

Voyage Data Recorders "CSI on the High Seas"*

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Table of Contents

Table of Contents.....	i
Preface	1
<i>1. What is a VDR?.....</i>	2
<i>2. Regulatory Authority for VDRs</i>	3
<i>3. Considerations for Counsel.....</i>	5
<i>4. Audio Evidence</i>	7
Conclusion	7

Collision at Sea Can Ruin Your Entire Day

“The sea is always ready, at the first sign of failure, to rush in and destroy the very craft it so readily supports upon the surface of the water. The sea is only safe so long as the ship is safe and seaworthy and ably handled. No matter how important a man at sea may consider himself, unless he is fundamentally worthy the sea will some day find him out. If a wrong move is made at sea, in a critical moment, death may be the penalty for the most simple failure.”

Capt. Felix Riesenberg - 1936

“Gentlemen, we are in a precarious position. We must be prepared to abandon ship. . . It’s time to go now, Phillips. You’ve done your duty. You can do no more. Abandon your cabin, it’s everyone for himself.”

Capt. Edward J. Smith – *A Night to Remember (1958)*

“Well it’s a new ship – but she’s got the right name. Now you remember that, you hear? You treat her like a lady, and she’ll always bring you home.”

Dr. Leonard ‘Bones’ McCoy – *Star Trek Next Generation (2079)*

“File the Limitation Action – Now.”

Anonymous Maritime Lawyer (1851-present)

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The relationship between a vessel owner and the master of an ocean going ship has created many of the nuances unique to maritime law. In the age of sail, the master was seen as the agent of the owner and had authority to act on his behalf and make business decisions in far flung ports of call. Technological advances have changed the concept of the master from the autonomous agent of the owner once the vessel breaks ground, to something more akin to a seagoing manager of a business unit. With satellite communications, e-mail, sat-phone communications, and shipboard teleconferencing, owners and operators can monitor day-to-day shipboard operations like never before. Similarly, all of these activities can be digitally recorded. This presentation touches on the implications of Voyage Data Recorders ("VDR") for those who litigate maritime casualties in civil, administrative and potentially criminal proceedings.

1. *What is a VDR?*

A VDR is a self-enclosed monitoring device that can digitally record almost every aspect of a ship's navigational and engine room information into a "black box" that allows review of the procedures and instructions used in the moments before a casualty to help identify the cause of the accident. Ship owners can outfit their vessels with a wide range of VDRs which can record virtually every critical piece of information relevant to a ship's business including:

- Ambient bridge conversation and VHF radio communications,
- Date, time, position (GPS),

- Ship's heading (Gyro),
- Speed (Log),
- Radar picture,
- Record radar and/or AIS data through ARPA overlays,
- Depth (Echo sounder);
- Engine demand & response,
- Main alarms, fire alarms etc.,
- Watertight and fire door status,
- Rudder order & response,
- Wind speed & direction,
- Hull stresses & acceleration.

A Simplified VDR or ("SVDR") records far less information, but nevertheless must record, "position, movement, physical status, command and control information." This information is usually limited to AIS/GPS information coupled with bridge audio.

The VDR data drive must also be located in a brightly colored, protected capsule to ensure that it can be retrieved post-casualty. It is usually located on the flying bridge and must also be fitted with a device that will assist in its location post-casualty. In the event the vessel sinks, the VDR emits a "ping" that can help accident investigators locate the wreck and begin salvage efforts. Once recovered, it will provide the foregoing data which is then reviewed much like the "black box" in aircraft casualties.

2. Regulatory Authority for VDRs.

Regulation 20 of SOLAS Chapter V requires VDRs on all vessels over 3000 GRT built after July 2002. The stated purpose behind this requirement is to "enable accident investigators to review procedures and instructions in the moments before an incident and help to identify the cause of any accident." See

MSC/Circ.1024 Guidelines on voyage data recorder (VDR) ownership and recovery. The United States is a signatory to SOLAS and likewise recognizes the requirement. As part of marine casualty investigations, the U.S. Coast Guard likewise has the authority to request voyage records. 46 CFR 4.05-15. These records include many of the items stored by VDRs.

4.05 - 15 - Voyage records, retention of.

(a) The owner, agent, master, or person in charge of any vessel involved in a marine casualty shall retain such voyage records as are maintained by the vessel, such as both rough and smooth deck and engine room logs, bell books, navigation charts, navigation work books, compass deviation cards, gyro records, stowage plans, records of draft, aids to mariners, night order books, radiograms sent and received, radio logs, crew and passenger lists, articles of shipment, official logs and other material which might be of assistance in investigating and determining the cause of the casualty. The owner, agent, master, other officer or person responsible for the custody thereof, shall make these records available upon request, to a duly authorized investigating officer, administrative law judge, officer or employee of the Coast Guard.

The IMO has implemented a phase-in for all vessels to comply with VDR requirements. All Cargo ships greater than 20,000 gross tons which were constructed before July 2002 were required to install a VDR or S-VDR at the first scheduled dry-docking after July 1, 2006 and not later than July 1, 2009. For all vessels between 3000 gross tons but less than 20,000 gross tons constructed before July 2002, they must have a VDR or S-VDR installed at the first scheduled dry-docking after July 1, 2006 but no later than July 1, 2010. This means that virtually every vessel calling on U.S. ports will be required to have a VDR installed by this year.

3. Considerations for Counsel

Marine lawyers must be cognizant of the implications of VDR data retention when conducting their preliminary investigations. Defense counsel should arrange with the Master and the Vessel's agent to preserve the VDR data, not only in the event of civil litigation, but also for U.S. Coast Guard marine casualty investigations. Unfortunately VDR data is often not immediately accessible and often requires the assistance of a shoreside technician who is qualified to download the relevant data from the VDR system. The technician should be advised to provide counsel with a copy of the VDR data and the software to playback the data. This data is usually rather large, and requires the use of portable hard-drives.

In December, 2005, the IMO issued a circular recommending that VDR manufacturers design and install units "with an accessible means for extracting the stored data from the VDR or S-VDR to a laptop computer." *See IMO SN/Circ.246*. The stated purpose of this circular was to enable marine casualty investigators immediate access to VDR data and software. Little appears to have come of this circular, and it appears that vessels would prefer this information flow through their counsel before being turned over to investigating authorities. In light of the possibility of criminal prosecution, discussed below, this raises a variety of constitutional concerns that could easily be side-stepped by U.S. Coast Guard investigators.

Despite the fact that VDR's have been around for a while, the data had rarely been requested by Coast Guard investigators. Since the COSCO BUSAN

incident, in which VDR data was extensively examined, the Coast Guard is now requesting VDR data with much more frequency. One thing to consider is that the failure to retain VDR data could be grounds for a civil penalty levied against the owner, or possibly be construed as interfering with a government investigation. 18 U.S.C. 1505.

At the very least, crews should be trained to activate the memory function after an incident to prevent the looping or recording over of the relevant data. In some cases, older VDRs recorded onto magnetic looped tapes, and would record over themselves in twelve hours. Newer digital VDRs will record over old data if improperly configured. There is currently no hard set standard for how long the VDR data must be retained, however, if the VDR data is lost, the repercussions for an adverse inference, or even worse, a spoliation instruction, are ominous. In some instances the Court could construe this as tantamount to altering or destroying the vessel's log. *See, e.g., The Ernest H. Meyer*, 84 F.2d 496 (9th Cir. 1936)

Cognizant of the requirements that vessels must maintain VDR data, a prudent marine lawyer who wishes to make a future claim would do well to send a spoliation letter to the ship's agent and counsel. A suitable spoliation letter would contain the warning that the VDR data is required to be maintained by Chapter V of Solas, and 46 CFR 4.05-15, and that the owner should take all measures necessary to download it and preserve it in the event a claim is made, or should the U.S. Coast Guard request it as part of their Part IV investigation.

4. *Audio Evidence*

All VDRs are required to gather audio recordings of the Bridge Team. Wheelhouses and bridge wings are commonly fitted with microphones which feed into the VDR. This has the unfortunate side-effect of often capturing cell-phone conversations on the VDR. Obviously, privileged communications with ship's counsel may be inadvertently disclosed to non-parties. Consequently, owners and operators should endeavor to train their crews accordingly. Evidence also may inculcate mariners of criminal wrongdoing, and could be used in U.S. Coast Guard proceedings. Consequently, it is incumbent that ship's counsel review the VDR recordings prior to being turned over to the U.S. Coast Guard to adequately inform any effected mariner of his or her rights.

Conclusion:

Technology is changing the face of maritime law. As ships become equipped with more information gathering devices, the role of the ship's lawyer must also adapt to these new evidentiary problems. But counsel can only prepare for these problems if she understands what kind of evidence is being captured, and how it may be used. This paper touches on only a few of those ramifications, but hopefully will be of benefit to maritime lawyers who are dealing with these problems daily. With regard to litigation of collision matters – unless the VDR data can be challenged as unreliable, the information it contains will obviate the need for many of the traditional machinations employed in litigating such claims. This should result in a savings of legal fees and expenses, and foster prompter resolution of such claims.