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With most of the country in lock down – yet again - with this shocking new strain of the virus, here in the world of marine surveyors we work on – unaffected by the pandemic that is crippling so many other industries.

While travel these days is dangerous our members, particularly those who work primarily in the cargo field, have no choice but to work safely with the risks always in mind and keep our imports and exports moving.

Those in the statutory field are probably feeling some pinch but most working boats are still out there doing what they do – keeping food on the table. Those in the recreational vessel sector are having somewhat of a field day with recreational boating being the new substitute for overseas travel.

As always, surveyors in all sectors are doing their bit for our great country. Well done to all.

Many thanks to the Head Office staff for their exceptional work over what has been a trying year. Our dedicated and devoted staff are working from home every day maintaining the full suite of services for both members and students.

The AIMS business continues to remain sound, and our current end of year figures show that financially we can press on with our stated objectives – promotion of the AIMS and professionalism.

You will notice more advertising, across all media sectors. We are proud to announce new partnerships with Shipping Australia, the International Forwarders & Customs Brokers

Association of Australia Ltd , Grain Trade Australia and hopefully the Australian Bulk Handling Review. These new partnerships along with our ongoing participation in the AMSA review and the National Safety Council showcase the AIMS and its membership.

The hard work that the staff have put in and continue to do so mean that we can continue improving membership skills through ongoing CPD offerings and formal training and will continue working closely with Government in the formulation of policies that directly affect Member's livelihoods.

The Marine Surveyor Certification scheme is slowly but surely growing and both Government and Industry are applauding our efforts and noticing our abilities as an organisation committed to continual improvement.

Which brings me to the vexing subject of surveying standards.

The Executive and Management have long been concerned about standards in our industry. We are acutely aware that as older members retire, we face the real danger of losing practical knowledge and expertise.

It is our job to ensure that up and coming surveyors are educated properly and can consistently and accurately perform their duties in accordance with accepted Australian industry standards. Our CEO, who is an expert in adult learning, is promoting the learning process called the Competence Ladder.

Apparently, we move through the following levels as we build competence in a new skill:

- or not.
 - Unconscious incompetence we don't even know that we don't know something or even that we need to learn it.
 - Conscious incompetence we now know that we don't know but now we at least know that we must learn something and practice it if we want to be considered competent (or survive).
 - 3. Conscious competence—we now know we have learned something and so we can consciously apply the learning.
 - Unconscious competence we have learned and used this skilled task on many occasions over time and now we don't focus on it because it comes easily.
 - 5. Then, over time we can forget our skills but think we're still experts. In this case we need to brush up a bit. Or maybe we teach someone else these skills?

Competency is the consistent application of knowledge and skill to the standard of performance required in the workplace.

I am sure that many of us have categories of survey on our website profiles that we have not actually used consistently in our workplace for some time. How many of us can outline what the standard for a particular survey is? How many of us think that because we did a particular survey five years ago or even 10 years ago that we are still competent today to carry out that survey? This is the same for all professions. One must maintain competence to do the job.

AIMS members have always had a solid reputation for working to accepted standards and we must not lose this. We advertise that our members are Certified Professionals, in other words they are consistently competent and undertake surveys per common codes of practice - every time.

In the coming weeks, the AIMS will be announced as the accrediting body for all grain surveyors – whether they are AIMS members or not.

This is a huge feat and something that AIMS has been working to achieve since the demise of the Australian Wheat Board Grain List.

This means that the AIMS is fully responsible for the training of and maintaining standards of all Australian Grain surveyors. We shall be asking all Grain surveyors to address the inspection standards that they are employing. We shall be asking them to answer the following questions:

- Do I know what the hold cleanliness and fitness to load standards are?
- Do I know the Code of Practice for Grain surveys - and where to find it?
- Do I know how to apply the relevant standards for Fitness to load Grain?

- Do I follow a standard inspection procedure and is this followed on every vessel?
- Do I know the rules for passing or failing a ship?
- Do I know the roles of the Independent marine surveyor and the AO and what their individual responsibilities are?
- Could I pass a written test on the above?

Times have changed as have industry expectations, and I think we could all do with some professional development. We do not want AIMS members disqualified for doing the wrong thing!

In time we will review the entire survey category list in the same fashion. Stay competent – or risk losing it. There are a several million ways to stay up to date – re-train via CPD, train someone else, write an article or be a mentor to someone coming through. Easy.

Draft surveyors should also be aware that our CEO is taking up an offer from NATA for further discussions on draft survey standards. This was at the invitation of NATA. The Executive firmly believe that the ONLY organisation that has the RIGHT to accredit professional draft surveyors is the AIMS. No other organisation has the depth of knowledge and experience in this area that we have. Draft surveys are our territory. We will continue to work on developing recognised standards as we have done with the Grain. It is obvious to me that not all Marine Surveyors these days can do a draft survey to the required standard. As a result, the value of the draft survey has been degraded.

The AIMS and its Members will be under the microscope over the next few years. We are hopeful that our efforts will be rewarded by some well-deserved recognition of our Profession.

Smales

Peter Murday President



With the end of the financial year over and done with we can now move forward with our Special Resolution objectives and during September we will see the AIMS move to a company limited by guarantee under ASIC and a Board of Directors in place.

Due to the ongoing lockdowns and increased COVID transmissions we have been hindered in our plans for a face to face AGM and voting in of the new Board.

To ensure that we keep moving forward we will issue the AGM notification to members in mid-September and, with the requirement for 21 days' notice, we envisage that the AGM will be held in early October. This might still need to be conducted by ZOOM however we remain hopeful that this is not the case.

To keep things on track our current Executive team will initially form the new Board. I think that it is fitting that Peter Murday will be our first Chairman of the Board along with John Holden as Vice Chair and Andrew Graver as Secretary. Once the AGM has taken place, we will call for nominations for positions on the

new Board and it is hoped that member voting will close in November and that the new Board will be fully installed just prior to the Christmas break and ready to commence work in January.

Nominations for board positions will be via an application process and once the nominations are approved we will conduct a vote, via Survey Monkey, and all eligible voting members will be able to have their say. We will provide everyone with sufficient notice on the process and keep members up to date via a member update email each week.

The pandemic ensured that nothing in the past financial year was a given for any business and AIMS was no different. I am pleased to say that we got through with limited disruption and thanks to the efforts of the whole team we ended up with enough of a profit to further our goals over the coming year.

We are just putting the finishing touches to our next 12 month strategic plan and again it was very pleasing to see our plans realised in the 2020/2021 period and almost all of our strategic plans were achieved. This will all be reported in the annual report but I can say that over this period we managed good advances in Government affairs and most notably with the Department of Agriculture who have worked with the AIMS to further refine the standards for Accredited Grain Surveyors and Grain Surveys and both parties hope that this will go a long way to alleviating the complaints and confusion between AO roles and the surveyor.

There are two, possibly three meetings to go but we are very confident of a mutually beneficial outcome and a less stressful grain season for all. Over the coming weeks the AIMS and the Department will be releasing fact sheets on both the standards required for grain surveys, the new requirements for the recording of AO inspections and how to apply for grain accreditation. I would like to take this opportunity to thank all members of the Department, Shipping Australia, GTA, and Angela Gillham from MIAL – their support was and continues to be invaluable to us.

Existing AIMS accredited grain surveyors will be receiving notices on the new requirements and how to transfer their AIMS accreditation to the national requirements.

In other areas our increased advertising and awareness campaigns are going strongly and we know from the phone queries from all sectors of the industry on how to find a certified surveyor that the marketing is working and that AIMS members are seeing the flow on effects of increased enquiries and work and students are choosing AIMS as their preferred provider of marine survey qualifications.

I recently also attended a meeting with the

66 **Existing AIMS accredited** grain surveyors will be receiving notices on the new requirements and how to transfer their AIMS accreditation to the national requirements." Department of Infrastructure on the processes that will be in place later this year for the review of the National Law and AMSA's performance in administering and managing the regulations for Domestic Commercial Vessels. I can advise that the AIMS will be part of this review and that as the peak body we will b concentrating on the marine survey issue and in particular the accreditation of marine surveyors. While anything can happen (and probably will) I am sure that AMSA will do their best to work collaboratively with the AIMS and that, if we are not appointed as the accrediting body, that the requirements for AMSA accreditation will be refined and more robust than what we have seen in the past. I will be contacting all AIMS members who

> are AMSA accredited for input into issues or particular pieces of legislation that they believe

should be considered during the review and

welcome any suggestions from members. Other news to date is our partnership with Shipping Australia who have been sensational in supporting our concerns with the DAWE

As always though, there is so much more to do but I am very excited for the future of the AIMS and our members and have great hopes for

While that doesn't sound much, at least it's a growth spurt rather than the death knell that everyone predicted 5 years ago. As we get closer to that 500 member mark I often think about those who thought our association would not survive.

The AIMS turned 35 in June this year and became incorporated one year later (1987). So, if nothing else and barring any lockdowns, pandemics or war, I think we should have a party around about the 29th June 2022 - a big celebration would go down quite nicely I think.

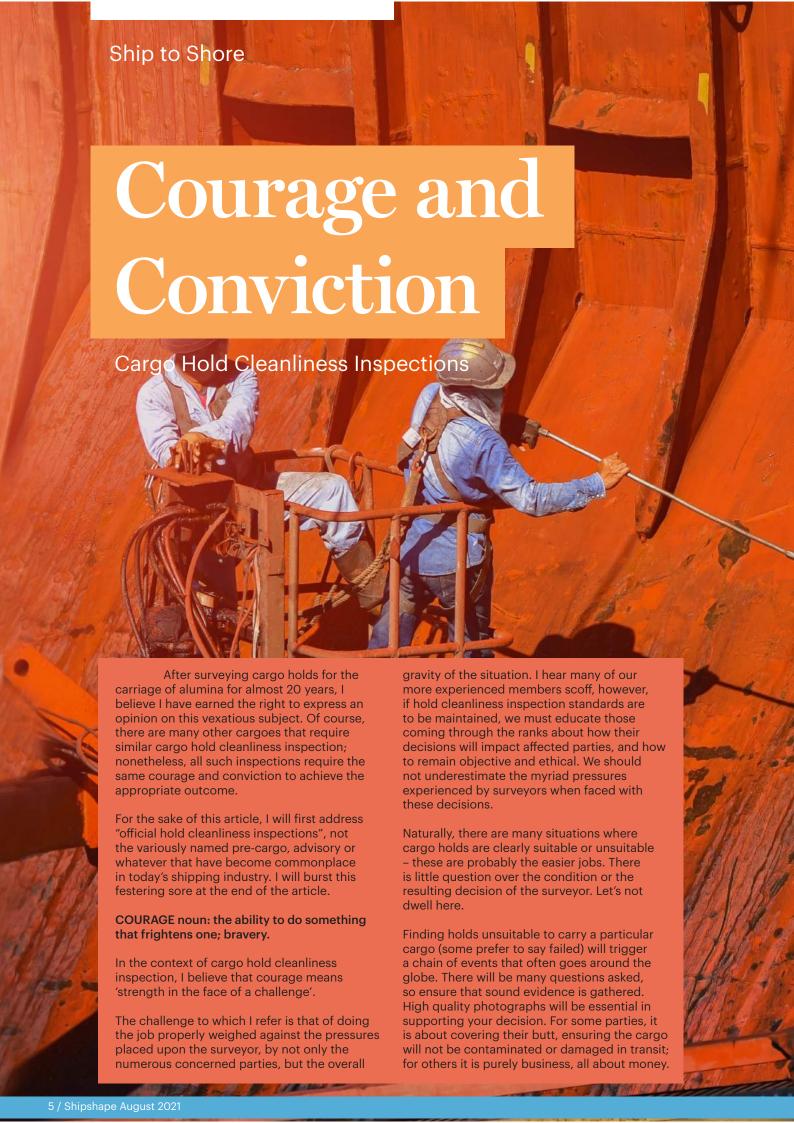
ypayal

Susan Hull CEO

We have also partnered with the International Forwarders & Customs Brokers Association of Australia (IFFCBAA) and hope to work with them more closely as members and supporters. There is a lot of synergy between the two associations and we can work together or leverage off each other to introduce much needed reforms and also promote AIMS members and our Certification scheme. There are several different shipping courses offered by IFFCBAA that I will mention in the training section of the newsletter.

I would also like to thank those members who helped out at the Sanctuary Cove Boat Show earlier this year. I know that both Stacey and Tim enjoyed having their support and their ideas and suggestions were very much valued. It's such a pity that the lockdowns have seen the cancellation of both the Sydney and Hobart shows.

A big thank you to Tim and Stacey who have done so much over the past year under very trying circumstances. We certainly would not have achieved our goals without them. Thank you.



In overall terms, there is potential for huge costs and substantial disruption to logistics, in some cases P&I Clubs will be brought in to resolve disputes arising from a negative hold cleanliness finding.

Okay, so I have probably embellished this story a little, however, consideration must be made for the complexities that exist behind the scenes and, consequentially, the thoughts that exist in a surveyor's mind as they are inspecting the holds. Is there an existing arrangement between the surveyor or his employer and one of the concerned parties, and if so, how could this influence the decision made by the surveyor? Are there any undeclared conflicts of interest? Can the surveyor provide an impartial assessment of the cargo holds? Will the surveyor maintain an ethical approach to the job when it has potential to affect a business relationship with one of the parties? Is the surveyor's employer supportive; is the surveyor overwhelmed and wanting to get the job done as soon as possible? Perhaps the surveyor is simply lazy and knows he will get paid for making the easy decision. Perhaps there is an arrangement with a third party that conducts hold cleaning and a 'failure' will be beneficial.

When cargo holds are passed as suitable to carry a cargo, everyone is happy, pressure on the surveyor dissipates, the tension in their shoulders is relieved, and the ship's crew, Master and Owners collectively sigh relief.

This is often the easy way out. The path of least resistance. No courage required! I am not saying that all holds passed are undeserving; on the contrary, I believe most cargo holds are presented well, generally ready for the intended cargo and in need of little, if any, improvement to meet suitable standard.

Experience dictates that most vessels will prepare cargo holds to suitable standards – the stakes are high, shipping is competitive, reputation is important, future business is on the line, but passing cargo holds can require courage.

This brings me to those cargo holds that may be borderline. Pluck up the courage to do good work! Put aside your fear of failure, remain objective, be practical, consider the cargo, how it will be loaded and how it will be discharged.

All these things will dictate your decision, but you must have the courage to make that decision. To make a judgement call. To back your experience.

This leads us to the question of experience.

How do we gain experience, and how long does it take to become experienced?

CONVICTION noun: a firmly held belief or opinion.

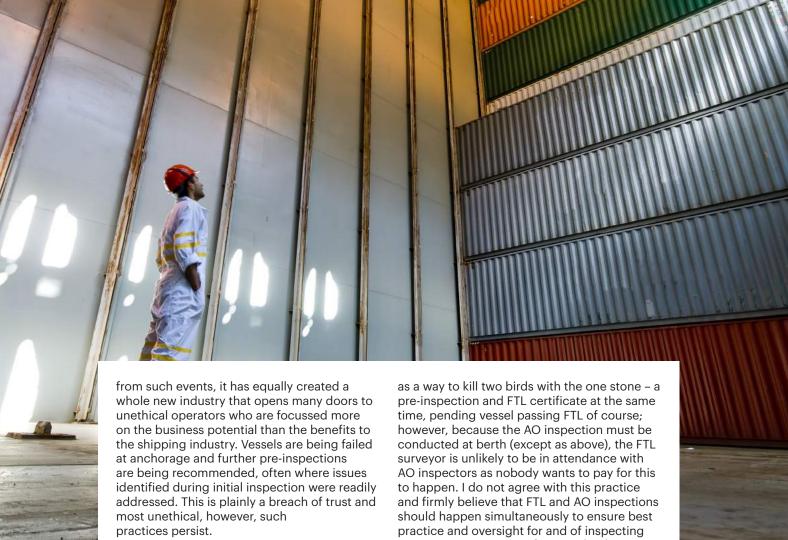
Firstly, let us examine what you believe. Do you believe that a job should be done well, ethically, and in a manner that will provide the appropriate outcome? If you answer yes to this question, then you will likely seek to equip yourself with as much knowledge as possible, continuously learning and striving to understand more, building upon your expertise to become experienced. This sounds like a lifelong journey, and in many ways, it is just that; however, with the right training, good mentors, critical thinking skills, the right aptitude, and a thirst for knowledge, it is possible to gain the experience to make appropriate decisions, feel confident with your decisions. From here in it is all about opinion!

Once you gain the experience and feel confident in your beliefs, you are equipped for the next stage – decision based upon opinion. This is where we start to feel that we speak with authority; we make logical argument to back our opinions and provide sound reasoning to rebut opposing arguments. Although this is challenging for many surveyors as they learn their craft, technology enables them (in most cases) to call a friend. A second opinion, a close-up photo via SMS, exchanging opinions can provide much comfort to our members who are still making their way.

So, what have we discovered on this brief journey – spend time with good mentors, absorb their knowledge, remain objective, think about what you need to achieve, be always ethical! Maintain the conviction to excel and apply those convictions with courage.

Now we come to the subject of pre-cargo or advisory surveys conducted at anchorage that are now more or less the norm for many sensitive cargoes loaded in Australia, particularly alumina and grain cargoes. This has reached the point in some cases where shippers are engaging with charter parties mandating such inspections at owners cost, irrespective of the actual vessel condition. I have personally attended vessels on maiden voyages, vessels returning for same cargo, etc, with such vessels generally considered very low risk in the past.

Despite the apparent value that this has provided in alleviating vessels being found unsuitable at berth and the raft of issues highlighted earlier in this article that can result



Additionally, vessels that have been preinspected are found wanting when they do berth, raising questions as to the competence of the pre-inspecting surveyor. Some of these persons are operating outside of the AIMS membership, providing little recourse to address the issue through the institute, but the practices continue - are these operators offering cut price services or are they just plainly incompetent? All members should call out such poor practices at every opportunity, lest our profession will never obtain the recognition it deserves and may slide into the murky depths that we currently associate with some Asian and South American ports. Half the battle is to get governments, ship owners, charterers, and shippers onboard to condemn unethical practices across the globe.

A further, albeit logical extension of moves towards pre-inspection is the conducting of "official surveys" at anchorage. The alumina trade appears to have resisted this move so far, however, the grain trade has taken to it like a Bosun to a bottle of Bundy! Not only is holds cleanliness, known as 'Fitness to Load' certification (FTL) being conducted at anchorage, but in particular parts of Western Australia, Authorised Officer inspections are also undertaken. It is an obvious gamechanger for shippers wishing to load vessels immediately upon berthing; however, owners are now insisting on anchorage FTL inspections parties. Pre-inspections for grain loading should remain just that!

It is often the case that one thing leads to another. In 1687 Isaac Newton's 3rd Law proposed that "For every action, there is an equal and opposite reaction". Why is it that more than 330 years later we keep doing things with little consideration of the consequences?

This is by no means a complete discussion of hold cleanliness, suitable standards and all that surrounds the process - perhaps that is for another day, and there are lots of opinions to consider along the way. I understand that some of what I say in this article may upset some people, however, I have reached this point in my life journey with both courage and conviction.

Until next time,



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Membership Update



Membership Renewals

Welcome back to all of our members who have renewed for the coming year and thank you for your ongoing support. I also extend a huge welcome to the 24 new members who joined us in July. It is so wonderful to have new surveyors join our ranks and we look forward to your involvement in the activities and pursuits of the AIMS within the profession and wider maritime industry.

I recognise that this year's renewals have coincided with a time where many of our members have a lot to contend with in their personal and professional lives. We had hoped, as evidenced by our pre planning of face-to-face events this year which we have since postponed, that we would have come out the other side of the challenges of the past 18 months, but our optimism was premature.

Many members are still navigating local and state lockdowns, be it from restrictions to travel for essential work, or the halt to steady streams of income within the commercial or recreational boating industry.

If you are yet to renew for the year, but are in the midst of these challenges and haven't had the opportunity or available funds to do so, please contact me via email info@aimsurveyors. com.au or phone 0492 881 737, I want to see everyone who wants to retain their membership have the opportunity to do so ready for a time when many of the roadblocks we currently face are reduced and hopefully removed.

Membership Levels

I understand some members are still unsure about the changes to membership levels this year. I have provided a summary below which will hopefully clear up any confusion, but if you are still not sure, give me a call and I am happy to have a chat about it.

In the recent special resolution, we put to the vote of members the option to reduce the number of membership levels to make it simpler and more streamlined. As part of this, you voted on removing the level of Probationary Membership and only have the following membership levels:

- Associate Members
- Full Members
- Certified Members

This was passed by the members and therefore Associate Members have become our entry level of membership, open to anyone starting up with up to 2 years of experience as a Marine Surveyor. Associate Members no longer receive a membership stamp but will receive a yearly certificate of membership. If you are currently an Associate and now eligible to upgrade to a Full Member, send me an email and I can look at this for you.

In response to member feedback that the requirement for 5 years' experience as a Marine Surveyor to gain Full Membership was too steep, we additionally put to the vote the change for eligibility for Full Membership to be reduced to 2 years' experience as a surveyor. In doing this though, we needed to ensure we maintain the standards within the profession, so in conjunction with this reduction in experience, we also increased the qualification requirements to a Diploma of Marine Surveying.

As marine surveyors come to the profession from many different areas of the maritime industry bringing with them valuable experience to support their new role, our aim is to standardise the qualifications marine surveyors hold. Your previous experience and qualifications are not being overlooked, quite the opposite in fact, but the Marine Survey specific qualification draws upon your experience and highlights the different perspective which needs to be taken when looking at a vessel wearing the 'hat' of a marine surveyor.

Depending on your background, your previous experience may entitle you to recognition towards some subjects of your Diploma. If you are interested in finding our more, email training@aimsurveyors.com.au to investigate this further.

Young Surveyors

Over the past 12 months a group of our members have volunteered their time to gather on several occasions with the goal to encourage and support surveyors and members who are new to the industry and/ or AIMS. There have been some great ideas shared and few new initiatives have come of this. Thank you to all members who have given their time to be involved.

With the dawn of a new year we welcome a new committee to take up the reigns for the next 12 months. We invite any members who are interested in becoming involved in the Young Surveyors Subcommittee to come forward. As part of your commitment to the committee we ask you to attend 4 x ZOOM Meetings throughout the year and participate in sharing ideas and initiatives to encourage and support new and up and coming industry colleagues.

Roger Weiller has generously volunteered to stay on as our Chair for 2022. If you would like to be a part of making sure our industry and the AIMS is relevant and inclusive to our young surveyors now and in the future, we would love to hear from you. Contact Stacey at info@ aimsurveyors.com.au for more information or to register your interest.

Short Courses

If you have spare time on your hands and you want to learn some new skills, why not take a look at some of our short courses on offer. There are over 200 courses to choose from and can be completed at your own pace in the comfort of your home or office. Examples of some which might be of interest:

Understanding the Cloud: Explore how the cloud works, what drives its incredible growth and how you can use cloud services. You will learn about the different kinds of clouds (public, private and hybrid) and which might be right for you. Whatever your technical background, by the end of this course you will be cloud savy.

Using Social Media in Business: Whether you are a social media novice or a seasoned veteran, this course will give you a solid foundation of social media marketing. You will learn about the 5 most popular platforms – Facebook, Twitter, Linkedin, Pinterest and Instagram and study secrets to using them to promote your business.

<u>Get Assertive!</u>: Learn specific techniques to become more assertive in all parts of your life. Learn how to use facial expressions, eye contact, gestures and your voice to reinforce the assertive statements you are making in order to be more confident in personal and professional relationships.

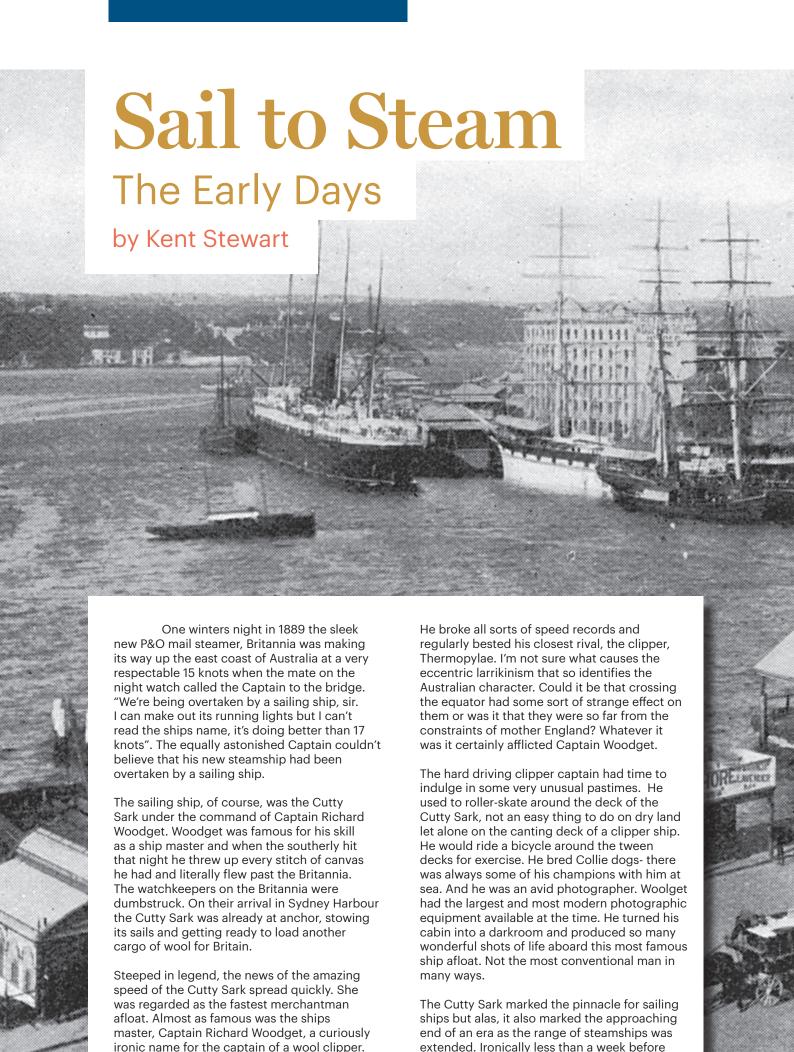
To find out more information on these and our other courses on offer view our course catalogue: https://www.ed2go.com/au-aimsurveyors/

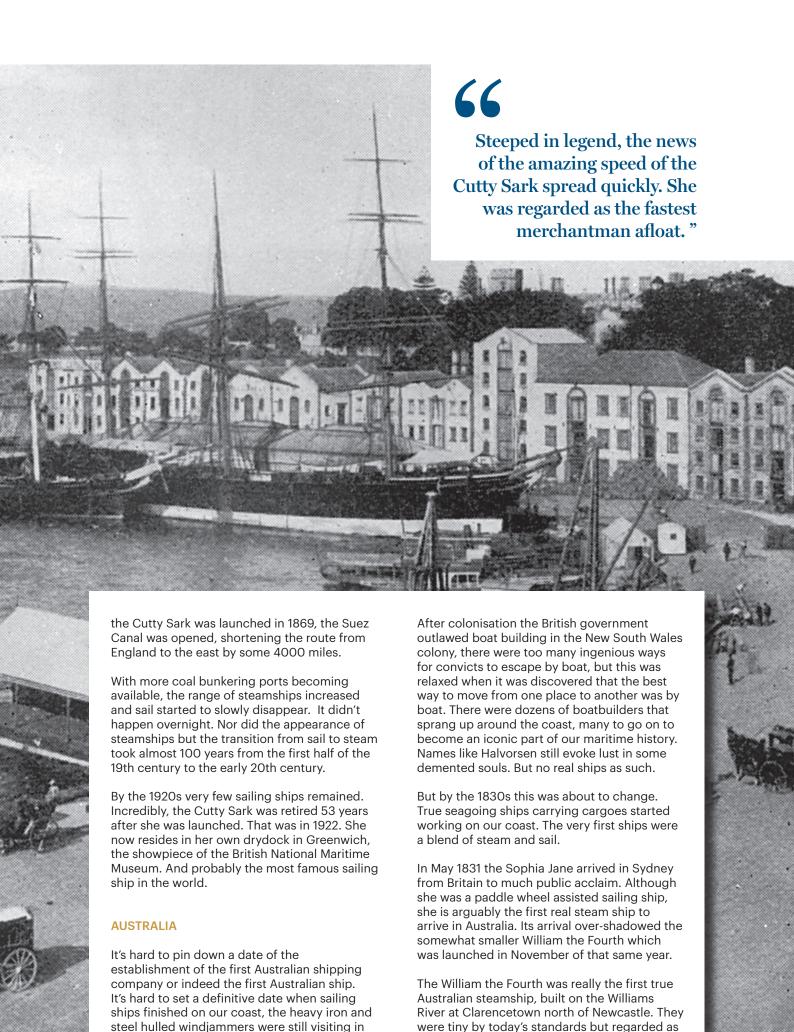
Did you know?

AIMS Fellow Member Brian Peters from Briar Maritime in Tasmania:



- 1. Is not dead he is alive and well!
- Is not dying he is receiving medication but has plenty of life left in him.
- 3. Has not closed his business because he is 1. not dead, or 2. dying.





ships nonetheless.

Sydney and Newcastle in the 1920s but the

numbers were diminishing.

Soon there were so many ships trading on short coastal runs and up the rivers that it adds to the complexity of defining when Australian shipping came of age. All the early ships on the Australian coast were registered in England (and remained so until 1981). So many were built in Britain. So which company was the first?

Howard Smith was arguably the oldest company name on the Australian coast. Captain William Howard Smith sailed the tiny Express into Melbourne in 1854 on a ship in which he had half share. He began a passenger service to Geelong and his company subsequently grew into other trades until 2001 when it was sold to the Adelaide Steamship Company. One hundred and forty-seven years later.

I have a chart of Sydney Harbour printed about the time of Federation which shows all the berths, mostly at Darling Harbour, and the names of all the old steamship companies that were regular visitors to Australia's largest city. Huddart Parker, AUSN, Burns Philp, the North Coast Steam Navigation Company, the Adelaide Steamship Company, McIlwraith Mc Eacharn, the Newcastle and Hunter River Steam Navigation Company, the Illawarra and South Coast Steam Navigation Company, the Melbourne Steamship Company, Dalgety and Co. and naturally, Howard Smith. And there were, of course, permanent berths for our regular visitors from overseas: China Navigation, Nord Deutscher Lloyd and our good friends from across the ditch, the Union Steamship Company of New Zealand.

In other parts of Australia shipping companies and coastal trades were popping up in the late 19th century as the population spread out away from the first settlement on the east coast. These were the early days of shipping in Australia. A haphazard blend of British and Australian ships trying to make a living from the trade on our island nation.

Many things have happened from then until now. Ships just kept growing in size, cabotage disappeared, foreign flags (with their cheap third world crews) made irreversible inroads into our trade and companies sought to maximise profits at the expense of a true homegrown shipping industry. That's progress for you.

by Kent Stewart

Extract from his book Girt By Sea



It's hard to set a definitive date when sailing ships finished on our coast, the heavy iron and steel hulled windjammers were still visiting in Sydney and Newcastle in the 1920s but the numbers were diminishing."



AMSA Marine Notice



Focused inspection campaign — safety of navigation

This marine notice provides information to ship owners, operators and masters about the Focused Inspection Campaign (FIC) on safety of navigation which will run from 1 August 2021 to 30 Sep 2021.

The purpose of the FIC is to determine:

- the level of compliance with the safety of navigation requirements of International Conventions, and
- the familiarity of the master and officers with their processes for ensuring safety of navigation.

BACKGROUND

This Focused Inspection Campaign (FIC) has been initiated by AMSA and is specific to Australia. It will apply to foreign flagged ships and Regulated

Australian Vessels (RAVs) arriving at an Australian port.

The FIC will be conducted from 1 August 2021 to 30 September 2021.

INSPECTIONS

AMSA inspectors will undertake the FIC in conjunction with a normal port or flag State control inspection.

Any port State control deficiencies will be reported to regional port State control databases.

AMSA encourages ship owners and masters to familiarise themselves with the requirements of SOLAS Chapter V, Australian Marine Order 27 and their safety management systems implemented onboard. Inspectors will complete a

checklist when conducting focused inspections so that AMSA can collate and report on the outcomes.

OUTCOME OF THE FIC

The results of the FIC will be analysed at the conclusion of the campaign, and a report will be published on our website.

FURTHER INFORMATION

AMSA's website provides information on the focused inspection campaign and a checklist of requirements that will be used during this FIC.

AMSA encourages ship owners, operators and masters to review the information provided at the links above.



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Understanding Grain Stability

Slack holds, heeling moments and stability

by Captain Francisco Juarrero

In the summer of 2020, the Master of a vessel chartered for a trip from Europe to Africa with grain products received a message from the harbour master at the loading port with a number of requirements. Among them:

'It is highly recommended to make loading with slack holds anty which isn't exceed noted in grain booklet. Usually for 5 holds vessel 2 slack holds are permitted. If more it must be confirmed by same case in a grain loading booklet.'

This was not the first time that such a requirement has been heard of. In the past, agencies in charge of verifying compliance with stability criteria have demanded that loading conditions be proved against the stability or grain book.

Fortunately, the loading plan only had two slack (partially filled) holds, but the message raised a valid question. What if the plan called for more than two slack holds, and what if this was not reflected in the grain loading book?

THE INTERNATIONAL GRAIN CODE

To answer these questions, let's first look at the rules governing the carriage of grain:

Part A, re7 of the International Grain Code lists the minimum stability requirements for the carriage of grain as follows:

- 1. The angle of heel after the shifting of the grain not to exceed 12°
- 2. The area of residual stability in the static diagram not to be less than 0.075
- 3. The initial GM not to be less than 30cm

The graph opposite represents the minimum stability requirement.

The area of the curve results from integrating the values of ordinate Y=GZ – Upsetting Arm,

for a known interval of angle of heel between 12° and 40° .

GZ (Righting Arm) = KN-KG $\sin \theta$ and

 $Upsetting \ Arm = \frac{Transversal \ heeling \ moment}{Displacement}$

The value of angle of heel results from:

 $Tan \ \theta \ (angle \ of \ heel) = \frac{Transveral \ heeling \ moment}{Displacement \ x \ GM} \ x \ 57.3$

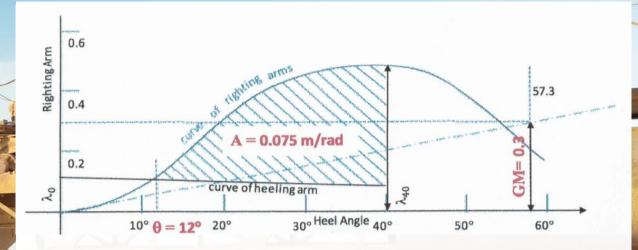
GM (hydrostatic curves) and KN (cross curves) are a function of the displacement.

A value of transversal heeling moment that satisfies the minimum criteria is called the allowable heeling moment. This is tabulated for pre-set values of displacement (or mean draught) and KG. In practical terms, the grain stability survey comes down to comparing the actual transversal heeling moment resulting from the shifting of the grain with the allowable heeling moment – as can be seen in the ships allowable heeling moments table.

It is well understood that the amount of slack holds should be reduced to a minimum, but nowhere in the Code is the amount of slack holds stated as a criterion. Regulation 6.3.6 of the International Grain Code states that the information which shall be approved by the Administration shall include:

6.3.6 – Typical loaded service departure and arrival conditions and where necessary intermediate worst service condition (recommended that such conditions be provided for three stowage factors).

That does not mean that the manual should include every possible load condition – the list would be endless. Nor does it mean that a plan has to be reflected in the typical conditions included in the manual in order to be valid.



The documentation on board should be complete enough to show that the vessel meets all the intact and grain stability criteria for a specific loading plan (as well as longitudinal strength and hold mass criteria), including:

- Tables or curves of volumetric heeling moments for holds
- Tables of allowable heeling moments
- Tables of curves of minimum and maximum hold mass for single and adjacent holds
- · The class-approved loading instrument

Technicalities aside, the message quoted at the beginning of the article reflects a lack of understanding of the assessment of grain stability and how the results of the calculations should be constructed.

UNDERSTANDING GRAIN CARRIAGE AND STABILITY

It is important for shipmasters and officers to understand the information contained in the grain booklet and the physical meaning of the grain calculation results. Holds loaded with grain can be slack, full untrimmed, full trimmed (manually or mechanically) and full self-trimmed (vessels with fore and aft upper stools). The empty volume of a slack hold allows the grain to flow freely and shift from one side to the other.

However, regardless of how the hold is loaded, all methods have the potential for grain to shift. Full untrimmed holds will become slack while in passage as the motion and vibration of the sea and the engine cause the grain to settle into void spaces fore and aft behind the hatch coming vertical strakes. Even trimmed or self-trimmed full holds will have small cavities and intricate spaces into which the grain can shift.

Because grain in non-cohesive, if the angle

of the roll exceeds the angle of repose of the grain, or if the rolling carries enough energy to overcome the internal friction of the grain even at smaller angles (Biran, 2003), the grain may start flowing feely from one side to the other.

I have carried out experimental tests with a model cargo hold filled with grain and suspended on an oscillating mechanism. The results showed that oscillations close to the angle of repose at small frequencies of balance or rolling periods can cause the grain to shift slightly to both sides without resulting in a permanent list. Oscillations with longer frequencies can case global shifting to one side.

When global shifting occurs, the centre of gravity of the mass of grain will displace transversally, creating a heeling moment. That moment, like any moment in physics, is proportional to the distance or arm and the physical quantity (volume, weight etc).

The volumetric moment is calculated by multiplying that moment by the length of the compartment. The International Grain Code has specific rules and tables for calculating the depth of the void in filled compartments (the depth in partially filled compartments is the ullage) and the heeling moments based on 25° slope and 15° slope for trunks and spaces of limited void transverse area.

The amount of heeling moment depends on the volume of grain and the breadth of the space available for it to shift in – so the geometry of the cargo hold is a defining factor.

This suggests that not every slack hold will have the same heeling moments. Smaller holds or tapered holds of smaller breadth compared with square holds will have smaller heeling moments.

A hold that is almost empty will contain less volume of grain and thus have less heeling moment than the same hold loaded to about half its capacity. The same applies to a hold loaded almost to full capacity. Here, the volume is greater, but as the surface of the grain is constrained by the narrow hatch coming, there is less breadth, so the heeling moment will be smaller than in the same hold loaded to half capacity. In short, two almost empty holds may produce less heeling moment than one half-full hold.

Accordingly, the five-hold vessel quoted in the statement may be loaded with holds 1 and 5 (tapered holds with less breadth) and No 3 almost empty (less volume of grain), giving a total of three slack holds, and be in a better stability condition that if loaded with holds 2 and 4 filled at 50%, giving a total of two slack holds. If properly loaded, even a vessel with more than three slack holds can pass grain stability requirements.

Overall grain stability is calculated by comparing the amount of heeling moments for all holds loaded with grain, assuming the grain has shifted, with the maximum allowable heeling moment. If the maximum allowable heeling moment is greater than the total amount of heeling moments once the grain has shifted, the vessel will still meet the stability criteria even with shifted cargo – that is, it will have a permanent angle of heel not greater than 12°, and fluid GM not lesser than 0.3 metres and an area of residual stability under the curve, not less than 0.075 m/rad.

With this in mind, we can answer some questions:

Is the number of slack holds the most important factor to consider when loading grain and assessing the stability?

No. The most important factor is that the maximum heeling moment should be as low as possible. If a loading plan with more slack holds results in a smaller heeling moment, as in the example above, this is the loading plan that should be chosen. If the data show that one big central cargo hold loaded to around half its volume carries more heeling moment in case of shifting than two smaller tapered-end holds almost empty, then the risk of a shift of grain leading to a permanent list are greater with that single slack hold.

Of course some loading plans do have unnecessary slack holds, and this should be avoided. The plan should always strive for maximum stability performance – that is, the greatest possible margin between the allowable heeling moment and the actual transversal heeling moment. That is the criterion to meet.

Does the number of slack holds affect how much or how little the grain shifts?

No. The shifting of the grain will depend on:

- 1. The extent of any rolling (angle of heel reached)
- 2. The frequency or period of rolling
- 3. The properties of the grain (granulometry, humidity etc)
- To some extent the geometry of the compartment, internal longitudinal members close to the surface of the grain etc.

Any hold loaded with grain, even if full, has the potential for cargo to shift if the conditions of large frequencies and angles of roll and smaller internal friction are met.

Does meeting the grain stability criteria mean that the grain will not shift?

No. It means that if the grain does shift, the permanent angle of list will not exceed 12°, that the GM is greater than 0.30 metres and that the area of residual stability under the static curve will exceed 0.075 rad/m, and therefore the vessel meets the minimum stability requirements as set out by the International Grain Code.

Does meeting the grain stability criteria mean the vessel is safe against capsizing?

Again, no. Meeting the grain criteria, like meeting the intact stability criteria, does not prevent capsizing, which is a complex phenomenon. One Grain Code criterion is that after the whole cargo has shifted, the maximum angle of permanent list is 12°, which is still manageable. However, consider that when rolling, the permanent angle of list is now the position of equilibrium (as seen in MV Modern Express listing 40° in the North Atlantic in 2016). The oscillations will add to the permanent list, and there is a risk that they may reach the angle of flooding. Another criterion is that the fluid GM is not less than 0.3 metres, to prevent the vessel from being in a situation of negative equilibrium and an angle of loll adding to the permanent heel.

CURVE OF RESIDUAL STABILITY – SOME QUESTIONS

The other criterion is that the area of the curve of residual stability must not be less than 0.075 m/rad. This area represents the energy the vessel has in storage for returning to the upright position after rolling. Bear in mind, however, that the grain criteria were set out before the entry into force of the Intact

Stability Code. The ISC has its own criterion with respect to the area of the curve (0.055 m/rad for angle of heel up to 30° and 0.09 m/ rad for angle of heel up to 40°), but there is no verification for how the vessel complies with the ISC if the grain shifts. In other words, if the vessel is subjected to a sustained beam wind while having a permanent list of 12°, would the new list exceed 16°? Or would the area under the curve of GZ, to the new upsetting arm curve or lever resulting from the grain upsetting moment 1A-B plus the wind upsetting lever 1w2 (new area b) be larger that the area a of wind and rolling?

Or what if the vessel, already with a permanent list after the grain has shifted, encounters any of the models of failure described in the second generation of intact stability: dead ship, pure loss of stability, parametric rolling, or broaching, which can cause even an upright vessel to capsize?

In normal conditions, Masters should exercise caution during severe weather and rolling in order to prevent capsize. In the case of the grain shifting, such caution is essential and should include changing course and speed as needed to mitigate the balance and ship motions.

All this will seem obvious to many readers, but some approaches to grain stability assessment suggest they may not be to everybody. Many stability plans are made giving preference to partially filling central fullershaped holds rather than end-tapered holds, or with holds left slack for no apparent reason.

Sometimes, calculations show that that plan will result in very marginal compliance without regard to the fact that the stowage factor when loading will not exactly match the one used for calculations, and the mismatch may result in non-compliance. Sometimes, the plan ignores the many resources available to improve the grain margin, like using ballast in double bottom tanks. Some calculations are done using untrimmed volume when not planning for trimming ends, giving false capacities.

Detailed explanations on the calculation and assessment of grain stability, can be found in General Information for Grain Loading from the National Cargo Bureau Inc.

This article first appeared in Seaways, the magazine of The Nautical Institute.





Training on the Brain

Our new partnership with IFCBAA gives AIMS members access to courses for professional development.

DANGEROUS GOODS COURSE - SEA

The IFCBAA, through its training partners, is able to provide you with the most comprehensive and up-to-date DG courses in Australia. You can also be assured that all DG Sea courses offered through the IFCBAA are approved by the Australian Maritime Safety Authority (AMSA) as meeting the standards required by national and international regulators.

The course provides comprehensive training in the theory and practical aspects of shipping dangerous goods by sea. It examines the IMDG Code and provides you with a systematic approach to packaging and documenting a hazardous shipment for sea transport.

Fees - \$420 incl GST

There is also a Refresher course available that covers the changes between the current International Maritime Dangerous Goods (IMDG) code and Australian Marine Orders (MO) and the new one and highlights what will change in the new edition and how they need to be applied.

The course is designed to provide an update in the theory and practical aspects of shipping dangerous goods by sea and provide you with the information you need to ensure your work practices and procedures are in line with the changes.

Fees - \$320 incl GST





Local tech simplifying safety and compliance

OffshoreSMS was created in 2018 by two commercial fishermen in Tasmania, one keen to see a simplification of AMSA's new safety legislation and the other with years of software development experience. The result has been a powerful set of web and app tools that are helping hundreds of domestic commercial vessel owners in Australia to manage safety and compliance on their vessels quickly, easily and with zero paper!

Founder and lead developer, Steve Fraser says, "We set out to take the pain points out of commercial vessel safety and compliance. The language around safety in Australia is confusing where it doesn't need to be, so our mission has always been to make safety simple. On top of that, to be fully compliant vessel operators need to do a ton of paperwork, but paper and boats just don't mix. We've worked hard to create tools that can finally let skippers get compliant with no paper."

The OffshoreSMS team has also recognised a significant pain point for both DCV operators and marine surveyors around safety management systems when putting a new vessel into survey. Fraser says, "Understanding that building a safety management system on a new vessel often comes at the end of a lengthy and stressful process for both surveyor and vessel owner, we have built a new Fast Track SMS feature that helps the user create an SMS quickly and easily. Either the surveyor or the vessel owner can build the SMS for just \$149, and then create a printable PDF or email it straight to AMSA."

"We believe that putting together a great SMS itself is only half of the battle. To really be compliant, vessel operators need to be logging and recording everything on their vessel. For that reason we have built an awesome mobile app with the ability to do a full range of real-time logs, from pre-start safety checks to incident reports, and from signed crew inductions to scheduled maintenance and drills."

In support of the Australian marine surveying industry, the OffshoreSMS team has put together a new directory of Accredited Marine Surveyors on their website. "As our user base around Australia grows, we want to give our members a better way to find a marine surveyor in their area, and to make it easier for them to know what services and expertise each surveyor or surveying business offers. Our directory is 100% free so we would encourage any surveyor to list their details and a short description of their services."

For more information, visit www.offshoresms.com.au/surveyors

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Pitfalls

by Mike Wall

Many marine surveyors starting up a new company go blindly forward without considering the many pitfalls which may befall them, learning on the hoof and succeeding by accident rather than by design. The first obstacle will be setting up the company with a name and objectives. A company name can be important in attracting business. It could be catchy and fall of the tongue easily, eg, it can be abbreviated to 'AMC', 'KMC', or it could be more formal, eg. Fred Bloggs & Associates Itd.

Notice those three little letters after the company name. They are there to protect you by limiting your liability. The nomenclature for such companies varies around the world but the operating and legal principles adopted in establishing this type of company are generally very similar, eq. LLC, Pty Ltd.

A limited company is a corporation with shareholders whose liability is limited by shares (Ltd), which is the most common form of privately held company. Setting up as a limited company is an attractive option for many people as, unlike sole traders, personal assets are completely distinct from company finances. Some countries insist on there being two or more directors whereas others allow single directors. In the event that a client successfully sues your company he will only be able to recover financial compensation from the company and not you as a director.

If your company is a limited liability company, it should be shown on all company documents, including your reports, eg, Company Name Ltd, Company Name LLC, PLC, Pty Ltd, etc.

You will need the help of a good lawyer and accountant at this early stage of the company development. Whilst some consider this to be an unnecessary expense it is not. They will guide you through the necessary legal procedures required.

Getting your message out to the clients is also important. You should have appropriate marketing literature ready to send out to them on request. Many people believe that marketing is just about advertising or sales. However, marketing is everything a company does to acquire customers and maintain a relationship with them. Even the small tasks like writing thankyou letters, taking a client for



Marine surveying is a dangerous profession. Use SWOT analysis for business planning, For this reason, new entrants should be strategic planning, competitor evaluation, appropriately inducted to your company. marketing, business and development & Apart from the administrative matters, eg, time research reports. Technically, Strengths and keeping, salary, vacations, etc, they should Weaknesses are internal factors, whereas be prepared for working aboard ship. The Opportunities and Threats are external factors. There is plenty of literature available on the induction literature should include a reference to safe working practices, eg, The Code of Safe internet to guide you. Working Practices for Seaman published by UK Maritime and Coastguard Agency. Strengths are those features of the business which allow you to operate more effectively An example of why this is needed is the case of than your competitors, eg, a strength could be a surveyor who entered a closed hold after the your specialist technical knowledge of tankers, chief officer had got into difficulties. Both died etc. As part of your marketing strategy you as a consequence. The family's insurer paid out should be frequently talking with clients to find out if their needs have changed. on the chief officer's death but then went after the survey company accusing it of negligence. Having an induction process in place would Weaknesses are areas capable of improvement. have prevented such an action. Are you lacking skills or new products? Do you have a higher cost base or lower productivity As an aside, the amount awarded by the judge than your competitors? You must face any would have bankrupted the company so the unpleasant truths about your business and be company directors approached the insurer realistic. to settle for less, indicating that if there was no settlement and the company forced into Can you identify any new opportunities for your bankruptcy they would simply close down and business? Are there any interesting trends of move down the road to open a new company which you can take advantage? with a slightly different name. The insurer settled. Threats can be external or internal, and are anything which can adversely affect your Whilst your staff may be your most valuable business. External threats could be inflation, asset they can also be a liability, particularly if new legislation, or a new competitor in your market. Internal threats could include a skill or they continually make mistakes and endanger your company welfare. This can be in two ways, staff shortage within your organisation. job performance and leaving the company. All staff should be subject to performance Once these have been identified, you should monitoring to ensure that they are fulfilling create an action plan to ensure that something their potential with improvements being in is done. Assign someone to each point and set stages. The other is when they are dismissed, deadlines. Review the results of your analysis where there is a possibility of sabotage. The regularly to determine if anything has changed modern thinking is that even staff who are and what has been achieved. serving out notice should be sent home to reduce such possibilities. Last of all, your product is your report to the client. One of the most neglected aspects of marine surveying is good report writing. Your company should also be dynamic, ie, it continually responds to changes, activities and Many surveyors starting up do not focus on progress, particularly the needs of your clients. this aspect of their jobs. A bad report can A SWOT analysis will help in this objective. ruin a promising career whilst a good one can enhance your reputation. But that's another SWOT is an acronym for Strengths, story... Weaknesses, Opportunities, Threats. The SWOT The above information and much more is analysis headings provide a good framework for reviewing strategy, position and direction available in: of a company or business proposition, or any other idea. It should be carried out on a regular 'Running a Marine Survey Company' by Mike Wall, published by Petrospot. Cost GBP75. ISBN: 978-0-9548097-7-5 Available from www.petrospot.com/books

2021 Sanctuary Cove International Boat Show

AIMS was represented with a stand at the Sanctuary Cove Boat Show this year. Over the course of the 4 days almost 60,000 visitors passed through the gates. Our stand was in the Pavillions, a 3x3m space which we decked out with our latest advertising and merchandise and both Tim and Stacey manned with the help of members.

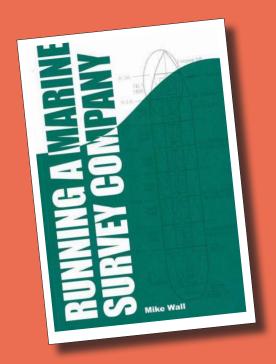
Brand exposure was massive. Over 300 of our showbags were distributed with our marketing material and the feedback on the bags was excellent. We were also featured in the Sanctuary Cove International Boat Show Yearbook and ran a half page ad within, over 10,000 copies of this were handed out free to visitors.

We had the opportunity to speak to many consumers, most unaware of the lack of regulation in the recreational vessel sector so it was the perfect opportunity to create awareness and promote our members. We had the help of members over the 4 days which was a huge advantage in answering technical survey specific questions.

We received feedback on our marketing from both members and the general public and will use this feedback to assist us in future campaigns to ensure our messages are well received and supported by members.

Overall AIMS was well represented with a professional eyecatching stand. We were able to interact with the public in a meaningful way and spoke to many people who either owned a boat or were in the market to do so in both the recreational and commercial sector. We believe AIMS representation was successful and worthwhile and something worth repeating in 2022.





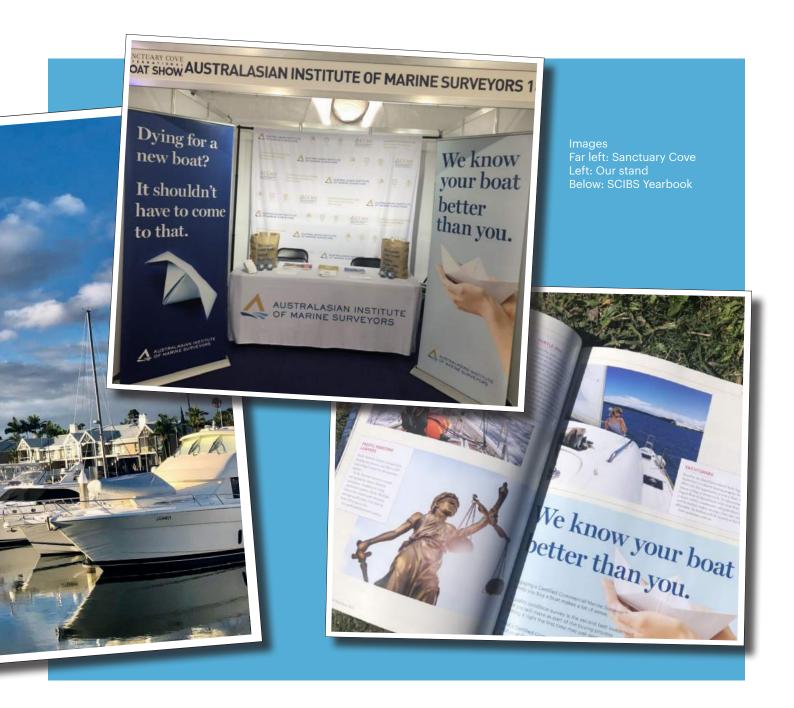
Running a Successful Marine Survey Company – by Mike Wall

Setting up a marine survey company is a very popular career choice for seafarers looking to work ashore. There are many who have made the move successfully — but there are also many who can tell you that it is not an easy transition. Mr Wall has produced what is sure to serve as the essential guide for seafarers looking to move into surveying. And, in fact, there's so much of value in his book that it would also serve as a useful general guide for anyone thinking of setting up in business.

For those who really want to know what it is like to start a business from scratch, as a Marine Surveyor this is essential reading. For those who are already Marine Surveyors but who still wonder why the competition is doing better than they are, this is essential reading. For those who are already successfully running a Marine Surveying business this is essential reading because it is a reality check for all. Mike tackles all of the difficult areas such as ethics, sales, conduct and time management head on with advice collected from the experience of having been there.

For anyone involved in marine surveying this book has been long overdue.

Available from www.petrospot.com/books

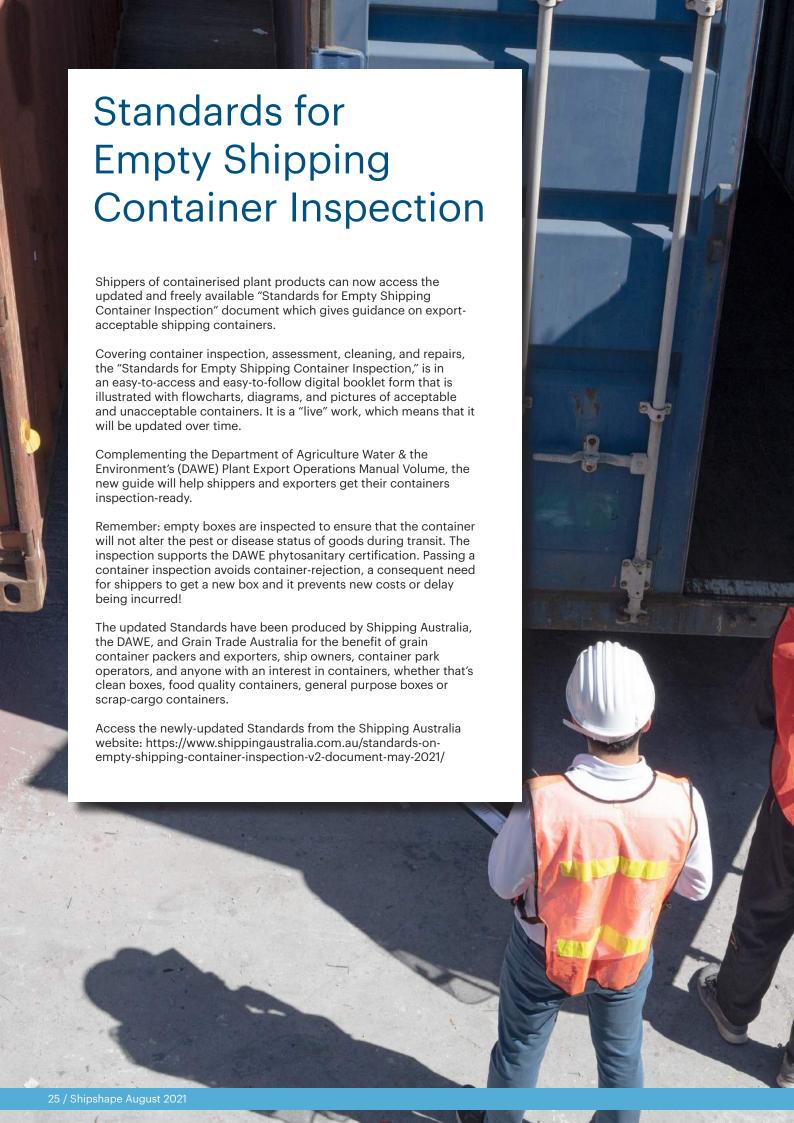


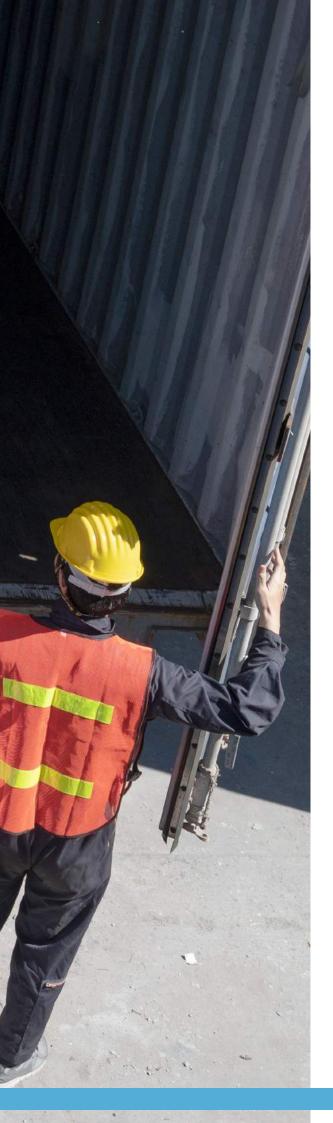


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Careers



Senior Marine Surveyor

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To provide leading and trusted expert assistance to our customers to help them enhance lives and restore businesses and communities in Australia and across the globe. We also aim to be the leading provider and most trusted source for expert assistance, serving those who insure and self-insure the risk of businesses and communities globally.

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