

Report on the grounding of
m/v FAST SAM
on June 20th, 2019



Picture : Aleksi Lindström - Fleetmon

Extract from the European Directive 2009/18/EC

(26) Since the aim of the technical safety investigation is the prevention of marine casualties and incidents, the conclusions and the safety recommendations should under no circumstances determine liability or apportion blame.

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

a.o.	Among Others
BA	British Admiralty
BASS	Bericht aan de Schelde Scheepvaart (Messages to river Scheldt shipping)
CATZOC	Category Zone of Confidence
cm	Centimeter
CNSSE	Committee Nautical Safety Scheldt Estuary
dm	Decimeter
E	East
ECDIS	Electronic Chart Display and Information System
ENC	Electronic Navigational Chart
ENE	East North East
GNA	Gemeenschappelijke Nautische Autoriteit (Common Nautical Management)
GPS	Global Positioning System
HAT	Highest Astronomical Tide
IHO	International Hydrographic Organization
IMO	International Maritime Organization
kW	Kilowatt
LAT	Lowest Astronomical Tide
LIS	Loods Informatie Systeem (Pilot Information System)
LW	Low Water
m	Meter
m/v	Motor Vessel
Max.	Maximum
MHWS	Mean High Water Springs
MLWN	Mean Low Water Neaps
MMSI	Maritime Mobile Service Identity
N	North
NAP	Normaal Amsterdams Peil
NL	The Netherlands
NLHO	Netherlands Hydrographic Office
nm	Nautical Miles
NtM	Notices to Mariners
P	Preliminary
QPS	Quality Positioning Services
SOG	Speed Over Ground
SOLAS	Safety Of Life At Sea
STCW	Standard of Training, Certification and Watchkeeping
T	Ton
TAW	Tweede Algemene Waterpassing
UKHO	United Kingdom Hydrographic Office
VHF	Very High Frequency
VTS	Vessel Traffic Service

1 MARINE CASUALTY INFORMATION

1.1 Classification of Accident

According to Resolution A.849(20) of the IMO Assembly of 27 November 1997, Code for the investigation of Marine Casualties and Incidents, a *serious marine casualty* means a marine casualty involving a fire, explosion, grounding, contact, heavy weather damage, ice damage, hull cracking suspected hull defect, etc., resulting in:

- structural damage rendering the ship unseaworthy, such as penetration of the hull underwater, immobilization of main engines, extensive accommodation damage etc.;
- or pollution (regardless of quantity);
- and/or a breakdown necessitating towage or shore assistance.

Less serious accidents are accidents that are not defined as *serious accidents* or *very serious accidents*.

According this definition, the accident was classified as

LESS SERIOUS

1.2 Accident Details

Time and Date	20 June 2019
Location	River Scheldt, near buoy E12A, (Fairway Everingen)
Deceased	0
Type of accident	Grounding

2 SYNOPSIS

Time Zone: Central European Summertime (UTC+2)

M/v FAST SAM left her berth at the port of Antwerp, Belgium, on June, 20, 2019 at 1600, loaded with a cargo of silica sand. Upon departure, the draughts fore and aft were respectively 4,40m and 4,80m. There was a moderate breeze with temperatures around 19°C with good visibility and no rain. Sunset was predicted at 2201. The destination of the vessel was Naestved, Denmark.

The vessel was manned according to the regulations with a master and five crew members. A river pilot and the master were on the bridge during the passage of the river Scheldt. The pilot was at the wheel.

The vessel sailed regularly on the river Scheldt between Flushing and Antwerp. This was the sixth voyage on the river since the beginning of June 2019. All six voyages were attended by a pilot and were executed with the same crew on board. This was the third time in June that this crew sailed through fairway Everingen.

All equipment on board was working properly. The vessel was equipped with up-to-date paper charts. There was no ECDIS on board. Paper chart 120, coproduced by UKHO and NLHO, edition June 2018, was used for the voyage on the river Scheldt. The pilot was equipped with a laptop containing specialized navigation software with detailed information about the river Scheldt.

On June 20th, around 1800, the vessel entered the river Scheldt at Antwerp (by the Boudewijn lock) with a river pilot on board.

The pilot had prepared the voyage plan of the river Scheldt up to Flushing and thoroughly discussed it with the captain on board. It was decided to sail through the northern fairway on the river (Middelgat and Everingen). The vessel sailed through this fairway on June 14 and 19 as well. Although it was ebb tide when the vessel entered the river, no risks for grounding within the fairway were detected.

Calculated water height surface water Location TERNEUZEN (NL) Reference: LAT Time zone: Summertime, NL, UTC+2					
Date	Time	Value (cm)	Date	Time	Value (cm)
21/06/2019	4:50	464 cm	21/06/2019	0:30	68 cm
21/06/2019	4:40	443 cm	21/06/2019	0:20	63 cm
21/06/2019	4:30	420 cm	21/06/2019	0:10	59 cm
21/06/2019	4:20	394 cm	21/06/2019	0:00	57 cm
21/06/2019	4:10	369 cm	20/06/2019	23:58	57 cm LW
21/06/2019	4:00	343 cm	20/06/2019	23:50	58 cm
21/06/2019	3:50	319 cm	20/06/2019	23:40	61 cm
21/06/2019	3:40	296 cm	20/06/2019	23:30	66 cm
21/06/2019	3:30	276 cm	20/06/2019	23:20	73 cm
21/06/2019	3:20	256 cm	20/06/2019	23:10	82 cm
21/06/2019	3:10	238 cm	20/06/2019	23:00	92 cm
21/06/2019	3:00	221 cm	20/06/2019	22:50	103 cm
21/06/2019	2:50	205 cm	20/06/2019	22:40	114 cm
21/06/2019	2:40	190 cm	20/06/2019	22:30	126 cm
21/06/2019	2:30	176 cm	20/06/2019	22:20	139 cm
21/06/2019	2:20	162 cm	20/06/2019	22:10	152 cm
21/06/2019	2:10	149 cm	20/06/2019	22:00	165 cm
21/06/2019	2:00	138 cm	20/06/2019	21:50	180 cm
21/06/2019	1:50	127 cm	20/06/2019	21:40	195 cm
21/06/2019	1:40	118 cm	20/06/2019	21:30	211 cm
21/06/2019	1:30	109 cm	20/06/2019	21:20	228 cm
21/06/2019	1:20	101 cm	20/06/2019	21:10	246 cm
21/06/2019	1:10	94 cm	20/06/2019	21:00	263 cm
21/06/2019	1:00	87 cm	20/06/2019	20:50	281 cm
21/06/2019	0:50	80 cm	20/06/2019	20:40	299 cm
21/06/2019	0:40	73 cm	20/06/2019	20:30	316 cm

Figure 2 – Tide table Terneuzen

<https://www.rijkswaterstaat.nl/water/waterdata-en-waterberichtgeving/waterdata/getij/index.aspx>

Buoy E12A was positioned in between buoys E12 and E14 and marked shallow waters on the northern site of the fairway, see Figure 3.

At 2020, twenty minutes before the passage of m/v FAST SAM, the inland navigation vessel m/v LA PRESTA had allided with buoy E12A. At 2025, the inland navigation vessel, m/v NOVAMENTE informed the VTS on VHF channel 03, the working VHF channel of sector Terneuzen, that buoy E12A was adrift.

At that moment, m/v FAST SAM was sailing in sector Hansweert and kept a listening watch on VHF channel 65. Upon arrival in sector Terneuzen, m/v FAST SAM reported her entry into the sector to the VTS on VHF channel 03. The VTS did not inform m/v FAST SAM about the buoy being adrift.

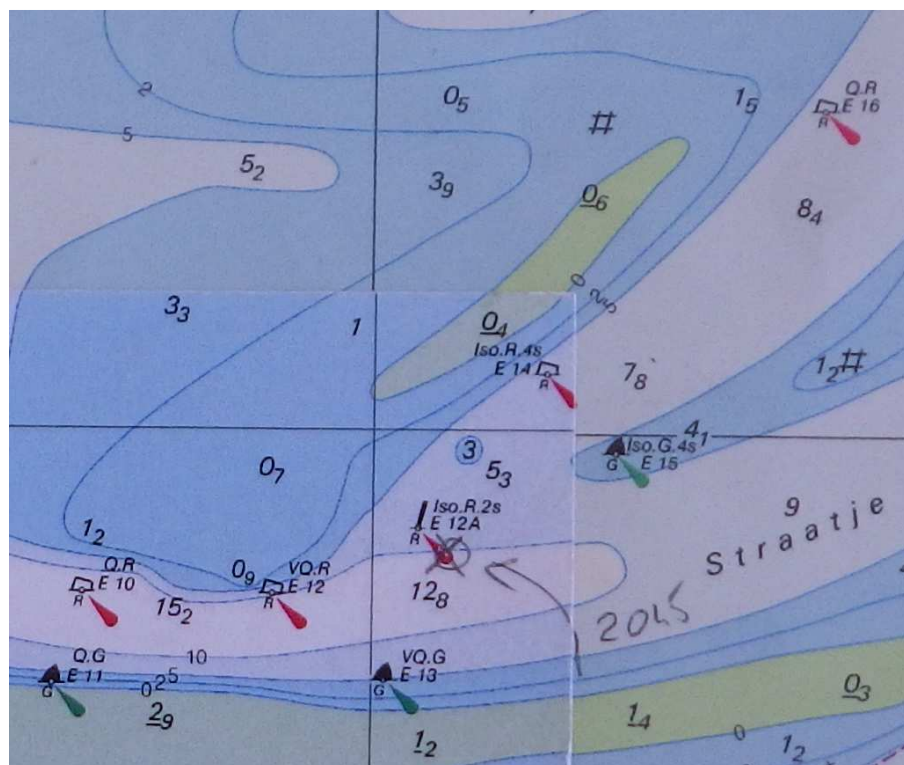


Figure 3 – Position of buoy E12A on Chart 120

M/v FAST SAM listed two to three degrees to portside after grounding and was unable to become afloat again by her own means. A tug company was called to refloat the vessel.

At 2145 the first tug arrived at the grounding location. The second tug arrived at 2220. The tide was still falling at that moment. Low water at Terneuzen was predicted at 2358, see Figure 2.

Despite several attempts, the tugs did not succeed to refloat m/v FAST SAM and at 2330 it was decided to cease the salvage until the tide raised.

At 0220 new attempts to refloat the vessel were undertaken. When the water level reached a height of 3.0m LAT at 0348, the vessel was refloated.

While grounded, the crew inspected and monitored the vessel. No damage to the vessel was detected by the crew. An underwater inspection witnessed by the classification society on June, 21st, also did not reveal any damage to the vessel.

3 FACTUAL INFORMATION

3.1 Particulars of m/v FAST SAM



Figure 4 – m/v FAST SAM

Source: [Shipspotting.com/Pekka Jarvinen](http://Shipspotting.com/Pekka_Jarvinen)

Name of ship	FAST SAM
IMO number	9085455
MMSI nr.	205477000
Call sign	ONEJ
Flag State	BELGIUM
Ship / craft type	General Cargo
Gross tonnage	1983
Deadweight	3204 T
Date keel laid	1994
Company name	Fast Lines
Propulsion type	Internal combustion
Max. engine power	1325 kW
Nr. main engines	1
Length overall	89.99 m
Length between PP	84,98 m
Breadth	12.5 m
Draught	4.56 m
Hull material	Steel

3.2 Tide tables and chart datum

In tidal waters, the actual depth changes with the tide. When the tide rises, the water becomes deeper. This makes it impossible to print the actual depth on a nautical chart. To solve this problem, the charted depth refers to a certain depth at a certain moment in time. This is called the chart datum. To know the actual depth, the tide at that moment (as can be found in tide tables) needs to be added to or subtracted from the charted depth.

Chart 120 uses LAT or lowest astronomical tide as chart datum. This means that the depth on Chart 120 is the lowest tide level which can be predicted to occur under average meteorological conditions (e.g. wind causes waves with crests and troughs that influence the depth) and under any combination of astronomical conditions (the position of the sun and the moon influence the tide). As LAT is the lowest possible tide, the predicted tide always needs to be added when LAT is used as chart datum.

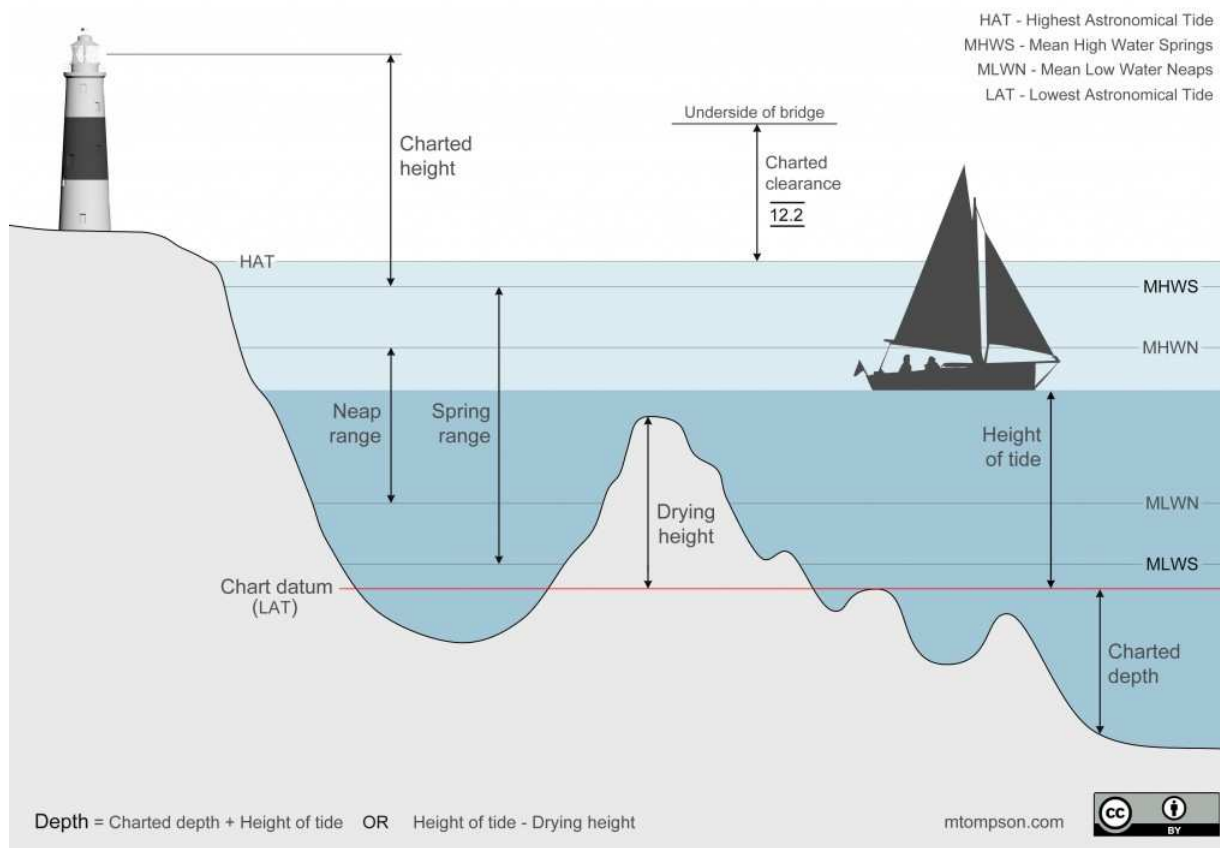


Figure 5 – Heights and depths on sea charts

Source : mtompson.co.uk/share.htm

Local tide tables do not always refer to LAT, but to a general reference called an ordnance datum. It is the same reference as is used to express the height of a certain point at land or in construction drawings. Such an ordnance datum can refer to the mean sea level in a city, at high or low water.

In the Netherlands, the ordnance point is the Amsterdam Ordnance Datum (NAP in Dutch: Normaal Amsterdams Peil), in Belgium TAW (Tweede Algemene Waterpassing) is used. The ordnance datum in Belgium is 2,33m lower than the ordnance datum in The Netherlands. TAW= NAP minus 233 cm. The highest point of Belgium, Signal de Botrange, lies at a height of 694 m above TAW, but at only 691,7 meters above NAP.

When a local tide table refers to NAP or TAW and the depth on the chart refers to LAT, a correction related to the location needs to be applied.

E.g: The correction at Hansweert to transform the depth from NAP to LAT= - 283 cm.

3.3 British Admiralty charts and Notices to Mariners

Recognised hydrographic offices all over the world are competent to develop, and publish, nautical charts for a certain area. These charts can be paper charts or electronic charts. In addition the hydrographic offices edit corrections that need to be applied to the published charts to keep them up to date.

The UK hydrographic office, the UKHO, collects information from partners and data suppliers worldwide and transforms this information into British Admiralty publications such as books, charts, etc.. These publications cover over 90% of the global trading routes.

There is a global network of ADMIRALTY distributors and seafarers all over the world use ADMIRALTY publications.

To keep ADMIRALTY charts and publications up to date, weekly Admiralty Notices to Mariners are published, in a digital format as well as on paper. The Admiralty NtM also contain published NtM issued by national hydrographic offices, for areas that are covered under ADMIRALTY charts and publications. In this specific case, paper chart 120 is produced in co-production between NLHO and UKHO. Therefore the Admiralty NtM is identical to the NL NtM.

It is inevitable that there is a delay of several weeks between the local publication of the NtM, the publication in the Admiralty NtM and the implementation of the correction onto the paper nautical charts and publications on board.

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ADMIRALTY Notices to Mariners

ADMIRALTY Notices to Mariners are weekly updates that provide bridge crews with the latest safety-critical navigational information. They can be downloaded for free below or purchased as weekly bulletins from your ADMIRALTY Chart Agent.

Low bandwidth

Weekly

Select period Year Week

2019 36

Select All

36snii19	724 KB (.pdf)	
36wknm19	2 MB (.pdf)	
Chart1351NM4509	35 KB (.pdf)	

Figure 6 – Admiralty Notices to Mariners, online version

<https://www.admiralty.co.uk/maritime-safety-information/admiralty-notices-to-mariners>

4 ANALYSES

4.1 Information about the missing buoy

On June, 20, 2019 at 2020 m/v LA PRESTA had allided with Buoy E12A. At 2025 m/v NOVAMENTE had informed Traffic Centre Terneuzen on VHF channel 03 that buoy E12A was no longer in position and was floating in proximity of buoy E12. The traffic centre confirmed reception of this message.

M/v FAST SAM had entered VHF sector Terneuzen (VHF channel 03) at 2033 and reported to Traffic Centre Terneuzen her entry into the sector. Traffic Centre Terneuzen confirmed reception of this message, but no warning regarding buoy E12A was given.

By entering sector Terneuzen, m/v FAST SAM had switched her listening watch from VHF channel 65, sector Hansweert, to VHF channel 03, see Figure 7. Messages broadcast before 2033 on VHF channel 03 were not heard on board m/v FAST SAM.

Scheldt shipping information reports were broadcast every hour+50' by Traffic Centre Vlissingen. As the buoy was allided with at 2020 and the grounding of m/v FAST SAM took place at 2045, no shipping information report was broadcast within that timeframe..

It can be concluded that m/v FAST SAM had not received any information about buoy E12A being adrift.

The shipping information report at 2050 did not inform about a missing and drifting buoy.

The shipping information report at 2150 did not inform about a missing and drifting buoy nor about a grounded vessel.

The shipping information report at 2250 informed that fairway Everingen was obstructed.

Vessels entering VHF sector Terneuzen were individually informed by Traffic Centre Terneuzen about a vessel that had grounded at buoy E12A.

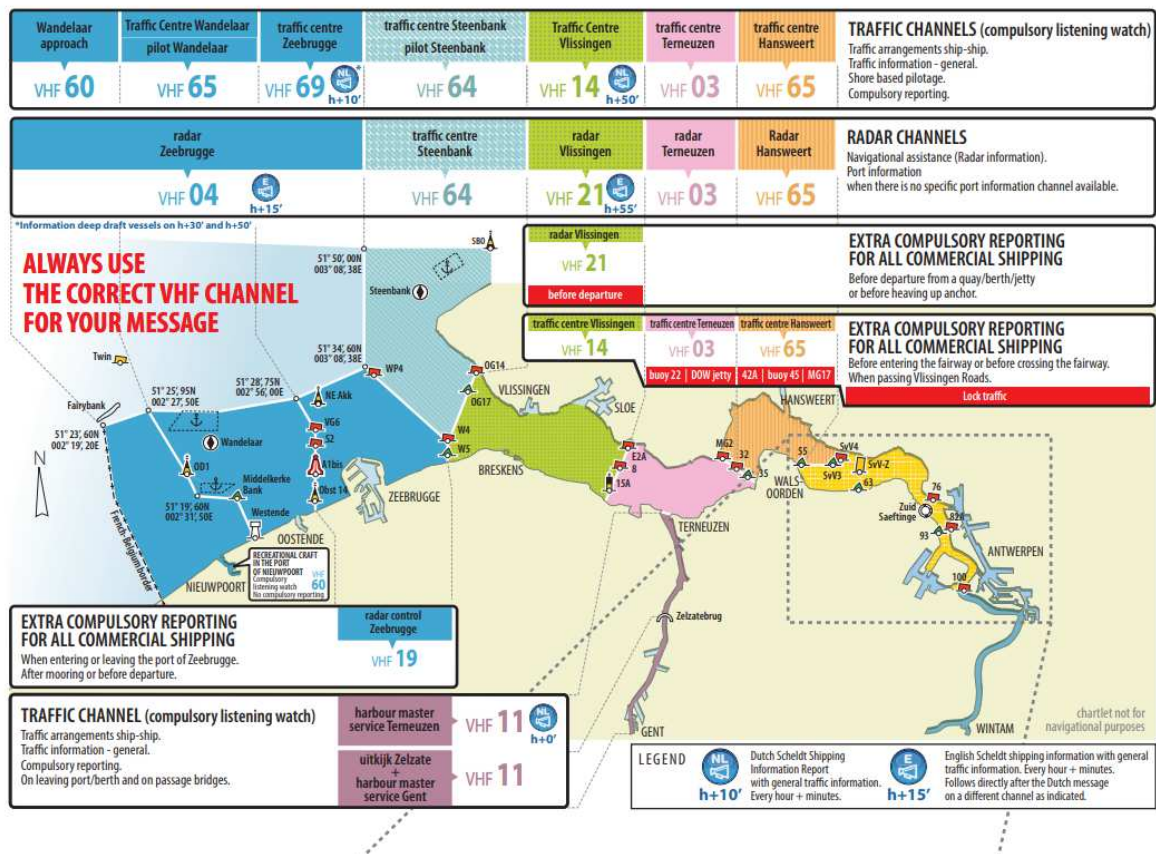


Figure 7 – VHF sectors on river Scheldt

4.2 Voyage planning and situational awareness of the pilot

The pilot had prepared the voyage on the river Scheldt by using Qastor software (from QPS brand) on a laptop. By using Qastor, the pilot had access to the most detailed level of information of the subscribed area, more detailed than the information available on ENC or paper charts. QPS offered a commercial service to make sure that any available update was available in the software. When updates were available, the software showed a warning and the updates were installed online.

The Qastor software used, was up to date. Detailed survey details and correct buoy positions were available.

At the moment of the grounding, the pilot was at the wheel. He was using the ship's radar and took advantage of the good visibility during daylight. He relied on his passage planning and his knowledge of the fairway and was not using his laptop for navigation.

On this type of vessels, pilots didn't bring their own GPS antennas to receive the position of the piloted vessel in the Qastor software. The antennas of the vessel were connected with the navigation laptop. The setting of the antennas on board influenced the accuracy of the vessel's position shown in Qastor. Therefore, the pilot did not navigate on Qastor software only.

The pilot had two years of experience in the area. Before receiving a license to pilot in the area, the pilot needed a.o. to prove his knowledge of the buoyage in the area. Buoy E12A was put in position in September 2018.

Pilots were informed about changes in the fairway by the notifications of the Common Nautical Management of the river Scheldt, the so called BASS, as an example is seen in Figure 15. Pilots received the BASS by the pilot information program (called LIS). LIS was available on the pilot's laptop and cellphone.

Notifications about changes in the fairway and up to date detailed navigation software continuously updated the pilot's knowledge.

4.3 Voyage planning and situational awareness of the head of the watch

During the voyage on river Scheldt, the captain was the head of the watch. There was no ECDIS on board. Chart 120 was in use and a voyage planning had been prepared by the crew from Flushing to Naestved. No voyage planning was in place for the part of the voyage from the berth at the Port of Antwerp to Flushing, although a voyage planning from berth to berth is compulsory on board.

After the pilot boarded, he discussed the voyage plan to Flushing with the captain. The captain agreed to use the voyage planning of the pilot.

As the captain sailed the river 5 times during the last month, each time with a pilot on board, he had sufficiently been familiarized with the way of working of the pilots.

The captain relied on the pilot and didn't plot any position on chart during the passage of the river Scheldt. He was on the bridge during the whole passage, standing in the vicinity of the pilot.

Without profound knowledge of the fairway and without plotting his position, it was impossible for the captain to detect the missing buoy.

4.4 Expected and available water depth according Chart 120 and ENC NL5WS140

The draught of the vessel was 4.8m. The local tide level was +2,6m LAT at the moment of grounding.

According the ENC and Chart 120, buoy E12A was lying in an area between depth contours 5 and 10 m (see Figure 3 and Figure 8 **Fout! Verwijzingsbron niet gevonden.**).

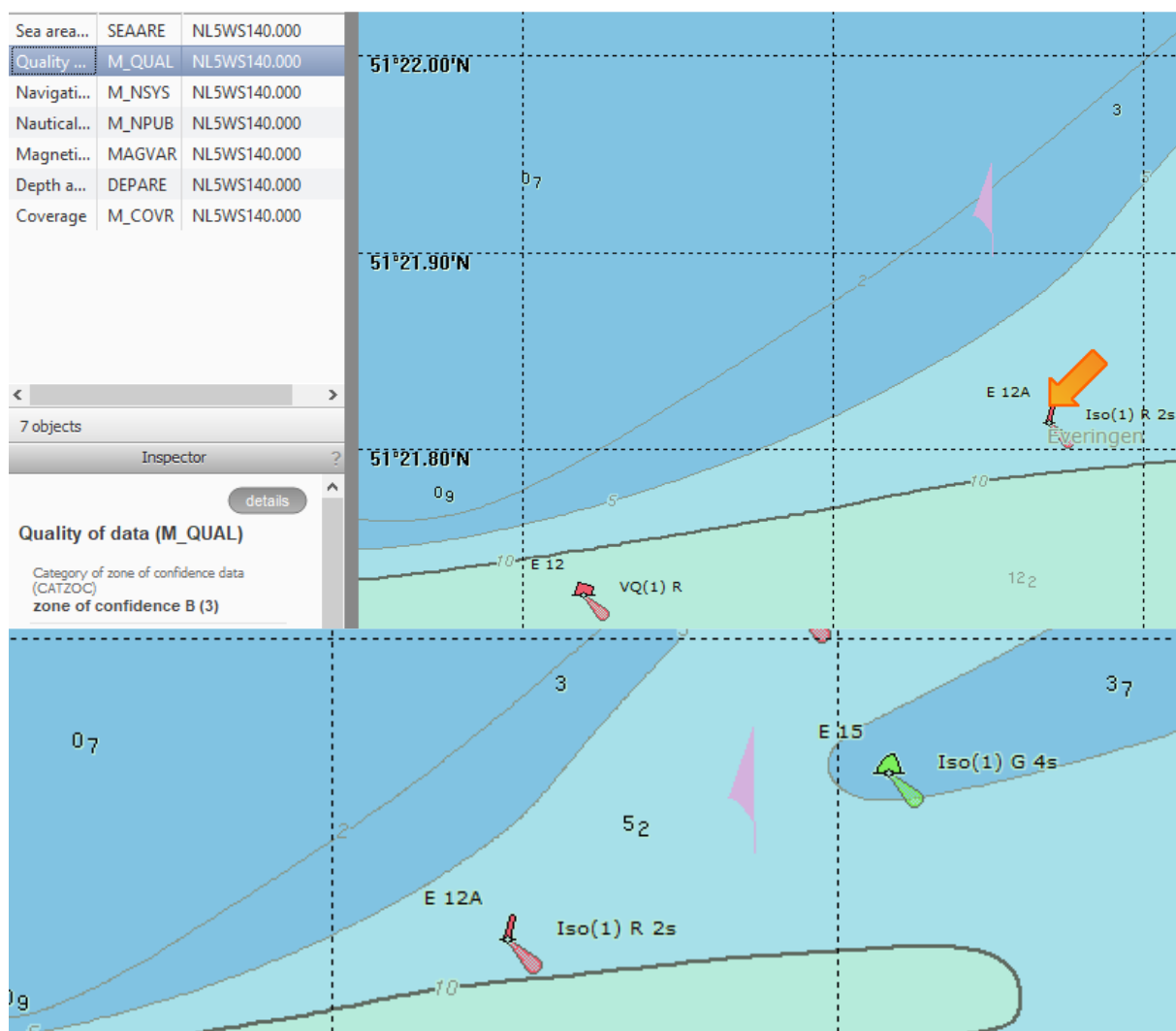


Figure 8 – ENC NL5WS140

The reliability of the charted data was assigned to as CATZOC B.

ZOC	Position Accuracy	Depth Accuracy		Seafloor Coverage	Typical Survey Characteristics
B	± 50 m	= 1.00 + 2% depth		Full area search not achieved; uncharted features, hazardous to surface navigation are not expected but may exist.	Controlled, systematic survey ² achieving similar depth but lesser position accuracies than ZOCA2, using a modern survey echosounder ³ , but no sonar or mechanical sweep system.
		Depth (m)	Accuracy (m)		
		10	± 1.2		
		30	± 1.6		
		100	± 3.0		
		1000	± 21.0		

Figure 9 – CATZOC B

CATZOC B criteria stated that uncharted features, hazardous to surface navigation are not expected but may exist.

The movement of sand beds is often unpredictable and thus cannot be charted.

More detailed information about CATZOC can be found in Annex 2.

The whole area had been surveyed between July 2016 and June 2019. The measured values north of buoy E12A explained why the vessel ran aground.

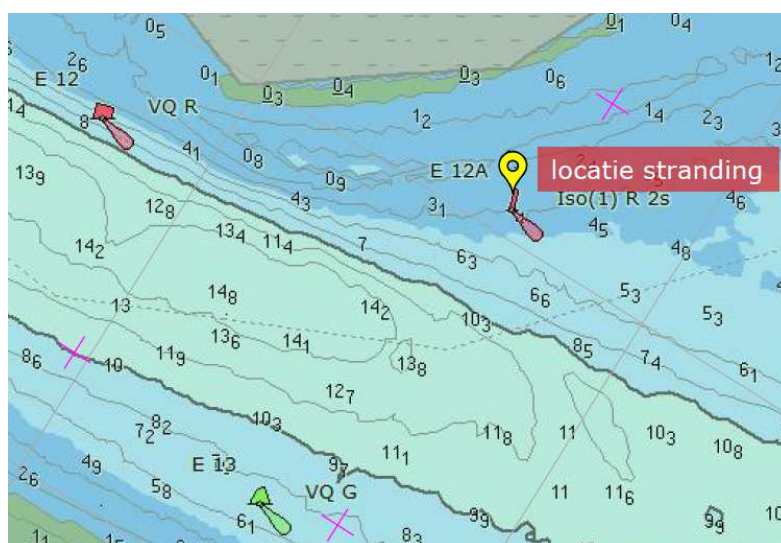


Figure 10 – Survey fairway Everingen

The results of the survey lead to a new target depth of the fairway of 35 dm. The Common Nautical Management of the river Scheldt issued a notification on June 24, 2019, see Figure 15. A preliminary NtM was published in week 26 by the Hydrographic Office of The Netherlands, see Figure 16 and in adapted format published by the UKHO in week 30, see Figure 17.

Qastor software, as used by the pilot, contained more detailed and accurate depths than shown on Chart 120 or on ENC NL5SW140. The passage plan was based on the information available in Qastor.

4.5 Position of Buoy E12A

A new Chart 120 (INT1479) was published in June 2018. In week 39 (2018), the Hydrographic office of the Netherlands sent out notice to mariners 346/18, based on a notification of the Common Nautical Management (BASS 74/2018), to insert buoy E12A .

*346/18 WESTERSCHELDE. EVERINGEN. Refers to: *341/18		Prev NtM: 341/18
Move		E 9A
Source: RWS MD 374/2018; PNR 2155-2018-1.		from 051-21.85N 003-50.25E to 051-21.77N 003-50.43E
Move		Q.G E 11
Source: RWS MD 374/2018; PNR 2155-2018-1.		from 051-21.64N 003-51.05E to 051-21.61N 003-51.23E
Move		VQ.G E 13
Source: RWS MD 374/2018; PNR 2155-2018-1.		from 051-21.64N 003-51.91E to 051-21.62N 003-52.03E
Move		Iso.R.4s E 8A
Source: RWS MD 374/2018; PNR 2155-2018-1.		from 051-22.04N 003-50.52E to 051-21.93N 003-50.61E
Move		Q.R E 10
Source: RWS MD 374/2018; PNR 2155-2018-1.		from 051-21.78N 003-51.05E to 051-21.75N 003-51.30E
Move		VQ.R E 12
Source: RWS MD 374/2018; PNR 2155-2018-1.		from 051-21.79N 003-51.85E to 051-21.75N 003-51.76E
Insert		Iso.R.2s E 12A
Source: RWS MD 374/2018; PNR 2155-2018-1.		at 051-21.85N 003-52.11E

Figure 11 – NtM 346/18

The British Admiralty published the notice in week 43 (2018) with reference 5074/2018. The notice was accompanied with a block that needed to be cut out and pasted on the paper chart, see Figure 12.

BASS 001/2019 (January 14, 2019) announced a change in the position of buoy E12A to position N 51°21,81' E 003° 52.17'.

The NLHO assessed this change to be too small to issue a NtM for paper charts.

On chart 120, Buoy E12A remained charted in position N 051° 21,85' E 003° 52,11'.

Related to the position of buoy E12A on chart 120, the grounding position (N 51° 21,82' E 003° 52,17') was within the boundaries of the fairway.

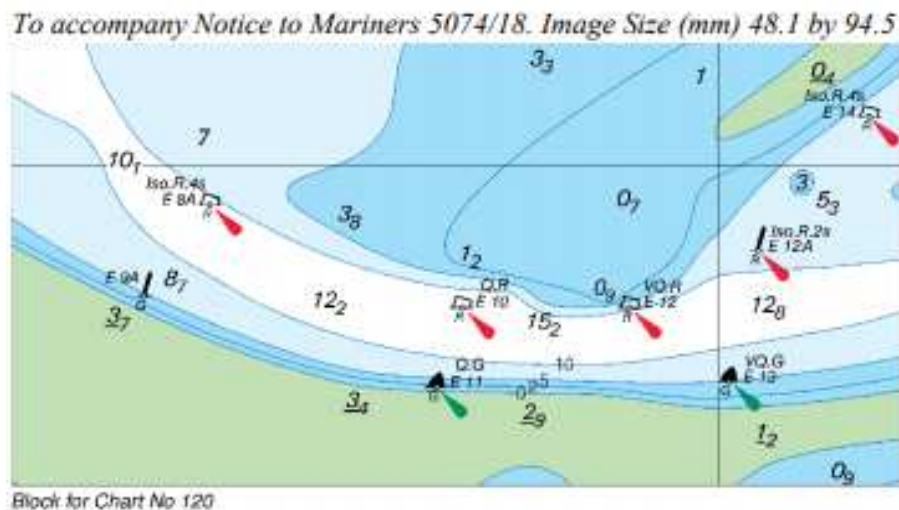


Figure 12 – Block to NtM 5074/2018

A new ENC NL5WS140 was published on June,4th by the Hydrographic Office of The Netherlands. See Figure 13.

Hydrografische publicaties/ Hydrographic publications
Publication BaZ / NL NM

NIL

Algemene berichten / General notices

***214/19** ENC CELLEN VERSCHENEN. OUDE ENC CELLEN VERVALLEN.

Op dinsdag 4 juni 2019 zijn de volgende nieuwe ENC's uitgegeven:
On Tuesday the 4th of June 2019 the following ENC cells will be released:

Cell:	NL5OS100
Usageband:	Harbour
Name:	Kanaal door Zuid-Beveland
Cell:	NL5WS130
Usageband:	Harbour
Name:	Approaches to Westerschelde
Cell:	NL5WS140
Usageband:	Harbour
Name:	Westerschelde West

Figure 13 – NtM wk 25

This ENC was showing the position for buoy E12A according to BASS 001/2019, see Figure 14. Related to the position of buoy E12A on ENC NL5WS140, the grounding position (N 51° 21,82' E 003° 52,17') was nearly the same as the position of buoy E12A.

Buoy, lateral (BOYLAT)	
Scale minimum (SCAMIN)	59999
Category of lateral mark (CATLAM)	port-hand lateral mark (1)
Object name (OBJNAM)	E 12A
Colour (COLOUR)	red (3)
Buoy shape (BOYSHP)	spar (spindle) (5)
<hr/>	
Record Id	2296
Primitive	Point
Group	2
Position	51 21.8140 N 003 52.1740 E

Figure 14 - Buoy E12A into ENC NL5WS140

On June, 24th,2019, the Common Nautical Management published notification BASS077/2019 with respect to changes in buoyage, see Figure 15. This included a further new position of buoy E12A, which was different from the position as published in ENC NL5WS140.

The Hydrographic office of the Netherlands had published a more general preliminary NtM, 239(P)/19 based on this notification, see Figure 16. The ADMIRALTY had published this correction in week 30 with reference NtM 3736(P)/2019. See Figure 17.

BASS

Bekendmaking Aan de Scheepvaart Scheldegebied

Vaarweg: van Blok grens Terneuzen / Hansweert (Middelgat) km 11.4 tot Everingen km 8.2

Omschrijving: Westerschelde - Everingen - Geul van Baarland - Betonningswijziging

De Gemeenschappelijke Nautische Autoriteit maakt bekend dat de betonning in het vaarwater Everingen gewijzigd wordt, ter hoogte van Baarland. Vanwege de natuurlijke verplaatsing van de vaargeul, is een wijziging aan de betonning noodzakelijk. Om een vaargeul van voldoende breedte te kunnen aanbieden wordt de streefdiepte van de vaargeul gewijzigd.

Deze bedraagt na publicatie van deze BASS: LAT-35dm

Noordelijk van de huidige geul wordt een nieuwe geul opengesteld voor vaarweggebruikers. Deze geul wordt betond met bijzondere markering (geel). Vanwege die beschikbare diepte heeft deze geul een andere streefdiepte dan de zuidelijke, lateraal betonde, vaargeul.

Deze bedraagt: LAT -20dm

Noordelijke geul:

Uitleggen:

GvB 1 (FL Y 5s.)	In positie: 51°22,339 N - 003°51,196 E
GvB 3 (FL Y 5s.)	In positie: 51°22,468 N - 003°52,218 E
GvB 2	In positie: 51°22,854 N - 003°49,583 E
GvB 4	In positie: 51°22,687 N - 003°50,482 E
GvB 6 (Fl (3) Y 10s.)	In positie: 51°22,504 N - 003°51,290 E
GvB 8 (Fl (3) Y 10s.)	In positie: 51°22,571 N - 003°52,150 E
GvB 10	In positie: 51°22,761 N - 003°52,826 E

Het uitleggen van de betonning in de Noordelijke geul staat gepland voor 26 juni 2019.

Zuidelijke geul:

Verleggen:

E 11 (Q. Fl. G)	Naar positie: 51°21,585 N - 003°51,416 E
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E 13 (VQ. Fl. G)	Naar positie: 51°21,603 N - 003°52,230 E
E 15 (Iso. G 4s.)	Naar positie: 51°22,000 N - 003°52,823 E
E 17	Naar positie: 51°22,382 N - 003°53,431 E
E 6 (Iso. R 8s.)	Naar positie: 51°22,360 N - 003°49,928 E
E 8	Naar positie: 51°21,939 N - 003°50,705 E
E 12 (VQ. Fl. R)	Naar positie: 51°21,721 N - 003°51,906 E
E12a (Iso. R 2s)	Naar positie: 51°21,803' N - 003°52,207 E
E 14 (Iso. R 4s)	Naar positie: 51°22,157 N - 003°52,660 E
<i>Opnemen:</i>	
E 19	
E 21	
E 4	
E 8a	
E 16	
E 18	
E 20	
<i>Uitleggen:</i>	
E 19 (Q G)	In positie: 51°22,858 N - 003°54,010 E
E 21	In positie: 51°23,269 N - 003°54,349 E
E 4 (Q R)	In positie: 51°23,007 N - 003°48,745 E
E 16 (Iso R 8s.)	In positie: 51°22,593 N - 003°53,126 E
E 18 (Q R)	In positie: 51°23,024 N - 003°53,609 E
E 20	In positie: 51°23,330 N - 003°53,962 E

Het wijzigen van de betoning in de zuidelijke geul staat gepland voor 26 juni 2019.

Vlissingen, 24 juni 2019

Figure 15 – BASS 077/2019

***239(P)/19** WESTERSCHELDE. EVERINGEN. GEUL VAN
BAARLAND.

Kaart / Chart
120

Int. / Int.
1479

Itemnr. / Itemno.
1

- 1** I.v.m. de natuurlijke verplaatsing van het vaarwater Everingen is de betonning gewijzigd.
De nieuwe betonning markeert een diepte van 3,5m LAT.

Noordelijk van de huidige geul Everingen wordt een nieuwe geul opengesteld, gemarkeerd met bijzondere markering (geel), genaamd GvB. Deze nieuwe betonning markeert een diepte van 2,0m LAT.

Kaarten worden zo snel mogelijk bijgewerkt.
De scheepvaart wordt geadviseerd voorzichtig te navigeren in het gebied.

*Due to natural changes of the fairway Everingen buoyage has been changed.
The new buoys mark a depth of 3,5m LAT.*

North of the existing fairway Everingen a new fairway will be opened, marked with special purpose buoys (yellow), named GvB. These new buoys mark a depth of 2,0m LAT.

*Charts will be updated as soon as possible.
Mariners are advised to navigate with caution in the area.*

Bron / Source: GNA 077/2019; PNR 1524-2019-1.

Figure 16 – NtM 239/19 (P)

3736(P)/19 NETHERLANDS - Channel. Buoyage.
Source: Netherlands Notice 26/239(P)/19

1. Due to natural changes to the seabed, the buoyage marking the Everingen channel, in the vicinity of position
51° 21'·69N., 3° 51'·64E., has been amended.
2. A new channel marked by yellow special purpose buoys has been established in approximate position
51° 22'·46N., 3° 51'·98E.
3. Charts will be updated when full details are available.
4. Mariners are advised to navigate with caution in the area.
(WGS84 DATUM)
Chart affected - 120 (INT 1479)

ADMIRALTY NOTICES TO MARINERS
Weekly Edition 30
25 July 2019
(Published on the ADMIRALTY website 15 July 2019)

Figure 17 – ADMIRALTY NtM 3736(P)/2019

The final changes in buoyage of fairway Everingen were published into a notification of the Common Nautical Management of the river Scheldt on August, 13, 2019 as shown in Figure 18.



Figure 18 – BASS 097/2019

The Hydrographic Office of The Netherlands had informed that a new edition of Chart 120 would be published. The new chart would contain the new position of the buoyage and preliminary NtM would be cancelled.

5 CAUSE OF THE ACCIDENT

The pilot nor the captain were aware that the vessel was sailing outside the limits of fairway Everingen:

- The pilot that was at the wheel at the time of grounding relied on his general knowledge of the buoyage and on the passage planning he had prepared, and thus missed out on buoy E12A.
- Buoy E12A was drifting, but this information had not reached the vessel.
Terneuzen Traffic Centre was informed that buoy E12A was not in position, but did not relay this information to m/v FAST SAM when she was entering the traffic zone.
- The captain relied on the knowledge of the pilot and he had no means available to detect that the vessel was sailing outside the fairway. No notice about changes in the buoyage of the fairway had reached him and according to updated paper chart Chart 120, the vessel was not sailing outside the fairway. Charted depths were deep enough taking into account the depth reliability. The only accurate information was available on the navigation computer of the pilot.

6 CONCLUSION

6.1 Safety Issues

1. The navigation software of the pilot was the only source on board containing correct and detailed information about the fairway. The pilot relied on his knowledge and the passage plan he prepared, on the radar screen and the outside view while he was at the wheel. The captain was not keeping an overview with respect to the position of the vessel on the chart.

2. Terneuzen Traffic Centre was informed about buoy E12A drifting in Fairway Everingen, but did not pass this information to m/v FAST SAM when entering the sector. The Scheldt shipping information report, broadcast by sector Vlissingen did not mention a drifting buoy, a possible danger to navigation, more than one hour after Terneuzen Traffic Centre received this information.

3. Surveys showed that the buoyage of fairway Everingen needed to be repositioned and that depth contours were not accurate anymore.

Buoy E12A was moved a first time as announced on January 14, 2019 before the new ENC was published on June,4, 2019. No notification was issued about this repositioning for users of paper charts because the position change was considered too small.

No notification was issued about the changes in depth contours until June,24, 2019, when a notification was issued that the buoyage in Everingen was going to be changed and that the new target depth was brought to 35dm.

6.2 Actions taken

The company:

- updated the safety management manual procedure regarding voyage planning to empower the duty of preparing a passage planning from berth to berth;
- updated the voyage plan form by including the possible effects of squat;
- reminded the masters regarding their overriding authority and the role of the pilot on board;
- distributed an internal report about the incident, including “lessons learnt”, to all vessels of the managed fleet.

The Committee Nautical Safety Scheldt Estuary (CNSSE)¹ discussed the incident and the following actions were taken:

- The traffic coordinators are reminded that they have to inform the users of the fairway when entering into their respective working area about changes in the fairway that have not been communicated with a BASS.
- The unlighted buoy E12A has been replaced by a light buoy. Buoys E12, E14 and E16 are light buoys as well.
- An internal investigation regarding the date of publication of BASS 077/2019 (concerning the shoaling of the fairway) has been started.

7 RECOMMENDATIONS

None

¹ https://www.vts-scheldt.net/default.aspx?path=Content%202009/Organisatie/CNVS_en

The committee discusses incidents and calamities, near misses and all other business brought forward by committee members which deviate from a desirable safety situation.

Members of the committee:

- For Flanders: the head of the VTS department of the maritime Services and Coastal Affairs Agency.
- For the Netherlands: the head of the Westerschelde Water District of the Department of Public Works Zeeland
- For DAB Pilotage: the Director General
- For the Dutch Pilotage: the chairman of the Regional Pilots Corporation Scheldemonden

ANNEX 1 ZONE OF CONFIDENCE

Extract from IHO publication S-57 TRANSFER STANDARD for DIGITAL HYDROGRAPHIC DATA Edition 3.1 - November 2000; Appendix A, Chapter 2.

Supplemented by S-57 Supplement N°3 , June 2014.

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ZOC Table:

1	2	3		4	5
ZOC ¹	Position Accuracy ²	Depth Accuracy ³		Seafloor Coverage	Typical Survey Characteristics ⁵
A1	± 5 m + 5% depth	=0.50 + 1%d		Full area search undertaken. Significant seafloor features detected ⁴ and depths measured.	Controlled, systematic survey ⁶ high position and depth accuracy achieved using DGPS or a minimum three high quality lines of position (LOP) and a multibeam, channel or mechanical sweep system.
		Depth (m)	Accuracy (m)		
		10 30 100 1000	± 0.6 ± 0.8 ± 1.5 ± 10.5		
A2	± 20 m	= 1.00 + 2%d		Full area search undertaken. Significant seafloor features detected ⁴ and depths measured.	Controlled, systematic survey ⁶ achieving position and depth accuracy less than ZOC A1 and using a modern survey echosounder ⁷ and a sonar or mechanical sweep system.
		Depth (m)	Accuracy (m)		
		10 30 100 1000	± 1.2 ± 1.6 ± 3.0 ± 21.0		
B	± 50 m	= 1.00 + 2%d		Full area search not achieved; uncharted features, hazardous to surface navigation are not expected but may exist.	Controlled, systematic survey achieving similar depth but lesser position accuracies than ZOCA2, using a modern survey echosounder ⁵ , but no sonar or mechanical sweep system.
		Depth (m)	Accuracy (m)		
		10 30 100 1000	± 1.2 ± 1.6 ± 3.0 ± 21.0		
C	± 500 m	= 2.00 + 5%d		Full area search not achieved, depth anomalies may be expected.	Low accuracy survey or data collected on an opportunity basis such as soundings on passage.
		Depth (m)	Accuracy (m)		
		10 30 100 1000	± 2.5 ± 3.5 ± 7.0 ± 52.0		
D	worse than ZOC C	Worse Than ZOC C		Full area search not achieved, large depth anomalies may be expected.	Poor quality data or data that cannot be quality assessed due to lack of information.
U	Unassessed - The quality of the bathymetric data has yet to be assessed				

Remarks:

To decide on a ZOC Category, all conditions outlined in columns 2 to 4 of the table must be met.

Explanatory notes quoted in the table:

- 1 The allocation of a ZOC indicates that particular data meets minimum criteria for position and depth accuracy and seafloor coverage defined in this Table. ZOC categories reflect a charting standard and not just a hydrographic survey standard. Depth and position accuracies specified for each ZOC category refer to the errors of the final depicted soundings and include not only survey errors but also other errors introduced in the chart production process. Data may be further qualified by Object Class 'Quality of Data' (M_QUAL) sub-attributes as follows:
 - a) Positional Accuracy (POSACC) and Sounding Accuracy (SOUACC) may be used to indicate that a higher position or depth accuracy has been achieved than defined in this Table (e.g. a survey where full seafloor coverage was not achieved could not be classified higher than ZOC B; however, if the position accuracy was, for instance, ± 15 metres, the sub-attribute POSACC could be used to indicate this).
 - b) Swept areas where the clearance depth is accurately known but the actual seabed depth is not accurately known may be accorded a 'higher' ZOC (i.e. A1 or A2) providing positional and depth accuracies of the swept depth meets the criteria in this Table. In this instance, Depth Range Value 1 (DRVAL1) may be used to specify the swept depth. The position accuracy criteria apply to the boundaries of swept areas.
 - c) SURSTA, SUREND and TECSOU may be used to indicate the start and end dates of the survey and the technique of sounding measurement.
- 2 Position Accuracy of depicted soundings at 95% CI (2.45 sigma) with respect to the given datum. It is the cumulative error and includes survey, transformation and digitizing errors etc. Position accuracy need not be rigorously computed for ZOCs B, C and D but may be estimated based on type of equipment, calibration regime, historical accuracy etc.
- 3 Depth accuracy of depicted soundings = $a + (b \cdot d)/100$ at 95% CI (2.00 sigma), where d = depth in metres at the critical depth. Depth accuracy need not be rigorously computed for ZOCs B, C and D but may be estimated based on type of equipment, calibration regime, historical accuracy etc.
- 4 Significant seafloor features are defined as those rising above depicted depths by more than:

	Depth	Significant Feature
a.	<40 m	2 m
b.	>40 m	10% depth

A full seafloor search indicates that a systematic survey was conducted using detection systems, depth measurement systems, procedures, and trained personnel designed to detect and measure depths on significant seafloor features. Significant features are included on the chart as scale allows. It is impossible to guarantee that no significant feature could remain undetected, and significant features may have become present in the area since the time of the survey.
- 5 Typical Survey Characteristics - These descriptions should be seen as indicative examples only.
- 6 Controlled, systematic surveys (ZOC A1, A2 and B) - surveys comprising planned survey lines, on a geodetic datum that can be transformed to WGS 84.
- 7 Modern survey echosounder - a high precision single beam depth measuring equipment, generally including all survey echosounders designed post 1970."

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