

VOYAGE DATA RECORDERS: "CSI" of Vessel Incidents

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Legge Farrow Kimmitt McGrath &
Brown, L.L.P.

Houston, Texas



MARINE CASUALTY – WHAT HAPPENS?

- Major gov't agencies who may investigate marine casualties
 - U.S. Coast Guard
 - State Pilot Board
 - NTSB
 - Various state/federal environmental agencies
 - State / federal law enforcement agencies (criminal conduct)

VESSEL DATA RECORDER: "VDR"

Regulatory Authority

- Required by Ch. V of SOLAS
- Mandatory on all ships >3,000 GRT built after July 2002
- Annual Performance Test Required
- Cert of Compliance to be issued and must be maintained on board vessel

Stated Purpose – To Be Used Like “Black Box” on Aircraft to:

- Review procedures and instructions used in the moments before casualty
- “help identify the cause of the accident”

What Does VDR Record and Preserve?

- AIS Data (position, speed, cse, cmg, target/traffic data)
- Radar screens
- Vhf transmissions
- Ambient noise/conversations on the bridge

The background is a solid blue gradient that transitions from a lighter blue at the top to a darker blue at the bottom. On the left side, there is a bright sun flare that creates a white and yellow glow, with light rays extending across the sky. The overall effect is a serene, ocean-like atmosphere.

CONCERNS FOR COUNSEL?

Voice Recorder Shows Pilots In '04 Crash Shirked Duties

By MATTHEW L. WALD

WASHINGTON, Jan. 24 — Tired and punchy, the two pilots of a twin-engine turboprop approaching the airport in Kirksville, Mo., on a cloudy night in October 2004 ignored required duties, descending far too low and far too fast without being able to see the runway, and were near tree-top level before they recognized their error, the National Transportation Safety Board said on Tuesday.

Both pilots of the Jetstream 32 died, along with 11 of the 13 passengers, in the only airliner crash with passenger fatalities in the United States that year.

The captain, Kim Sasse, 48, and his co-pilot, Jonathan Palmer, 29, joked and yawned as they descended through the clouds, according to a transcript released by investigators. At one point an air traffic controller asked them to "say your new heading," meaning to indicate the direction the plane was flying. The two joked that rather than giving the direction in degrees, it would be amusing to reply simply, "New heading."

"I'd like to do that just once to see if I'd get a crack," Mr. Palmer said.

"All right," Mr. Sasse said.

The exchange occurred when the plane was below 10,000 feet, an altitude where Federal Aviation Admin-

tors said the federal rules did not take account of either work assignments outside normal sleeping patterns or the fatigue that could be induced by a series of challenging takeoffs and landings.

F.A.A. rules on flight hours and duty time are so complex that one agency official told investigators in an interview after the crash that he had had trouble explaining the rules to the airline, the safety board said. The plane, a commuter affiliate of American Airlines, was operated by a company then called Corporate Airlines and now called RegionsAir.

The acting chairman of the safety board, Mark V. Rosenker, said that even if the pilots were fatigued, they should have been able to land safely if they had followed procedure.

"Discipline in that cockpit didn't seem to exist," Mr. Rosenker said.

Flight crews are supposed to call

*Despite warnings,
pilots went ahead with
a dangerous descent.*

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Possible Criminal Actions Against Owners and Mariners – “Its Hardball”

Lloyd's
Ship Manager
Essential reading for Owners, Operators and Managers
October 2002
180p

Poland:
Lack of support

Cyprus:
Confident future

Coatings:
Deadline day

RELEASING THE SHACKLES

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London P&I Club posts bail to buy liberty for Mangouras

Club insists decision is not a precedent, write James Brewer and Nigel Lowry

THE family of Apostolos Mangouras, Greek master of the *Prestige*, are preparing to fly to Spain to welcome him back to liberty, after London P&I Club agreed to provide his £3m (\$3.24m) bail.

Lawyers were, due to present to a judge in Corcebalon, Galicia, bail in the form of a guarantee from a Spanish bank. Observers were confident this would allow terms to be set for the swift release of Capt Mangouras from the high-security Spanish jail in which he has been incarcerated for more than two months.

"Capt Mangouras will then be given some private time to spend with his relatives. He has made it clear that another priority will be to express thanks for the hundreds of letters from individuals and organisations in Spain that have called for his freedom.

London P&I club directors and management have been working urgently to clear various technical hurdles so that the interests of the senior mariner would be protected, including his personal security in a country where the pollution of coastline has caused anger in several

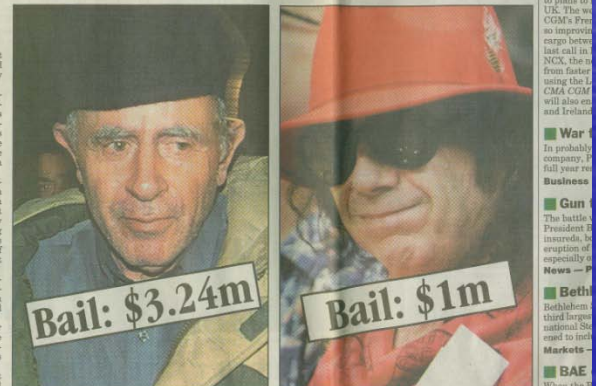
man who, by all accounts, put himself at grave personal risk to do his duty in very difficult circumstances.

"The level of bail is offensive, in the context of the captain's situation. The court's decision is difficult to understand, given that it has been handed down in the European Union, where human rights are said to be a cornerstone of society.

"An illustration of the offensiveness of the decision in Spain can be gained from a comparison with the recent case of a wealthy celebrity in California who, being accused of murder, had his bail set at less than a third of the bail required from Capt Mangouras."

This was apparently a reference to veteran pop producer Phil Spector, released on \$1m bail after being accused of murdering an ex-wife.

Mr Hinton made it clear that in providing the bail, the club was admitting to liability to anyone, nor should this be seen as a precedent. International Transport Workers' Federation general secretary David Cockcroft hailed the club's move to remedy the master's plight while "faced with an almost



The sum to secure Capt Mangouras' release was set at more than three times that of rock producer Phil Spector, who is facing charges of murder in California. The master of the *Prestige* is set to be released on a bank guarantee.

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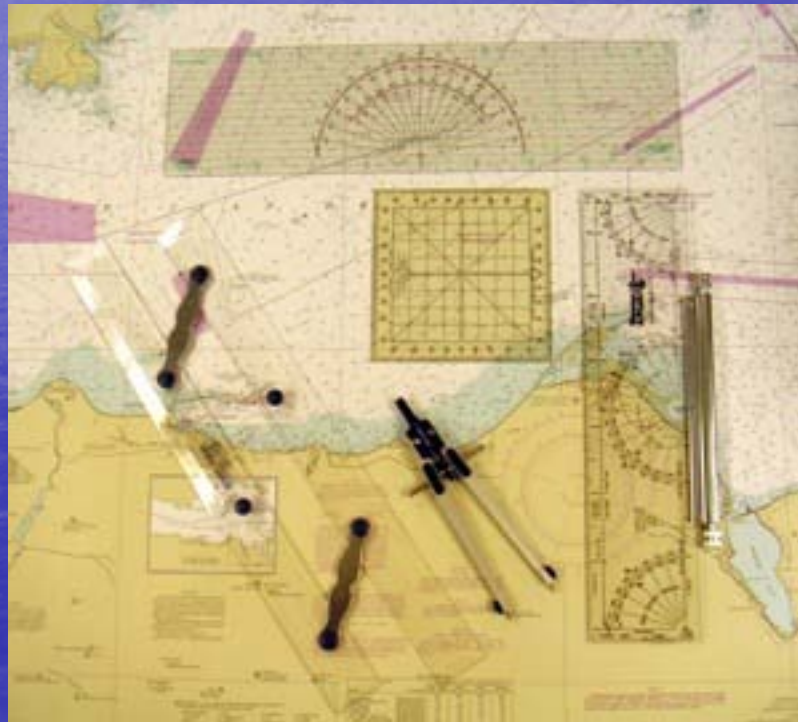
Old Method of Proving Collision Case

- Recreate your theory of vessel actions using:
 - Testimony of ship's crew
 - Course recorder data
 - Charted positions
 - GPS log positions/waypoint
 - Interpret same data from adverse vessel

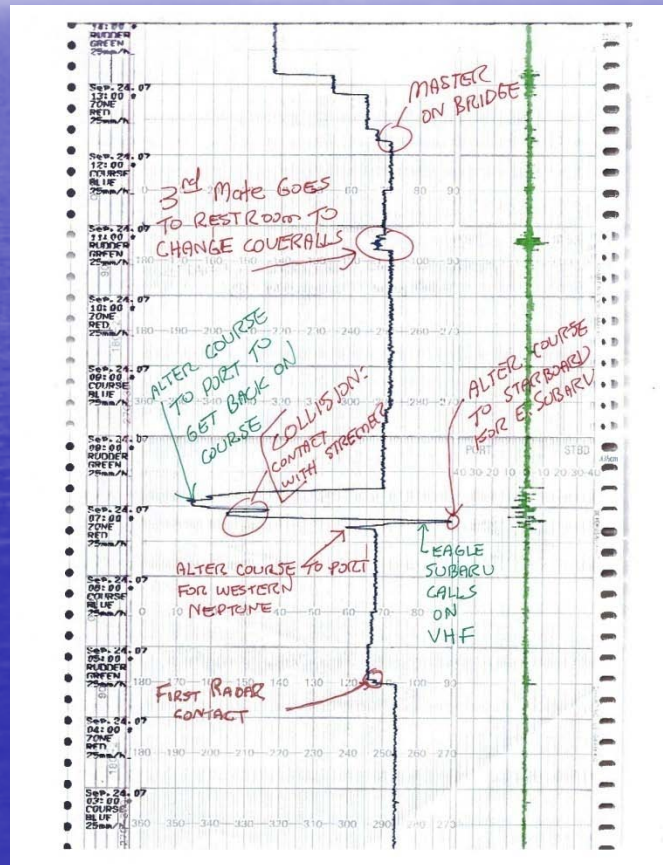
All Recorded by "Mr. Roger That" on Bridge of Ship



Old Tools for Recreating Collisions



Course Recorder – Old School Annotated with Testimony

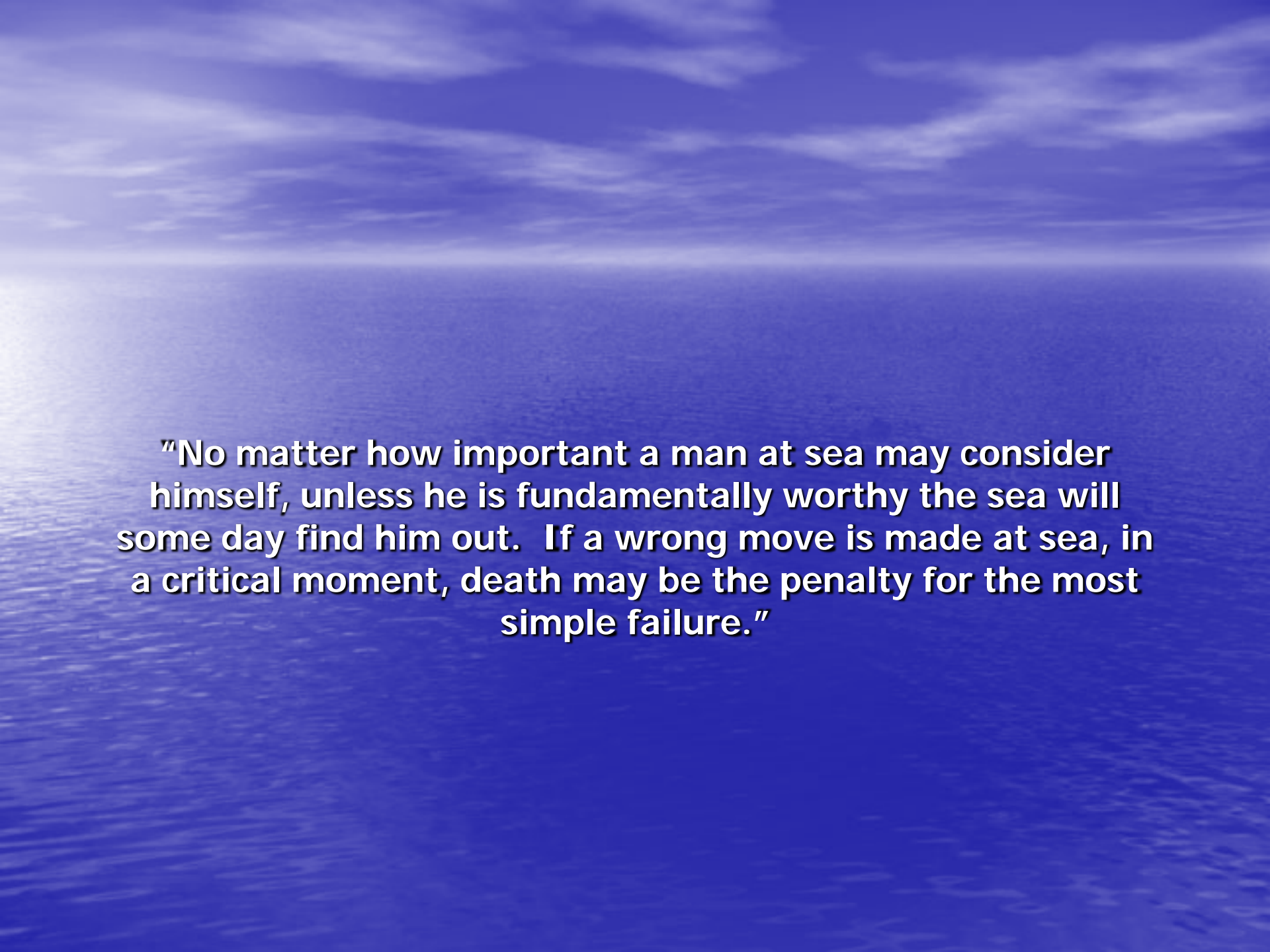


New Method – Voyage Data Recorder Feedback

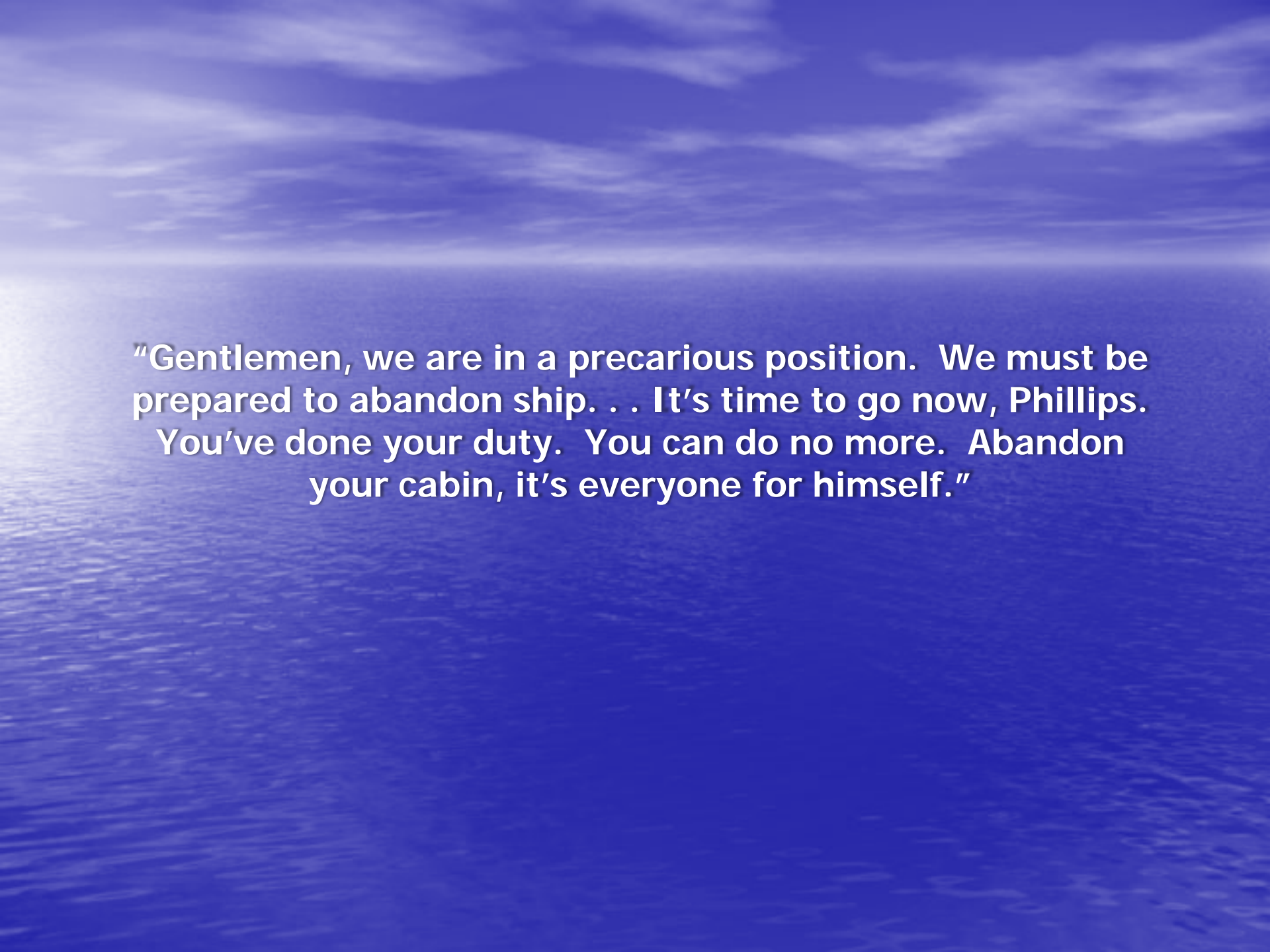
- Actual data from vessel navigation systems is recorded
- Used like “black box” in aircraft casualties
- Takes all fun out of litigating collisions
- Likely savings in legal fees

All Recorded by VDR and Stored In Beer Keg on Flying Bridge for Post-Casualty Retrieval

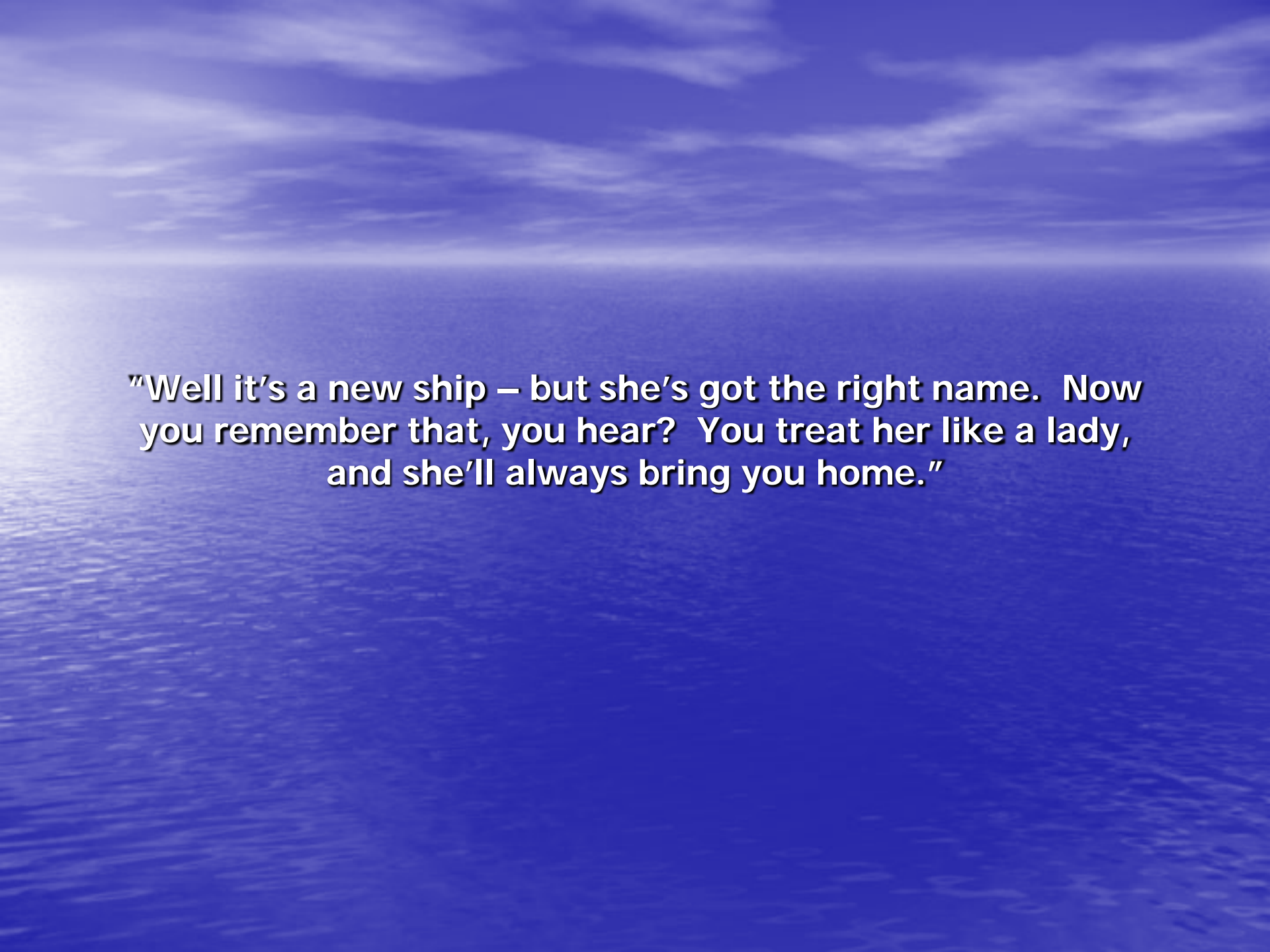




"No matter how important a man at sea may consider himself, unless he is fundamentally worthy the sea will some day find him out. If a wrong move is made at sea, in a critical moment, death may be the penalty for the most simple failure."



"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."

A serene background image featuring a clear blue sky with wispy white clouds at the top, transitioning into a calm blue ocean with gentle ripples. The horizon line is visible in the middle of the frame.

"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."

**“File the Limitation Action –
now.”**

A blue sky with light clouds over a blue ocean. The text is centered in the middle of the image.

Collision at Sea:

It can ruin your whole day



Collision: What the Eye Witness Sees





















PEQUOT



What the VDR Captures

Examples of Different VDR
Displays

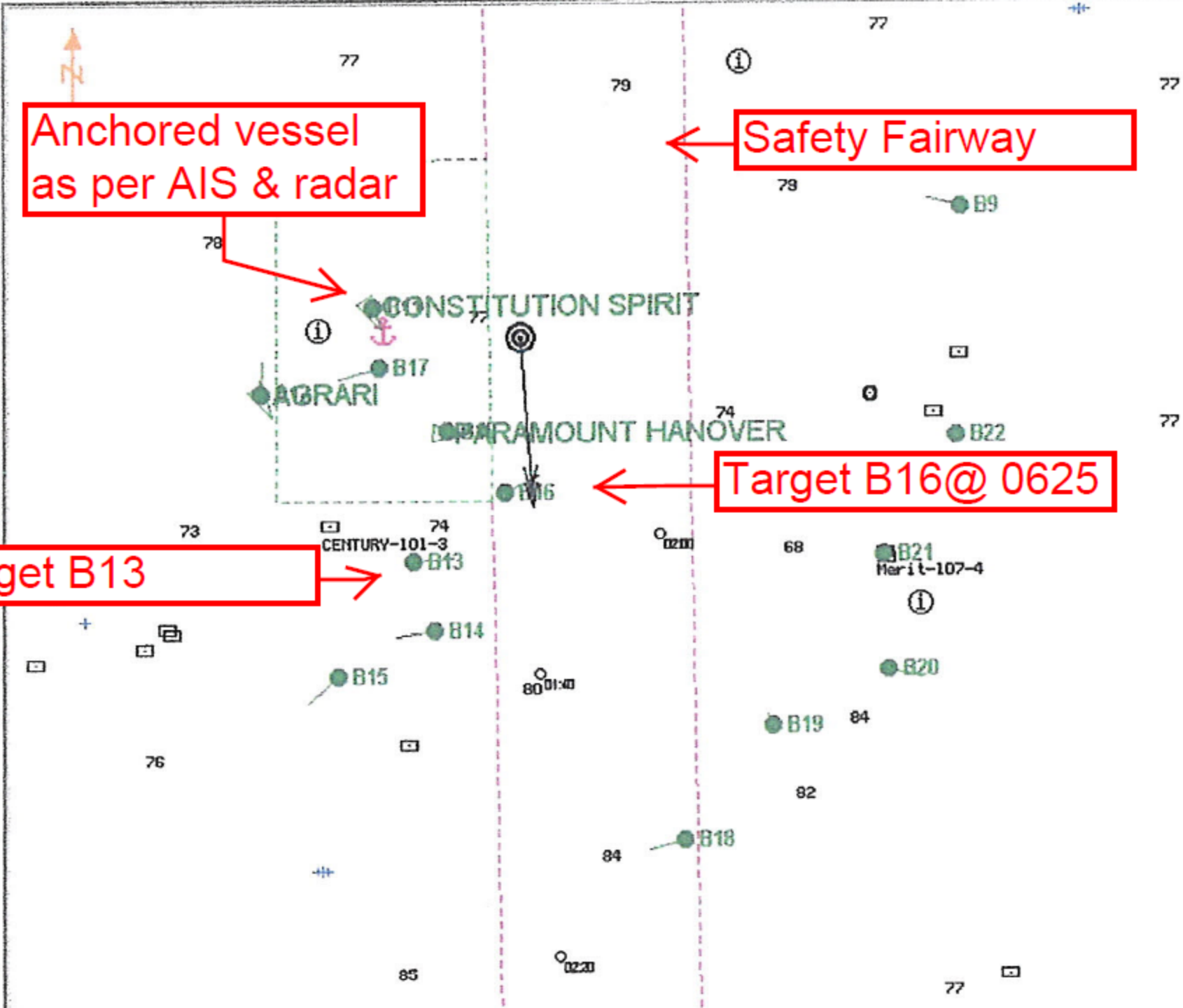
Actual Replay of Vessel Radar, AIS, and ECDIS Displays From Three Collisions

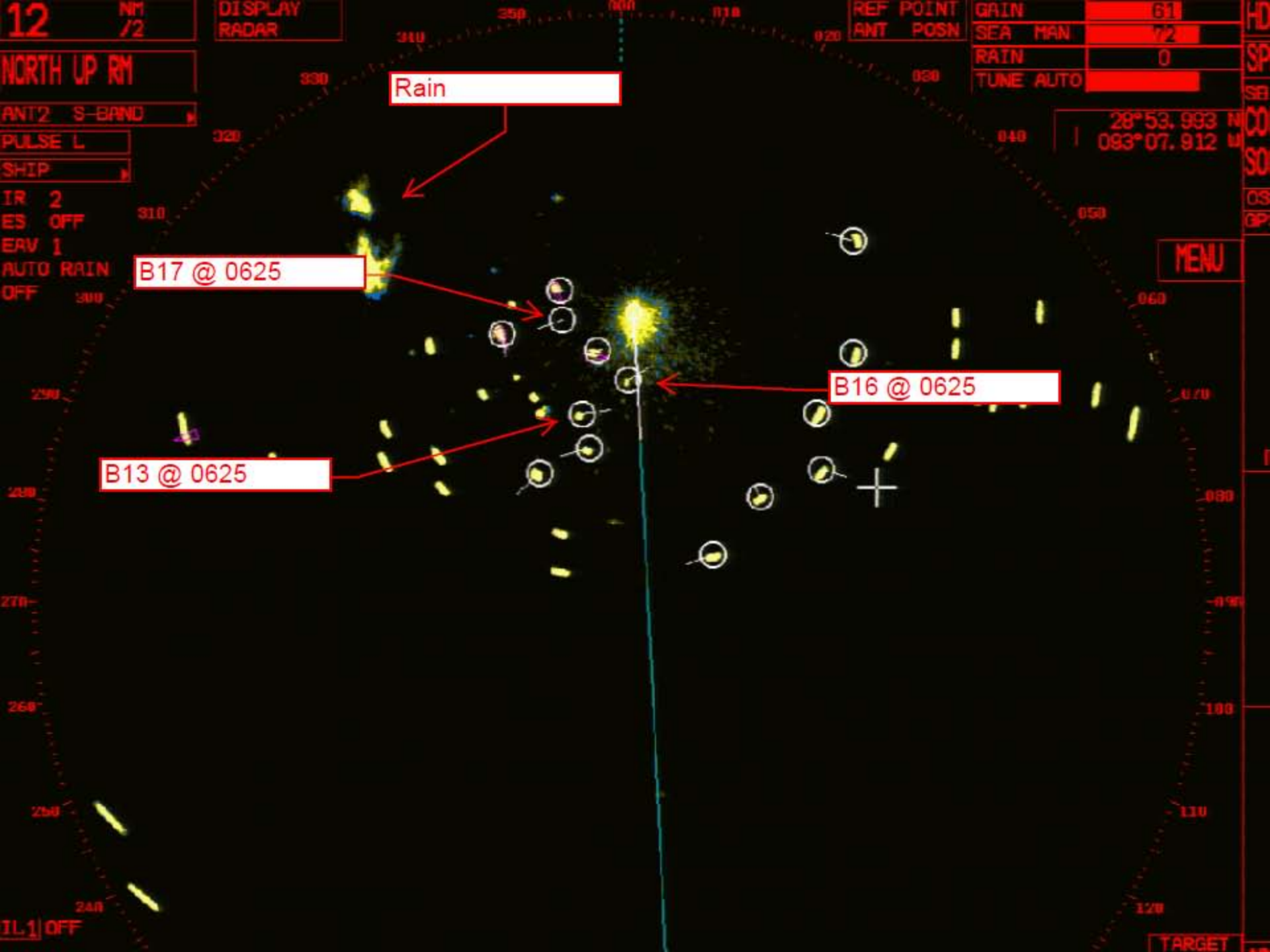
Anchored vessel
as per AIS & radar

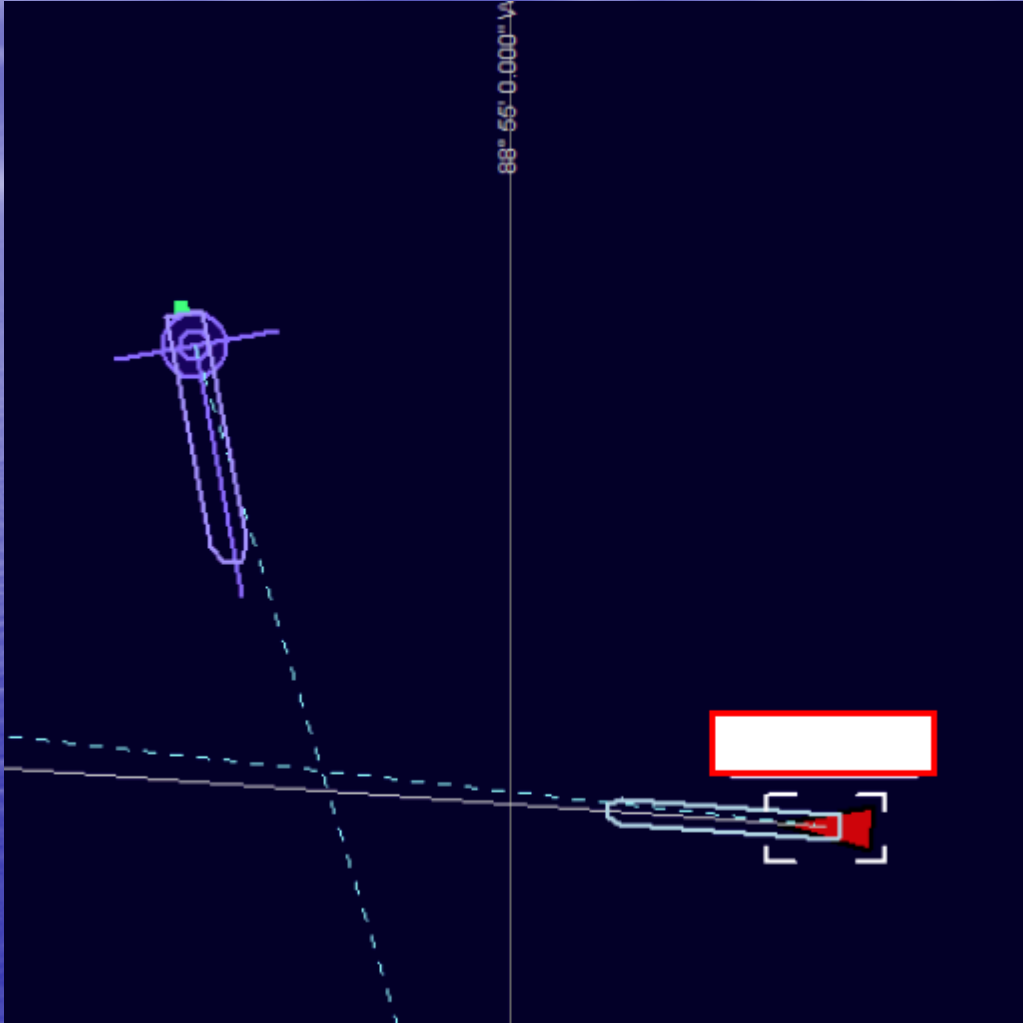
Safety Fairway

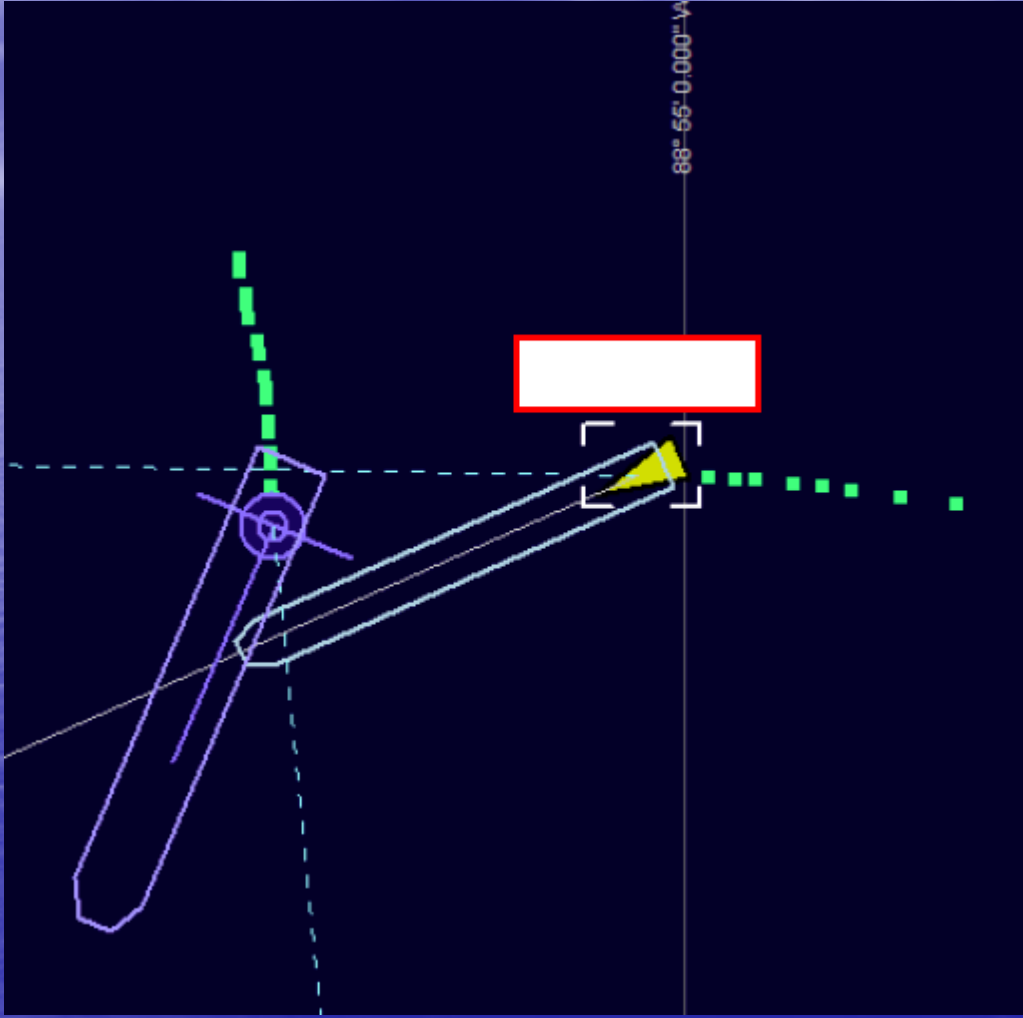
Target B13

Target B16@ 0625











VDR Data from ST. LOUIS EXPRESS

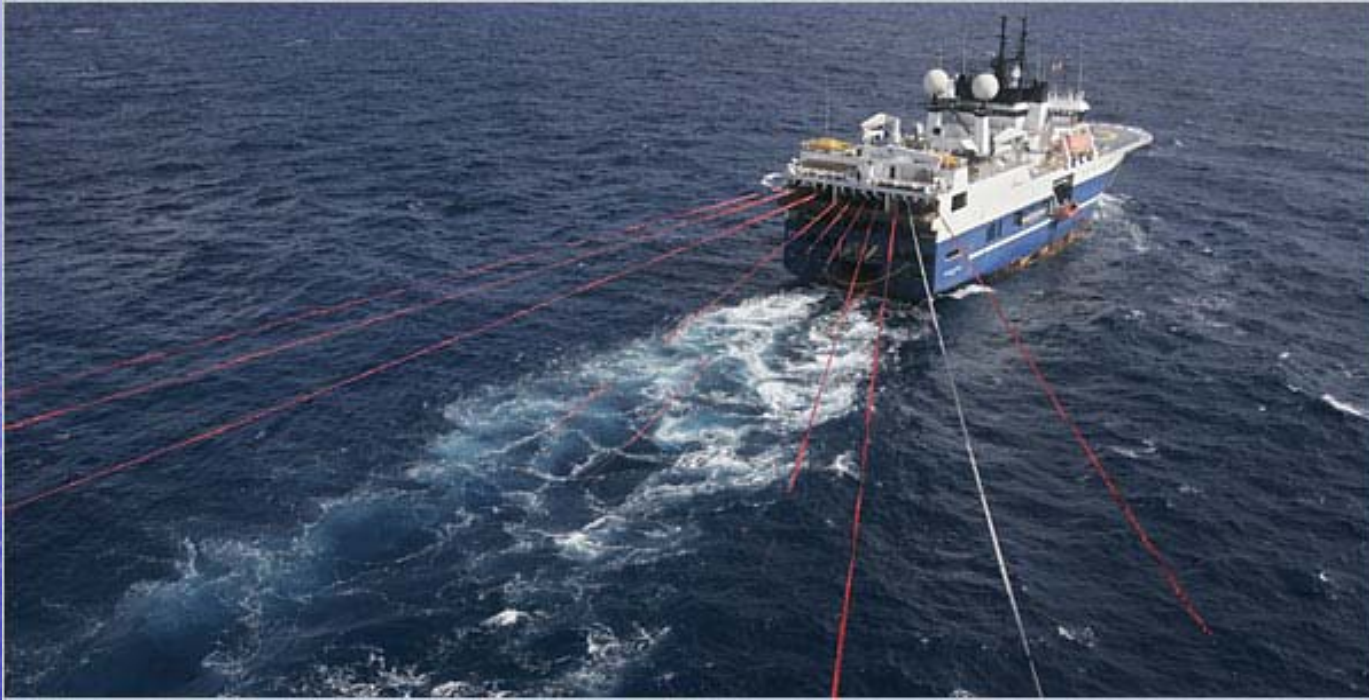
Collision Between M/V ST.
LOUIS EXPRESS
and
M/V WESTERN NEPTUNE

24 September 2007 @ 0240 hrs
Gulf of Mexico

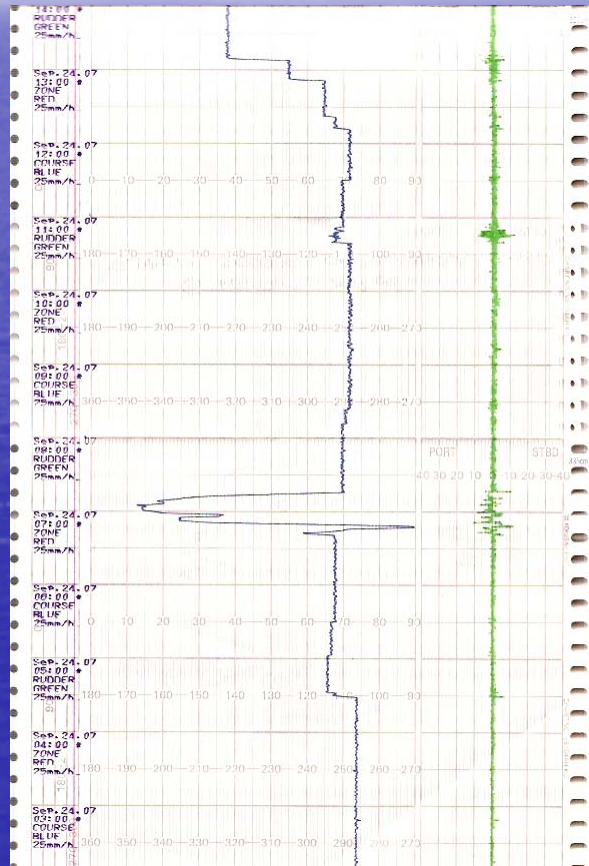
M/V ST. LOUIS EXPRESS



M/V WESTERN NEPTUNE



Course Recorder of SLE



Navigational Gear on Bridge of SLE

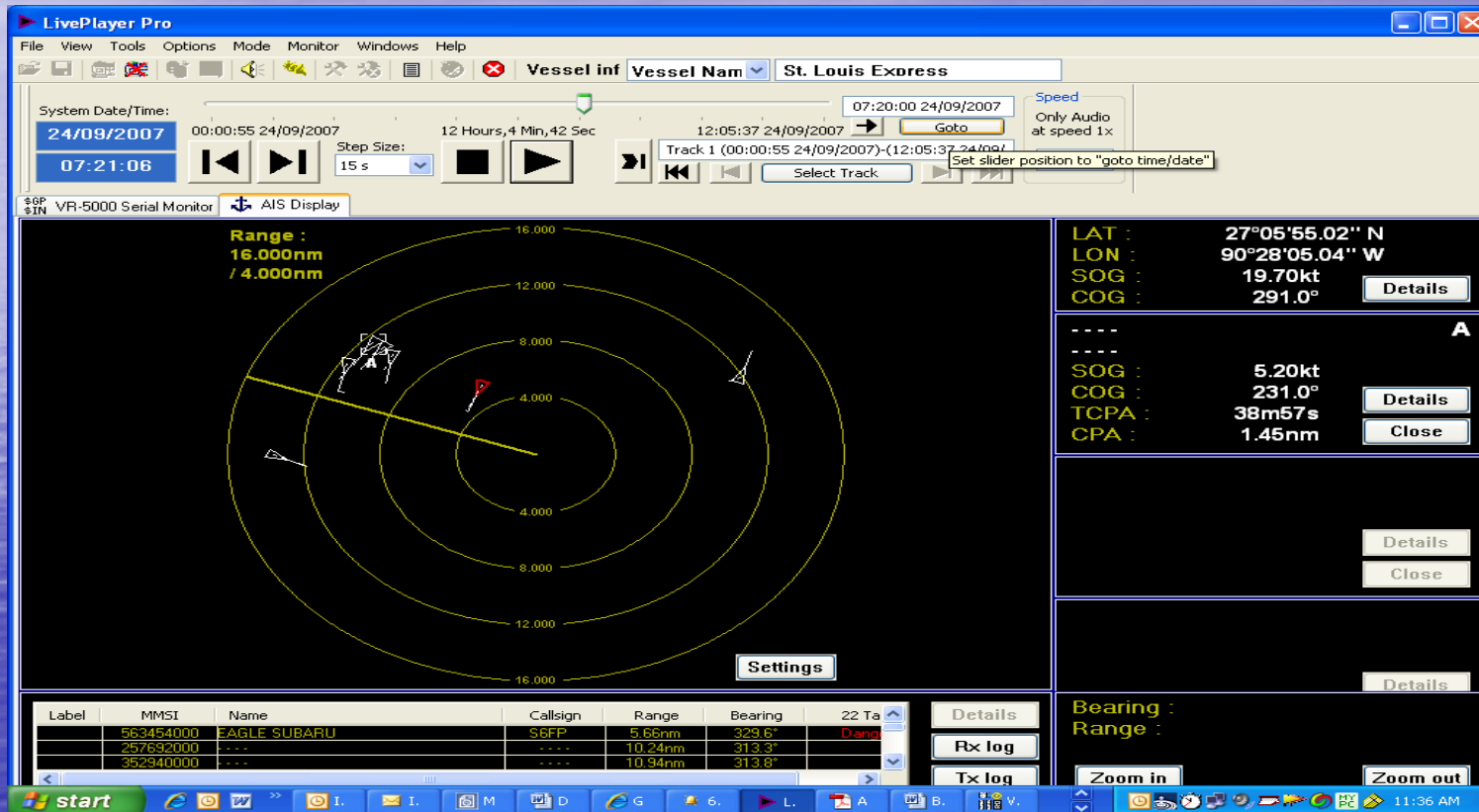




St. Louis Express

AIS Timeline from 0716 GMT
To 0804 GMT

0720 M/V Furore contacts SLE and requests
 3 NM CPA safety box ahead and on either side
 6 NM CPA astern



0723 GMT

Eagle Subaru Contacts SLE

LivePlayer Pro

File View Tools Options Mode Monitor Windows Help

Vessel info: Vessel Name St. Louis Express

System Date/Time: 24/09/2007 00:00:55 24/09/2007 12 Hours, 4 Min, 42 Sec 07:21:55 24/09/2007 Goto

07:23:46 Step Size: 15 s Track 1 (00:00:55 24/09/2007)-(12:05:37 24/09/2007) Select Track Speed: 1x Only Audio at speed 1x

VR-5000 Status Monitor VR-5000 Serial Monitor AIS Display

Range : 16.000nm / 4.000nm

LAT : 27°06'08.99" N
 LON : 90°29'01.25" W
 SOG : 19.00kt
 COG : 273.0°

Details

Details

Close

Details

Close

Details

Close

Settings

Label	MMSI	Name	Callsign	Range	Bearing	23 Ta
	563454000	---	----	4.66nm	330.4°	Dang
	257692000	OCEAN ODYSSEY	LNUT	9.43nm	314.5°	
	352940000	---	----	10.18nm	314.8°	

Details

Rx log

Tx log

Zoom in

Zoom out

start

9:26 AM

0727 GMT

SLE Bearing 326, vectoring astern of Eagle Subaru

The screenshot shows the LivePlayer Pro interface. At the top, the vessel name is "St. Louis Express". The system date/time is 24/09/2007, and the current time is 07:27:57. The radar display shows a range of 16.000nm / 4.000nm. The vessel "EAGLE SUBARU" is visible on the radar at a range of 3.06nm and bearing of 329.1°. The vessel "SLE" is visible at a range of 8.99nm and bearing of 315.5°. The right panel displays the following data:

LAT :	27°06'40.91" N	
LON :	90°30'19.61" W	
SOG :	19.50kt	Details
COG :	326.0°	

A		
SOG :	4.70kt	
COG :	233.0°	Details
TCPA :	25m48s	
CPA :	4.06nm	Close

The bottom panel shows a table of vessel data:

Label	MMSI	Name	Callsign	Range	Bearing	24 Ta
	563454000	EAGLE SUBARU	S6FP	3.06nm	329.1°	Dang
	257692000	----	----	8.25nm	315.0°	
	352940000	BECO TAU	HP7673	8.99nm	315.5°	

0736 GMT

SLE crosses astern of Eagle Subaru

LivePlayer Pro

File View Tools Options Mode Monitor Windows Help

Vessel info: Vessel Name St. Louis Express

System Date/Time: 24/09/2007 00:00:55 24/09/2007 12 Hours, 4 Min, 42 Sec 07:35:55 24/09/2007

07:36:23

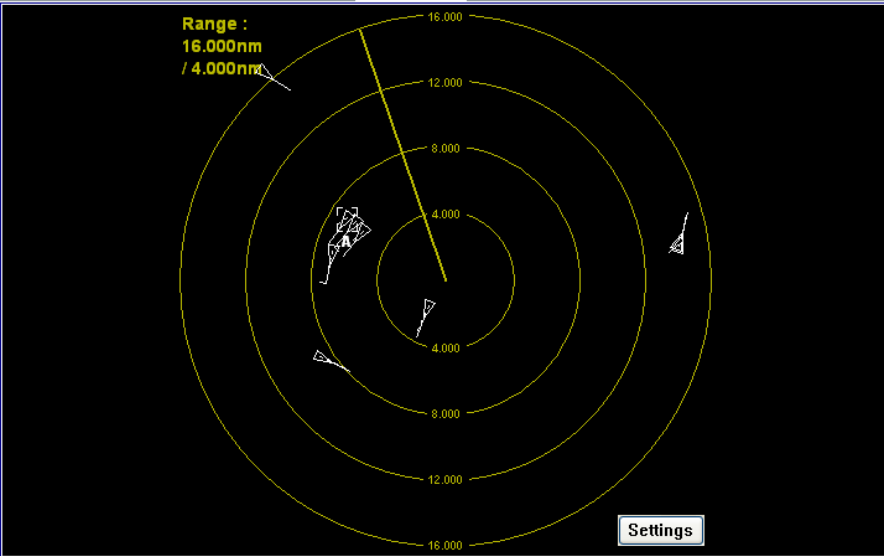
Step Size: 15 s

Track 1 (00:00:55 24/09/2007)-(12:05:37 24/09/2007)

Select Track

Speed: Only Audio at speed 1x 1x

VR-5000 Status Monitor VR-5000 Serial Monitor AIS Display



Range : 16.000nm / 4.000nm

LAT : 27°09'07.02" N
LON : 90°31'53.22" W
SOG : 19.80kt
COG : 338.0°

SOG : 4.40kt
COG : 232.0°
TCPA : 13m37s
CPA : 5.18nm

Label	MMSI	Name	Callsign	Range	Bearing	18 Ta
	563454000	---	---	1.91nm	214.3°	
	257692000	---	---	5.82nm	300.9°	
	352940000	---	---	6.44nm	303.1°	

Settings

Details Rx log Tx log

Zoom in Zoom out

start

9:34 AM

0749 GMT

SLE alters course to 290

LivePlayer Pro

File View Tools Options Mode Monitor Windows Help

Vessel info: Vessel Name St. Louis Express

System Date/Time: 24/09/2007 00:00:55 24/09/2007 12 Hours, 4 Min, 42 Sec 07:45:55 24/09/2007

07:49:08 Step Size: 15 s Track 1 (00:00:55 24/09/2007)-(12:05:37 24/09/2007) Speed: Only Audio at speed 1x

VR-5000 Status Monitor VR-5000 Serial Monitor AIS Display

Range : 16.000nm / 4.000nm

LAT : 27°13'06.12" N
 LON : 90°33'32.94" W
 SOG : 19.90kt
 COG : 329.0°

WESTERN NEPTUNE A
 3FEN9
 SOG : 5.30kt
 COG : 222.0°
 TCPA : 02m06s
 CPA : 5.26nm

Label	MMSI	Name	Callsign	Range	Bearing	23 Ta
	257692000	OCEAN ODYSSEY	LNUT	4.58nm	248.1°	
	352940000	BECO TAU	HP7673	4.82nm	255.6°	
A	357268000	WESTERN NEPTUNE	3FEN9	5.31nm	260.7°	

Zoom in Zoom out

9:37 AM

0755 GMT

SLE on heading 290

LivePlayer Pro

File View Tools Options Mode Monitor Windows Help

Vessel info: Vessel Name St. Louis Express

System Date/Time: 24/09/2007 00:00:55 24/09/2007 12 Hours, 4 Min, 42 Sec 07:55:20 24/09/2007

07:55:30 [Play] [Stop] Step Size: 15 s [Goto] 12:05:37 24/09/2007

Track 1 (00:00:55 24/09/2007)-(12:05:37 24/09/2007) [Select Track] [Speed] Only Audio at speed 1x 1x

VR-5000 Status Monitor VR-5000 Serial Monitor AIS Display

Range : 16.000nm / 4.000nm

LAT : 27°14'08.52" N
 LON : 90°35'30.24" W
 SOG : 19.90kt
 COG : 290.0° [Details]

----- A

 SOG : 5.40kt
 COG : 227.0° [Details]
 TCPA : 06m08s
 CPA : 4.11nm [Close]

[Details] [Close]

[Details]

Label	MMSI	Name	Callsign	Range	Bearing	16 Ta	Details
	352940000	----	----	4.21nm	231.8°		[Details]
	257692000	----	----	4.26nm	222.9°		[Rx log]
A	357268000	----	----	4.51nm	239.7°		[Tx log]

[Settings] [Zoom in] [Zoom out]

start [Taskbar icons] 9:45 AM

0300 GMT

SLE Crosses Western Neptune's Streamers

4.05 nm CPA

LivePlayer Pro

File View Tools Options Mode Monitor Windows Help

Vessel info: Vessel Name St. Louis Express

System Date/Time: 24/09/2007 00:00:55 24/09/2007 12 Hours, 4 Min, 42 Sec 08:00:00 24/09/2007 Goto

Speed: Only Audio at speed 1x 1x

Track 1 (00:00:55 24/09/2007)-(12:05:37 24/09/2007) Select Track

VR-5000 Status Monitor VR-5000 Serial Monitor AIS Display

Range : 16.000nm / 4.000nm

LAT : 27°14'42.17" N
 LON : 90°37'13.80" W
 SOG : 19.60kt
 COG : 290.0° Details

----- A

 SOG : 4.40kt
 COG : 219.0° Details
 TCPA : 01m42s
 CPA : 4.05nm Close

Settings

Label	MMSI	Name	Callsign	Range	Bearing	18 Ta	Details
	352940000	----	----	4.02nm	210.9°		
A	357268000	----	----	4.08nm	220.4°		Rx log
	257692000	----	----	4.30nm	202.8°		Tx log

Zoom in Zoom out

start 9:47 AM

0304 GMT

Captain of Western Neptune calls SLE

CPA 4.02 NM

The screenshot shows the LivePlayer Pro AIS Display interface. The main display area features a radar plot with concentric range rings at 4.000nm, 8.000nm, 12.000nm, and 16.000nm. A yellow line indicates the range to a vessel, with a label 'Range : 16.000nm / 4.000nm'. A vessel icon is visible on the plot, labeled 'B'. The interface includes a menu bar (File, View, Tools, Options, Mode, Monitor, Windows, Help), a toolbar, and a status bar. The status bar shows the system date/time as 24/09/2007, 08:04:20, and the vessel name as 'St. Louis Express'. The right-hand side of the interface displays detailed vessel information for three vessels, labeled A and B.

System Date/Time: 24/09/2007 08:04:20

Vessel info: Vessel Name St. Louis Express

Speed: Only Audio at speed 1x

Range : 16.000nm / 4.000nm

Vessel A:

- LAT : 27°15'08.33" N
- LOX : 90°38'36.65" W
- SOG : 20.10kt
- COG : 289.0°

Vessel B:

- SOG : 4.70kt
- COG : 226.0°
- TCPA : -02m02s
- CPA : 4.02nm

Vessel C:

- SOG : 6.80kt
- COG : 32.2°
- TCPA : 03m12s
- CPA : 6.74nm

Label	MMSI	Name	Callsign	Range	Bearing	20 Ta
A	357268000	----	----	4.07nm	203.3°	
	352940000	----	----	4.20nm	194.2°	
	257692000	----	----	4.64nm	187.9°	

This Would Not Be Captured on VDR



A blue sky with light clouds over a blue ocean with a sun reflection.

Enjoy Your Cruise

Thank you.

VOYAGE DATA RECORDERS: "CSI" of Vessel Incidents

Jim Brown

Legge Farrow Kimmitt McGrath &
Brown, L.L.P.

Houston, Texas