

LIABILITY CONSIDERATIONS IN THE USE BY PILOTS OF THEIR OWN CARRY ABOARD NAVIGATION EQUIPMENT

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One of the more significant developments in the practice of piloting in the United States is the use by pilots of their own portable electronic chart systems. As this development has proceeded, pilots have expressed concern over the potential liability exposure associated with the use of these units. The purpose of this paper is to offer some comments and advice on this subject.

Background: Brief Description of Portable Units

There are a number of different types of portable units currently being used by US pilots. Generally, the units are similar to laptop computers, although there is some use of smaller, tablet or handheld units. In some cases, the units are off-the-shelf laptops. A unit is carried aboard by the pilot; set up on the bridge of the ship by the pilot; and then used by the pilot as a navigation information resource during the piloting assignment. A unit provides, at a minimum, own vessel positioning information utilizing the Differential Global Positioning System or some other source. The vessel's position is shown on an electronic chart-type display through software containing information specific to the particular pilotage area. Portable units may also provide positioning information on other vessels, through Automatic Identification Systems (AIS), a radar overlay/underlay, a link to a shoreside VTS center, an internet server-based platform (recognizing other pilot carry aboard units), or some other position information vehicle. They may also have digital communication capabilities that would provide information such as real-time tide and current data.

A developing trend, and debate, in the use of carry aboard units is toward closer integration of the unit with shipboard equipment. Regulation V/19.2.4 of SOLAS requires ships to be fitted with an AIS transponder and receiver. As of this date, the requirement applies to most ships that pilots handle. International Maritime Organization guidelines also require that shipborne AIS systems subject to Regulation V/19.2.4 include a "pilot plug" located near conning position 1 on the ship's navigational bridge. The pilot plug provides the pilot with a portal to the ship's received AIS information as well as other information, such as the ship's gyro heading and position data derived from the ship's antenna and other equipment.

The pilot plug offers the pilot the opportunity to import into the portable unit as much or as little of the ship's own navigation information as the pilot chooses. At the present time, several US pilot groups are using the pilot plug with their portable units. One group takes virtually all of the ship's information available through the plug,

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including the ship's position data. Other groups, however, either do not use the pilot plug or import from it only a limited amount of the available data, such as the gyro heading. Reluctance to use the pilot plug with the portable unit is based primarily on concerns about the reliability of the ship's data and its interoperability with the portable unit. In addition, for some pilots on this side of the pilot plug debate, the main value of the portable unit is that it provides information that is independent of the ship, and, therefore, using the pilot plug would defeat the purpose of the portable unit.

Pilotage Law and the Use of Carry Aboard Units: the Ideal

Before discussing the current state of pilotage law relative to the use of portable units, it might be useful to suggest what the law should be and how it should develop. Simply, the law should encourage, not discourage, the introduction of practices and technologies that will improve safety. Whether pilots should carry aboard and use their own electronic navigation units, and whether pilots should use the ship's pilot plug, should be answered not by the lawyers or judges but rather by pilots in the exercise of their own professional judgment.

To give a preview of the conclusion, I am optimistic that the law will match this ideal. Pilots can and should proceed to make their own judgments as to the use of the units. So long as pilots exercise reasonable precautions, the potential liability exposure should not prove to be an insurmountable obstacle. At this time, after 10 or 15 years of pilots in the US using carry aboard units, there has been no court case, regulation, or other legal authority that would suggest that pilots should avoid using such units because of liability concerns.

Portable Units and General Pilotage Law Negligence and Liability Principles

There is usually a time lag between the introduction of new technology and practices and the development of a body of law or set of legal principles that would provide some relatively reliable guidance as to the use of such technology or practices and the resulting liability exposure for those who use them. Most United States law on these types of subjects consists of court or administrative adjudications, and these occur only after a case or controversy arises. In the maritime field, this means only after a casualty.

This is true with pilots' portable electronic units. The units and their use have simply not been around long enough for the development of a body of law that would provide the certainty that pilots, if not attorneys, would like to see. The potential exists that we will not see some specific guidance in this area unless there is a major casualty in which a pilot's portable unit was an issue.

But this does not mean that pilots and their attorneys have to operate completely in the dark or that pilots should shy away from using their own carry aboard electronic equipment because of liability uncertainties. We can assess the potential liability risks by anticipating how the matter would be handled under traditional maritime law negligence

and liability principles. We can also look to past cases that have involved the use of then-new technology, such as radar or ARPA, or pilot-supplied equipment, such as hand-held radios.

The basic description of pilot liability is that a pilot will be held responsible for his or her own negligence. This responsibility can take the form of a monetary judgment in a civil suit for injury or damages caused by the negligence (subject to whatever liability limitation laws, principles, or agreements may be applicable); fines and penalties assessed by governmental regulatory bodies; loss or suspension of a license or reprimands by licensing authorities; or even criminal penalties, usually in connection with an oil spill or loss of life.

In order to determine whether a pilot was negligent, the pilot's actions or behavior are compared to the standard of care to which the law holds the pilot. That is the standard of a reasonable and prudent pilot considering the function and services the pilot is expected to provide. This is a high standard. "The law places a special duty on the pilot of a vessel based on his expertise and the responsibility he is charged with."² The pilot is presumed to possess superior local knowledge and advanced shiphandling and bridge management skills.

On the other hand, a pilot is not a guarantor of the safe navigation of a vessel. A pilot is not responsible for acts of God, for unforeseen mechanical or equipment problems, or for the human errors of others. In addition, even where a casualty can be attributed to an action or decision of a pilot, liability is not imposed on the pilot unless the action or decision can be found to be contrary to what a reasonable, prudent pilot would have done under the circumstances. This aspect of a pilot's liability exposure has been described in a leading case on the subject as follows:

The duty of the pilot is to exercise that degree of care and skill possessed by the average pilot, and the mere fact that a different course of action might have avoided a collision is not enough in itself to condemn him to legal liability. The pilot's decision to handle the movement as he did was that of a reasonably competent harbor pilot under the circumstances that existed. He exercised the due care and skill required of him and was not required to be infallible. Furthermore, a navigator is not charged with negligence unless he makes a decision which nautical experience and good seamanship would condemn as unjustified at the time and under the circumstances shown.³

² Transorient Navigators Co. S/A v. M/S Southwind, 524 F. Supp. 373 (E. D. La. 1981); reversed on other grounds, 714 F. 2d 1358 (5th Cir. 1983); on remand, 609 F. Supp. 634 (E. D. La. 1985). The district court's decision on remand contains an additional description of the pilot's duty of care: "A river pilot is required to exercise a special and high degree of care in navigating waters through which he travels." Id. at 637.

³ American Zinc Co. V. Foster, 313 F. Supp 671, 682 (S. D. Miss. 1970); modified, 441 F. 2d 1100 (5th Cir. 1971); cert denied, Ingalls Shipbuilding Div. Of Litton Systems, Inc. v. American Zinc Co., 404 U.S. 855 (Citations omitted). See also, Kingfisher Shipping Co., Ltd. V. M/V Klarendon, 651 F. Supp. 204, 207 (S.

As a practical matter, a pilot's performance is measured against this standard of care through the use of expert witnesses. The plaintiff or prosecution will hire an expert witness who will testify that the pilot did not do what a reasonably prudent pilot would have done under the circumstances. The defendant pilot's legal team will also have hired one or more expert witnesses who will testify that the pilot did what any other competent mariner would have done.

Potential Liability Scenarios

In each of the following scenarios, a ship casualty has occurred, and a pilot's use or non-use of a portable unit has been identified as a possible cause of the casualty and as a possible basis for imposing liability on the pilot.

1. Pilot Fails to Use Unit.

In this scenario, the pilot failed to use the portable unit. The pilot did not bring his or her unit aboard for one of any number of reasons. The pilot may have brought it aboard but never set it up. Or the pilot may have brought it aboard and set it up but then never consulted it during the period of time relevant to the casualty.

The central issue in this scenario is whether there is a legal requirement that the unit be used. First, is there a governmental regulatory requirement that the unit be used? The answer to this question is particularly important under United States maritime law because the failure to use a unit in violation of a regulation requiring it would invoke a presumption of fault. This is an application of the so-called "Pennsylvania rule," which gets its name from an 1874 decision by the United States Supreme Court involving the vessel PENNSYLVANIA.⁴ In that case, the Supreme Court established the principle that if a ship or an individual involved in the navigation of a ship was acting in violation of a navigation safety regulation at the time of a casualty, the ship or the individual is presumed to be negligent or at fault. At that point, the burden of proof shifts to the defendant – in our scenario, the pilot – to show that the violation could not have been a cause of the casualty.

As far as we are aware, there is currently no regulatory requirement in the United States that a pilot use a portable electronic unit. It may not be too long before there is one, however. The first place where this will occur will probably not be a federal or international requirement. Instead, in those states or ports where pilots are provided with a portable unit, a state or local commission may eventually issue a regulation requiring the use of a unit for some or all pilotage operations. Most likely, this will occur where

D. Tex. 1986): "A compulsory pilot's decisions are not negligent if they are the decisions a competent compulsory pilot might make under the same circumstances; thus, due care and skill is required of a compulsory pilot but not infallibility." (Citations omitted).

⁴The Pennsylvania, 86 U.S. (19 Wall) 125, 22 L.Ed. 148 (1873).

the pilots have been granted a specific adjustment to the pilot tariff to fund the acquisition and maintenance of the units. Typically, the pilots will have justified this tariff increase by arguing that the units are essential to providing the safest, and maybe even the most efficient, piloting services. The same thing has occurred in locations where pilots are required to carry cellular phones, the costs of which are covered in their rate base.

Use of a portable unit may also be one of several measures or conditions required for undertaking certain vessel operations. Local requirements may be formally issued by the Coast Guard, pilot commissions, port authorities, harbor safety committees and other bodies for operations such as moving in restricted visibility or when traditional aids to navigation are unavailable. Some of these requirements may not have the status of regulatory action that would trigger the application of the Pennsylvania Rule. In that case, however, they might nevertheless establish a standard of care that would support a finding of negligence if not followed.

That raises the second important question: even if there is no regulatory requirement for the use of a unit, has using a portable electronic unit, especially in that particular pilotage area, become so prevalent as to become an industry or professional standard. If so, the failure to use a portable unit could be considered a breach of the standard of care expected of pilots. Relevant evidence for this question would include written guidelines or best practices manuals or expert testimony on what pilots typically do under the same or similar circumstances.

That issue could well be addressed in the same fashion as the use of hand-held radios was in a 1982 court decision, Texaco Trinidad, Inc. v. Afran Transport Co.⁵ The case involved a casualty that occurred in 1979 when a loaded tanker struck an oil refinery's mooring buoy located off the coast of Trinidad. Texaco was the owner and operator of the refinery as well as the cargo owner of the oil in the tanker. Tankers were required by Texaco, as the operator of the terminal, to use the services of a mooring team consisting of a pilot and at least two other individuals, all of whom were employed by Texaco and supplied to the tankers. Texaco sued the owner of the ship for damages to the buoy.

The court ruled against Texaco on the ground that Texaco's own negligence was the cause of the casualty. A principal factor in the casualty was determined to have been the mooring team's inability to communicate among themselves during the mooring maneuver. This inability was, in turn, attributed to the failure of Texaco to supply the pilot, its employee, with a portable radio. According to the decision, "it is customary and regular and normal procedure for the pilot to be furnished such a radio."⁶

The same type of analysis would undoubtedly come into play with the non-use of a pilot's portable unit. The question would be: is it "customary and regular and normal procedure" to use such a unit?

⁵ 538 F. Supp. 1038 (E.D. Pa. 1982)

⁶ Id. at 1041.

Third, even if a casualty occurs in a pilotage area where portable units are not used so much as to be a customary, regular, and normal procedure, that is not necessarily the end of the inquiry. Liability might still be imposed on the pilot if it could be shown that although the use of a portable unit was not customary among pilots, the particular pilot involved had a unit available and did not use it under circumstances where if he had, the casualty would have been prevented. There is a separate legal obligation to use available resources to avoid a collision. This is the basis, for example, of Rule 7 of the International and Inland Rules of the Road.⁷ That rule requires each vessel to “use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists.” A violation of Rule 7 would, of course, invoke the application of the Pennsylvania Rule. Even without a finding of a violation of Rule 7, however, testimony could be presented to establish that the use of an available unit would have been expected of a reasonable and prudent pilot under the circumstances.

There is an interesting case that demonstrates this aspect of liability. The case involved a 1987 allision of the tanker SEAPRIDE II with an electric transmission line tower in the Delaware River.⁸ The ship was moving in ballast and in dense fog with near zero visibility. Although the ship was equipped with an ARPA, the ARPA features were turned off at the time of the casualty with the unit being used simply as a radar. It was shown at the trial that neither the pilot nor any of the ship’s bridge crew, including the master, had been trained in the use of the ARPA. The court found, based on expert witness testimony from a Panama Canal pilot, that use of the ARPA would have prevented the casualty. The defendants argued that the master and the pilot should be given wide discretion in their use of navigation resources. The court rejected that argument, however, concluding that the real reason why the ARPA was not used was because neither individual had sufficient training to do so.

Among the several findings of negligence made by the court against the ship was that both the pilot and the master violated Rule 2 of the Inland Rules of the Road⁹, which is the general negligence provision, because “an adequately trained seaman would have used [the ARPA] under the circumstances.”¹⁰ This finding called for the application of the Pennsylvania Rule, with the court concluding that the ship could not rebut the presumption of fault because it could not show that the failure to use the ARPA could not have been a cause of the casualty.

The training issue will be addressed in our discussion of the next scenario. The significance of the SEAPRIDE II case for this scenario is that it demonstrates that although there was no specific regulatory requirement at the time that the master or pilot

⁷33 U.S.C. foll. §1602; 33 U.S.C. §2007 (Inland Rule).

⁸In Re Waterstand Marine, Ltd., 1991 AMC 1784 (E.D. Pa. 1988).

⁹33 U.S.C. §2002.

¹⁰Supra at 1799.

be trained in the use of an ARPA, the failure or inability to use that available resource under the circumstances was found to be negligence.

It is possible that a pilot's own normal and customary practices could be sufficient to establish that the failure to follow those practices constitutes negligence. A recent casualty investigation report by the Australian Transport Safety Bureau of the July 19, 2002 grounding of the containership ANL EXCELLENCE¹¹ illustrates the argument that could be made. According to the Report, the ship was attempting to enter the port of Brisbane at about 0525 during a rain shower. As the ship approached a buoy on the starboard side, the pilot ordered a course change to starboard to follow a bend in the channel. Unfortunately, that was the wrong buoy, and the ship ran aground. The Report concluded: "Based on the evidence available, *ANL Excellence* grounded ... as a result of the pilot erroneously ordering an alteration of course on the starboard lateral beacon E3 instead of at the temporary starboard lateral buoy marking the position of the original east cardinal beacon E5."¹²

The ATSB found that one of the factors in the casualty, and clearly a major factor, was that the pilot failed to follow "his normal procedure of checking the position of the course alteration using his portable electronic chart system."¹³ During the investigation, the pilot had stated that it was his normal practice to confirm his own vessel's position on his unit before any course alteration. Although a casualty investigation report does not establish negligence or legal responsibility or liability, and in the United States, at least, cannot be used in a subsequent court proceeding, the Report's treatment of the pilot's alleged failure to follow his normal and customary practice suggests how that issue would be addressed in assessing the pilot's legal liability.¹⁴

2. Pilot Makes Mistake in the Use of the Unit.

In this scenario, the pilot brought his unit aboard. The pilot might not have set it up correctly, however, or did not provide necessary information, or use the correct software settings. Whatever the reason, the pilot's actions caused information from the unit, information upon which he or she relied, to be inaccurate. Alternatively, the unit may have been operating properly and providing accurate information, but the pilot misread or misinterpreted the information.

¹¹ Marine Safety Investigation Report 181 (May 2003), "Independent Investigation into the Grounding of the Liberian Registered Containership ANL Excellence in Moreton Bay, Queensland 19 July 2002", Australian Transport Safety Bureau. Available from www.atsb.gov.au.

¹² *Id.* at 17.

¹³ *Id.*

¹⁴ The ATSB's Report also criticized the pilot for having his unit in a power-saving mode, which had caused the screen to go dark at the time of the course alteration, and for setting up the unit several meters away from the pilot's normal conning position. Nothing in the Report indicated that either circumstance had anything to do with the grounding. Nevertheless, the ATSB's critique of those and other aspects of the pilot's use of his portable unit and its recommendations on how such units should be used offers a valuable discussion piece for training courses.

Because this scenario assumes that the pilot made a mistake and that his mistake was a cause of the casualty, the potential for pilot liability is understandably high, as it would be under traditional pilotage law liability and negligence principles. As we discussed earlier, however, not every mistake or error of judgment constitutes negligence. Notwithstanding whatever burden of proof rule might apply in the case, the pilot would, as a practical matter, attempt to show that his error or mistake could have been made by any competent pilot acting with reasonable care under those circumstances. Obviously, this would be a heavy burden.

It can be expected that one of the first areas of inquiry will be the pilot's training in the use of the unit. Although the SEAPRIDE II case was primarily about the failure to use an available piece of navigation technology, the analysis in the case of the training issue gives some indication of how this would be handled in our scenario.

The SEAPRIDE II court specifically found that providing the ship's crew with an instruction manual was not sufficient. In the process, it suggested, as have other cases, that the more advanced and complex a technology is, the higher the degree of training that would be expected of our ideal "reasonable and prudent pilot." This seems to be a matter of common sense and would presumably apply with special force in the use of portable computer equipment by some individuals who may not have had extensive training or familiarity with computers.

3. Pilot Fails to Maintain Unit.

In this scenario, a casualty occurs when a pilot's portable unit fails to work or works improperly, and the problem was caused by the pilot's failure to maintain the unit. The pilot may have failed to keep the batteries charged, in the case of a unit that uses battery power. For a unit that uses the ship's power, the pilot might have forgotten or lost the power cord. The pilot may have failed to keep the software updated or otherwise failed to keep the unit in good working order.

Again, the issue is the standard of care expected of our reasonable, prudent pilot in the upkeep of the pilot's unit. An expert witness might well testify that it is usual and customary to: a) carry extra batteries, power cords and other ancillary equipment, b) have regular, periodic maintenance checks, or c) make arrangements to insure that software is updated. These types of expectations are similar to what pilots have faced for years with their handheld radios. The Texaco case discussed previously, in fact, provides a good example of how this issue has been treated with radios.

In that case, even though the court found Texaco liable for failing to provide its pilot with a radio, which is the normal and customary practice, the court further observed that "it is customary for the radio to be tested before the pilot leaves shore and takes his position on the ship to undertake piloting operations."¹⁵ This suggests that the court would have found Texaco and its pilot at fault even if the circumstances of the casualty had been that the inability of the mooring team to communicate had been caused not by

¹⁵ Supra.

the failure of the pilot to take a radio aboard but rather by a failure of a radio that was taken aboard to work when it was needed.

4. Pilot or Pilot Association Is the Source of Erroneous Information or Is the Manufacturer/Developer of a Defective Unit or Software

In some places, pilots or their pilot associations are contracting with programmers to develop navigation software that becomes proprietary to the pilots. In other places, more typically, pilots provide information to unit manufacturers or software developers in order to “fine tune” or verify the accuracy of the information loaded on the unit. The resulting unit and software remains the product of the manufacturer, who may be free to sell it to other users. Many pilots also want to “customize” their units with their own information or with features that they find particularly useful.

What happens if, under any one of these variations, erroneous information or a defect in the unit that causes a casualty can be attributed to the information provided by the pilots or deemed to be the property of the pilot or pilot association? There may well be some liability exposure here. This moves us beyond the usual components of traditional pilotage law into areas such as product liability and programmer’s liability in computer law.

A key here will be the contractual arrangements between the pilot or pilot association and the software manufacturer/vendor. Under the contract, who is responsible for defects in software or hardware? Is the pilot or pilot association indemnified against claims from third parties arising out of casualties caused by defects in the unit or software, even defects due to erroneous information supplied by pilots? The indemnification question looms particularly large if a manufacturer sells a unit or its pilot-perfected software to other users, who could in turn come back against the manufacturer and the pilots who contributed, perhaps, the error in the unit or its information.

Unfortunately, I can offer even less specific guidance on these issues than on the issues raised in the other scenarios. The liability of the manufacturers and developers of navigation technology and electronic navigation software is itself a developing area of the law combining maritime law and computer/intellectual property law. It is well beyond the scope of this brief discussion. Extensive, multi-day conferences on the subject, such as the “Maritime Law and ECDIS” conference in New Orleans in March of 1995, have been held with intensely debated speculations on what legal principles will eventually emerge from the introduction of new navigation information resources and technology. Pilots who participate in this development will also share in the potential legal uncertainties.

To assist in limiting the exposure of the pilot association and its members under this scenario as well as under the previous scenario, associations that own the portable units may want to consider placing the ownership of the units as well as the maintenance and updating activities in a separate entity, especially a limited liability structure.

5. Pilot Does Nothing Wrong

What is the pilot's exposure if a portable unit malfunction beyond the pilot's control causes a casualty? The pilot brings the unit aboard, sets it up properly, consults it at appropriate times during the piloting job, and practices good prudent piloting. A defect in the unit or inaccurate information, on which the pilot reasonably relies, however, causes a casualty.

Although we have saved this scenario for last, it is probably the one that makes pilots most uncomfortable and is the most frequent question pilots ask about portable unit liability. Pilots, at least those in the United States, have always worked with the knowledge that they may be held responsible for their own negligence. If they fail to perform their services in the manner of a reasonably prudent pilot, they may have a problem. On the other hand, if they rely on equipment onboard a ship that causes a casualty, and if they can show that the reliance was reasonable and that they otherwise did everything right, they can leave it to the shipowner and the equipment manufacturer to fight over who is ultimately liable. A malfunctioning pilot's unit is different, however. When a pilot provides the equipment, what is his responsibility for it?

The initial question would be whether the use of a portable unit is sufficiently accepted as a reasonable and safe practice in the profession. The answer to that question would largely be a matter of how prevalent the use of the units is among pilots. This issue, of course, is decreasing as a potential risk feature as the use of the units throughout the pilot world is increasing. Nevertheless, we should be aware of the possible argument that this technology and practice is too experimental and unproven for its use to be reasonable and prudent. Again, this would be a battle of the expert witnesses.

The more likely issue would be the reasonableness of the pilot's reliance on the information from the unit. If the use of the unit and its information is found to be an acceptable practice, can the pilot escape liability by showing that he relied on information from the unit, which subsequently was found to be inaccurate? There are, of course, many cases in U.S. law governing pilots' reliance on traditional navigation aids and information sources— buoys, charts, shipboard equipment, etc. The rule that seems to emerge from these cases calls for a review of all the circumstances to determine whether the reliance was reasonable. A case involving reliance on information from a pilot's portable unit would probably examine what, if any, other sources of information were available to the pilot. Also, would a reasonably prudent pilot's local knowledge and shiphandling and Bridge Resource Management practices have overcome the inaccuracy of the information? Assuming that a pilot is not responsible for the inaccuracy of the unit's information, the pilot's liability situation should be much the same as it would in the case of reliance on shipboard equipment.

I am not aware of any principles under U.S. maritime law that would put the pilot in the position of a guarantor of pilot-supplied equipment, where the pilot would have liability similar to strict liability or product liability in the absence of negligence or other

fault. Negligence will still be the liability standard. The pilot's actions will be measured against the standard of the reasonable, prudent pilot under similar circumstances.

Practical Suggestions for Minimizing Liability Exposure

1. If unit is taken aboard, set it up and use it. Members of the bridge crew who see a pilot bring aboard a unit and then leave it unopened somewhere on the bridge or set it up and then never look at it will likely point that fact out to investigators in event that the ship has an casualty. This will draw attention to the pilot's failure to use his or her portable unit and perhaps raise an issue that otherwise might not have been raised. The burden would then be on the pilot to justify the decision not to use an available resource and to show that the use of the unit would not have prevented the casualty.
2. Learn as much as possible about portable units. Talk to pilots in other groups and locations who use portable units, and talk about the units within your own group. In the event of an casualty, a pilot should be able to talk credibly about the use, benefits, and limitations of the units. The SEAPRIDE II case demonstrates that a court may be reluctant to recognize pilot discretion in decisions on the use of technology and to respect the pilot's professional judgment when it appears that the pilot may not know what he or she is talking about.
3. Receive training before using a unit. Clearly, liability risks are enhanced when a pilot, particularly a pilot without significant familiarity with computers and electronic information systems, is simply handed a unit and dispatched to a ship. Most unit vendors offer training courses, and schools in the United States offer courses in the use and operations of the units. There are two types of training in this area, both of which are equally important. One is training in the operation of the units, and the other is bridge resource management training that addresses how pilots should incorporate the units into their piloting practices.
4. Continue to exercise good piloting practices. Some pilots have told me that they are concerned about becoming overly focused on the unit to the exclusion of other sources of information and communications with the bridge crew. Remember that a portable electronic unit is only one navigation tool or bridge resource.
5. Always carry spare batteries, power cords, and other ancillary equipment that might be needed.
6. As soon as you can after setting up the unit, verify or confirm to the extent reasonably possible that the unit is working properly and that the information displayed is accurate, even information coming from the ship's pilot plug.
7. Establish a system for periodic maintenance checks. Some pilot groups have a contract with the unit manufacturer to have units tested and updated as necessary on a regularly scheduled basis to test units and to update software as needed. Keep a log of maintenance checks and software updates.

8. Consider placing the ownership and maintenance of the portable units in a separate, limited liability entity.
9. If a proprietary or customized unit is developed, include liability protection provisions in the contract with the developer or programmer. If pilots are asked to provide information or to verify software data, get prior agreement on liability protection.
10. In locations where the pilots are covered by a liability limitation statute, check the language of the statute to ensure that the use of a portable unit would be considered within the activities for which liability is limited.
11. Try not to over-promote the units. In their zeal for advancing the use of the units or for obtaining funding through the pilotage rates for them, some pilots may tend to exaggerate the benefits of portable electronic information systems in the preventing casualties and permitting operations that were previously considered too risky. This might have the effect of raising expectations to the unreasonable level where the fact that a casualty occurs when a pilot is using a portable unit will create a de facto presumption that the pilot had to have been negligent in some way.

Conclusion

Where does this leave us? It leaves us where I think pilots have always been. The best protection against liability is to do the best possible piloting job. Not only will that prevent casualties, it will put the pilot in the best legal position in case a casualty does occur.

Pilots should avoid trying to think like lawyers. Many of the most serious legal problems that pilots get themselves into happen when they make a decision on the bridge of a ship, often under emergency circumstances, based on what they think they heard a lawyer say or, even more dangerous, what they think a lawyer would do under the circumstances. My advice to pilots is: Don't do this! BE A PILOT! Rely on your training and instincts and keep in mind why ships are required to take a pilot. It is becoming increasingly clear that a pilot's job, and what the public and the law expect of a pilot, is to prevent a casualty. Pilots should do whatever they can, and use whatever resources are available, to prevent a casualty. If a casualty does occur, the law favors those who can show that they did their best rather than those who tried to avoid liability.

If using a portable, carry-aboard piloting unit will, in the pilot's own professional judgment, help to prevent a casualty and will genuinely enhance safety and improve the pilot's performance, the pilot should use it. I believe a pilot can do so under current United States law without exposing himself or herself to significantly greater liability risks. The key is to be prudent and to exercise some common sense measures to limit the liability exposure.