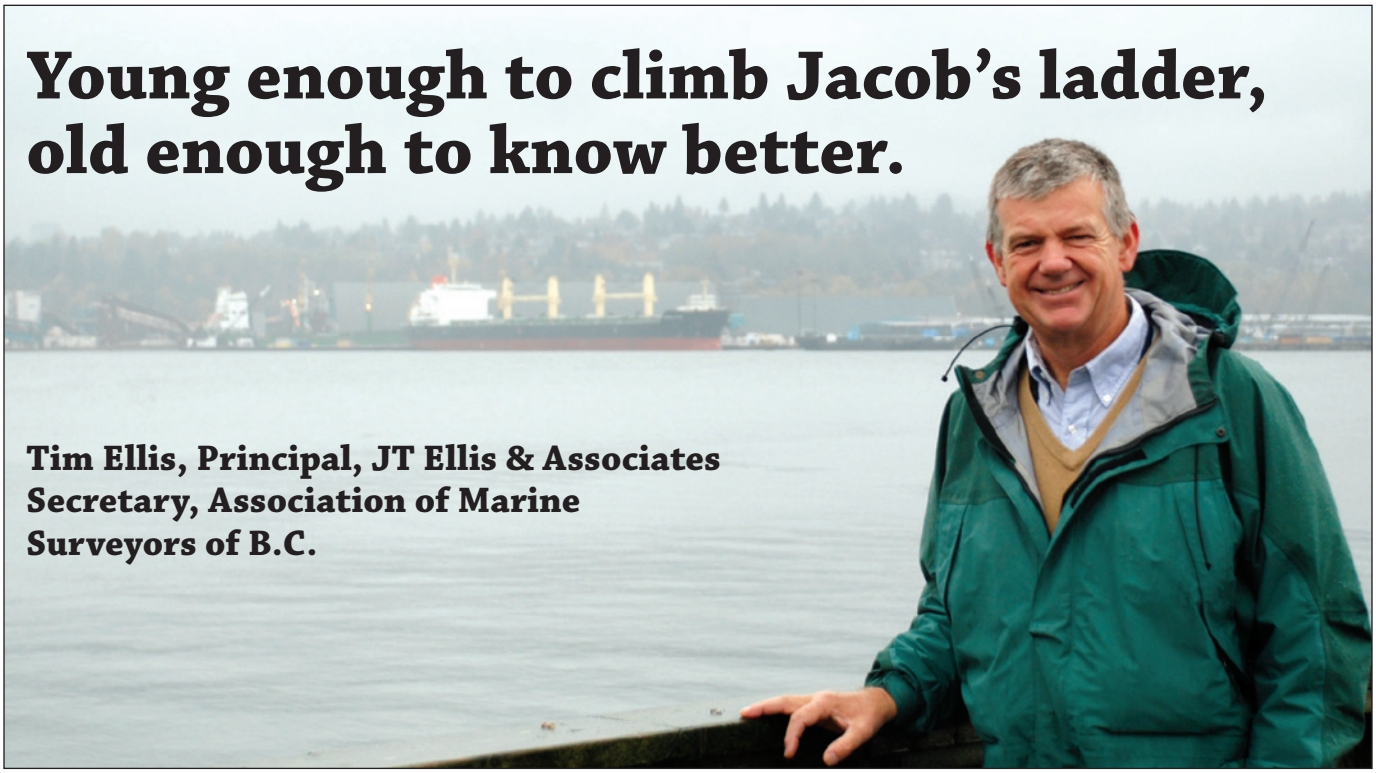
Young enough to climb Jacob's ladder, old enough to know better.



Tim Ellis, Principal, JT Ellis & Associates Secretary, Association of Marine Surveyors of B.C.

If you look up the definition of a "marine surveyor" on Wikipedia, you'll read a quote from the International Association of Classification Societies (IACS):

When it comes to defining the qualities and qualifications of a marine surveyor, a memorandum of 1834 has not been bettered:

"The utmost care and discrimination have been exercised by the Committee in the selection of men of talent, integrity, and firmness as surveyors, on whom the practical efficacy of the system and the contemplated advantages must so materially depend; the Committee have in their judgment appointed those persons only... who appeared to them to be most competent to discharge the important duties of their situations with fidelity and ability, and to ensure strict and impartial justice to all parties whose property shall come under their supervision."

Taken one step further, Tim Ellis points to a more recent description from colleague Philip Oldham:

"A marine surveyor is young and limber enough to scramble through the smallest hatch, strong enough to lift the heaviest hatch cover, yet old enough to have seen it all. He has the eye of an eagle and can write like Boswell. He is expected to be a shipwright, a naval architect, a marine engineer and perhaps most important of all, a diplomat. He must know the market value of every boat and what it costs for every type of repair. Marine surveyors are the people in the field who put on the coveralls and crawl in and around the bilges and bottoms of boats and report to you on the condition of a boat or the cause and extent of loss. We are the eyes and ears of the insurance underwriter."

"A marine surveyor is...expected to be a shipwright, a naval architect, a marine engineer and perhaps most important of all, a diplomat.

It is with these definitions in mind that we clearly see the inherent traits of a surveyor in Tim Ellis, Principal of JT Ellis & Associates and Secretary of the Association of Marine Surveyors of British Columbia (AMSBC).

BCSN: *Given the definitions above, could you explain the duties — or perhaps categories is a better word — that a surveyor performs?*

TE: Sure, the very basic duties of a marine surveyor can be boiled down to: inspecting, assessing, measuring, weighing and reporting. As for categories, or more appropriately, reasons to engage a surveyor, there are many: valuation, condition, damage, fitness for purpose, new construction, salvage, underwater, marine accident investigation, compliance, draft surveying, class surveying, the supervision of the loading and unloading of projects and cargoes, sampling, handling, routing, lashing, stability surveys, heavy lifts...just to name but a very few.

BCSN: *Given the extent of knowledge that is required of a marine surveyor is there any accreditation required, either from a government agency or other organization that a surveyor needs to obtain?*

TE: There is no federal or provincial government requirement for marine surveyors. In North America, there are several associations of marine surveyors, but most are south of the border and not representative of the national and local conditions we experience here in Canada and here in B.C. — hence, the Association of Marine Surveyors of B.C. (AMSBC). The International Institute of Marine Surveyors, with whom we are affiliated, acts as an umbrella organization for marine

surveying associations around the world and gives us a window into the trials and tribulations affecting surveyors wherever they are found.

Within the AMSBC, we require surveyors to have five years' worth of work experience, to undergo an interview by their peers, pass an examination and agree to abide by the ethics and standards promulgated by the Association. We would like to see the AMSBC receive a mandate from the provincial government that would ensure that all marine surveyors who hang out a shingle in British Columbia have some form of accreditation and that that accreditation is based on appropriate qualifications, knowledge and experience. We are seeking Chartered Status to achieve this.

Up until 25 years ago, the qualifications for a marine surveyor were that he came from the commercial shipping industry and he would be either a master, mate or engineer but in fact, there never was the formal requirement for qualifications — surveyors' clients just wouldn't employ people who didn't have these qualifications. At some point over the last few decades, it became obvious that the requirement to be a master, mate or engineer was impeding progress and the value of knowledge and experience was deemed to be greater than the need for these difficult-to-get qualifications of master mariners, mates and engineers. So that's led to a bit of a "rush" — many people loosely affiliated with the sea through pleasure boating or fishing, for example, believe that they can go into marine surveying as an easy option. Someone who retires early and still wants to work thinks they can become a marine surveyor but of course it doesn't work like that — there is no substitute for experience and expertise.

The AMSBC is quite progressive in the way it has approached issues like education.

BCSN: *Are there courses available that a person can take to become a marine surveyor?*

TE: There is an educational course provided by the International Institute of Marine Surveyors (IIMS) who works with Edexcel (an organization in the U.K. that facilitates the program — audits the exam and study material and marks the results). This allows for distance learning and a consistency in application and evaluation of the exam. For surveyors in B.C., the exams are proctored by the AMSBC.

The AMSBC is quite progressive in the way it has approached issues like education. In addition to our educational association with the IIMS, we have resourced numerous questions from our member surveyors — in fact, one of the requirements of membership is that you have to contribute to the Continuing Education Program.

BCSN: *You mentioned earlier that the AMSBC requires members to abide by standards in ethics — is that a big issue for the Association? Further, how does the Association work to resolve issues?*

TE: I wouldn't say we have a litany of these complaints but even four or five over a three-year period are far more than I'd like to see. The good news is that, of those four or five, only one related to a member and that complaint related to an omission rather than commission — i.e., the charge was that his reporting was not adequate, however when we carefully reviewed the client's instructions, the report achieved what had been asked and, in fact, the surveyor had completed his instructions satisfactorily.

The committee that reviews complaints are all very experienced surveyors. To give another example of the types of things we see, we had a case where a surveyor (not a member) had inspected a vessel — and bear in mind that reports are purchased and are the sole property of the person who commissioned the report — and in this

case, the surveyor had communicated the contents of the report to an authority who made a determination based on the findings contained within that report. This was done without the knowledge of the person who had commissioned the report and was to his detriment. The surveyor's duty is to the person who commissioned the report.

BCSN: *Surveyors are obviously integral to determine causes of damages in accidents. Could you give some examples of how you would work within the legal processes of cases involving accidents?*

TE: In general terms, the surveyor's duty to an employer is to determine the cause, cost and extent of damages, but the actual input depends upon the instructions issued to the surveyor by the client. To give an example: A dry-bulker enters a claimed 'safe berth' and during the discharge it's noted that water is entering the vessel's foremost hold. The investigation indicates that the mid-stream berth is shallower as a result of rapidly falling water levels and that the vessel may have come into contact with the bottom. An incomplete examination of the damage indicates that the vessel may have pressed a hole through her hull by coming into contact with her own anchor...or the pile securing the forward end of the buoyage system...or by the stevedore's equipment...or by contact with some heretofore unknown underwater obstruction...or through stress upon the vessel...or perhaps previous and unreported damage.

There are several factors that must be taken into account during a survey, including damage to the vessel, damage to cargo, delays to the discharge, stevedore's stand-by time, loss of use of the berth, loss of charter hire, removal and disposal of damaged cargo, loss of future use of the vessel (charter hire), dry-docking, repair, loss to the receiver, incomplete out-turn, etc. and lawyers and surveyors representing each of these stakeholders will want to survey every aspect of the incident to determine cause, extent and cost. It is not uncommon to have numerous surveyors onboard a vessel, all at the same time, all jockeying for position and all utterly convinced of the righteousness of their position and their right to pre-eminence. In this case, after years of legal wrangling, the loss was found to be the responsibility of the berth owner.

The surveyor can act as the disponent owner, but this is not so common now, the purpose of such employment is more likely as an independent third party to assess and report to a client. In general, the surveyor's activities are employed by one of the parties which may be, for example, owner, charterer, sub-charterer, P&I Club, hull insurer, cargo interests, stevedore and /or longshoremen, berth owner, berth operator, ship handler (tugs), pilots, bunkers, and so on. There are many more to list.

A typical charter party dispute can arise from something as simple as a vessel's inability to load a contracted volume of cargo, for example, the wrong kind of wheat, or perhaps due to a stability issue arising from the order of loading, or perhaps she cannot maintain a warranted speed — 12.5 knots instead of 14 knots, or a vessel might be detained in port for a safety infraction causing delay and loss — all of the foregoing will require attendance by a knowledgeable surveyor to determine the cause, extent and cost.

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BCSN: *What about the liability of a marine surveyor?*

TE: Liability insurance for all professionals in recent years has become an issue. A single claim can put even the most successful surveyor out of business. Lawyers pursuing negligence claims often use the shotgun method where all parties involved are named jointly, leaving a judge or arbiter to assign a value to each defendant named. Even when a surveyor is faultless, the costs of defence are considerable.

Our litigious world makes us all careful and prudent. Insurance is critical because it's not just a case of protecting yourself from the possibility of suits but a lack of insurance can inhibit people from doing the best work that they can. Some surveyors, especially those who operate at the small vessel level, probably find it hard to justify the high costs of insurance but, having said that, the AMSBC recently negotiated a very competitive and attractive package on behalf of our members with BFL Canada Insurance Ltd. It took two and a half years to work out an agreement on behalf of our members.

BCSN: *Let's focus now on the ships that you survey. What sort of trends have you seen in terms of deficiencies or issues that are continually identified?*

TE: I'd have to say adequate manning and size of crew is a very big issue today. Modern vessels are larger and more complex than any of their predecessors but crews are smaller than they have ever been. For example, a handy bulker circa 1985 might have 44 crew aboard whereas a Panamax-sized vessel today will have as few as 15. Today's vessels are efficient but lonely. Time at sea has not been reduced, but time in port has declined to the point that many serving seamen won't have time to leave their vessels at all during a seven-month contract (and those contracts are often extended to over a year). Modern vessels also rely much more on dock facilities to discharge their cargoes.

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The shipping companies try to operate as efficiently as possible by contracting out as much as they possibly can. This especially impacts on operations while in port because it means that, for example, during a loading or unloading, the crew has to be available virtually all the time that they're in port to open and close hatches, move the vessel up and down the dock — whatever is required — and with only 12, 15 or 17 people onboard, that can be a problem. Crew become tired, stressed and start making mistakes.

Some owners are, too often, remote from their ships and their crews whilst maintaining interest in profits, expenses and the business of logistics. Officers are overwhelmed by bureaucracy, harried by owners, and ignored by busy ports. Crews lack basic skills compounded by an inability to communicate with each other due to language barriers, pay is stagnating and responsibilities are increasing.

Another issue that, while not as prevalent today as 20 years ago but can still be seen, is in the cleanliness of cargo holds. A vessel that is not clean is not fit for loading. Vessels are much

With a passion for sailing, Tim's life has revolved around the sea.

more multi-purpose than they used to be and are expected to carry any cargo — for example, you could carry sugar on one voyage, salt on another, cement on a third. Sugar chemically reacts with cement so that it's no longer cement so you can destroy a very large, valuable cargo through inattention. A seed of wheat trapped on a shelf high up on a ship's hull that falls into cement, for example, will sprout when it gets wet, and it will exert 4,000 p.s.i. within drying cement. A few grains of corn inside a cargo of cement will sprout through the cement; or a handful of oily coal dust in cement can spoil an entire cargo. We run into this from time to time but shipping companies have learned that cleanliness is very important.

I wouldn't hesitate to say that a ship hold that may be 20 metres deep needs to be inspected with your nose against the plate from the very bottom to the very top. You may need a cherry picker in there to accomplish this and you go up and down between every frame in the hull and inspect it to make sure it's clean. The grain inspections undertaken by Transport Canada and by private surveyors are of a similar nature — they will not accept any loose debris inside a ship's hull.

BCSN: *Does a surveyor's work include inspection of port-side infrastructure?*

TE: Yes, that's part of our work as well. We've seen it before where a company builds a dock, say for example in the Arctic, but doesn't talk to anybody qualified to actually work in the conditions they're expecting. So the designers go ahead and design wonderful features for a port and they don't work. They forget that a ship is not discharged statically. The ship will move up and down the dock underneath the handling equipment. If your ship is on a dock that's not long enough or there are no dolphins to hold it, it suddenly becomes an impossible task to unload cargo. Surveyors have a very critical job function when it comes to assessing, monitoring or even assisting with the designs (or redesigns) of these kinds of features.

Surveyors are also involved with monitoring ships' gear, port-side gear, containers, container handling or other areas where you're seeking to gain advantages through efficiencies in handling.

BCSN: *Does the economy impact on surveying? For example, are you more likely to see less maintenance?*

TE: There are now few vessels trading that are over 15 years old and although one can find the odd 25-year-old ship, these tend to be in specialist trades or built to a particularly high standard with higher scantlings than we might see today. What this means is that most vessels afloat are now very new, or less than 10 years old. One of the main reasons for scrapping the old fleet was that maintenance had become such a grave issue that it led to excessive risks with leaking hatches, rusting decking, inoperative machinery, breakdowns and so on. New ships, better paint systems, electronic engine monitoring, computerized ballasting

About Tim Ellis

Prior to establishing JT Ellis & Associates in 1977, Tim Ellis was employed by a European shipping line, working in offices in Vienna, London and Hong Kong. Tim gained valuable experience in commercial marketing, operations, accounting, management and analysis as well as container operations and risk management. Located in Taipei, Taiwan, Tim provided marine surveying and project management services for cargo, project shipping, and ocean-going vessels. He also provided services in the areas of transport management, risk management, yachts and small craft, and insolvency.

Since 1993, Tim has been based in Vancouver, B.C. and provides services for cargo, project management, transport consultancy, ocean going vessels, commercial craft including floating and fixed structures, risk management and control, valuations, yachts and small craft.

Tim has been married to Esther for 26 years and enjoys sailing, rowing and boatbuilding.

and stability programs and associated equipment (available for 30 years but only truly functional in this generation of vessels) all help to allow maintenance to be directed where it is most needed rather than everywhere and all the time. Maintenance, or the lack of it, is likely to become an issue as the aging fleet approaches the end of its useful life which is generally considered to be 25 years.

BCSN: *How does today's focus on environmental sustainability impact on surveying (for example, new regulations, new technology)?*

TE: Environmental sustainability, outside of the auditing function, is not something we would come across a lot but mostly we address this in terms of the cleanliness of a ship's operation — the question of invasive species from ballast water is a useful example. Surveyors are required to board vessels to examine their logs and determine what and how much ballast is taken on, where it's being discharged, etc. There are instances where surveyors in the engineering department have found quite serious violations — for example, a vessel had fitted false panelling to disguise the fact that they were pumping their sewage and grey water directly overboard and the very fact that they had panelled this in and that the valves were not marked as to function meant that they had conspired to do this.

BCSN: *Is that something the surveyor would pick up on and is he obligated to report it to authorities?*

TE: If it's not part of his instructions for the survey he's undertaking, then he's not required to look for it, but if it's his job to review the engineer's log books to find out how much and where and how waste was pumped out and handled, and he inspected it and identified serious deficiencies, then yes, he'd certainly report on it.

Once it's written in the surveyor's report, it would be unwise for the company to ignore it. When you come to any kind of legal process the first thing that will be put on the table is the surveyor's report.

BCSN: *How has technology impacted on the surveyor's job?*

TE: The obvious advances, such as communications and reporting, are beneficial even if not always welcome. Other technologically advanced tools such as ultrasound, imaging, and similar devices are still beyond many small practices purely due to the expense and training required, but it is now evident that these will become mandatory in time simply because their use limits exposure to risk — for example, using ultrasound to detect whether or not a ship's hatches leak is far superior to running a hose pipe of water over the hatch coaming.

Imaging is another advancement that is becoming viable. It allows you to view a ship's hull to indicate stress points, fractures, void spaces and all sorts of other, useful information. The entry-level equipment is expensive and it puts it out of sight of most marine surveyors but you can see an evolution taking place with these kinds of technologies. It is difficult to imagine a future without even greater reliance on technological advances than we currently have.

I have heard of companies in Vancouver who will not use surveyors who don't have ultra sound equipment to inspect the hatches of vessels loading grain — and I would consider that to be very reasonable. Ship owners, disponent owners, cargo owners and receivers absolutely demand that these kinds of surveys do the job they're supposed to do because the risks associated with improper hatch sealing or simple things like rust holes in the decks are just not acceptable.

BCSN: *Earlier on in the interview, we discussed training standards and the required qualifications for a marine surveyor. Is the industry maintaining an adequate supply of surveyors currently, and following from that, do you see the upcoming retirement surge as being an issue? Are there any plans within the AMSBC to address this?*

TE: I think we would like to see more young people enter the profession but I'm not sure many are willing to put themselves at risk in terms of job security, nor are they attracted by the hours that must be worked and the travel involved.

The AMSBC has not identified a pool of likely candidates. In the case of small boats, there is the attraction of sailing or yachts that bring people who may or may not be suited to marine surveying but who feel they could be marine surveyors. A willingness or desire to become a marine surveyor has to be backed up by "proofs" and the only way to get that is by exams, tests, etc. For the commercial and deepsea surveying requirements, this is an emerging problem. BCSN

About the AMSBC

The Association of Marine Surveyors of British Columbia (AMSBC) was formed in 1969 for the purpose of bringing together general marine surveyors with the object of enhancing and developing the practice while providing a representative body in approaching the maritime industry. Affiliated with the International Institute of Marine Surveying, the AMSBC membership comprises practicing marine surveyors situated throughout the province of British Columbia, particularly at the principal ports of Vancouver, Victoria and Nanaimo, who bring to the Association their particular experience providing a broad and diverse input.

The members of this Association have undertaken to perform their respective services in keeping with the Code of Ethics and Constitution of the Association. Surveys provided by the membership range through hulls, machinery, cargo and terminals (port operations) to surveys of special or particular nature embraced in the term "Marine Related Transport".

For the full membership directory of the AMSBC, please see page 26 of this month's *BC Shipping News*.

For more information about the AMSBC, please visit: www.amsbc.org.