
MERIDIAN COASTAL AUTHORITY

NAVIGATION SAFETY BRANCH

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PRELIMINARY REPORT

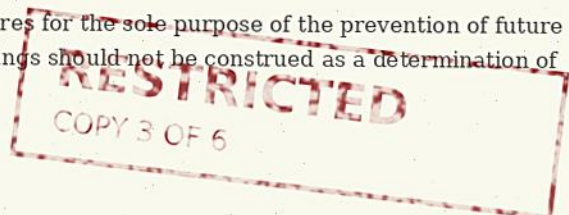
Failure of the Kestrel Bank navigation node (KB-7) and subsequent collision between the bulk carrier OSTRAVA POINT and the supply tender ANNIE C

15 MARCH 2018

Four fatalities

Report reference	KB/0315/PRELIM
Occurrence date	15 March 2018, 0200 UTC
Location	Kestrel Bank approach channel
Installation	Corran Quay control facility, berth 3 (CQ-03)
Issued	2 April 2018
Status	Preliminary. Findings subject to revision.
Classification	Restricted — not for publication

This report is issued under the Authority's investigation procedures for the sole purpose of the prevention of future occurrences. It is not issued to apportion blame or liability. Findings should not be construed as a determination of fault.



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STATUS OF THIS REPORT

- 0.1 This is a preliminary report. It records the factual information available to the investigation at the date of issue and such analysis as can safely be drawn from it. It does not represent the Branch's final conclusions.
- 0.2 The investigation has had access to the control facility's operational logs, to the authorisation record extracted from the facility's telemetry ingest system, and to interviews with six members of staff. One further interview has been sought and not obtained.
- 0.3 This copy has been released in part. Text withheld is marked and the provision relied on is cited in the margin beside it. Nothing has been withheld from Appendix A.

PROVISIONS RELIED ON

- AP 12(1) Personal information of a living individual or of the family of a deceased person
- AP 12(3) Personal information of a third party who is not the subject of the investigation
- AP 19 Information relating to proceedings that have been commenced or are in contemplation
- AP 23 Information provided in confidence by a commercial undertaking
- 0.4 The telemetry ingest system at CQ-03 retains a continuous record of environmental and control data. The Branch was supplied with a working extract of the relevant window by the facility operator on 19 March 2018. The full ingest volume (approximately 14.2 GB for the period) has not been independently examined; the Branch is satisfied that the extract is representative.

1 SUMMARY OF THE OCCURRENCE

- 1.1 At 0200 UTC on 15 March 2018 the Kestrel Bank navigation node (KB-7), which provides the channel lighting and traffic signal for the Kestrel Bank approach, went offline. The node was unavailable for four minutes and eleven seconds.
- 1.2 During that period the bulk carrier OSTRAVA POINT (12,140 t deadweight, inbound, under pilotage) continued on her approach heading. The supply tender ANNIE C was crossing the channel on a scheduled transfer. Neither vessel had sight of the channel signal.
- 1.3 At 0203 UTC OSTRAVA POINT struck ANNIE C on her port quarter, forward of the accommodation. ANNIE C flooded and sank within approximately nine minutes.
- 1.4 Four of the five persons aboard ANNIE C were lost. One was recovered by the pilot launch and survived. No injuries were sustained aboard OSTRAVA POINT.
- 1.5 The node did not fail. It was isolated, from the control facility at Corran Quay, by a properly formed maintenance command issued at 0200 UTC and carrying a valid authorisation. The investigation has been principally concerned with establishing who issued that command and why.

PERSONS LOST

AP 12(1)

G. ANNIKS	Master, ANNIE C	b. 1971, [REDACTED]
S. OYELARAN	Mate	b. 1988, [REDACTED]
M. TREW	Engineer	b. 1979, [REDACTED]
L. DEMBELE	Deckhand	b. 1994, [REDACTED]

2 VESSELS AND INSTALLATION

OSTRAVA POINT — bulk carrier

Type	Handysize bulk carrier
Deadweight	12,140 t
Length overall	139.9 m
Built	2006
Condition at occurrence	Inbound, laden, under pilotage
Speed over ground 0159Z	8.4 kn

ANNIE C — supply tender

Type	Harbour supply tender
Length overall	24.6 m
Built	1994
Persons on board	5
Condition at occurrence	Crossing, scheduled transfer

KB-7 — Kestrel Bank navigation node

Function	Channel lighting, traffic signal, AIS repeater
Power	Shore feed, 30 min UPS reserve
Control	Remote, from CQ-03
Last scheduled maintenance	11 January 2018

CQ-03 — Corran Quay control facility, berth 3

Function	Channel control and telemetry ingest
Manning at occurrence	3 carded, 1 supervisory (see 4.6)
Terminals	CQ03-T01 to CQ03-T06
Ingest retention	Rolling 90 days, then archive

Facility operated under contract by [REDACTED] Contract reference [REDACTED]

AP 23

3 NARRATIVE OF EVENTS

- 3.1 All times are UTC and are taken from the facility's ingest record, which is synchronised to GPS time.

TIME	EVENT
2340Z	Night watch commences. Three operators card in at CQ-03.
2357Z	Session 4471982 opened on terminal CQ03-T04. Operator field not completed.
0021Z	Routine tide and salinity telemetry. Nothing of note.
0146Z	OSTRAVA POINT reports abeam of the outer mark, inbound.
0158Z	ANNIE C departs the east quay for a scheduled transfer.
0200Z	KB-7 placed in maintenance isolation. Channel lighting and traffic signal extinguished. Command carries a valid authorisation (see section 4).
0200Z	Ingest record shows a discontinuity of four minutes eleven seconds. The feed does not resume where it stopped.
0203Z	Collision. OSTRAVA POINT strikes ANNIE C on the port quarter.
0204Z	KB-7 returns to service automatically on expiry of the isolation window.
0206Z	Pilot launch reports vessel down in the channel.
0212Z	ANNIE C founders. One survivor recovered.
0248Z	Facility supervisor notified at home address.
0510Z	Authority duty officer attends CQ-03.

- 3.2 The isolation window applied at 0200 was the standard four-minute maintenance window. The node behaved correctly throughout: it went out when instructed and came back when the window expired. No equipment fault has been identified.

4 CONTROL SYSTEM AND AUTHORISATION

- 4.1 Isolation of a navigation node from CQ-03 requires an authorisation held against a named engineer. The authorisation is applied at the terminal, written into the control record, and carried forward into the telemetry ingest stream, where it is retained with the environmental data.
- 4.2 The isolation command at 0200 UTC was properly formed and carried the authorisation of D. MAHON, engineer (marine automation), engaged at the facility under contract since November 2015. Mr Mahon held current authorisation for node maintenance at the date of the occurrence.
- 4.3 Mr Mahon was carded in to the facility at the material time and was on the night watch as a telemetry operator. In interview on 17 March, conducted at [REDACTED], he stated that he did not issue the command, did not apply his authorisation to it, and was not at a control terminal between 0150 and 0210. He was unable to account for the authorisation appearing in the record. AP 19
- 4.4 The Branch has found no evidence of a defect in the authorisation mechanism. The record is internally consistent and the authorisation chain for the period validates.
- 4.5 A second engineer, [REDACTED], held the same authorisation and was also on watch. The record does not associate him with the command. AP 12(3)
- 4.6 The facility supervisor, [REDACTED], was present in the building on the night of 14/15 March but did not card in and does not appear on the filed watch list. Session 4471982, opened on terminal CQ03-T04 at 2357 and never closed, is unattributed in the record supplied to the Branch. [REDACTED] has declined two invitations to interview. The Branch does not presently consider this material to the authorisation finding. AP 12(3)
- 4.7 Mr Mahon did not attend a scheduled third interview on 22 March and has not been located since. The Branch has been informed that the matter has been referred to [REDACTED] and that [REDACTED]. AP 19

5 ANALYSIS AND REVIEW

- 5.1 The node was isolated deliberately, by a command that was correctly formed and correctly authorised, at a time when two vessels were converging in an unlit channel. No technical failure contributed to the loss.
- 5.2 The authorisation record is the primary evidence. It has been extracted from the ingest stream, checked for internal consistency, and reproduced at Appendix A. Every record in the block carries a timestamp, an action, an operator identifier and a session number, and every record validates against its own checksum.
- 5.3 On the evidence available the Branch finds that the isolation command at 0200 UTC was issued under the authorisation of D. MAHON. Mr Mahon's account is not supported by the record.
- 5.4 The Branch notes that it has examined the extract supplied by the facility operator and not the underlying ingest volume.

TECHNICAL REVIEW

I have reviewed the authorisation chain extract at Appendix A against the control record for the period 2340 on 14 March to 0210 on 15 March 2018. The chain is complete. Fourteen records are present, each carrying an operator identifier, and each record validates. I find no evidence of alteration.



H. VARGA

Principal Engineer, Control Systems

Meridian Coastal Authority · 28 March 2018

6 CONTRIBUTORY FACTORS

- 6.1 A navigation node serving a live channel was placed in maintenance isolation without a check on channel traffic. No such check is required by the facility's procedures.
- 6.2 The four-minute isolation window is not interlocked against vessel movements. It was open to any holder of a node authorisation at any hour.
- 6.3 Card-in discipline at CQ-03 was weak. Presence in the building did not require a card, and the filed watch list was maintained by hand.
- 6.4 A terminal session was open and unattributed for over two hours. The system permits this and raises no alarm.
- 6.5 ANNIE C's crossing was scheduled and routine and was not visible to the control facility as a movement requiring the channel signal.

7 RECOMMENDATIONS

- 7.1 That node isolation be interlocked against declared vessel movements in the affected channel.
- 7.2 That presence in a control facility require a card regardless of role or seniority, and that the watch list be generated from card data and not by hand.
- 7.3 That terminal sessions without an attributed operator be closed automatically after thirty minutes and raise an alarm.
- 7.4 That the Authority review its practice of accepting extracts of operational data prepared by the operator under investigation.

A APPENDIX A — AUTHORISATION CHAIN EXTRACT

A.1 Extracted from the telemetry ingest stream, CQ-03, at offset 0x4E1C20. Fourteen records of 56 bytes. Reproduced as supplied.

#	TIMESTAMP	ACTION	OPERATOR	SESSION	CRC
1	2018-03-15T01:13:00Z	SESSION_OPEN	MCA\p.oyelaran	4471978	A83D
2	2018-03-15T01:21:22Z	SESSION_OPEN	MCA\d.mahon	4471980	AE41
3	2018-03-15T01:25:38Z	SESSION_OPEN	MCA\t.bruk	4471981	0091
4	2018-03-15T01:33:12Z	XFER_BEGIN	MCA\p.oyelaran	4471978	D825
5	2018-03-15T01:43:29Z	XFER_ACK	MCA\d.mahon	4471980	A87D
6	2018-03-15T01:47:08Z	RETENTION_SET	MCA\t.bruk	4471981	436B
7	2018-03-15T02:00:00Z	NODE_ISOLATE	MCA\d.mahon	4471980	6C60
8	2018-03-15T02:03:31Z	GATE_DISARM	MCA\d.mahon	4471980	DB78
9	2018-03-15T02:11:19Z	SESSION_CLOSE	MCA\d.mahon	4471980	370D
10	2018-03-15T02:18:07Z	CAL_APPLY	MCA\p.oyelaran	4471978	4108
11	2018-03-15T02:25:18Z	CHAN_SUBSCRIBE	MCA\d.mahon	4471980	6A96
12	2018-03-15T02:32:01Z	XFER_ACK	MCA\t.bruk	4471981	CDCE
13	2018-03-15T02:39:00Z	SESSION_OPEN	MCA\p.oyelaran	4471978	4158
14	2018-03-15T02:47:37Z	SESSION_CLOSE	MCA\d.mahon	4471980	0F53

A.2 Record 7 is the isolation command at the material time. Fourteen records, fourteen operators. Each record validates against its own checksum.

DISTRIBUTION

- 1 Chief Inspector, Navigation Safety Branch
- 2 Harbour Master, Corran Quay
- 3 Facility operator (CQ-03)
- 4 Principal Engineer, Control Systems
- 5 Legal Services
- 6 File