

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, D.C. 20594

June 1, 2016

Automatic Identification System (AIS) Data

Specialist's Factual Report By Doug Mansell

1. EVENT SUMMARY

For a summary of the accident, refer to the *Accident Summary Report* in the docket for this investigation.

2. GROUP

A group was not convened.

3. DETAILS OF INVESTIGATION

The National Transportation Safety Board (NTSB) Vehicle Recorder Division received Nationwide Automatic Identification System (NAIS) data from the United States Coast Guard. The provided NAIS data includes commercial vessel traffic in the Houston Ship Channel on the day of the accident. NAIS data was reviewed to identify vessel traffic near the accident that was relevant to the accident sequence.

3.1. AIS Description

The Automatic Identification System (AIS) is an automatic tracking system used to identify and locate vessels by electronically exchanging data with shore stations, other vessels, and aircraft. Information provided by AIS includes a vessel's identity, type, position, course, speed, navigational status, and other safety-related information. The US Coast Guard records NAIS data from a terrestrial network of AIS base stations along coastlines, and a satellite network for waters beyond the range of the terrestrial network. AIS enables vessel identification and tracking, and is not intended for precision navigation of vessels.

Title 33 *Code of Federal Regulations* (CFR) Part 164 requires a properly installed, operational AIS device on most commercial vessels operating in US waters, including the Houston Ship Channel. Both vessels involved in the accident, and the commercial vessel traffic encountered by either vessel in the Houston Ship Channel on the day of the accident, were equipped with AIS devices.

3.2. AIS Data

Specialized software was used to decode the raw NAIS data. Table 1 contains the overall dimensions and reference point for the reported position of each vessel.¹ Attachments 1 through 6 contain tabular data of the AIS position reports from each vessel, as listed in table 1. Figure 1 depicts the AIS-reported vessel dimensions, measured from the reported reference point.

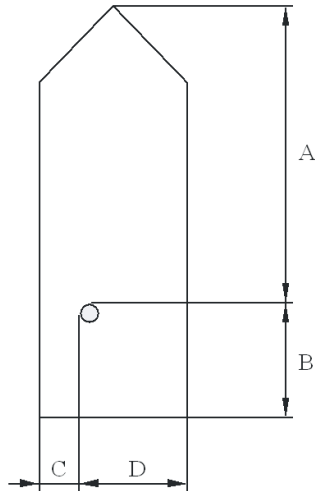
Table 1. List of vessel dimensions, and attachments containing AIS position reports

Vessel	MMSI [†]	Call sign [†]	Vessel dimensions (meters) reported via AIS (see Figure 1)				Attachment containing tabular data
			A	B	C	D	
Carla Maersk	219269000	OZGB2	13	170	16	16	1 [‡]
Conti Peridot	636092092	A8WR7	161	29	10	22	2 [‡]
Karoline N	636013817	A8PQ8	186	41	13	19	3
Stolt Span	636010915	ELVQ7	132	30	12	12	4
Gaia Leader	566300000	9V9650	26	173	24	8	5
Lincoln L	367528110	WDG3635	3	13	3	3	6

[†] Maritime Mobile Service Identity (MMSI) and call sign are regulated, unique identifiers for a vessel.

[‡] Voyage Data Recorders (VDRs) record position history more frequently than AIS.
For detailed position history, refer to the VDR factual report in the docket for this investigation.

Figure 1. Reference point for reported position and overall dimensions of vessel ²



¹ AIS devices broadcast different types of messages, at various intervals. Message type 5 includes static and voyage related information, broadcast every 6 minutes from Class A AIS devices. Vessel name and dimensions are included in message type 5. Other message types include position reports, broadcast at 2- to 12-second intervals. Position reports are included as attachments to this report.

² Refer to International Telecommunication Union Recommendation ITU-R M.1371-5, figure 41, available at <http://www.itu.int/rec/R-REC-M.1371/en>.