requirements for existing vessels.

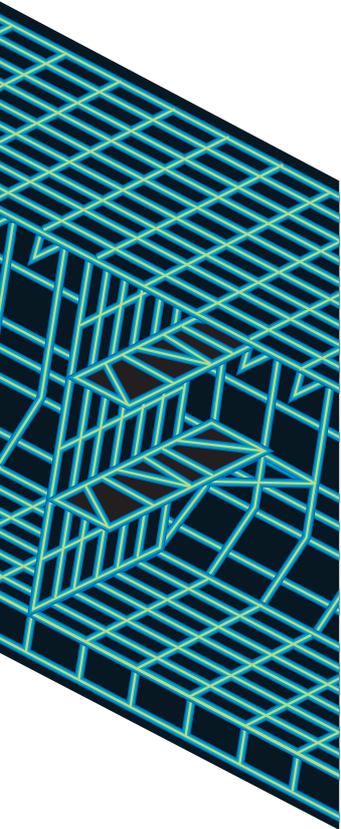
Although designed and built to the accepted classification and international regulatory standards in force at that time, proving their soundness over many years of sturdy service, these older workhorses of the world's fleet are showing greater degradation of their structure than had been projected or catalogued. In the intact condition they continue to serve their owners well. It is when water finds its way into the cargo holds, when these vessels are loaded with high density cargoes, that they have been placed in danger.

Critics have alleged that the new IACS requirements are an admission that class has been knowingly surveying and approving unsafe ships. Such allegations are repugnant to the moral and professional ethics upon which class is founded.

During 1997 the discussions will continue within IMO to decide on new statutory requirements for existing bulk carriers, as well as future new construction. The results of these discussions will not affect the applications of the IACS requirements which have been accepted by each of the IACS members as a condition of class.

“We should look to the primary barrier. If you ensure the hull remains watertight, is properly painted and there is no corrosion, then you don't have to worry about the secondary barrier.”

Bruce Farthing
Director, Intercargo



“Industry and IMO should accept *in toto* the IACS proposals made to MSC 67 on bulk carrier safety.”

Executive Board
Liberian Shipowners Council



ABS is working hard to ensure there will be as little commercial disruption and the least cost penalty attached to making the necessary modifications to bulk carriers in ABS class as is possible. An internal task force has been created to deal with the expected surge in requests for engineering plan review. It is recognized that each ship will have to be dealt with on a case by case basis, the degree of structural modification being dependent upon the initial design and subsequent level of wastage and damage.

IACS members thus far have not felt it necessary to extend the new structural requirements applicable to Hold No.1 throughout the cargo block. However, IMO's forthcoming actions and the future operational record may open the matter to further consideration. It is understandable that owners should view the possibility of such an extension with foreboding. Any such decision could significantly increase the cost of modifying a vessel and may send some ships to the scrap yard ahead of their expected retirement.

Class is cognizant of these fears. For the moment the only reassurance we can offer is that any decision will be pragmatic, taking due account of operational realities. But those decisions must also be founded on the same fundamental principles of safeguarding life and property as have the decisions affecting bulk carrier safety to date. The independence of class in reaching those decisions cannot and must not be compromised.

Over the years, the shipping industry has distinguished itself by the manner in which it has

responded to urgent safety concerns. The operational problems which are being encountered by older bulk carriers have posed the latest challenge. The industry has responded with a massive technical reevaluation of the design and operation of these vessels.

ABS has thrown its full technical resources into finding practical solutions to the unique problems which the loading and carriage of high density bulk cargoes place on the world's bulk carrier fleet. Our entire organization is committed to stemming the loss of ships and seafarers through the implementation of safe design, construction, maintenance and operational practices for these vessels.

“Owners can be assured that none of these recommendations and new standards has been developed in a theoretical vacuum. A great deal of thought, research and discussion has gone into the development of the new standards to ensure that they are a sensible, real-world response.”

Robert D. Somerville, President ABS

“Next year (1997) I am devoting 50 per cent of my department’s time to getting really effective application of Port State Control in Europe.”

Roberto Salvarani, Head of Maritime Safety, European Transport Commission

Responsibility for the application of effective safety standards should start, and finish, with the shipowner. That is the theory. In practice the most professional shipowners accept this responsibility and strive to enforce those standards. Despite the well publicized headlines of casualties and Port State detentions, the reality is that a great majority of owners can be found within this responsible category.

When the actions of the shipowner fall short, it is expected that the statutory standards imposed by the Flag State will ensure compliance. But, as IMO Secretary-General Bill O’Neil points out in his introduction to this Review, the casualty

ships, but against any fall-off in standards by any ship, could be construed as an indication that the proper hierarchical system of responsibility has been found lacking. On the other hand, the increase in Port State activity could also be construed as a pragmatic acceptance by the maritime industry that this method of enforcement has become one of the most effective means of monitoring standards.

The spread of the Port State Control regimen through new Memorandums of Understanding in the Pacific, the Americas, the Caribbean and proposed Memorandums for the Mediterranean and Africa provides ample evidence of the efficacy of the approach. That around 1,000 ships are detained in European ports each year, and that 23 Flag States, all members of IMO, have been placed on the European MOU blacklist, is distressing testimony to the need for such an enforcement system.

Roberto Salvarani, Head of Maritime Safety at the European Commission has made the expansion of Port State Control within European waters a primary focus of activity for the coming year. On the other side of the world, Australian authorities are equally committed to stringent Port State Control monitoring. And the US Coast Guard continues to rigorously enforce these

PORT state CONTROL

rates in some fleets “are a hundred times worse than in others.” Clearly not all Flag States have accepted their responsibilities. Neither have all class societies, although, once again, there is a clear predominance of those that have.

Inevitably there will be a residue of owners, Flag States and other bodies with responsibilities for ensuring safety of life and property at sea who choose to abrogate the duty of care imposed upon them. It is then that Port States should take action to ensure compliance. That Port State Control is now widely viewed as being the most effective, front line weapon in the fight against not just substandard

standards on ships calling at US ports. With the requirements of the ISM Code taking effect in 1998, Port State authorities are expected to further strengthen their enforcement activities. Shipowners who have run from areas of stringent enforcement, are finding it increasingly difficult to hide from a Port State inspector.

Each of the Port State MOUs has identified class as a central element within the mix of contributory factors to a vessel’s safety standard. For example the US Coast Guard applies automatic penalty points within its targeted inspection matrix dependent upon the class society with which a vessel is registered. It is a matter of pride that ABS is one of only four societies which receives zero penalty points based on its past performance.



In Europe, Mr. Salvarani is currently working with IACS to determine a set of objective criteria which should be applied to classification society responsibilities and performance. The new criteria are intended to more closely identify serious deficiencies which can be considered to have stemmed from lax classification society oversight of areas for which it had responsibility. The information is expected to be used to more closely target vessels for inspection in a manner similar to that used by the US Coast Guard. IACS is closely cooperating with the European Commission in this endeavor.

ABS has a very simple policy with respect to Port State Control. It is one of total support for the system and total intolerance for any class related detention of an ABS vessel. Every Port State detention of an ABS vessel is subject to an exhaustive in-house, survey department review. When these reviews were first introduced they indicated that there were areas in which ABS policy directives to and support of the field survey staff could be further enhanced.

Chief among these has been the initiation of a new Lead Surveyor Program within ABS. This is intended to provide field surveyors with a clearer level of support from experienced colleagues when determining appropriate action in instances where an unusual degree of subjective judgment, or a complex interpretation of the regulations, is required during an inspection.

To reduce the chance of a safety equipment related shortcoming escaping a surveyor's notice, ABS has also established a policy which requires two surveyors to attend every SLE survey carried out on a bulk carrier 15 years of age and older. A further safety check has been established with the new internal policy that SOLAS and Load Line Reports on all vessels 10 years of age and over are to be reviewed and countersigned by an ABS Principal Surveyor or Surveyor-in-Charge.

In addition, ABS has sought to strengthen its working relationships with the various Port State and Flag State administrations to jointly tackle this question. An added feature of the new ABS SafeNet program, which is currently being released to owners, is a directory listing of the principal contacts at both the major Port State and Flag State administrations to give owners an immediate avenue through which to discuss any incidents that may arise.

That the most recent Port State statistics available show a noticeable decline in the already small number of incidents involving ABS classed vessels, indicates that these improvements have had an immediate and positive impact.

There is now a threat of direct financial sanctions being imposed on owners of vessels detained by Port State authorities. These would be in addition to the already significant financial implications of the detention itself. They will provide added incentive for owners to ensure their vessels are maintained to the highest standards.

But safety should never be a question of money. It should be an ethical and professional acceptance that safety and quality are integral responsibilities attached to the owning and operating of ships. The lives of the seafarers who serve aboard those ships depend upon such a commitment by the shipowner. The safe delivery of the cargo can only be assured if the ship itself is sound and maintained in accordance with all industry standards.

From the boardroom to the boiler-room, ABS has made a total commitment to these standards. If every shipowner, Flag State and classification society fully accepted and enforced these responsibilities in the same manner, Port State inspectors would be out of a job.

“ABS will continue to give its complete support to the Port State authorities in their efforts to enhance safety compliance. We encourage all shipowners and every Flag State Administration to support the application of the highest professional and safety standards aboard every ship. ABS will do its part.”

Robert D. Somerville, President, ABS

ISM COMPLIANCE

“Shipowners must realize that it is not a question of whether their ship will be detained in a US port if it is not in compliance with the ISM requirements. The ship will not be permitted to enter any US port if it is not fully documented.”

Adm. James Card, United States Coast Guard

For those organizations approved by the major Flag States to audit and issue certification of compliance with the International Ship Management Code (ISM), 1996 proved to be a frustrating year of wait and then wait some more. As the year drew to a close, more than 90 per cent of all shipowners required to comply with the provisions of the Code, which will form a part of the Safety of Life at Sea (SOLAS) convention from its effective date of 1 July 1998, had yet to begin the auditing process.

Despite repeated urgings from regulatory bodies, from the most responsible Flag State administrators and from prominent industry organizations such as INTERTANKO, the vast majority of owners appeared reluctant to accept that these new requirements will be a part of their future operations.

For most Flag States, and for the more prescient owners who have already sought ISM certification, the major classification societies are the preferred auditing bodies. Without exception, these organizations have geared up to meet the enormous demands which the auditing process will place upon them. Yet, for the moment, these new resources remain underutilized.

According to statistics compiled by the International Association of Classification

Societies (IACS), by year end only 5 per cent of those owners affected by the Phase One deadline of the Code had been certified. Only 1,000, or just 6 per cent of the nearly 19,000 ships which must comply with the provisions of the Code by July 1998, had met the new standards.

Without exception, these compliant owners are those that have already evidenced a total commitment to quality management and to the highest possible operating standards. It is ironic that, if all owners operated to comparable, self-imposed standards, it is unlikely that the regulatory bodies would have perceived a need for the imposition of mandated standards. The ISM Code has been formulated to ensure that all owners adopt a quality management approach to their operations, ashore and afloat. Yet it is the owners most specifically targeted by the Code who have yet to respond to its requirements.

Cause for mounting concern on the part of regulators and the IACS members is that experience gained from assisting the pathfinding owners through the process of compliance, has shown that a minimum twelve months is required from inception to certification. In many instances this period has stretched out to almost eighteen months. Only in the rare instances of auditing a company which is already ISO 9000 certified and totally familiar with quality management requirements has there been any significant reduction in this period.

The sound of the ticking clock reverberates ever louder.

Although ABS has mounted more than thirty seminars in as many cities over the last two years, explaining to shipowners, operators and managers exactly what is required by the Code, the reticence of so many owners to begin the compliance process suggests that there is still widespread misunderstanding of the implications. The Code is intended to set acceptable standards of safety for shipowners and shipmanagers. Where it differs from past safety standards is that it applies not merely to the operation of the ships but also to the



j u l y 1

owner or manager's shoreside operations and office.

As any organization which has adopted the principles of Quality Management, as ABS has done, can attest, it is no easy task. It involves a rigorous analysis of what the company does and how it does it. Indeed, it is this process which originated our own corporate statement that *"Safety is what we do. Quality is how we do it."*

An essential element of a quality management system is that the organization itself sets its own criteria. As a consequence, it has been widely reported that the Safety Management Manual, which the ISM Code requires an owner to place aboard each of its vessels, may be as slim as five pages or as voluminous as 500 pages. Yet it is fallacious for an owner to think that the auditing and certification process can be reduced to a quickly produced five page booklet and lip-service adherence to vaguely worded principles.

Although the actual auditing and certification fees are low, shipowners are right in their assessment of significant overall costs associated with meeting the ISM standards. There is the cost of an experienced consultant, such as ABS Marine Services, to guide an owner or manager through the process. And there are costs associated with systemic changes within the organization.

There is also the less quantifiable cost of the time which must be devoted to the process by the senior management of the organization. Yet there is also mounting evidence that these costs will be quickly offset by significant operational savings, ranging from more competitive insurance rates to a reduced incidence of injuries and cargo damage.

Yet the cost-benefit arguments should not ultimately impinge on an owner's accession to the code. It is a mandated requirement. It has been made clear by the principal regulatory bodies that there will be no waivers granted on the implementation date of 1 July 1998. *There will be no extension of this deadline.*

The US Coast Guard, for example, is quite firm on this point. From the date of implementation a vessel which is not in full compliance with the ISM code will not be permitted to enter a US port. The Port State Control authority has made it clear that full compliance means the vessel must carry proper certification, issued by a recognized auditing body. Temporary certificates issued by a commercially complaisant flag state on the understanding that the owner has begun, but not yet completed, the auditing and certification process will not be acceptable.

It is a sobering thought to set this policy statement alongside the IACS statistics. With scarcely sufficient time still remaining for a company to complete the steps required for compliance, more than 90 per cent of the world's merchant fleet faces exclusion from the ports of the world's largest trading nation.

ABS stands ready to help these owners meet the challenge and the deadline. We have trained a worldwide team of experienced ISM auditors. Many of these experts are also qualified to conduct ISO 9000 audits and ABS, alone among the major classification societies, has reached an agreement with the principal ISO regulatory bodies for joint auditing and issuance of both ISO and ISM standards and certification. This approach offers owners considerable savings, both monetary and in terms of organizational disruption.

Our experienced staff from ABS Marine Services can provide all the necessary guidance to shepherd a company through the organizational adjustments necessary for the issuance of the ISM's Document of Compliance (DOC). Drawing from experienced former seagoing personnel, ABS has put together an expert team to review and amend on-board safety and operational practices to bring each vessel in a fleet into compliance for the issuance of the required Safety Management Certificate (SMC).

And ABS has recognized that some owners have unintentionally delayed embarking on the ISM accreditation process because they have not fully understood the requirements, the timing nor the risks of non-compliance.

To assist these owners, ABS has elected to freeze its ISM fee structure at 1996 levels until mid-1997. But the recalcitrance of so many owners promises a last minute bulge of activity which will place unreasonable burdens on all recognized auditors. It is these owners who will find fees rising rapidly in response to demand.

"This should not be an exercise in brinkmanship. The deadline is looming. It is not going to be waived or extended."

Tim Leitzell, President, ABS Marine Services

“We haven’t seen such optimism, nor such creativity, in the US Gulf since the 1970s. Ideas such as the drilling spar and the mini-TLP signal that the entrepreneurs and innovators are returning.”

Bud Roth, President, ABS Americas

Man’s relentless need for petroleum based energy and products is pushing oil and gas exploration into new, technologically demanding areas. Within the offshore sector 1996 saw the industry’s focus return to the Gulf of Mexico, its birth-place fifty years ago. It is there that technology has fueled a revolution, ending a decade of depression and changing the lives of millions along its shores. The discovery of new reserves in deep waters of the outer continental shelf has sparked development of new production methods and revitalized the offshore industry.

for extracting the oil, have led the industry into once-forbidding depths. The new fields have vindicated the researchers who had long believed in the Gulf’s promise of deep-water riches, despite industry skepticism.

The deep-water revolution is now in full swing, helping the US oil and gas industry recover some of the 400,000-plus jobs it lost between 1984 and 1994. Once called “The Dead Sea,” the Gulf of Mexico is now called “The New Alaska.” Shell alone predicts that the projects in which it is involved have the potential to produce a combined 400,000 barrels of oil and 1.3 billion cubic feet of natural gas per day. This optimism on the part of just one producer, when compared to current levels of Gulf oil output, reveals the cause of the deep-water renaissance. At present, the Gulf of Mexico region delivers a total of 1.2 million barrels of oil and 13.7 billion cubic feet of natural gas per day.

Such potential is spreading ripples throughout the region. The Gulf Coast is alive again with the hum of reborn industries and the din of working shipyards. New projects for reaching the presumed reserves of 10 billion barrels of oil in the deeper Gulf waters have set armies of engineers, technicians and craftsmen to work. With general rig utilization at nearly

DEEP water **EXPLORATION**

In 1994, seismic mapping techniques uncovered the 100-million barrel Mahogany oil-field, proving the salt layer believed to be the “bottom” of the Gulf was in fact not a bottom but merely another layer of potential. That same year, a near-gusher at the Auger platform in 2,860 feet of water sparked interest in exploring the Gulf’s greater depths. By 1996, exploration activity had blossomed. Multi-billion-dollar commitments for deep-water development projects from industry leaders, including Shell, Amoco, Texaco and Exxon, dispelled the last of the lingering shadows which grew during the US offshore industry’s decade of depression.

It has taken ten years for technology to meet these new deep water demands. The growing precision of seismic techniques in locating oil reserves, and improved engineering technology

100 per cent, 1970s-built semi-submersibles have been called out of retirement and sent to yards for extreme modification to work in ever-greater depths. Gulf shipyards are overflowing with the resulting conversion work.

This shipyard work has been spread around the US Gulf and to Mexico, where the TNG shipyard in Veracruz, jointly owned by US and Mexican interests, is being readied to catch the spillover. Virtually every Gulf Coast yard capable of fabrication has benefited from the renewed activity, often subcontracting for sections which are moved to the main contracting yards for final assembly.

As a key supporter of the offshore industry, ABS has been participating fully in this rebirth. In 1997, when the offshore industry celebrates its 50th anniversary, ABS will have notched up



“It is really exciting that we, as a class society, can play a part in ensuring that technical innovations are safe — without being so rigid as to stifle innovation.”

Malcolm Sharples
Vice President Offshore, ABS

more than 40 years of partnership with this re-energized sector. From the earliest involvement of class societies in the certification of odd-looking barges, working in 20 feet deep Louisiana marshes, to recent plan approval for operations in water depths up to 10,000 feet, the offshore industry and ABS have worked closely on research and the exchange of technology.

The ABS Record reflects this long history. More than 80 per cent of the world's fleet of jack-up drilling rigs, and over 50 per cent of both the drillship and the semi-submersible drilling rig fleets are to ABS class. As 1996 drew to a close, ABS also confirmed its dominance within the floating production (FPSO) sector when four FPSOs for Brazilian producer Petrobras brought the ABS fleet of these specialized vessels to more than 40.

It is the willingness of the ABS Offshore Engineering Department (OED) to take an interactive role in these technically sophisticated projects which has given ABS such a major presence in the offshore industry. ABS project managers are often called upon for advice in the earliest phases of a project. Such early involvement often leads to significant cost savings for the client. And ABS is able to guide these innovative operators as they seek to meet new standards for groundbreaking projects such as spar buoys and tension leg platforms (TLPs).

New technologies for extracting oil — such as the spar buoy and the mini-TLPs — exemplify the technical creativity and daring now being employed in the Oil Patch. Seismic technology, pioneered in the Gulf, is discovering reserves

in fields ranging from Scotland to West Africa, from Brazil to the South China Sea. Although most of these are not deep waters, their development is being facilitated by construction and processing techniques recently applied on the US outer continental shelf.

Another technological leap is being developed by a Conoco/Reading & Bates partnership — construction of the first of a new generation of 120,000 dwt, dynamically positioned drillship, designed to ABS class for exploration in depths of up to 10,000 feet. The ABS experience with dynamic positioning of large vessels goes back over 20 years, to the classification of the top-secret GLOMAR EXPLORER for the US government.

With super-drillships, the challenge is not so much newness of technology as size. For the ABS engineers, one of the challenges is to identify these new thresholds and develop the technology necessary for the industry to move safely past them.

Deep-water development will continue to stretch the capabilities of the tension-leg platform. Whether modified TLPs, new designs of spar buoys, super-drillships or some as-yet unknown concept will produce oil in depths beyond 10,000 feet remains to be seen. Every indication from 1996 is that it will and that ABS will continue to be at the forefront of that technology.



“The fundamental contribution of ABS and class is safety. I believe the offshore industry as a whole recognizes this. These are smart, tough people in this industry and they wouldn't pay for something that's not benefiting them.”

Peter Noble, Vice President Engineering, ABS

ISO 14000 environmental **STANDARDS**

“We are united by a common premise: that human activities are needlessly causing grave and perhaps irreparable damage to the global environment. The damages are clear to all of us.”

US Vice President Al Gore

It is not easy being an environmentalist. Even in environmentally sensitive countries, the environmentalist lobby is often perceived as being part of a radical fringe, more concerned with saving arcane species of wildlife than preserving jobs or creating wealth. Worse, in the majority of countries, environmental issues have scarcely rated a second thought by the governments or the people. The earth continues to be polluted in alarming ways, despite the significant progress which has been made towards instituting environmentally sensitive policies in the US and its major industrialized partners.

In September of 1996 the first, coordinated, internationally accepted step was taken towards encouraging a cleaner, healthier, more sustainable world-wide environment for future generations. ISO 14000 Environmental Management Systems standards were formally finalized at that time and have already begun to be implemented around the world. Yet what is expected to be a landmark in the global challenge to protect the environment passed almost unnoticed. Few, even in industries likely to be affected by these new standards, are even aware of their existence.

But, in the same manner that the ISO 9000 standards surged from obscurity to become the dominant determiner of quality operations over the last five years, ISO 14000 standards are expected to become equally widespread over the next decade. There are, however, notable

differences in the method of application of these two international standards. And there is a very distinct difference between ISO 14000 standards and the environmental regulations enforced by government agencies such as the Environmental Protection Agency (EPA) in the US and its counterparts elsewhere.

The new international standard takes a different approach to enforced regulation of an organization's activities. It challenges each organization to take stock of itself, set its own objectives and commit itself to a process of continual improvement. Where the philosophy of ISO 14000 differs from the pattern which has become familiar to industry through the implementation of ISO 9000 standards, is that it demands the consideration and involvement of a much wider participatory group.

ISO 9000 essentially ensures compliance with the quality specifications of a customer through the demonstration of an adherence to quality management. ISO 14000 doesn't have such a specific focus. Instead it challenges an organization to assess its operations from an environmental impact standpoint, taking into account such factors as the impact of the sourcing of its raw materials, its productive processes and the use and ultimate disposal of its products within the market. It requires an organization to think past a customer to its shareholders, staff, insurers and even those citizens who may live near its plant.

Moreover, the standards require a complete commitment to these environmental principles by the employees of an organization. Staff must be trained and shown to be competent in environmental procedures. They must be competent in handling the environmental consequences of their work. The new standards demand an infusion of environmental awareness, a change in corporate culture and an acceptance of the environmental consequences of every aspect of the organization's activities.

As with other ISO Management Systems standards, the ISO 14000 requirements have been kept intentionally generic so that they are

equally applicable to all kinds of organizations. They are not to be considered as only applying to heavy process and manufacturing industries, but have equal relevance within the service sector, a white collar company or a government department.

The ABS Group of Companies, and particularly ABS Quality Evaluations, geared up for these new standards so that immediate professional help could be provided to those organizations which elected to respond quickly to them. The client list has already grown to include companies across the United States, Asia and in South America.

Within weeks of the new standards being issued, ABS QE had received accreditation as an ISO 14000 Registrar. Although it would appear to have been a natural outgrowth of the ABS Group's long experience with auditing ISO 9000 standards for clients around the world, ISO 14000 imposed new challenges for the company. The very specific demands of the standards require auditors who are not only experienced with Management Systems but who also have wide-ranging expertise in environmental issues.

ABS already has some auditors on staff able to meet these demanding new criteria. Audits will be approached on a team basis, marrying the specialized talents of an experienced auditor and an environmental expert to provide clients with the most effective service.

Difficult to impose, demanding to comply with and far reaching in their impact, these new standards have garnered considerable support from governments. Their formulation stemmed from the groundbreaking United Nations Conference on Environmental Development, held in Rio de Janeiro in June of 1992. The standards were developed in less than half the normal time taken for new ISO instruments, a fact which underscores the importance which many governments place on them, and of the official support which has underpinned their development.

Governments in several countries have become concerned that the environment needs greater protection, yet they have recognized that they have little formal environmental regulation in place. ISO 14000 is viewed as a quick solution, one which encourages a culture of compliance rather than the threat of retaliation.



As both governments and industry come to realize the enormous importance of these new standards, there will be a growing demand for experienced, independent environmental auditors. It is the mission of the ABS Group to assist its clients to enhance the safety of their operations, the quality of their services and the environmental impact of their activities. Every step of the necessary training, implementation, verification and certification which will be required by a company willing to embrace these new international environmental standards, will be offered by ABS as it strives to fulfill that mission.

“Within five years, ISO 14000 activity will surpass ISO 9000.

This is the most far reaching, most important enhancement to the quality of our life, the safety of our children and the protection of the environment in which we live.”

Chris Wiernicki, President, ABS Group.

technical

INNOVATION

“There is unlimited potential for continued technical improvement and refinement in the manner in which ships and marine structures are designed and built. Increased knowledge, more sophisticated use of computers and on-going research will lead to stronger, safer and more efficient ships, and marine structures in the future.”

Dr. Don Liu, Senior Vice President, ABS

Market forces continue to drive technology developments within the shipping industry. Technology is seen by the most progressive shipowners as a very effective weapon in the competitive war. As owners strive to maintain a slimmed down administrative infrastructure, classification societies are seen as offering an increasingly important source of technical expertise, advice and support.

Working closely with shipyards, naval architects, consultants and an owner's technical management, ABS is able to contribute its vast reservoir of practical and technical experience to the process of designing, constructing, operating and maintaining vessels and other marine systems. As owners and designers increasingly seek better solutions to traditional design problems, ABS is able to draw on its knowledge and experience to provide innovative yet realistic application of the formal Rules.

Larger ships can return economies of scale, as tanker and bulk carrier owners have proved.

In 1996 it was containership owners which capitalized on the same guiding principle as they moved up to and past the 6,000 TEU mark. These larger vessels highlighted the importance of a sophisticated understanding of the structural strength of the hull girder, and the impact of large hatch openings, from a first principles engineering standpoint. Past experience, coupled with the traditional prescriptive Rules which stem from such experience, cannot provide the same detailed degree of confidence as refined first principles engineering. Of the various computer-based Rule applications issued by classification societies, ABS SafeHull™ is solidly based on these first principles. As a result, a preponderance of orders placed in 1996 for large containerships were for vessels designed to the SafeHull notation.

Faster ships offer improved utilization and competitive advantage. Once again containership operators have been in the forefront, exploiting improved engine technology. And ferry operators continued to embrace high speed technology throughout 1996, taking delivery of a wide range of size and types of high speed craft. ABS responded to this latter demand by developing an updated, significantly expanded and improved version of its well established Rules for High Speed Craft. Larger vessels, built from a wider range of materials including composites, are now covered by the Rules.

Technology not only facilitates larger, faster and more efficient vessels, it is also the key to safer vessels. 1996 was the year in which the debate over the structural integrity of aging bulk carriers became more intense. The debate spurred continuing detailed research of the problem by an IACS members' group of experts. That research provided clear validation of the first principles approach to Rule making as embodied in SafeHull.

During 1996 ABS completed a major improvement of the groundbreaking SafeHull System, further differentiating the first principles based Rules from the other, more traditional alternatives. Pilot testing of the new system was largely complete by the end of the year, readying the new Windows and workstation based

“Experience is clearly validating SafeHull™ shows how to redistribute steel within the structure to produce a stronger and more robust ship.”

Dr. Jack Spencer
Vice President Technology, ABS

versions for an early 1997 release. The most significant differences for SafeHull users will be the new user friendly Windows environment, and the addition of containerships to the existing applications for tankers and bulk carriers.

On closer inspection, however, the user finds significant improvements in the technology underlying the program, particularly improved finite element modeling and analysis capabilities, and simpler and easier interfaces with commonly used CAD systems. Also included are all the latest draft IACS requirements for bulk carriers which permit cross checking of a design against these criteria and will permit easy adjustment to the new IMO standards once these are confirmed.

Although SafeHull is a cornerstone to the future of ABS Rule making, it is just one of many major technology advances which are being taken in response to industry needs. Throughout 1996, ABS participated in joint studies and launched its own studies into a wide range of topics including non-linear, time-domain hydrodynamic methods for loadings and motions, non-linear ultimate strength methods for ship structures, improved rules for the design of refrigerated vessels and refrigerated cargo containment systems, and industry leading research in wave-induced large amplitude motions and loads (LAMP).

This latter effort will develop what is expected to be the foremost, most advanced available ship motion program, able to accurately predict extreme wave loads on the ship structure. More

than four years have already been devoted to researching this essential new area of technical knowledge in partnership with the US Navy. Development work is on-going and the program is undergoing extensive validation and testing on both super computer and ABS in-house computer systems.

Concurrently, the ABS Research & Development division is developing a methodology and procedures which will allow these advanced methods to be applied to modern ship designs, particularly the new generation of very large, fine form, higher speed ships, complementing both Dynamic Load Approach (DLA) and SafeHull analysis capabilities.

It is through projects such as the LAMP research that ABS continues to progress the boundaries of marine technology knowledge. The beneficiary is the marine industry itself. From enhanced technology for the innovative and demanding offshore sector, to new, reliability based “Safety Case Approach” assessments of machinery components, maintenance and operational issues, ABS continues a century long tradition of defining the leading edge of technical innovation, developments which will enhance the safety of marine structures and systems and assist in protecting the marine environment.

“There is a need for the people within Research & Development to have more than tunnel vision. They must have broad practical experience so that they can interpret developments which are affecting the industry and be able to identify new areas which offer value-added enhancements to design and safety.”

John Conlon, Director R&D, ABS



“Existing bulk carriers could have continued without any strengthening – provided they had gone through an enhanced survey program and carried out any necessary repairs that the close-up survey revealed.”

John Hadjipateras
Chairman, Greek Shipping Co-operation Committee

Responding to escalating demands for higher standards, owners of older bulk and tanker tonnage are faced with increasingly stringent inspection procedures. Some of these, such as the highly successful Enhanced Survey Program (ESP) for bulk carriers, are now mandatory. Others, such as the voluntary but rigorous Condition Assessment Service

enhanced

SURVEYS

(CAS) are being requested by some tanker and large bulk carrier owners seeking to place their vessels with the most discriminating charterers.

A number of improvements have been made to the ESP requirements for older bulk carriers in the three years since its introduction. During 1996 IACS members agreed to increase the scope and frequency of close-up surveys of side structure, hatch covers and bulkheads. Effective 1 January 1997, IACS requires an annual close-up inspection of the hatch covers and coamings on all bulk carriers. It is expected that IMO will align its own requirements with those of IACS as soon as it is possible.

For vessels between 10-15 years of age, extensive annual close-up inspection of the forward cargo hold, with intense scrutiny of the lower one-third of at least 25 per cent of the shell

frames, including the lower end attachments and adjacent shell plating, is now required by IACS. If any significant degradation is found, all frames in the hold are to be checked. And an annual overall inspection of all the cargo holds on these vessels is to be carried out.

For bulk carriers over 15 years of age, the vessels which have proved to be at greatest risk, this same degree of intense scrutiny of not just the forward hold but of at least one other hold, most commonly No. 2 hold, will also be required.

For the often hard-pressed ABS field surveyors, these revisions have meant significant changes to their workloads and work practices. When inspecting an older bulk carrier with significant corrosion, a survey which may have taken a few hours may now often last a day or more. If extensive gauging is required, the attendance of the vessel may stretch much longer.

The requirement for close-up inspections of a much larger proportion of the interior of a hold is also placing greater physical demands on the surveyor. He may now spend several hours swaying from the telescoped arm of a cherry picker or clambering around elaborate staging. In the past, the extent of a surveyor's close-up inspection depended upon the judgment and experience of the surveyor.

The new rules over-ride much of this subjective interpretation. They have imposed specific requirements for close-up inspections to ensure sufficient hard, factual information is gathered for the surveyor to make a reasonable assessment of the hull structure.

The manner in which gaugings are taken and recorded has proven to be of particular concern to the conduct of an effective ESP. When the ESP requirements first came into effect, the common interpretation of the classification societies was that, if a certified gauging company performed the service, the class surveyor need not be in attendance.

Unlike some other organizations which continue to accept this approach, ABS quickly determined that it is essential for the class surveyor to be in attendance throughout the gauging process

if valid and reliable data is to be collected. It is only with the guidance of an experienced class surveyor that the full range of gaugings required for a class inspection can be collected.

It is the level of surveyor experience which ABS has found to be the crucial element in ensuring survey integrity. An experienced surveyor need not witness the taking of every gauged reading but ABS now requires the gauging firm to provide the surveyor with interim reports while the readings are being taken. In that way, the surveyor can specify additional readings in areas of substantial corrosion and is also on hand to immediately notify the owner of the general condition and recommend remedial action.

There is ample evidence that the Enhanced Survey Program for older bulk carriers has had immediate beneficial results. The incidence of loss of older bulk carriers has declined significantly since the program was introduced in 1993. But more still needs to be done. The original requirements had set a 1998 target date for all of the approximately 4,000 bulk carriers which fall under its scope to complete ESP. The timetable was linked to normal periodic survey requirements.

Given the risks attached to trading these vessels with high density cargoes, and the clear evidence of the efficacy of the ESP approach, IACS accelerated the deadlines during 1996. The revised requirements impose an end-1997 target for all pre-1987 built bulk carriers, which have not yet undergone an enhanced survey, to undergo the cargo hold portion of the program. ABS took an even more aggressive approach to these new requirements. Rather than wait until the IACS proposed 1 January 1997 implementation date, ABS adopted these tougher standards as conditions of class effective 1 September 1996.

Close-up inspections and extensive gaugings are also central elements in the Condition Assessment Service (CAS) which has been requested from ABS Marine Services by owners of older tankers, bulk carriers and, increasingly, FPSOs. The voluntary program is separate from required classification procedures. It offers a comprehensive assessment of the actual structural condition of the subject ship, resulting in a final rating on a 1-5 high-low rating scale.

Owners are choosing to undergo the CAS for a variety of reasons ranging from pre-approval for charter to sale and purchase valuation. For each vessel it provides a clear assessment of future

repair and maintenance needs. For these owners, the unique ABS SafeHull system offers the most precise structural evaluation and future prediction tool available. A particular strength of SafeHull for these vessels is its ability to assess the future impacts of the structure's sensitivity to corrosion.

It is this predictive capability of a SafeHull based CAS which has caught the attention of operators of FPSOs, particularly those considering a major conversion of an existing 1970's built VLCC. Once in service these vessels will be on station for extended periods, with ten year assignments considered commonplace. Downtime, or time off-station for these vessels is operationally and commercially catastrophic. A complete SafeHull CAS can provide the highest level of assurance that service interruptions due to structural failure can be avoided.

A CAS vessel need not be to ABS class to undergo such a SafeHull evaluation. The essential element for an accurate evaluation is the extensive gaugings of the hull which are part of the CAS program. With these available, the SafeHull evaluation can be readily applied.

Whether it is the close-up scrutiny of an ESP or the exhaustive analysis of a CAS, survey requirements are beginning to tighten. Although the job of the surveyor has become more demanding as a consequence, the basic requirement remains the same. Corrosion is the enemy. A ship's hull and structure will always deteriorate. The independent and impartial expertise of the class surveyor is the industry's safeguard that deterioration does not lead to disaster.

“Older ships are more difficult for the surveyor. There is more corrosion. The surveyor must be more vigilant. The gaugings must be more extensive. The real test of a surveyor's skill is the ability to conduct a proper survey on a twenty-year old bulk carrier.”

Gus Bourneuf, Chief Surveyor ABS

INFORMATION

management

"We are truly now in the information age. The use of information technology is not only a great opportunity but a necessity if an owner is to successfully compete and meet the regulatory and commercial challenges posed by charterers, Port and Flag States, and IMO agreements such as ISM and STCW."

Admiral William J. Kime
Chairman and Chief Executive Officer,
Interocean Ugland Management Corp.

Plug into the Internet and find an answer. Subscribe to a database and receive a mountain of confirming statistics. Search the intraoffice network to find the posting from your colleague. Open one of the rackfull of trade publications and glean the latest gossip. Information. It is everywhere.

It bears the modern manager up one minute and threatens to bear him away the next.

It has changed the conduct of business. It has transformed the shipping business.

There is an enormous amount of technical and regulatory information which directly impacts the day to day operations of a shipowner. It is being issued by an alphabet soup of organizations from the IMO to the US Coast Guard. It is layered atop the traditional market intelligence which an owner requires to survive and prosper. Computers are seen by some as the bane of this information overload. For others, they are the solution.

ABS not only subscribes to this latter view but has been working to produce an easily applied system which will alleviate some of the infor-

mation burden for shipowners. 1996 marked the pilot release of SafeNet, an innovative information management system for shipowners, operators and managers. 1997 will see its widespread release to our clients.

The result will be better informed surveyors, able to better identify critical areas on which to focus inspections, armed with more knowledge than has ever been the case before. And it will result in better informed owners and managers, with direct access to the most comprehensive database of information relating to the survey status and physical condition of their vessels. An added benefit is access to a host of ancillary information, from shipyard contact numbers to Port State Control checklists, needed to operate efficiently in the current market.

Shipowners are being given the opportunity to ease the transition from traditional practices to this groundbreaking system through a two phase implementation of SafeNet. Phase I, which has been successfully piloted and is being readied for widespread release, offers owners electronic access to the ABS Survey Status database relating to the vessels in that owner's fleet. This value added service is being provided free of charge by ABS.

Included in this Phase I module are several databases which owners have indicated would be useful to their operations. These include a complete listing of ABS Type Approved equipment; a worldwide listing and description of all shipbuilding and repair facilities with the necessary contact information; an extensive listing of all the major Port State and Flag State administrative contacts to assist owners requiring information relating to statutory and Port State requirements affecting the operation of their vessels; and a worldwide database of ABS survey offices to assist the owner in summoning professional assistance at any time in any port.

This Phase I release is equally important to ABS. Every one of those field survey offices will also be connected through the SafeNet program to the ABS central Survey Status database. Future information available to an attending surveyor



“SafeNet™ has only recently been installed in Tidewater’s office but it has already become an indispensable part of operations. We have faster access to more and better information than before.”

John Laborde
Director, past Chairman,
President & CEO, Tidewater Inc.

will be more complete, more current and more focused than ever before, offering significant internal operating efficiencies for the organization and improved service to our clients.

Although this first phase will bring new efficiencies to ship management and ship surveying, it is the second phase, scheduled for a pilot release in the second half of 1997, which will elevate the shipmanagement capabilities of SafeNet to a new dimension. This phase will link the survey status of a vessel to an owner’s planned maintenance system. It will allow the life cycle storage of complete condition assessment information, including gaugings, 3-D vessel schematics and digitized photographs.

Owners will have access to the precise condition of a vessel and will be able to accurately predict future structural condition. Because of the integration of the various databases within the SafeNet program, including a key casualty database, owners will also be able to conduct trend analysis to give early warning of potential trouble spots to permit more cost effective planning of repairs.

Using the results of structural evaluation, an owner will be able to work with ABS to develop a survey strategy based on such factors as corrosion, stress, coating breakdown and fatigue. For new vessels, SafeNet will provide a complete lifecycle record, from building dock to scrapyard.

While attention is being directed at implementing the ambitious first two phases of SafeNet, such is the dynamic structure of the program that ABS is already planning future technical enhancements to provide owners with more useful, and useable information. On that future horizon, ABS foresees the capability of providing an owner with the tools necessary to not only assess the structural condition of the vessel but to predict critical areas for inspection, identify hull sections requiring replacement steelwork, determine the quantity of materials required, prepare the repair specifications and use pricing information supplied by selected contractors to develop quotes, all from a computer in the owner’s office.

Other applications currently under consideration include risk assessment analysis, and imaging and multimedia technology to offer owners real-time viewing of hull and machinery surveys. Rather than swamp an owner with an unmanageable overload of information, ABS envisages SafeNet as the means by which an owner will have access to essential operational information in a single, easy to use location. The information it provides will offer the owner a clear commercial advantage in an increasingly complex and competitive market.

“The concept of SafeNet™ is so profound that its rich potential is bound only by the extent of our vision. SafeNet will take the worlds of shipmanagement and ship surveying into the next century. They will never be the same.”

Frank J. Iarossi, Chairman, ABS



the YEAR in review
1996

Periodic surveys of ships in service is one of the more routine activities of the classification society. But no other is more important to an owner struggling to keep a vessel well maintained, operating safely with a minimum of in-service interruptions.



Robert D. Somerville

President, ABS



Chris Wiernicki

President, ABS Group

As the year began, ABS announced a new service to expedite these periodic surveys through a program allowing ABS certified chief engineers to inspect and obtain credit for machinery that has been opened and repaired in the course of normal operations.

Also in January the ABS affiliate, ABS Quality Evaluations, certified Jurong Shipyard Limited in Singapore to the ISO 9001. At that time twelve shipyards were among the more than 1000 facilities in various industries that ABS QE had certified in accordance with this quality management standard. In the ABS tradition of positioning its services in advance of client needs, ABS QE began preparing certification services for the next ISO standard of developing interest, ISO 14000, which addresses environmental management.

The quality management approach to the safety of ships, as embodied in ISO 9000 and the International Safety Management Code (ISM), was an area in which ABS devoted increased energy throughout the year.

Initiated in February, a round of seminars were held in 10 major international cities over the following months.

ABS Marine Services pioneered the joint ISO 9000/ISM auditing and certification program for the industry and the seminars explained this linkage, the fundamentals of the quality management programs, and took the attendees through the entire implementation and certification process. Proving to be an overwhelming success, the seminars attracted capacity attendance in all locations.

Throughout the year, shipowners and operators turned to the ABS organization in increasing numbers for certification to these two important standards. Early leaders were Mobil Shipping Co. Ltd. in London and Universe Tankships (Delaware) Inc. in New York which received ISM and ISO 9002 certification in February. In the same month Antares Naviera SA and Transportes Maritimos Petroleos of Buenos Aires, received their ISM certifications, underscoring the worldwide reach of the ABS organization.



In March ABS accepted the ATLANTIC PROSPERITY, the largest ship to be classed by ABS during 1996. This VLCC and its sister vessel are 164,400 gt (311,700 dwt) and were built by Hitachi Zosen for a subsidiary of OSK Lines for charter to Exxon. Six VLCCs in all were classed by ABS during the year and a count of a further 29 newly delivered smaller tankers was indicative of the organization's continued high level of involvement within the tanker sector. That high level will continue as contracts were received to class 28 more tankers during 1996, giving ABS a majority share of all VLCC contracts placed by year end.

Under the terms of a 1995 Memorandum of Understanding with the US Coast Guard – as part of the Alternative Compliance Program –

ABS had been appointed as the designated authority for the issuance of International Oil Pollution Prevention Certificates. The program proved a success and in April of 1996 it was announced that this authority would be extended to apply to vessels used for the carriage of noxious substances in bulk. Authority was also granted to ABS to inspect and verify requirements associated with those sections of MARPOL which deal with the prevention of pollution by ship generated

garbage, and by harmful substances carried in packaged forms.

In May the EVER ULTRA was delivered to ABS class. This 69,000 gt, 5,300 TEU containership (and its four sisters), under construction at Mitsubishi Heavy Industries for Evergreen International, became the largest containership in ABS class. (Later in the year Evergreen ordered a further six vessel series of containerships to ABS class at the same yard.) **Class activity with large containerships continued as a particularly strong suit for ABS.** Throughout the year



it classed 29 such vessels (19 of which are 50,000 gt and over), delivered to owners including OOCL, Hyundai, APL,

NOL and Sea-Land Services, as well as Evergreen, while also receiving contracts to class an additional 47 containerships.

ABS created a stir at the Posidonia International Exhibition in June with announcements by ABS Chairman Frank Iarossi of the launching of SafeNet and advancements in SafeHull. The former is a life cycle shipmanagement and information network designed to assist shipowners and operators with the increasingly complex task of managing their vessels more safely and efficiently. **Following a successful pilot program in the US, SafeNet is scheduled for release to ABS owners in the first half of 1997.**

SafeHull, the uniquely innovative, dynamic based method for the design and analysis of ship structures, underwent a series of major improvements in 1996. At the gathering in Greece, Mr. Iarossi reported on refinements that will make





this powerful tool even more flexible and user friendly. These include features such as Windows PC and workstation office environments, in addition to the extension of its application from tankers and bulk carriers to containerships. Following extensive pre-release testing, these enhancements will be available to the industry in early 1997.

A noteworthy vessel classed by ABS in July is LARAMIE, the last of a 16 vessel series of 26,400 dwt fleet oilers built for the US Navy by Avondale Shipyards. The series was developed and constructed over a twelve year period with the final three, including the LARAMIE, being modified to an environmentally sensitive double hull configuration. During August the affiliate ABS Marine Services added asset and leveraged lease appraisals to its growing array of industry services. These are intended to assist the financial and insurance sectors.

At the same time, it was reported that among the classification requests for newbuildings ABS had received, was a contract for two 155,000 gt (317,000 dwt) bulk carriers. To be built at Daewoo for Krupp interests they will be the largest bulk carriers in ABS class. Bulk carriers were a source of significant class activity for ABS throughout the year as 27 were classed, eight of which were Capesize ranging from 151,000 to 163,000 dwt, while class contracts were received for an additional 24 newbuildings.

A major achievement was recorded by the ABS Industrial Verification subsidiary in September when it received approval by Japan's Ministry of Labor (MOL) as a foreign inspection body for imported boilers and pressure vessels. ABS IV is one of the very few organizations to have been granted such recognition.

Unequivocal evidence of the success of SafeHull in its application to both new and existing ships came in September. At that time **ABS passed the 100 vessel mark for new ships (totaling more than 10,000,000 dwt) delivered, designed to be built, or building using the ABS SafeHull system.** Since the first SafeHull vessel was classed in the spring of 1994 (a 128,000 dwt shuttle tanker for Conoco Norway), other owners to have applied SafeHull technology to their newbuildings include such

Providing training and assistance in the effective use of SafeHull to the world's leading shipyards was a major activity of ABS during 1996. Dedicated teams were active throughout the year. They not only provided initial support but also helped find solutions to hardware and software issues to permit seamless integration of the SafeHull programs into shipyards' existing workstation computer based systems.

industry leaders as Ceres Hellenic, MISC, Mobil and Evergreen.

At the same time this newbuilding milestone was reached, an additional 93 vessels, all existing tonnage built to the Rules of both ABS and other class societies, had undergone or were contracted to undergo a SafeHull structural assessment, most as part of the extensive Condition Assessment Service (CAS) offered by ABS Marine Services.

Indicative of this effort, in October ABS opened a SafeHull training center at the Marine Design and Research Institute of China in Shanghai. Equipped with a battery of powerful computers, the center can train engineers from the major shipyards from China and elsewhere in the Pacific region where most of the SafeHull vessels are building.

Also in October Marinette Shipyard delivered the ABS classed, 206 foot, buoy tender JUNIPER. This marked the first time the US Coast Guard has adopted the standard commercial practice of building and maintaining a vessel to classifi-



cation society standards. This vessel will be followed by four sister ships and a second series of 14 similar but smaller craft.

November brought the announcement of a series of new ABS initiatives to reinforce its dominant position within the offshore industry. These included a new marketing structure and internal expert strategy groups to ensure that engineering and technical services provided by ABS are uniquely tailored to the needs of offshore operators. Also included is an expanded suite of advanced computer programs and technical support services, principal among which is the extended application of SafeHull to FPSOs. An *ABS Guide for Building and Classing Floating Production, Storage and Offloading Systems* had been published earlier in the year.

Of further service to the offshore industry was the approval by the ABS Technical Committee in November of a revised edition of the *ABS Rules for Building and Classing Vessel Under 90 Meters*. Responding to the trend toward larger, more powerful offshore support vessels, the Rules include an entirely new section devoted to this type of craft. Developed in close cooperation with the industry, these Rules set new standards for unrestricted worldwide service and include the innovative 'SOLAS ready' designation for cabotage trading vessels.

Also in November, ABS Marine Services formed a new partnership with Oiltest Inc. and Drew Marine Inc. which expanded its long-standing ABS Oiltesting Service. The service will benefit from the inclusion of Drew within the partnership. The company offers market leading technical expertise in the field of fuel additives and a worldwide sales and service network.

By December there was growing concern on the part of ABS senior management to IACS statistics on the implementation of the ISM Code. These figures indicated that only 5 per cent of the estimated 18,700 vessels required to comply with the Code by 1 July 1998 had been certified by IACS members. In an attempt to encourage

shipowners to begin this important certification process, estimated to take at least twelve months, ABS announced that it would defer a planned auditing fee increase until 1 July 1997. At that time a significant increase will be imposed to be followed by further penalty increases from the first of the New Year.

At the same time, ABS also announced that significant internal cost savings and operational efficiencies would allow it to maintain its 1996 fee structure for classification services throughout the coming year. This represents the third consecutive year that ABS has been able to offer its clients a stable fee structure as a result of management efficiency efforts.

As an organization serving the international marine industry, ABS has been particularly concerned with the provision of educational opportunities within the fields of naval architecture and marine and offshore engineering. These disciplines provide the training ground for the industry's future leaders. To encourage students to pursue careers in these areas, a scholarship program was established by ABS in December. The program encompasses six annual scholarships to be awarded at technical universities in Greece, Japan, Korea, Italy, China and the UK, as well as three in the US at Webb Institute, MIT, and the University of Michigan.

Shortly before the close of the year the affiliated ABS Group of Companies reorganized its structure to improve market opportunities and internal efficiencies. Effective 1 January 1997 ABS Quality Evaluations will continue its operations only in the Americas. The certification services it formerly provided in Europe and the Pacific regions will be undertaken by a new subsidiary, ABS Services, which will also provide the industrial verification services worldwide formerly offered by ABS Industrial Verification, a subsidiary which has been phased out.

The new organization's emphasis on product line selling through a single geographic office in each country is expected to offer ABS clients better service, driven by market demand, and significant operational efficiencies for the ABS Group.

ABS Marine Services will continue to operate worldwide, closely aligning its marketing with that of ABS to offer shipowners a complete suite of marine safety related services.

The year ended on a high note, one which augured well for ABS classification activity in 1997 and the years ahead. During the month of December ABS received contracts to class 70 new vessels of over 1,000,000 gt (1,700,000 dwt).

Time is short. Adherence to the requirements of the ISM Code takes at least twelve months for most companies. ABS has the expertise to assist owners meet the requirements of the Code. The ABS team stands ready to respond. It is expected that 1997 will be the year of compliance as the industry moves firmly towards more responsible and safer operational practices.

1997 is a year in which ABS will be putting new technologies to work in support of the wide range of essential safety and quality services it offers, particularly those associated with classing and operating ships and offshore structures. And a reorganization has positioned the ABS Group, comprising the subsidiary companies ABS Services, ABS Marine

Services, training institutes and government bodies. ABS Marine Services has developed a series of programs to assist owners and educational institutes meet the immediate and ongoing standards of these new requirements.

The first quarter of the year will also see the release of several new products which will offer substantial assistance to owners of craft from small catamaran ferries to the most modern containerships.

Publication of the *ABS Guide for Building and Classing High Speed Vessels* offers designers, builders and operators of these specialized craft the latest technological guidance for steel, aluminum alloys and fiber-reinforced plastic construction. ABS has been a traditional leader in classing these vessels, whether to catamaran, hydrofoil, SWATH, air cushion, wave piercing or monohull designs. Responding to the rapid changes in this sector, ABS has revised its existing Guide, released in 1990. The new requirements reinforce the ABS position at the forefront of this technology.

For owners and builders of tankers, bulk carriers and containerships, the major development at ABS in 1997 is the release of a widely revised and significantly updated version of the unique ABS SafeHull structural design and analysis program. The much anticipated release had been deferred as ABS responded to industry requests for a range of

LOOKING **AHEAD**

Services and ABS QE, for robust expansion of its activities in support of safety, quality and environmental services for shore based industries.

Updated regulations will also keep the ABS team active as it assists shipmanagers adjust to new requirements ranging from the latest version of the STCW (the International Convention of the Standards of Training, Certification and Watchkeeping for Seafarers) to garbage management and the all-important preparations for the implementation of the International Ship Management Code (ISM).

STCW took effect February 1, 1997. It covers all ship types and applies enhanced requirements for crew training and competency, and the documentation of compa-

operating systems to ensure maximum ease of use. As a result, the new ABS SafeHull system will be equally effective under all three Windows environments – Win 3.1, Win 95 and Windows NT, as well as all workstations most commonly used in the world's major shipbuilding yards.

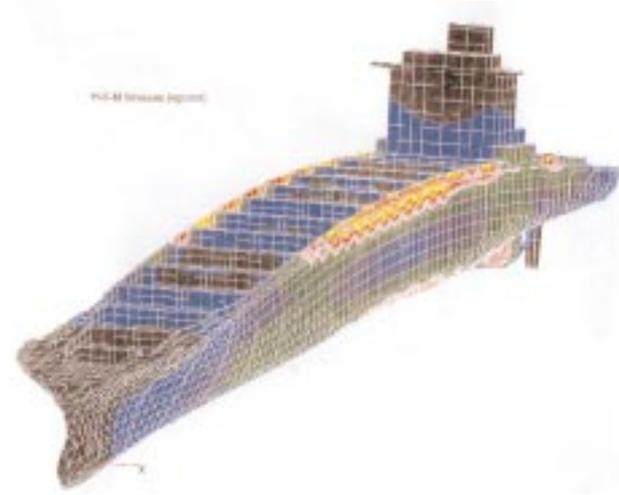
In addition to improved ease of use, and wider and more sophisticated technical capabilities than the previous MS-DOS based version, the new ABS SafeHull program has been expanded to include containerships of greater than 130m in length. Although several containerships for prominent operators have already been contracted to SafeHull criteria, design review has had to be carried out by ABS staff. The new



version of the program will devolve that capability to any SafeHull user, whether in the shipyard or the owner's design office. Full training support will continue to be provided throughout the year by a dedicated ABS team.

Subsequent to an extensive and deliberate pilot testing program, the first phase of ABS SafeNet will be released to owners of ABS-classed vessels throughout 1997. The nucleus of this phase is access to the survey status database relating to those vessels. But it also includes an array of additional useful information such as a listing of ABS Type Approved Equipment, listing and description of repair facilities worldwide, a listing of all Port State and Flag State contacts, and a worldwide directory of ABS survey offices.

Mid-1997 is the target date for the pilot release of the ambitious Phase Two SafeNet. This will link survey status to the owner's planned maintenance system covering both hull and machinery. And it will allow the creation of a vessel specific life cycle database comprised

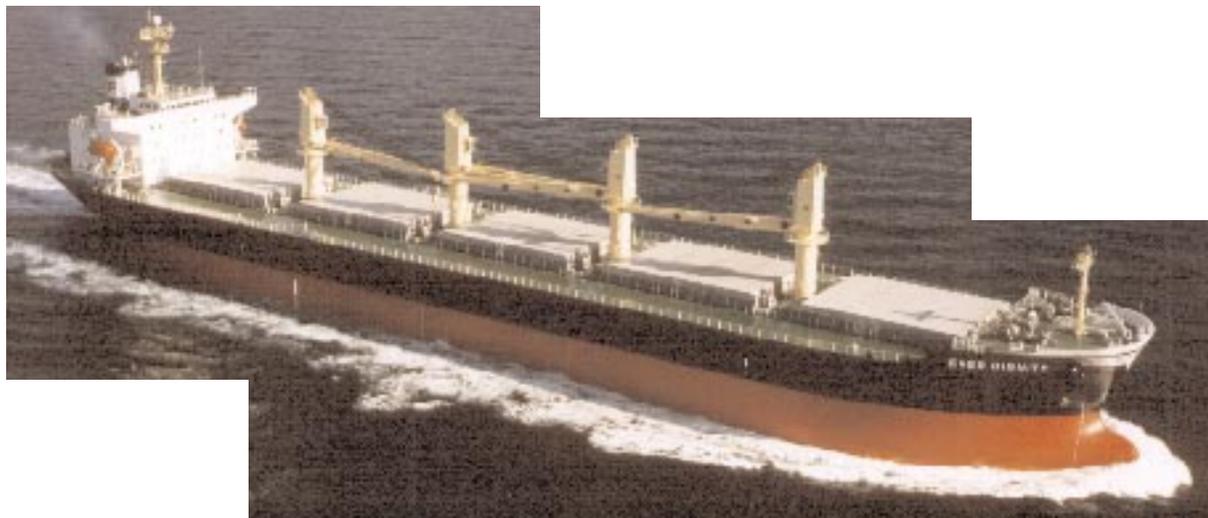


of complete condition assessment information, including gaugings, 3-D vessel schematics, and digitized photographs.

A resurgence in the offshore industry has focused attention on a new generation of floating units for both drilling and production. In response, ABS has been updating its full range of existing technical software which is applicable to this pace-setting technological sector. The new package of programs will be available for application to offshore projects by mid-year, although plan specific applications will be possible even earlier. Evaluations of advanced purpose column stabilized drilling units, tension leg platforms, drill ships and floating production systems will be covered by the new suite of software. Application of ABS SafeHull technology to FPSOs will also be available on a project basis from ABS technical experts.

Mid-year will bring the release of additional technological advances in the shape of new guidelines for specialized refrigeration systems and equipment, and for machinery fitted aboard all vessels. Both initiatives are expected to become the new industry standards upon release.

A resurgence in the offshore industry has focused attention on a new generation of floating units for both drilling and production. In response, ABS has been updating its full range of existing technical software which is applicable to this pace-setting technological sector.



On 1 July, Annex V of MARPOL will require a garbage management plan to be aboard all new ships equal to or greater than 400 gt carrying 15 or more persons. ABS Marine Services has developed the necessary guidelines for owners seeking to comply with these requirements and will be able to offer expert assistance.

This responsive approach to owners' demands for guidance in meeting new regulatory burdens will be applied to the new SOLAS provision for Cargo Securing Manuals. All new and existing ships, equal to or greater than 500 gt, carrying other than solid or liquid cargo in bulk, will be required to carry and stow cargo in accordance with a Cargo Securing Manual (CSM), approved by the Flag State, effective 31 December 1997. ABS is offering owners a detailed guide in electronic format to smooth the development of these new manuals and ensure proper compliance.

Bulk carriers will remain a central focus of industry attention throughout 1997. There will be further discussion of the structural standards for new and existing bulk carriers used for the carriage of high density cargoes at the May meetings of the IMO Maritime Safety Committee. Preparatory to this ABS will be meeting with owners to explain the new IACS requirements that have already been imposed and to inform owners of the additional complex research which is being undertaken by the Association's members.

Enhanced Survey Requirements imposed by IACS took effect for bulk carriers of 10 years of age and older from 1 January 1997, although ABS had already imposed these new requirements during 1996. ESP was also required by IACS for all new and existing chemical carriers, effective 1 January 1997.

Regulations affecting tanker operators in 1997 include the July 1 IACS requirement for intact stability for all new and existing tankers. And the US Coast Guard has mandated that by 29 July all existing single hull tankers of any size entering U.S. waters must have specific maneuvering data posted in the wheelhouse.

Throughout the year an ongoing focus for the ABS organization will be the implementation of the ISM Code provisions. The matter has passed from the hands of IMO to the individual Flag States which are charged with its enforcement and to the owners who must comply with its terms prior to the July 1998 implementation date.

The phaseout of single hull tankers will continue throughout the year under the provisions of both MARPOL and OPA-90. The former mandates that, during the year, applicable single hull tankers built during 1967 are to be withdrawn from trading and that tankers built between 1967 and 1972 are to be prohibited from transporting oil in bulk unless they comply fully with the terms of MARPOL 13(G). Within the US, OPA 90 applies to tankers and tank barges and the 1997 phaseout will require older vessels to be withdrawn from service according to the size-age configurations contained in the law.

Passenger and RO/RO passenger ships will also be subject to further regulation during 1997. Effective 1 July new requirements relating to ventilation duct strength, operational features, watertight doors, and stability requirements will apply to either one or both ship types. Enhanced IACS requirements for side and stern doors comes into effect for all applicable vessels on the same date.

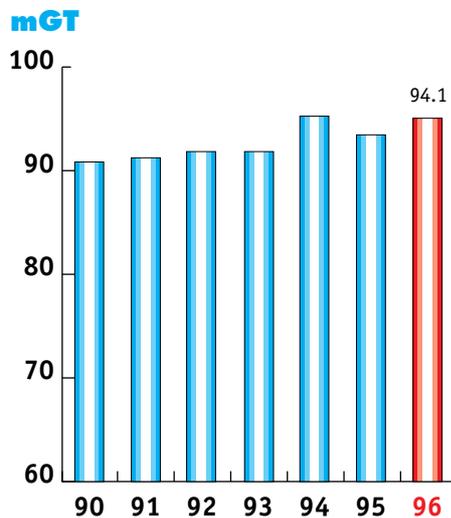
classification

ACTIVITY

Strong results continue in major ship categories with containership figures showing the most significant increases.

ABS classification activity during 1996 continued to be robust. When viewed in perspective with the strong showing of results over the prior two years, it is evident that there is a renewed vigorous demand for ABS classification services fueled by significant technological advancements and quality initiatives. Moreover, the results for 1996 were well balanced having been spread over the three major vessel types – tankers, bulk carriers and containerships

Total Tonnage in Class



SafeHull technology has clearly come into its own having been quickly recognized by the marine industry as providing superior design and operational benefits. It has generated significant class activity since the first SafeHull vessel was classed in mid-1994. By the close of 1996, 25 SafeHull tankers and bulk carriers had been classed while another 86 tankers, bulk carriers and containerships were contracted to be built or building to ABS class.

It is also interesting to note that whereas 1995 was a particularly outstanding year for ABS in terms of bulk carrier class activity, 1996 was an especially distinctive one for its class activity with containerships.

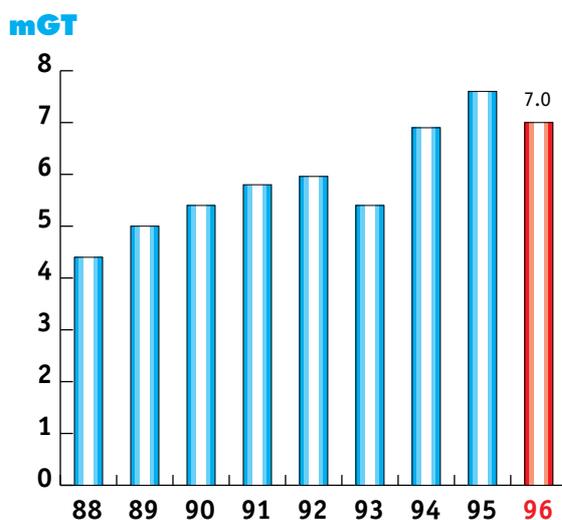
VESSELS CLASSED

During 1996 ABS classed 742 new and existing vessels totaling 6,662,300 gross tons. This surpasses the 1995 figures by some 2 per cent in numbers and a hefty 36 per cent in tonnage. In fact, this exceeds totals for vessels classed in a given year going back well over two decades. Of the vessels classed in 1996, 523 of 5,106,200 gross tons were newbuildings. This compares with the 1995 figures of 452 vessels of 3,611,000 gross tons registering an impressive jump of 16 per cent in numbers and 41 per cent in tonnage. The other 219 vessels classed in 1996, are existing vessels including 140 of 1,331,500 gross tons that had previously been classed by other societies or were unclassed and 79 vessels, the prior ABS class of which had been dropped, were re-instated.

VESSELS REMOVED

Removed from ABS class during 1996 were 975 propelled and non-propelled vessels. Of these 483 were dropped for noncompliance with the

Order Book



ABS Rules – 54 of this number being oceangoing vessels, the others being nonpropelled and smaller types – 66 were scrapped, and the remaining 426 were withdrawn for a variety of other reasons.

CLASSED FLEET

At the conclusion of the year the ABS fleet amounted to 11,584 ships and offshore structures of all types totaling 94,071,700 gross tons. This marks a slight decrease in numbers and slight increase in tonnage, compared to end of the year 1995. This ABS classed fleet represents 100 different flags of registry.

NEW CONTRACTS RECEIVED

During the year formal contracts were received to class 474 new ships and offshore units of 4,528,000 gross tons. While the tonnage figure remained almost the same as for contracts received during 1995 the number of vessels was 9 per cent less.

ORDERBOOK

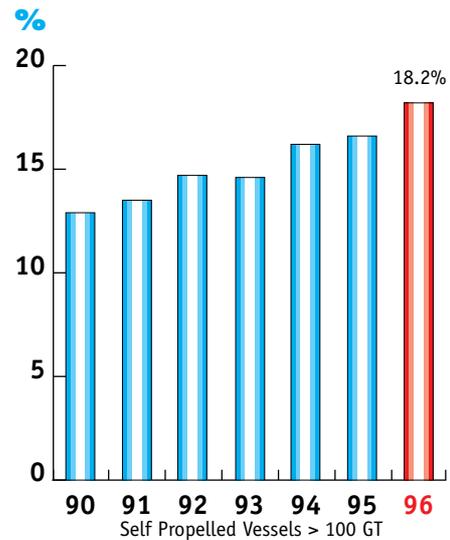
As of the completion of 1996 the ABS orderbook of new ships and offshore structures showed 574 vessels of 7,027,100 gross tons contracted to be built or building to class. Orderbook figures for year-end 1995 showed 831 vessels of 7,579,000 gross tons. This apparent falloff in the ABS orderbook results from an administrative procedure of deleting contracts for a number of smaller vessels as it became evident the projects were not going to materialize. However, the orderbook remains at a level that assures ABS classification activity will remain vibrant into the next century.

TANKERS

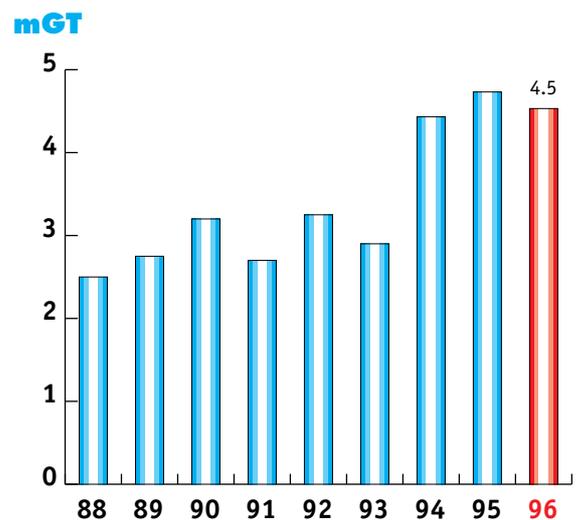
During 1996 ABS classed 29 tankers totaling 1,800,000 gross tons. While this was a decrease of 12 tankers from the year before, it was an increase of almost 32 per cent in tonnage indicating stepped up activity with larger size VLCC and AFRAMAX tankers. Contracts were received to class 28 new tankers of 1,220,000 gross tons during 1996 besting 1995's corresponding figures by 75 per cent and 15 per cent respectively. At the close of 1996 there were 47 tankers of 1,825,900 gross tons building or contracted to be built to ABS class (which is 12 per cent more in numbers but 18 per cent less in tonnage than the close of 1995) with a further 831 tankers of some 36,922,000 gross tons already in the fleet of ABS classed vessels.

ABS % of the World Deliveries

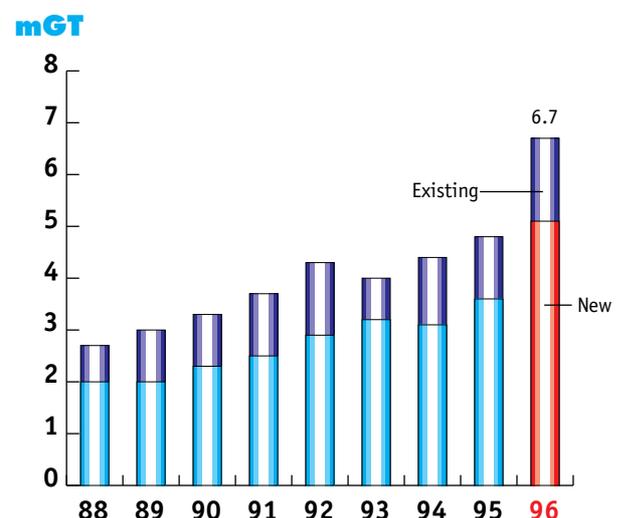
Based on GT



Contracts Received

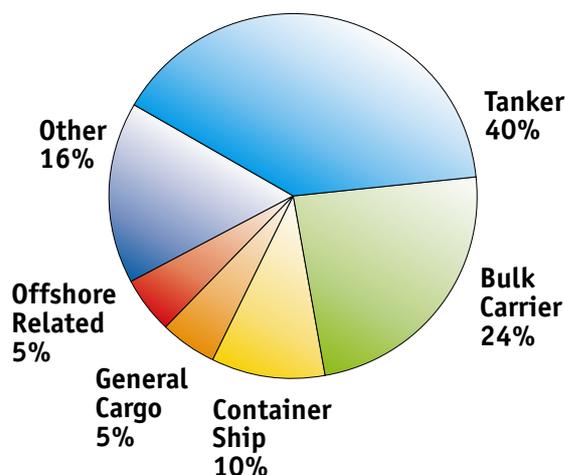


Total Incoming GT



ABS Class Vessels

Based on GT



BULK CARRIERS

In 1996, 27 bulk carriers of 1,235,100 gross tons were classed for an increase of 3 in number and 38 per cent in tonnage over the previous year. Contracts slowed somewhat from 1995 which was a superlative year in receiving new orders for bulk carriers. During 1996 ABS received contracts for 24 bulk carriers of 1,213,000 gross tons down from 1995 by 44 per cent in numbers and 34 per cent in tonnage. Nevertheless, the orderbook at the end of the year remained close to that of 1995 with 63 bulk carriers of 2,500,500 gross tons building or contracted to be built to ABS class. The classed fleet of ABS bulk carriers numbered 855 of some 21,892,000 gross tons.

ABS Activity During 1996

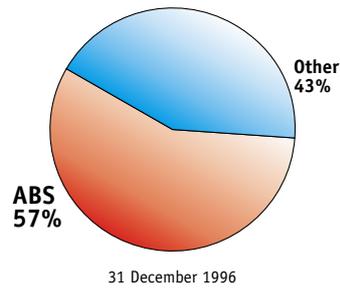
Type	As of 31 December 1996 Vessels in Class		As of December 1996 Vessels on Order		During 1996 New Vessels Classed	
	No.	Gross Tons	No.	Gross Tons	No.	Gross Tons
Barge	4,875	8,219,600	122	287,600	287	487,600
Bulk Carrier	855	21,892,300	63	2,500,500	27	1,235,100
Combination [Dry/Liquid] Carrier	27	1,103,900	-	-	-	-
Container Carrier	312	9,498,600	58	1,770,700	29	1,385,000
Dredge	48	116,600	2	2,000	4	2,000
Ferry/Passenger Cargo	106	450,300	5	600	4	38,400
Fishing Vessel	49	36,700	6	2,300	-	-
General Cargo Vessel [Dry Cargo]	596	5,254,800	4	41,900	11	115,300
Launch/Crew Boat	188	19,200	10	2,000	13	600
Liquefied Gas Carrier	68	2,446,200	3	111,700	-	-
Mobile Offshore Drilling Unit	551	3,589,200	4	21,300	1	2,700
Offshore Platform*	91	-	2	-	2	-
Passenger Cruise Vessel	87	688,700	1	39,000	4	3,100
Single Point Mooring	23	-	1	100	1	-
Supply/Tug & Supply Boat	910	492,300	10	7,000	1	1,600
Survey/Research Vessel	108	188,900	24	16,500	2	7,400
Tanker	831	36,922,100	47	1,825,900	29	1,800,000
Tugboat	1,067	289,600	65	21,500	47	14,100
Underwater Vehicle	74	400	5	100	-	-
Vehicle/Barge Carrier	97	2,302,600	6	272,600	-	-
Yacht	298	55,400	44	12,300	40	7,000
Other	320	504,300	92	91,600	21	7,300
Total	11,584	94,071,700	574	7,027,100	523	5,106,200

*Includes offshore installations and pipelines where gross tonnage does not apply.

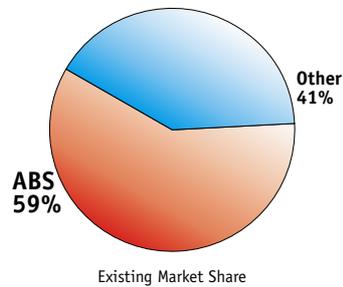
CONTAINERSHIPS

It was a most extraordinary year for ABS with containerships as significant increases were registered in its class activities over 1995. During 1996 ABS classed 29 containerships of 1,385,000 gross tons for an increase of 81 per cent in numbers and more than double the tonnage. Contracts also were received at a brisk rate throughout the year and by its close ABS had received requests to class 47 containerships of 1,580,000 gross tons for an increase over the year earlier of 81 per cent in numbers and well more than double in tonnage. At the year's end the ABS orderbook for containerships rose to 58 of 1,770,700 gross tons marking an increase of 38 per cent in numbers and 24 per cent in tonnage over year end 1995. The ABS classed fleet of containerships at the close of the year reached 312 of some 9,499,000 gross tons.

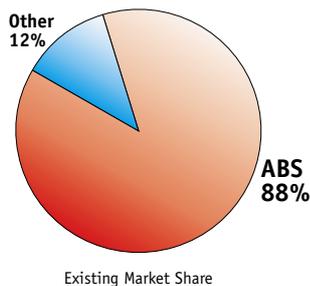
VLCC's on Order Based on DWT



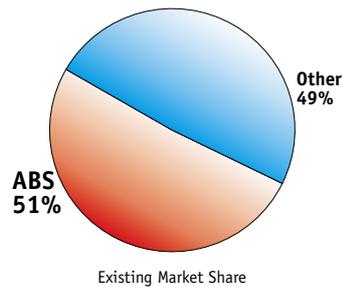
Drill Ships Based on DWT



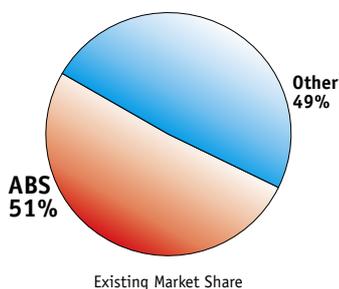
Jack-Ups



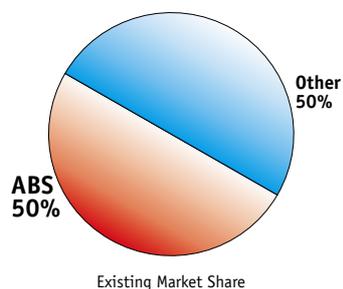
FPSO's



Semi-Submersibles



Tension Leg Platforms



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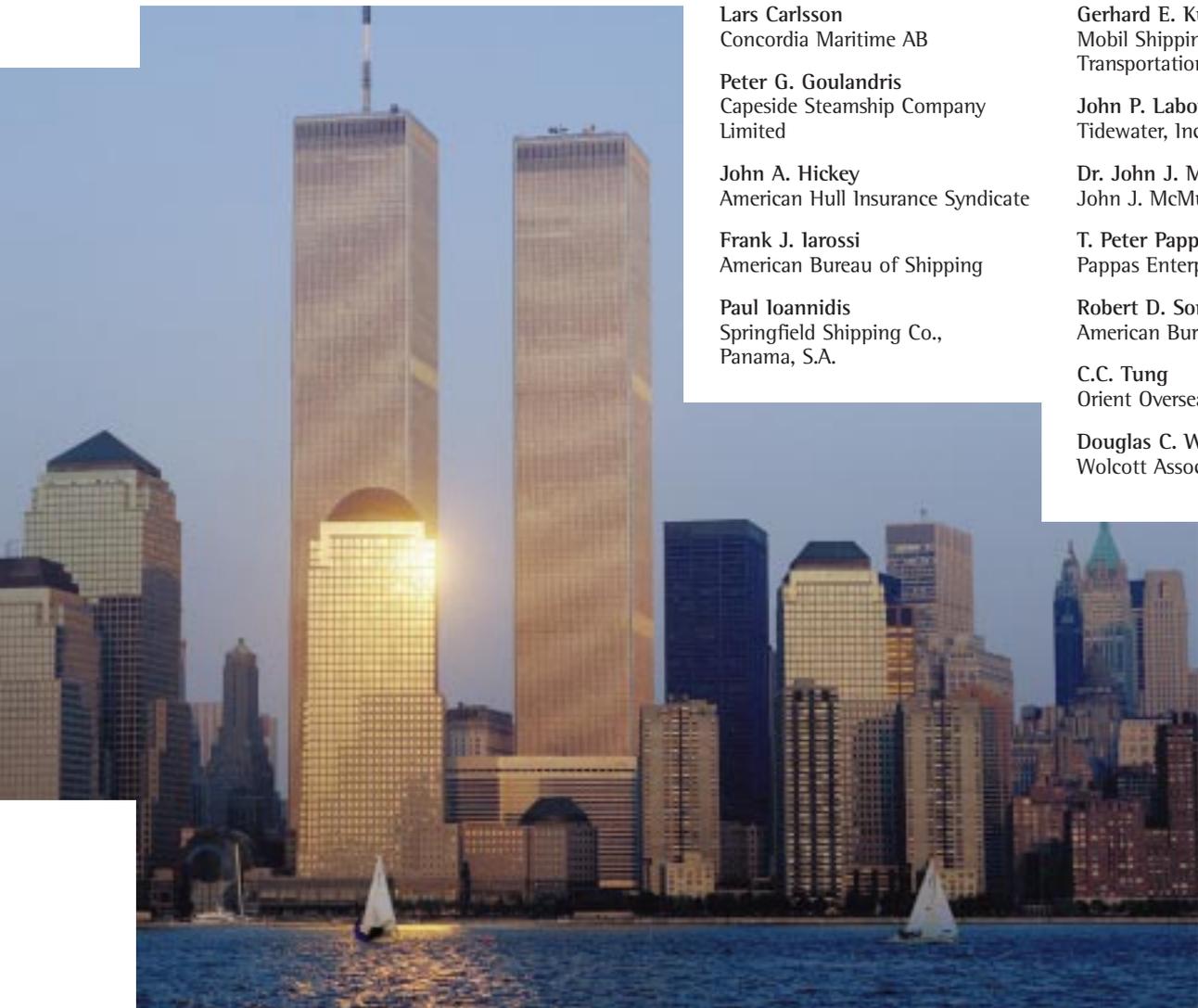
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The mission of ABS Group and its operating companies is to assist its clients to improve the safety of their operations, to enhance the quality of their services, and to minimize the environmental impact of their activities.

The ABS Group Companies pursue this mission by offering integrated services related to awareness, evaluation, training, implementation, verification and certification.

Quality Policy

It is the policy of the ABS Group Companies to provide quality services in support of our mission and to be responsive to the individual and collective needs of our clients as well as those of the public at large. All of our client commitments, supporting actions and services delivered must be recognized as expressions of quality. We pledge to monitor our performance as an on-going activity and to strive for continuous improvement.



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