REPORT OF THE INVESTIGATION INTO THE FAILURE OF THE PILOT LADDER FROM THE M.V. "ALEXIA"

The Marine Casualty Investigation Board was established on the 25th March, 2003 under The Merchant Shipping (Investigation of Marine Casualties) Act 2000

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CONTENTS

1. SYNOPSIS

1.1 The M/V "Alexia", a bulk carrier sailed from Dublin port on the night of the 4th of February 2004.

1.2 Whilst disembarking the pilot in Dublin bay, the pilot ladder side ropes gave way.

1.3 The pilot and approx 27 feet of pilot ladder fell into the pilot cutter below.

1.4 The pilot was seriously injured.

2. FACTUAL INFORMATION

2.1 Name of Vessel: "Alexia"
Call sign: 9HPR7
Port of Registry: Valletta
Flag: Malta
IMO Number: 8100894
Year of Build: 1984
Class Lloyds register

2.2 Ship's particulars (See appendix 8.1)

2.3 Master and Crew of M/V "Alexia"

Name	Rank	Nationality
Shvedov, Valentyn	Master	Ukraine
Malyarenko, Oleksiy	Chief Officer	Ukraine
Shpak, Illya	2nd Officer	Ukraine
Gavrylyuk, Sergiy	3rd Officer	Ukraine
Gulya, Borys	Bosun	Ukraine
Zubchenko, Oleksandr	AB	Ukraine
Omelyanenko, Vadym	AB	Ukraine
Bogdanov, Oleksandr	AB	Ukraine
Zhurov, Oleksiy	AB	Ukraine
Vorst, Sergiy	AB	Ukraine
Chaban Oleksandr	Chief Eng.	Ukraine
Vynogradov, German	2nd Eng.	Ukraine
Malyshev, Mykola	3rd Eng.	Ukraine
Chursin, Oleksandr	4th Eng.	Ukraine
Mykhaylenko, Leonid	Elec. Eng.	Ukraine
Fedorov, Sergiy	Oiler	Ukraine
Nedenko, Sergiy	Oiler	Ukraine
Novostavsky, Vadym	Oiler	Ukraine
Moroz, Yuriy	Oiler	Ukraine
Titiyevsky, Oleksandr	Cook	Ukraine
Ulyanychev, Volodymyr	Steward	Ukraine

2.4 Ship's Agent in Dublin

R.A. Burke Ltd,
Berth 22, Ocean Pier, Alexandra Road, Dublin 1.

2.5 Dublin Pilot: Mr Thomas J.Byrne

Pilot Boat Cox: Mr Siad Alguidy

Bayman: Mr David Byrne

2.6 Pilot Cutter "Tolka" (Dublin Pilot No 1).

2.7 The draft of the M/V "Alexia" on sailing Dublin on the 4th of February was:

Forward	3.69 Meters
Midships	4.64 Meters
Aft	5.88 Meters
Freeboard approx	10.5 Meters

2.8 The M/V "Alexia" had undergone a Port State control inspection in Cork on the 30th January 2004 and no deficiencies were noted.

3. EVENTS PRIOR TO THE INCIDENT

3.1 The M/V "Alexia" sailed from Dublin Port, berth number 30 at 18.10 hours on the 4th of February 2004.

3.2 A Dublin Port Licensed pilot, Mr Thomas J. Byrne was on board.

3.3 The pilot had come on duty at 10.00 hours on the 4th February 2004.

3.4 The pilot boarded the M/V "Alexia" at 17.50 hours.

3.5 The weather at this stage was South Westerly 20 to 30 knots.

3.6 The pilot advised the master of the M/V "Alexia" that the pilot ladder should be rigged one meter above the water on the vessels port side.

3.7 The M/V "Alexia" proceeded from berth number 30 into the river and out into the channel and then through the breakwater heads without incident.

3.8 The pilot left the bridge of the M/V "Alexia" at approx 19.00 hours in a position between number 1 and number 3 buoys.

3.9 The vessel was steering a course of approx 125 degrees true.

3.10 The wind was on the starboard side of the M/V "Alexia".

3.11 There was a good lee on the port side of the M/V "Alexia".

3.12 The M/V "Alexia" was proceeding at approx 4 knots.

3.13 The weather at this time was South Westerly force 6.

3.14 An officer accompanied the pilot to the main deck.

3.15 The crew of the M/V "Alexia" had rigged a combination ladder (Pilot ladder in combination with a accommodation ladder) for the pilot to disembark on the port side. (See Photographs 1,2 and 3 at Appendix 8.4).

3.16 The Chief Mate of the M/V "Alexia" stated that he checked the pilot ladder himself by standing on the lower platform of the short pilot accommodation ladder and testing the pilot ladder side ropes and then put he weight on the pilot ladder step to test it.

3.17 There were no manropes fitted to the pilot ladder.

4. THE INCIDENT

4.1 The pilot called the pilot cutter on VHF Radio Channel 12 as he reached the top platform of the pilot accommodation ladder.

4.2 The pilot cutter then came alongside the port side of the M/V "Alexia" (See Photograph No 13 at Appendix 8.4).

4.3 The pilot ladder lower steps were trapped between the vessel and the pilot cutter.

4.4 The pilot descended the pilot accommodation ladder and transferred onto the pilot ladder.

4.5 When the pilot was two or three steps down the ladder, he states that he noticed that the steps were beginning to tilt forward (in the direction of the bow of the M/V "Alexia") and the top part of the pilot ladder had loosened or slackened.

4.6 Then both rope sides of the ladder failed. (See Photograph No 7 at Appendix 8.4).

4.7 The pilot and the pilot ladder fell approx 27 feet onto the pilot cutter. (See Photograph No 6 at Appendix 8.4).

4.8 The Bay man assisted the pilot and secured him to the Hadrian rail (Safety rail on foredeck of pilot cutter) using a safety harness.

4.9 The Bay man and the Pilot cutter coxswain manhandled the pilot into the pilot cutter cabin space.

4.10 The pilot cutter departed the scene and proceeded in the direction of Dublin Port.

5. EVENTS AFTER THE INCIDENT

5.1 The master of the M/V "Alexia" contacted the pilot cutter on VHF Channel 12 and offered assistance.

5.2 The pilot cutter disembarks another pilot Captain Jim Kennedy off another outgoing ship the "Linnea".

5.3 Captain Kennedy gave medical assistance to the injured pilot.

5.4 The pilot cutter then proceeded to the landing stage of the pilot station.

5.5 The Dublin Fire Brigade Ambulance transferred the injured pilot to the Mater Hospital.

5.6 The M/V "Alexia" proceeded to anchor in Dublin Bay.

5.7 The M/V "Alexia" returned to Dublin Port berth number 36 on the morning of the 6th of February.

5.8 The pilot ladder from the M/V "Alexia" was taken ashore by the pilot cutter.

5.9 The pilot ladder was transferred to the operation centre of Dublin port.

5.10 The pilot ladder and its parts were formally identified at the Dublin Port Operation centre by the crew of the M/V "Alexia". (See Photograph No 5 at Appendix 8.4).

5.11 The pilot ladder and its parts were subsequently sent to Tension Technology International Ltd for examination and testing. (See Appendix 8.3).

5.12 The M/V "Alexia" received a new pilot ladder that was accompanied by a certificate of type Approval.

5.13 It was not necessary to detain M/V "Alexia" as the ship co-operated fully.

5.14 The M/V "Alexia" sailed from the port of Dublin without incident on the night of the 6th of February bound for Aracaju, Brazil.

6. CONCLUSIONS

6.1 The report of examination, sampling and testing by realisation method to determine rope residual strength and likely cause of failure of Pilot's ladder from M/V "Alexia" carried out by Tension Technology International Ltd came to the following conclusions;

(a) The failure appears to be caused by a combination of general reduction in performance of the rope used in the ladder assembly, a possible misalignment of the ladder when deployed and a very localised deterioration of both rope legs close to their splices.

(b) The general appearance of the ladder suggests that it has been in service for a considerable period of time.

(c) It would appear that the ladder has not been subjected to regular inspection within existing guidelines and recommendations for safe working with fibre ropes (Ref 2,3,4,5,6)

6.2 Further to the above report there is no evidence of pilot ladders from M/V "Alexia" having been regularly inspected as per SOLAS Chapter V Regulation 23 (2.1).

6.3 The pilot ladder appears to have been rigged in compliance with SI No 55 of 1993 by the crew of the M/V "Alexia", regarding supervision and rigging of the pilot ladder, the pilot accommodation ladder, escorting of the pilot from the bridge to the place of disembarkation and having in place a lifebuoy and light with a line and a cluster light rigged to light up the area of operation for the pilot disembarkation.

6.4 The pilot ladder was reported to be rigged 1 meter above the water line.

6.5 This height of 1 meter could have been affected by the wind heeling the M/V "Alexia" to port.

6.6 This height of 1 meter could have been affected by the action of the seas listing the M/V "Alexia" to port.

6.7 When heeled or listed to port, the distance above the water of the pilot ladder would be reduced.

6.8 When the pilot cutter came alongside the M/V "Alexia", the pilot ladder bottom steps were trapped between the vessel and the pilot cutter. This would have caused a strain on the ladder. Also if the pilot cutter moved in relation to the vessel, this would have caused the ladder to move in a forward or aft direction.

6.9 The instantaneous and complete failure of the rope supports of the pilot ladder was due to the deteriorated condition of the rope supports as per the report from Tension Technology International Ltd. The average breaking strength of the pilot ladder rope side supports was 0.76 Tonnef whilst the minimum breaking strength of new rope is 5.33 Tonnef.

6.10 The average residual strength was 14.2% of a new rope.

6.11 Additional factors involved in the parting of the pilot ladder rope side supports were the interaction with the pilot cutter placing a strain on the pilot ladder, and the relative movement of the pilot cutter with the vessel causing mis-alignment of the pilot ladder rope side supports.

7. RECOMMENDATIONS

7.1 It is recommended that a report of the incident be sent to the Malta Government Marine Administration where the ship is registered.

7.2 A Marine Notice should be issued reminding owners and shipmasters of the requirement to provide safe means of pilot transfer, the proper stowage and regular inspection of pilot ladders as per SOLAS Chapter V, Regulation 23 2(2.1).

7.3 Pilot transfer arrangements and pilot ladders should be inspected during Port State Control inspections.

7.4 Pilot ladders should have a certificate stating their year of manufacture and compliance in line with IMO Resolution A.889 (21).

7.5 Port authorities should ensure that the boarding and landing of pilots is carried out as per Marine Notice number 26 of 1993 re The Boarding and Landing of Pilots by Pilot Boat Code of Practice. (See Appendix 8.5).

8. LIST OF APPENDICES

8.1 M/V "Alexia" Ship’s particulars.

8.2 Situation report from MRCC Dublin regarding the incident.

8.3 Report of examination, sampling and testing by realisation method to determine rope residual strength and likely cause of failure of Pilot’s ladder from M/V "Alexia".

8.4 Photographs.

8.5 Marine Notice No.26 of 1993.

Appendix 8.1

Ship Particulars

APPENDIX 8.1

SHIP'S PARTICULARS

NAME OF VESSEL	M/V " ALEXIA "
NATIONALITY	MALTA
PORT OF REGISTRY	VALLETTA
OFFICIAL NUMBER	8305
CALL SIGNAL	9HPR7
IMO NUMBER	8100894
DATE / PLACE OF BUILT	1984 OCT. 15TH ISHIKAWAJIMA HARIMA HEAVY INDUSTRIES
TYPE OF VESSEL	BULK CARRIER STRENGTHENED FOR HEAVY CARGOES
MAIN ENGINE	IHI SULZER 6 RBL. 66
M.C.R	11.100 PS / 124 RPM
NOR	9.990 PS / 119.7 RPM
SEA SPEED	13.0 KNOTS
OWNER	ZEUS NAVIGATION CO. LTD. VALLETTA MALTA Address Zeus.doc
OPERATORS	SEVEN SEAS MARITIME LIMITED Address Seven.doc
MANAGERS	ALLOCEANS SHIPPING COMPANY LIMITED Address AllOceans.doc
CLASS REGISTER	LLOYD'S REGISTER
P&I CLUB	NORTH OF ENGLAND
LAST DRY DOCK	31 / 10 / 2001
RADIO COMPANY CODE	B E 0 2
MMSI NUMBER	215469000
INMARSAT C. # 1	421546910
INMARSAT C. # 2	421546911
INMARSAT MINI-M TLF	763652270
INMARSAT MINI-M FAX	763652272

LENGTH (O.A)	187.73 MTRS / 615.91 FT	INTERNATIONAL GRT	22076.00
LENGTH (B. P)	178.00 MTRS / 583.99 FT	INTERNATIONAL NRT	11770.00
BREADTH	28.40 MTRS / 93.18 FT	PANAMA CRT	23848.00
DEPTH	15.30 MTRS / 50.20 FT	NRT	17642.00
		SUEZ CRT	22727.35
DRAFT SUMMER	10.762 MTRS	NRT	19489.86
DRAFT WINTER	10.538 MTRS		
DRAFT TROPICAL	10.986 MTRS	FREE BOARD-SUMMER	4.576 MTRS
DRAFT TROPICAL RRESH	11.232 MTRS	FREE BOARD-WINTER	4.800 MTRS
		FREE BOARD-TROPICAL	4.352 MTRS
FULL DISPLACEMENT	45,302 M/TONS	FREE BOARD-T/FRESH	4.106 MTRS
DISPLACEMENT- SUMMER	45,302 M/TONS	FREE BOARD- FRESH	4.330 MTRS
DISPLACEMENT-WINTER	44,286 M/TONS		
DISPLACEMENT-TROPIC.	46,327 M/TONS	LIGHT SHIP WEIGHT	7,717 M/TONS
DISPLACEMENT- T/FRESH	46,296 M/TONS	LIGHT SHIP DRAFT.	2.030 M
DISPLACEMENT- FRESH	45,295 M/TONS	TPC SUMMER DRAFT	45.52 MTS
DEADWEIGHT	37,585 M/TOMS		
DEADWEIGHT- SUMMER	37,585 M/TOMS		
DEADWEIGHT-WINTER	36,569 M/TONS		
DEADWEIGHT-TROPICAL	38,610 M/TONS		
DEADWEIGHT- T/FRESH	38,579 M/TONS		
DEADWEIGHT- FRESH	37,578 M/TONS		

FRESH WATER ALLOWANCE	0.246 M
HOLDS CAPACITIES GRAIN	45,852.9 CUB/MTR OR 1,618.323 CUB/FT
HOLDS CAPACITIES BALE	44,368.9 CUB/MTR
MAXIMUM HEIGHT	44.50 MTR

MASTER OF M/V "ALEXIA" V. SHVEDOV

Appendix 8.2

Situation report from MRCC Dublin regarding the incident

APPENDIX 8.2

SITUATION REPORT FROM MRCC DUBLIN - SITREP

'RANSMISSION PRIORITY: ROUTINE Ref No: 15074 05/02/2004

'TG: 050900 UTC FEB 04 INCIDENT NAME: MV ALEXIA PILOT INJURED 134/04

'ROM: MRCC DUBLIN

'O: IRISH COAST GUARD EJM/EJK MSO DN HBR MASTER

SITREP NUMBER: ONE

1. Identity of Casualty:TOM BYRNE DUBLIN PORT PILOT
3. Position: DUBLIN BAY
:. Situation: PILOT INJURED DISEMBARKING FM OUTBOUND VESSEL
). Number of Persons at Risk: 1
E. Assistance Required: ADVISE MSO
F. Co-ordinating RCC: MRCC
G. Description of Casualty: TOM BYRNE DUBLIN PORT PILOT
H. Weather: SW FORCE 5
[. Initial Action Taken: MSO BRIAN HOGAN ADVISED
J. Search Area:
K. Co-ordinating Instructions:
L. Future Plans:
M. Additional Information: / Conclusion
041920 UTC DUBLIN PORT RADIO REQUEST MRCC RELAY DETAILS OF INJURIES SUSTAINED BY PILOT TOM BYRNE DISEMBARKING FROM OUTBOUND MALTESE BULKCARRIER ALEXIA/9HPR7
041924 UTC MSO BRIAN HOGAN ADVISED
MV ALEXIA RETURNED TO ANCHORAGE UFN

Appendix 8.3

Report by Tension Technology International

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REPORT

EXAMINATION,SAMPLING AND TESTING BY REALISATION METHOD TO DETERMINE ROPE RESIDUAL STRENGTH AND LIKELY CAUSE OF FAILURE of PILOT'S LADDER from 'MV ALEXIA'

Date	Rev.	Description	Prepared by	Authorised by
26/ 02 04	01	Final	JN	SJB

Distribution:

Client:	Department of Communications Marine and Natural Resources	Attention:	Paul Miley
Internal:	TTI Ltd	Attention:	Steve Banfield

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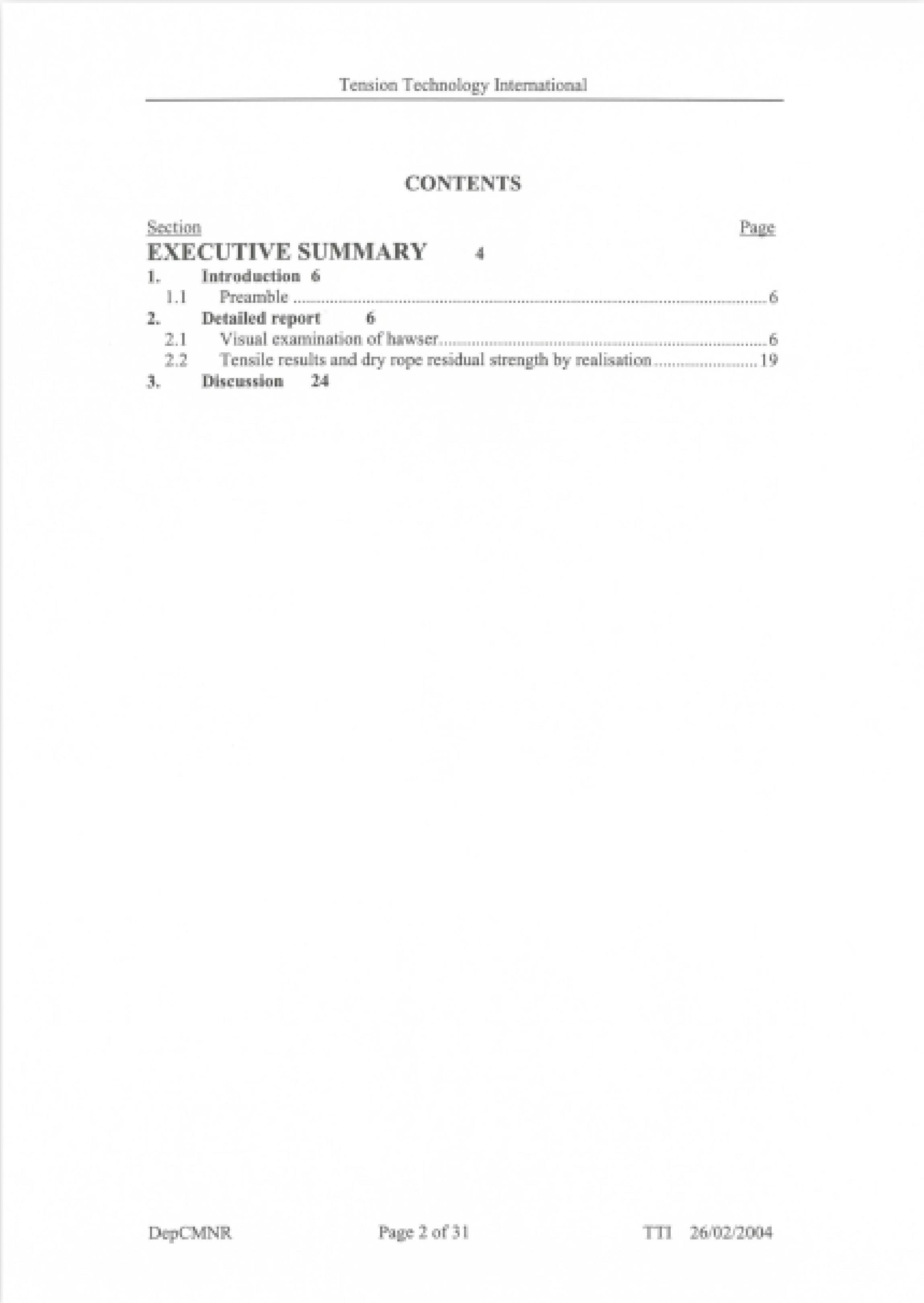

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TERMS AND ABBREVIATIONS

TTI	Tension Technology International
DepCMNR	Department of Communications, Marine and Natural Resources
Rope	Rope is made up of three **strands** twisted together
Strand	Strand is made up of a number of **rope yarns** twisted together
Rope Yarn	Rope Yarn is made up of **manila fibres** twisted together
Tensile Test	Method of determining the response of materials to a load or tensile [pulling] force
Breaking load	Maximum force recorded during a tensile test.
Breaking strain	The extension of the material under test, at breaking load, expressed as a % of the original length of the sample.
Fatigue	Term covering several different mechanisms by which rope strength can be adversely affected. In particular loss of performance due to **flex fatigue** is caused by repeated bending of a rope at a localised position.
Stress raising	A very localised elevation of force within a rope, usually caused by discontinuities in the rope structure, such as a splice.
Abrasion	In ropes, can be either external abrasion to the surface of the rope, or internal abrasion caused by relative movement of the rope elements
Dry Rope Strength	Depending on the fibre used in rope construction, some ropes may have a reduced tensile performance when wet. All assessment of rope performance is done on the basis of the rope being dry.
Realisation	Method by which an estimate of rope strength can be made, from knowledge of the strength of its individual components
Residual Strength	Ratio of the estimated breaking strength [by realisation] of the rope to its minimum specified breaking strength. Expressed as a %
KiloNewton kN	Unit of force, 10 kN is approximately 1 Tonnef

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EXECUTIVE SUMMARY

The Pilot's Ladder was delivered by hand to the premises of Tension Technology International, Arbroath, courtesy of Mr J Carolan, Dublin Port Co.

Originally, the ladder was a single assembly, consisting of two rope legs, each of which being threaded through ladder spans and battens, to form the ladder part, and spliced back to itself about 1000 mm above the uppermost ladder span. Each rope leg extended beyond the splice to form a securing part, the means by which the ladder was secured to the vessel. Each securing rope was tied to its own shackle securing point on the vessel deck.

On receipt by TTI, the ladder was found to be in 3 pieces, two that were the securing part of each rope leg and the third part was the ladder assembly. The ladder assembly was found to include the splices of each leg.The failure point was found to be located just above the splice of each leg.

The splice on one leg was found by TTI to be intact, whilst on the second leg the splice had been unravelled. Photographs provided by DepMCNR suggest that this splice was also intact at the time of failure and therefore a third party may have unravelled it, for inspection purposes.

The ladder was visually inspected by TTI and then its various components were tested for their tensile properties. From this tensile information, an estimate of residual dry rope strength was calculated.

It was found, on visual inspection, that there was significant external abrasion damage to the rope of the entire ladder assembly, occurring in both the securing part and the ladder part of each leg. Untwisting the rope and its component strands [to reveal the component rope yarns] confirmed the presence of abrasion damage.

Tensile testing of both the rope strands and their constituent rope yarns revealed the extent to which the abrasion had affected the general strength of the rope both in the securing part and the ladder part of the assembly. It is possible to infer from the data that, even if no abrasion was present, the rope strength had still declined by a significant margin.

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The table below shows the estimated dry rope breaking load and its residual strength from four positions within the ladder, one from each of the securing parts, and one from each of the ladder parts of the legs.

Minimum Dry Rope Breaking Load [EN 698:1995] Type A, Ref No. 26 **52.3 kN, 5.33 Tonnef**	**Leg A**		**Leg B**	
	Br Load	**Residual Strength**	**Br Load**	**Residual Strength**
	Tonnef	**%**	**Tonnef**	**%**
Securing Rope part	0.77	14.4	0.64	12.1
Ladder part	0.71	13.3	0.91	17.0

The average breaking strength is 0.76 Tonnef, whilst the minimum breaking strength of new rope is 5.33 Tonnef. The average residual strength is 14.2%.

Thus, substantial deterioration has occurred in the rope performance. However, this alone does not explain the failure, as there remained a margin of safety. It is assumed the weight of the gentleman involved in the incident was not unusually high.

The fact that both rope legs failed just above their respective splices suggests very strongly that flex fatigue and/or stress raising has critically added to the deterioration in the rope at these very localised positions. TTI has seen instances of these mechanisms causing rope failures just beyond splices in other investigations.

The photographs supplied by DepCMNR suggest that the ladder may have been deployed in such a way that its spans and battens were not horizontal at the time of the incident. If correct, this would have led to unequal loading of the legs.

The degree of visible abrasion damage found suggests that the rope had been in use for a considerable period of time [or had experienced a very high number of deployments].

No evidence of chemical or microbial attack was seen, but but their absence can only be confirmed by further investigation by optical microscopy.

It does not appear that the ladder had been subjected to regular inspection in line with the recommendations for inspecting ropes and rope structures.

Inspection to CMI/OCIMF guidelines would have shown that this rope had deteriorated and should have beed rejected well before this failure.

Appendix 8.3

Report by Tension Technology International

1. INTRODUCTION

1.1 Preamble

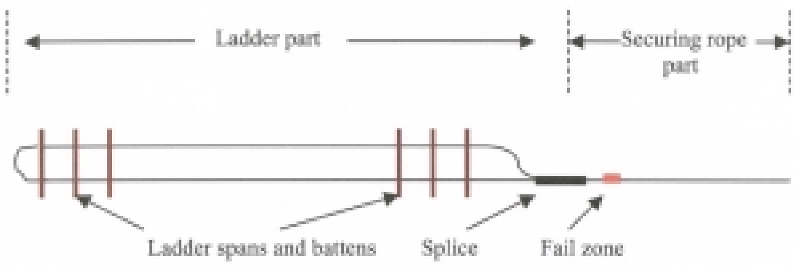
This report is submitted to the Marine Survey Office [MSO] of the Department of Communications, Marine and Natural Resources in response to their request to conduct a technical investigation into the failure of the Pilot's Rope Ladder from the 'MV Alexia'

2. DETAILED REPORT

2.1 Visual examination of ladder.

Visual examination of the ladder was in accordance with OCIMF, ACI and CMI guidelines.

Figure 1 Sketch of side view of ladder [representation only]



Photos 1 –5 are photographs of the ladder supplied by DepCMNR. From these photographs and subsequent inspection by TTI, the ladder was found to have failed just above the splices in both legs.

The ladder is formed from two legs of rope [TTI-named Leg A and Leg B], each of which threaded through the ladder spans and battens, doubled back [threaded again] and spliced to itself about 1000 mm above the uppermost span.

For the investigation, each leg is referred to as two parts, securing rope part, Items A and B, and ladder part, Items A' and B'.

On receipt, the ladder assembly was found to be in three sections, the ladder part and two securing rope parts, in agreement with the photographs supplied by DepCMNR

Photograph 1 shows a general view of the ladder part, with the legs identified.

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Photo 1 General view of ladder part

Leg B, Item B' Leg A, Item A'

Photograph 2 shows the securing rope parts in situ. It is assumed the photograph shows the attachment to the deck shackles at the time of the accident, and is not a reconstruction.

Photograph 3 shows the securing ropes laid on the deck, still attached to the shackles.

The first observation is that, from Photograph 1, the failure point on each leg are the same distance from the uppermost ladder span. From Photograph 3, the length from the shackle to the failure point of each leg is different. It may also be seen from Photograph 3 that the free end emerging from each knot is also different, and corresponds to the shackle-to-failure point difference; ie the shorter free end has a longer shackle-to-fail point length..

This would suggest that the ladder was deployed in such a way that the ladder spans and battens were not horizontal when hanging down the side of the vessel. If this is a correct assumption, then this would result in an uneven loading in each leg, as the pilot used the ladder.

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Photo 2 Securing rope parts in situ

Photo 3 Securing ropes laid on deck

Differing length of free ends

Differing lengths from shackle to fail point, corresponding to difference of free end length. Left hand securing rope is Item A, right hand securing rope is Item B, identified by the appearance of the free end end taping.

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The second observation is that the failure zone in both legs is just above the splice.

Photograph 4 is a close up of the failure zone in the ladder part, Item A'

Photo 4 Close up of failure zone, Item A'

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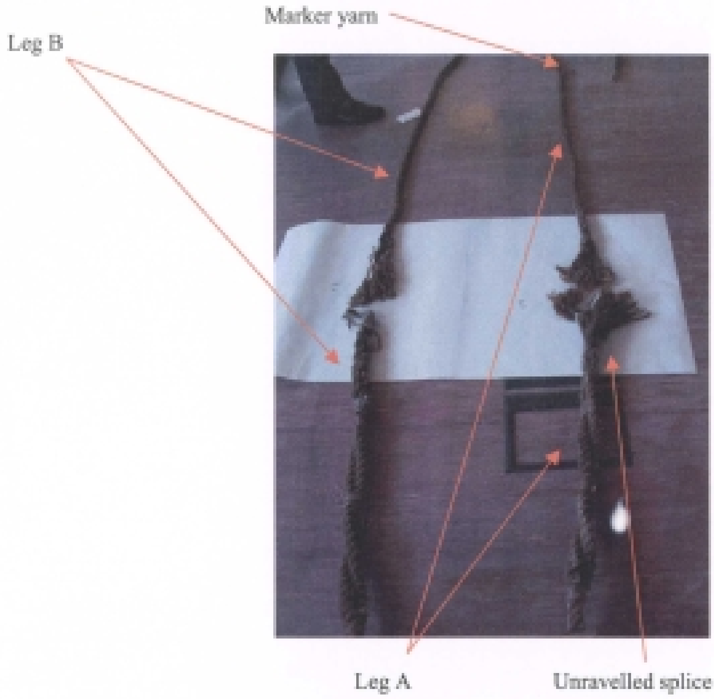
Photograph 5 is a general view of the ladder and securing ropes laid out after the incident.

Photo 5



It may be seen that the splice on the ladder part Item A' has been unravelled, and that a marker yarn has been tied into the securing rope part Item A. It is assumed from this that some investigation work has already been carried out on site.

The following photographs are TTI photographs. Photo 6 shows a general view of the entire ladder assembly.

The securing ropes were appropriately labelled in two positions. This allowed sampling between the labelling points whilst maintaining traceability. Only one label was attached to each of the legs of the ladder part.

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Photo 6 General view of ladder as received.

Leg B Leg A

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Photgraph 7 shows the labelling of the securing rope parts.

Photo 7

Photograph 8 is a close-up of the splice/fail zone of Item A'

Photo 8

Evidence of external abrasion is seen, and this was a constant finding throughout the whole visual examination. Photograph 9 shows the splice/fail zone for Item B'

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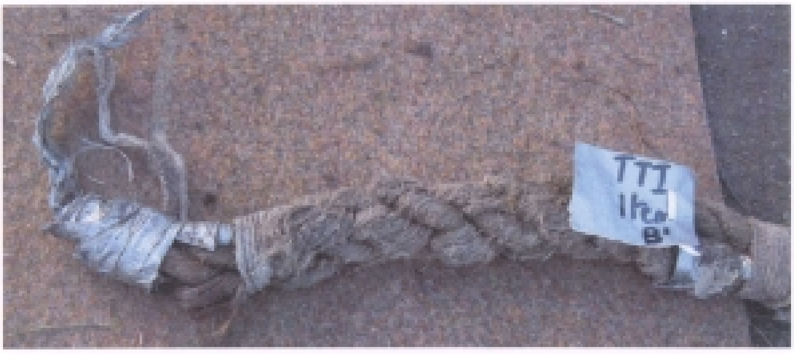
Photo 9



Photograph 10 is a close up of a ladder span where the rope was threaded through it. It can be seen that there is surface abrasion of the exposed rope between the spans a loss of rope material associated the span eye, where there has been repeated relative movement between the span and the rope.

Photo 10

Surface abrasion

Loss of rope material due to repeated rubbing of ladder eye

This photograph is representative of the condition of the entire ladder part.

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Photographs of more detailed investigations follow.

Table 1 shows the construction of the rope

Table 1

Rope Type	**Type A 3 strand hawser laid**
Rope diameter	**26 mm [see note below table]**
Material	**Manilla**
Breaking Force [EN 698:1995]	**52.3 kN [5230daN]**
2 strands Yarns/strand	**12 outer and 5 inner yarns**
1 strand Yarns/strand	**14 outer and 4 inner yarns**

NB The mean diameter of the rope was found to 25 mm, halfway between the diameters expected for a No 24 and a No 26 rope. It was judged that the original rope was more likely to be that of a No 26 specification.

Photographs 11-14 are representative of findings for the securing rope parts, Items A and B.

Photograph 11 is a close up of the a typical strand, taken from securing rope part Item A.

Photo 11 Strand from Item A

Abrasion is clearly seen where the surface of the strand has been to the outside of the rope

Photograph 12 shows a strand from Item A opened out to reveal its constituent inner and outer rope yarns. Abrasion damage can be seen to the outer yarns, whilst the inner yarns are in relativley good condition. The amount of loose fibre released during the investigation is further evidence of the degree of damage suffered by the outer rope yarns.

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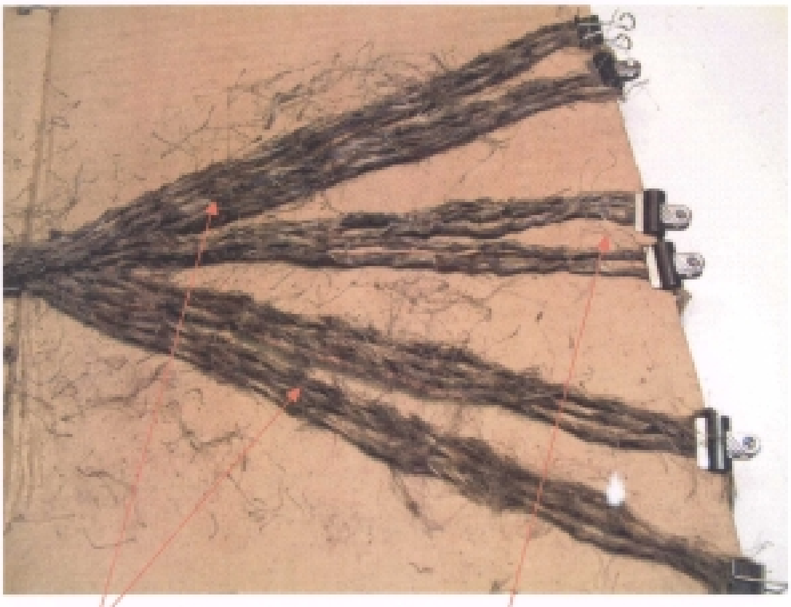
Photograph 13 is a closer view of the outer yarns, and Photograph 14 is a closer view of the inner yarns

Photo 12 General view of opened out strand



Outer rope yarns

Inner rope yarns

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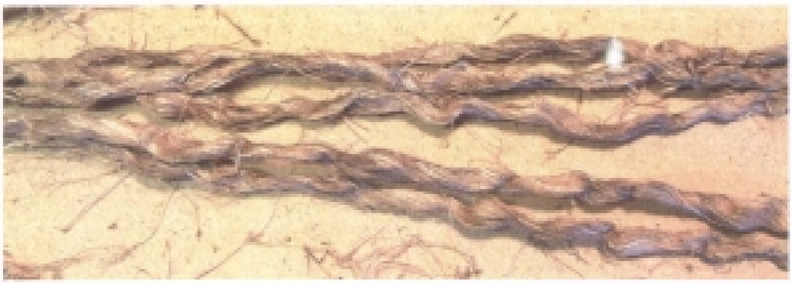
Photo 13 Outer rope yarns

Photo 14 Inner rope yarns



Photographs 15-18 show the damage found on rope from the ladder part Item A".

Photograph 15 shows the rope, and Photograph 16 shows an unwound strand from the rope.

Appendix 8.3

Report by Tension Technology International

Photo 15 Rope from ladder part Item A'

The arrow indicates the part of the rope that has been threaded through a ladder span eye. In general, the rope diameter at these positions was found to be circa 21 mm, a loss of approx 20% on the nominal 'as-new' diameter [lighting shadow partially obscures this diameter loss, but at higher magnification, this can be clearly seen]

Photo 16 General view of unwound strand from ladder part Item A'

Appendix 8.3

Report by Tension Technology International

Photo 17 Close up of outer yarns

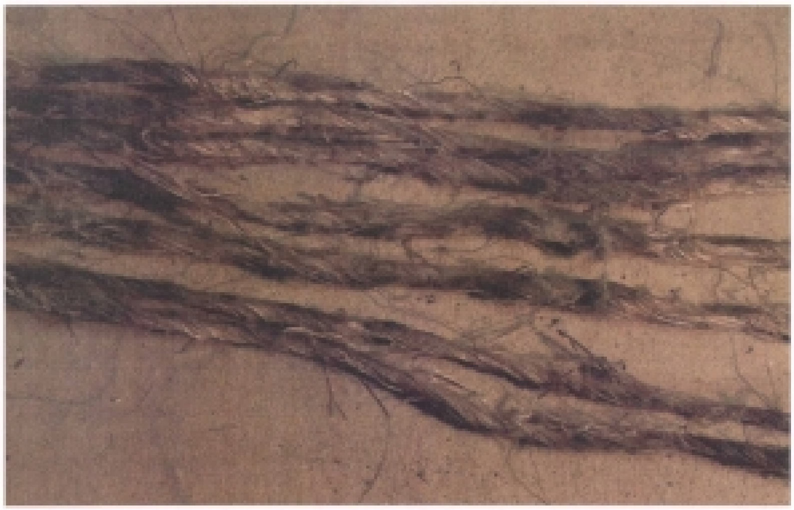
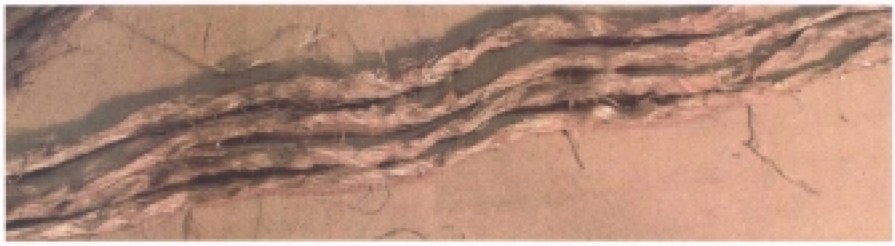


Photo 18 Close up of inner yarns



Damage to the outer yarns is again clearly seen, as is the relatively better condition of the inner yarns.

Appendix 8.3

Report by Tension Technology International

Photo 15 Rope from ladder part Item A'

The arrow indicates the part of the rope that has been threaded through a ladder span eye. In general, the rope diameter at these positions was found to be circa 21 mm, a loss of approx 20% on the nominal 'as-new' diameter [lighting shadow partially obscures this diameter loss, but at higher magnification, this can be clearly seen]

Photo 16 General view of unwound strand from ladder part Item A'

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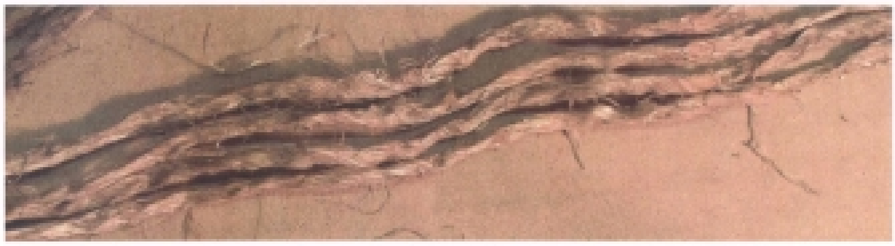
Photo 17 Close up of outer yarns

Photo 18 Close up of inner yarns



Damage to the outer yarns is again clearly seen, as is the relatively better condition of the inner yarns.

Appendix 8.3

Report by Tension Technology International

2.2 Tensile results and dry rope residual strength by realisation

2.2.1 Tables of results

The ladder was sampled at four locations for tensile testing, one rope sample being taken from each of Items A, B, A' and B'. The tests were conducted on both individual strands and on rope yarns, according to the following schedule:

	Rope Yarn	Strand
Securing Rope Part, Item A	Yes	Yes
Ladder Part, Item A'		Yes
Securing Rope Part, Item B		yes
Ladder Part, Item B'	Yes	Yes

Table 2 Summary of Rope Yarn Tensile Results

	Outer rope yarn		Inner rope yarn	
Sample	Br Load N	Br Ext %	Br Load N	Br Ext %
Item A	124	3.9	662	12.7
Item B'	267	3.5	554	9.1

Appendix 2 shows the tensile results and associated statistics in greater detail.

A comparison of the inner and outer rope yarn breaking loads immediately confirms the visual observations, that the outer yarns had suffered damage. Reduced breaking load, caused by the damage also has resulted in reduced breaking extension.

Table 3 Summary of Strand Tensile Data

	Strand	
Sample	Br Load N	Br Ext %
Item A	4009	11.7
Item A'	3989	14.4
Item B	3634	14.5
Item B'	4217	10.5
Mean	3962	
Std Dev	242	
CV %	6.1	

The equivalent data for strands is shown in table 3. Observing the mode of failure of the strands during the test revealed that it was the outer yarns that failed first [because of their low strength and extension], at which point the maximum load had been reached. There was some remaining, but limited, tensile performance as the some of the inner yarns were still intact.

Appendix 8.3

Report by Tension Technology International

Basic statistics are also shown in Table 3, and it is seen that the Coefficient of Variability [Standard Deviation / Mean] is quite low. This is evidence that the location of the failures is not random and that there is likely to have been a very localised reduction in strength at these zones.

Photograph 19 shows an example of two tensile failed strands from securing rope Item A.

Photo 19 Typical tensile failures of rope strands

Photo 20 is a reminder of the failure zones of the ladder, photo from DepCMNR

Photo 20 Failure zones of the ladder

Appendix 8.3

Report by Tension Technology International

Whilst the conditions [under which the failures were generated] were different, it is reasonable to note that the fail zones of the ladder show a greater degree of uniformity in terms of the positional distributon of the failed ends of the component rope yarns. There is no sign of the extened tails of rope yarn material as seen in Photo 19. This is another indication of a localised gross weakening of the rope structure at the fail zones. This will be discussed further in the next section.

The information regarding breaking load of the rope strands and yarns is used to estimate dry rope strength and % residual strength.

2.2.2 Estimate or rope strength by realisation

Table 4 provides a summary of the estimated dry rope strength and % residual strength.

Table 4

Minimum Dry Rope Breaking Load [EN 698:1995] Type A, Ref No. 26 Manila fibre **52.3 kN, 5.33 Tonnef**	Leg A		Leg B	
	Br Load	**Residual Strength**	**Br Load**	**Residual Strength**
	Tonnef	**%**	**Tonnef**	**%**
Securing Rope part	0.77	14.4	0.64	12.1
Ladder part	0.71	13.3	0.91	17.0

The average breaking strength of the rope is 0.76 Tonnef, whilst the minimum breaking strength of new rope is 5.33 Tonnef.

The average residual strength is 14.2%.

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Tables 5-8 show the calculations used to derive the values summarised in Table 4. Where two estimates have been deived, ie from rope yarn and also from strand, the average has been used in Table 4

Table 5 a] and b]

Dry rope strength and % residual strength by realisation of Securing Rope Part, Item A

Table 5a	Total RopeYarns	Ave BL kN	Total BL kN
Rope-yarn			
outer yarn	38	0.124	4.712
inner yarn	14	0.662	9.268
aggregate yarn break load in rope kN			13.980
realization factor			0.58
dry rope calculated break load, kN			8.110
[dry rope calculated break load, tonnef]			[0.83]
minimum new dry break load			52.300
% residual strength			**15.5**

Table 5b	Strands	Ave BL kN	Total BL kN
Strand	3	4.009	12.027
realization factor			0.58
dry rope calculated break load, kN			6.976
[dry rope calculated break load, tonnef]			[0.71]
minimum new dry break load			52.3
% residual strength			**13.3**

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Table 6

Dry rope strength and % residual strength by realisation of Ladder Part, Item A'

	Strands	Ave BL kN	Total BL kN
Strand	3	3.989	11.967
realization factor			0.58
dry rope calculated break load, kN			6.941
[dry rope calculated break load, tonnef]			[0.71]
minimum new dry break load, kN			52.3
% residual strength			**13.3**

Table 7

Dry rope strength and % residual strength by realisation of Securing Rope Part, Item B

	Strands	Ave BL kN	Total BL kN
Strand	3	3.634	10.902
realization factor			0.58
dry rope calculated break load, kN			6.323
[dry rope calculated break load, tonnef]			[0.64]
minimum new dry break load			52.3
% residual strength			**12.1**

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Report by Tension Technology International

Table 8a] and b]

Dry rope strength and % residual strength by realisation of Ladder Part, Item B'

Table 8a	Total RopeYarns	Ave BL kN	Total BL kN
Rope-yarn			
outer yarn	38	0.267	10.146
inner yarn	14	0.554	7.756
aggregate yarn break load in rope kN			17.902
realization factor			0.58
dry rope calculated break load, kN			10.38
[dry rope calculated break load, tonne]			[1.06]
minimum new dry break load			52.3
% residual strength			**19.9**

Table 8b	Strands	Ave BL kN	Total BL kN
Strand	3	4.217	12.651
realization factor			0.58
dry rope calculated break load, kN			7.338
[dry rope calculated break load, tonne]			[0.75]
minimum new dry break load			52.3
% residual strength			**14.0**

If an assumption is made that the inner and outer yarns are the same specification, and the the breaking load found for the inner yarns is substituted into the 'outer yarn' calculation of tables 5a] and 8a], then an estimate of the residual dry rope strength in the absence external abrasion may be made.

In this case, the estimate of dry rope residual strength is about 35%. This indicates that the decline in the general condition of the rope in the ladder assembly is not exclusively related to external abrasion.

3. DISCUSSION AND CONCLUSIONS

3.1 Discussion

The failure was located just beyond the splice in each of the two legs used to construct the ladder. The splices were located about 1000 mm above the uppermost ladder span.

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Report by Tension Technology International

The visual inspection of the ladder revealed damage due to external abrasion throughout the whole assembly.

In the ladder part of the assembly, there were two sources of damage, one being general external abrasion, the other being localised damage caused by repeated rubbing of the ladder span eyes on the rope threaded through them.

Unravelling of rope samples, to reveal the strands and then their component rope yarns confirmed the extent of the abrasion damage.

Tensile testing revealed the degree to which the rope tensile performance had deteriorated when compared to its minimum 'as-new' breaking force. The rope was estimated to have a residual strength of just over 14 %

However, this fact alone can not explain the failure, as there remained enough strength in both ropes to provide a margin of safety.

It was noticed from incident photographs that there may have been a misalignment in the ladder when deployed, in that the ladder spans and and battens may not have been horizontal. If this was the case, then it is reasonable to assume that there would have been unequal loading of the rope legs.

The fact that the ladder failed close to both splices, and with a very uniform line of failed yarn ends acros the rope, gives a strong indication that there was a very local deterioration of the tensile properties of both ropes in this area. Photograph 20 shows localised nature of the failures in each leg. Two common causes of this are flex fatigue and stress raising. TTI have seen failures of a similar nature in previous investigations and studies [Ref 1], and it is very possible that both effects played their part in this incident.

A final point is that the general condition of the ladder suggests that it had been in use for a considerable period of time. With natural fibre ropes, there can be a deterioration in performance due to microbial and chemical attack, and repeated wetting [see Appendix 3]. Whilst there was no visual evidence of chemical degradation or microbial attack, it is entirely possible that degradation due to repeated wetting would have played its part in a general reduction of the rope performance.

A calculation to determine residual rope strength using the breaking loads of the inner yarns only gives an indication of the reduction in rope strength assuming there was no external abrasion. Further work involving optical microscopy would confirm the presence and extent of any microbial or chemical damage.

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3.2 Conclusions

- The failure appears to caused by a combination of general reduction in performance of the rope used in the ladder assembly, a possible misalignment of the ladder when deployed and a very localised deterioration of both rope legs close to their splices.

- The general appearance of the ladder suggests that it has been in service for a considerable period of time.

- It would appear that the ladder has not been subjected to regular inspection within existing guidelines and recommendations for safe working with fibre ropes (Ref 2, 3, 4, 5, 6)

References

1. The Durability of Polyester Ropes, JIP co-promoted and managed by NEL and TTI, 1999-2002.

2. "The selection, use, care, inspection and maintenance of non-metallic ropes and cords" United Kingdom Defence Standard DEF STAN 40-7/1.

3. "Mooring Equipment Guidelines", 2nd Edition, Oil Companies International Marine Forum 1997.

4. "Admiralty Manual of Seamanship' III 1983

5. "The selection, use and care of man-made-fibre ropes in Marine applications". British Standard BS 4128 1967 : Now lapsed, not replaced.

6. Cordage Manufacturers Institute, Recommendations for Rope Safety, 1984.

Appendix 8.3

Report by Tension Technology International

4. APPENDICES

Appendix 1

Testing Apparatus and testing conditions

Photo 8 shows the tensile testing instrument used to perform the tests. Bollard grips were used to clamp the samples.

The machine is a Testometric Micro 500, Serial No 500-123

Calibration performed by Denison Mayes Group, 10 June 2003, Certificate No. 64800

Photograph 1 Bollard grips used for tensile testing

Testing conditions were:

Gauge Length 835 mm

Xhead Speed 200 mm/minute

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Report by Tension Technology International

Appendix 2

Results of tensile testing

	Securing Rope Part, Item A Tensile Results					
	Rope Yarns				Strands	
	Outer rope-yarn		Inner rope-yarn			
	Br Load N	Br Strain %	Br Load N	Br Strain %	Br Load N	Br Strain %
Average	124	3.9	662	12.7	4009	11.7
SD	49	1.2	243	2.5	N/A	N/A
CV [%]	39	30.9	36.7	19.8	N/A	N/A
	No of tests=13		No of tests=4		No of tests=2	

	Ladder Part, Item A' Tensile Results					
	Rope Yarns				Strands	
	Outer rope-yarn		Inner rope-yarn			
	Br Load N	Br Strain %	Br Load N	Br Strain %	Br Load N	Br Strain %
Average	0	0	0	0	3989	14.7
SD	0	0	0	0	N/A	N/A
CV [%]	0	0	0	0	N/A	N/A
	No of tests=0		No of tests=0		No of tests=3	

	Securing Rope Part, Item B Tensile Results					
	Rope Yarns				Strands	
	Outer rope-yarn		Inner rope-yarn			
	Br Load N	Br Strain %	Br Load N	Br Strain %	Br Load N	Br Strain %
Average	0	0	0	0	3634	14.5
SD	0	0	0	0	N/A	N/A
CV [%]	0	0	0	0	N/A	N/A
	No of tests=0		No of tests=0		No of tests=3	

	Ladder Part, Item B' Tensile Results					
	Rope Yarns				Strands	
	Outer rope-yarn		Inner rope-yarn			
	Br Load N	Br Strain %	Br Load N	Br Strain %	Br Load N	Br Strain %
Average	267	3.5	554	9.1	4217	10.5
SD	64	0.7	128	1.4	N/A	N/A
CV	23.8	20.4	23.2	15.4	N/A	N/A
	No of tests=14		No of tests=4		No of tests=2	

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Appendix 3

Appendix 3 Extract from 'Admiralty Manual of Seamanship' I 1983

its left-hand lay makes it suitable for use with the marline hitch. It may be rot-proofed or natural.

Nettlestuff is made from New Zealand and St. Helena hemp. It consists of two or three yarns, reverse-spun (left-handed), and laid up together right-handed. It was once used for making hammock clews.

Care and maintenance

Natural fibre used in ropemaking has not a permanent elastic limit within which it can be worked indefinitely. Therefore no attempt should be made to put a heavy strain on a rope which has been well used or on a rope which has once been loaded to near breaking-point. The life of a rope depends on the amount it is used under strain, because the fibres tend to slip a small amount under each load in spite of the twist given during manufacture.

Ropes contract when wet, and a belayed rope must be slackened off before it is dangerously strained. On the other hand, advantage may be taken of this contraction for tightening lashings by wetting the rope. Never stow rope away while it is wet; if this is unavoidable the rope should be brought out and dried at the first opportunity. Boats' falls, which are stowed on reels, often have to be reeled up wet and are then very liable to rot. They should not be turned end-for-end without first being carefully inspected throughout the whole length.

Although any rope in good condition can be confidently expected to bear its full working load with ease, allowance for wear must be made in assessing the strength of used rope, particularly when it has been subjected to hard conditions. Before estimating the strength of such a rope it should be examined for damage, rot and fatigue. Serious damage can be seen when the strands are distorted and bear unequal strains, or when the rope becomes *opened*. Slack-jawed or opened rope usually results from hauling by hand, when there is a tendency to unlay it near the end. Examples of opened rope are often found in the last few fathoms of boats' falls, and those affected portions must always be cut off before the falls are turned end-for-end; failure to do so has been the frequent cause of accidents.

Loss of strength caused by external chafe can be estimated from the proportion of damaged yarns in a strand. To assist in this estimation it should be accepted that Admiralty manila and sisal have, very approximately, $C^2 \times 3$ yarns per strand, C being the circumference of the rope.

Rot can be detected by opening out the strands and examining their inner surfaces. Should the exposed fibres be healthy and strong, all is well; if they are powdery, discoloured, weak, or can be plucked out, rot exists and the rope should be condemned.

Fatigue will most probably show itself in a reduction of the circumference of the rope below its specified size. This indicates that the rope has stretched under a heavy load and has failed to return to its normal condition. A rope which has been so stretched has lost a considerable proportion of its initial tensile strength and should therefore be used with great caution.

If a rope is showing no signs of damage, rot or fatigue, it is unlikely to be much below its full strength, but some consideration must be given to its age

Appendix 8.3

Report by Tension Technology International

and those occasions when its fibres may have been weakened or their grip on each other lessened. Such weakening may have been caused by any or all of the following:

Constant stretching under heavy loads
Stowing away wet
Subjection to extremes of heat and damp, as in the tropics
External friction round bollards or through fairleads
Internal friction due to bending round sheaves of blocks.

If short lengths of yarns can be taken which are representative of the used portion of the rope they may be tested for tensile strength and thus give an indication of the deterioration which has taken place. It is necessary, however, to know the actual or specified breaking strength of the yarns.

The only really reliable method by which the strength of the rope may be determined is to test a sample of the worst part of the rope to destruction. Sample lengths are taken for testing to destruction of all ropes manufactured commercially and at the Admiralty Ropery. Appearance, stretch and reduction in size are all important, but it is not possible to lay down rules which can be applied to determine the degree of deterioration in tensile strength which has occurred by these means. This has always been left to the judgement of experienced seamen or ropemen.

Manufacture

Not only does the twist imparted to a rope during manufacture give it elasticity and enable its fibres to hold together by mutual friction, but it also packs the material firmly, thereby helping to keep out moisture and giving the rope a hard surface against wear and tear. Twisting the fibres, yarns and strands in opposite directions also helps to counter any tendency of the rope to unlay. Rope which is given a hard twist in manufacture (hard-laid rope) loses in flexibility and strength but gains in elasticity and firmness. Soft-laid rope, on the other hand, is very flexible, and stretches less, but is more easily damaged by chafe. Rope used for general purposes is given a medium twist; but for edging sails, awnings and other canvas, where flexibility and minimum stretch are the first considerations, soft-laid boltrope is used.

The distance along the rope between any two points on the same strands is known as the *jaw* of the rope, and gives a measure of the hardness of the lay; the shorter the jaw the harder the lay. A similar result can be obtained from the *angle of the lay*, which is the angle between the line of the strands and that of the rope; the greater the angle the harder the lay. A rope in which the lay has become slack, perhaps even showing a gap between the strands, is known as *slack-jawed* or *opened*.

Twisting the fibres to form the yarn is essential to enable them to hold together, but it reduces the strength of the individual fibres, and, within limits, the lighter the twist the greater is the strength of the yarn. On the other hand, bad material in a rope may be disguised by reducing the angle of lay; so that, although it may pass the necessary test when new, it will probably fail afterwards under normal working conditions.

All vegetable fibre cordage supplied to the Royal Navy is manufactured at the Admiralty Ropery at Chatham, with the exception of log line and the

Appendix 8.3

Report by Tension Technology International

Appendix 8.4

1 and 2. Combination Pilot Ladder arrangement "M/V Alexia".

Appendix 8.4

3. Port side M/V "Alexia" showing combination pilot ladder (takes from quay wall).

4. Port side M/V "Alexia" showing method of securing pilot ladder.

Appendix 8.4

5. Crew of M/V "Alexia" identifying pilot ladder at Dublin Port office.

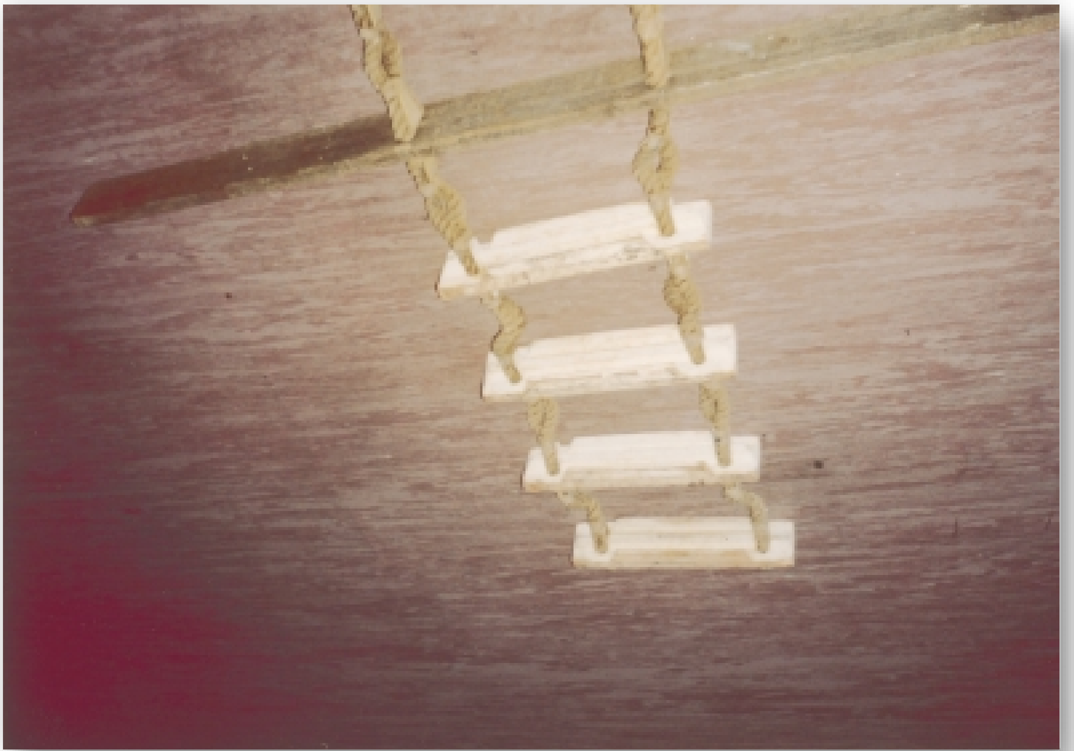
6. Section of pilot ladder from M/V "Alexia" that fell onto the pilot vessel.

Appendix 8.4

7. Section of pilot ladder showing failure of both rope sections.

Appendix 8.4

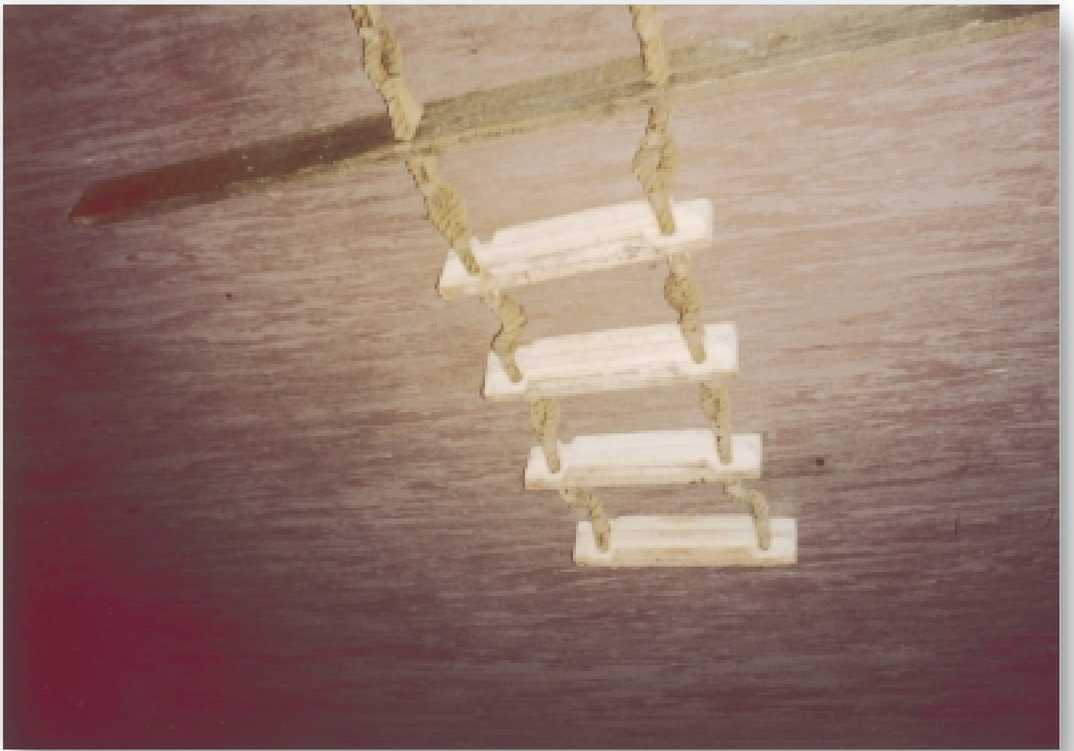
8, 9, 10, 11. Bottom section of pilot ladder from M/V "Alexia".



Photograph No. 9

Appendix 8.4

Photograph No. 10



Photograph No. 11

Appendix 8.4

12. Tolka (Dublin Pilot No. 1)

13. Tolka (Dublin Pilot No. 1) starboard side

Appendix 8.4

14. Tolka (Dublin Pilot No. 1) starboard side

15. Tolka (Dublin Pilot No. 1) rubber fendering (skirt)

Appendix 8.5

Marine Notice

APPENDIX 8.5

Department of the Marine

Marine Notice

NO. 26 OF 1993

NOTICE TO ALL SHIPOWNERS, SHIPMASTERS, OFFICERS, SKIPPERS AND HARBOUR AUTHORITIES

Re: The Boarding and Landing of Pilots by Pilot Boat

Code of Practice

A booklet has been published by the British Ports Association outlining the practices to be followed when embarking and disembarking pilots.

This booklet is recommended by the Department of the Marine and should be obtained for the use of all persons concerned with the use of pilot boarding equipment.

The publication can be obtained from the British Ports Association at the address below:-

Africa House
64-78 Kingsway
London WC2B 6AH
United Kingdom

Telephone: 071 242 1200
Facsimile: 071 405 1069

Fionán O'Muircheartaigh,
Rúnaí.

Department of the Marine,
Dublin 2.

7th July, 1993

9. LIST OF CORESPONDENCE RECEIVED

9. CORESPONDENCE RECEIVED

02/11/2004 15:25 +44-207-4919491 SEVEN SEAS MARITIME PAGE 01/01
+44 207 4919491

SEVEN SEAS MARITIME LIMITED

Registered Office
BERGER HOUSE
38 BERKELEY SQUARE
LONDON W1J 5AD

Telephone : 020 7495 6776
Fax : 020 7491 9491

Telex : 884280 SEVSEA G
E-mail : Sevenseas@sevsea.co.uk

Our Ref: CK/DK/04

Your Ref:

FACSIMILE COVER SHEET

TO: MCIB
ATT: JOHN G. O'DONNELL ESQ
FAX: 00.353.1.678 3129

FROM: C. KERSHAW
DATE: 02/11/04
NO PAGES: 1

SUBJECT: ALEXIA - PILOT'S CUTTER COLLISION WITH THE PILOT LADDER 4.2.04

WE ARE THE LONDON AGENTS OF THE OWNERS OF M/V ALEXIA. WE REFER TO YOUR LETTER TO MR. SHVEDOV DATED 11.10.04 AND WE CONSIDER THAT SOME VERY IMPORTANT POINTS HAVE NOT BEEN CONSIDERED.

IN THE CONCLUSION OF THE REPORT THE WRITER HAS FAILED TO TAKE INTO CONSIDERATION THE FACT THAT IF THE CUTTER HAD NOT BEEN NEGLIGENT IN POSITIONING ITSELF AGAINST HE VESSEL THE ROPE WOULD NOT HAVE PARTED. THE ROPE WAS NEVER DESIGNED TO TAKE THE WEIGHT OF A CUTTER, AND PRIOR TO THIS INCIDENT IT WAS MORE THAN CAPABLE OF BEARING THE WEIGHT OF A MAN WITHOUT BREAKING. IT WAS THE CUTTER THAT WAS THE CAUSE OF THE INCIDENT NOT THE QUALITY OF THE ROPE, AS EVEN IF THE ROPE HAD BEEN BRAND NEW IT WOULD STILL HAVE BROKEN UNDER THE UNNATURAL STRAIN OF THE WEIGHT OF THE CUTTER.

THE WRITER OF THE REPORT HAS USED THE "TENSION TECHNOLOGY" AS A QUASI SCIENTIFIC DOCUMENT TO BACK UP HIS CONCLUSIONS. THIS REPORT WAS ISSUED IN RESPECT OF A PORTION OF ROPE THAT HAD BROKEN DUE TO EXCESSIVE STRAIN OF THE CUTTER BREAKING IT. THE REPORT DOES NOT SHOW WHAT THE CONDITION OF THE ROPE WAS PRIOR TO THE INCIDENT, THEREFORE IT CANNOT BE USED AS EVIDENCE THAT THE ROPE WAS INADEQUATE.

WE WOULD BE GRATEFUL IF YOU COULD CONSIDER THE POINTS THAT WE HAVE RAISED.

KIND REGARDS
CHRISTINE KERSHAW

Registered in England No. 1099553

MCIB RESPONSE

The MCIB notes these comments, however, we disagree with the contentions contained herein. Please see conclusions in Final Report.

9. CORESPONDENCE RECEIVED

Calafort Átha Cliath

DUBLIN PORT Co

Dublin Port Company
Port Centre, Alexandra Road, Dublin 1
Telephone (353 1) 887 6000, 855 0888
Fax (353 1) 855 1241
Web www.dublinport.ie

1st November 2004

Mr. J.G. O'Donnell, B.L.,
Chairman,
MCIB,
Leeson Lane,
Dublin, 2

IRELAND
Date Received
/ 2 NOV 2004
EIRE

RE: m.v. "ALEXIA"

Dear Mr.O'Donnell.

Thank you for the opportunity to comment on the draft report into the above incident in which one of our pilots was seriously injured and one of our boatmen was put at risk of injury.

This incident is of particular concern to Dublin Port Company since it highlights an area of risk to our personnel over which we have no control. It is reasonable for our pilots to assume that equipment being offered as a means of boarding vessels, such as a pilot ladder, is fit for purpose. I welcome the fact that the report highlights this matter and makes recommendations to address the issue by better examination of pilot ladders during Port State Control inspections.

The emphasis must be on compliance with international standards and requirements as, foreign registered vessels may not have access to Irish or UK codes of practice. Accordingly, any effective measures will only be achieved through the IMO framework. It might be useful, therefore, to consider proposing these codes of practice to IMO for inclusion in internationally enforced legislation. This would ensure that all vessels are required to comply with agreed standards which can then be readily addressed through Port State Control inspection.

The report clearly establishes that the pilot ladder was in very poor condition with the rope strength being reduced to some 14% of original. In addition, it is clear that the ladder was rigged incorrectly with the result that the steps were not level, as required.

I would like to draw your attention to paragraphs 4.3 and 6.8 in which reference is made to the fact that the ladder was "trapped" between the ship's side and the side of the pilot cutter. As written, it appears to suggest that the ladder was "trapped" in a manner such that it could not be released or that it could not move as a result of being "trapped" in this position. It is accepted practice that this is not a desirable situation, however, the design of the ladder in this area actually caters for this situation by requiring the fitting of rubber steps which can absorb any compressive loads and "slip" very easily over the ship's hull or the fendering of the pilot cutter.

Irish Port of the Year 2003

9. CORESPONDENCE RECEIVED

Mr. J. G. O'Donnell,
Chairman,
MCIB
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This design feature obviously recognises that, while it is not desirable to have the ladder in this position, it is likely to occur in routine operations. I am also satisfied that this matter did not contribute to the failure of the ladder since, in my experience of operations within this port and worldwide seagoing experience, such a situation has never resulted in the failure of a properly fit for purpose pilot ladder. I have no doubt that a well founded ladder would not be adversely affected by the sliding loads imparted by the pilot cutter. The draft report indicates that the ropes of this ladder should have been capable of withstanding a load of some 10.66 tonne which is vastly in excess of any load resulting from the "pull" on the ladder imparted as a result of being located between the ship's side and the pilot cutter. I would request, therefore, that this fact is reflected in the report since, as currently written, it might be construed that the strain from the pilot cutter caused the failure which is clearly, not the case.

As an editorial matter, it appears that the rope pieces, shown in photo No.7, are incorrectly identified. Leg A should refer to the top R.H.S. and not top L.H.S. of photos shown.

Thank you, again, for the opportunity to comment on the draft report into this incident and I hope the measures identified will help to prevent a recurrence.

Yours sincerely,

Enda Connellan,
Chief Executive

MCIB RESPONSE
The MCIB notes the contents of this letter.

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