



SAFETY INVESTIGATION REPORT

201507/010

REPORT NO.: 11/2016

July 2016

The Merchant Shipping (Accident and Incident Safety Investigation) Regulations, 2011 prescribe that the sole objective of marine safety investigations carried out in accordance with the regulations, including analysis, conclusions, and recommendations, which either result from them or are part of the process thereof, shall be the prevention of future marine accidents and incidents through the ascertainment of causes, contributing factors and circumstances.

Moreover, it is not the purpose of marine safety investigations carried out in accordance with these regulations to apportion blame or determine civil and criminal liabilities.

NOTE

This report is not written with litigation in mind and pursuant to Regulation 13(7) of the Merchant Shipping (Accident and Incident Safety Investigation) Regulations, 2011, shall be inadmissible in any judicial proceedings whose purpose or one of whose purposes is to attribute or apportion liability or blame, unless, under prescribed conditions, a Court determines otherwise.

The report may therefore be misleading if used for purposes other than the promulgation of safety lessons.

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MY AKALAM

Grounding while on passage From Giardini Naxos to Messina, Sicily 08 July 2015

SUMMARY

The Maltese registered commercial yacht *Akalam* sailed from Giardini Naxos to Messina, Sicily with one passenger on board.

Following a request by the passenger to sail as close as possible to the Sicilian coast, the master decided to deviate from the voyage plan and sail in water depths of not less than 20 m.

At approximately 1040, *Akalam* lurched and abruptly came to a stop. She then started veering to port. The impact was violently felt by the crew.

The immediate cause of the grounding was a deviation from the documented passage plan and the very close sailing to the coast, which was exacerbated by lack of a navigational mark over the shoal.

The MSIU has issued two recommendations to the Company designed to ensure that crew members on board appreciate the importance of voyage planning.



FACTUAL INFORMATION

Vessel

Motor/sail yacht *Akalam* (Figure 1) is a 32 m sloop built in 2011 at Pendennis Shipyard, Falmouth, UK. The hull and superstructure are built of aluminium and fitted with a 610 bhp MAN engine, giving speeds in excess of 13.50 knots. Under sail, she is capable of reaching 11 knots in 20 to 25 knots wind.

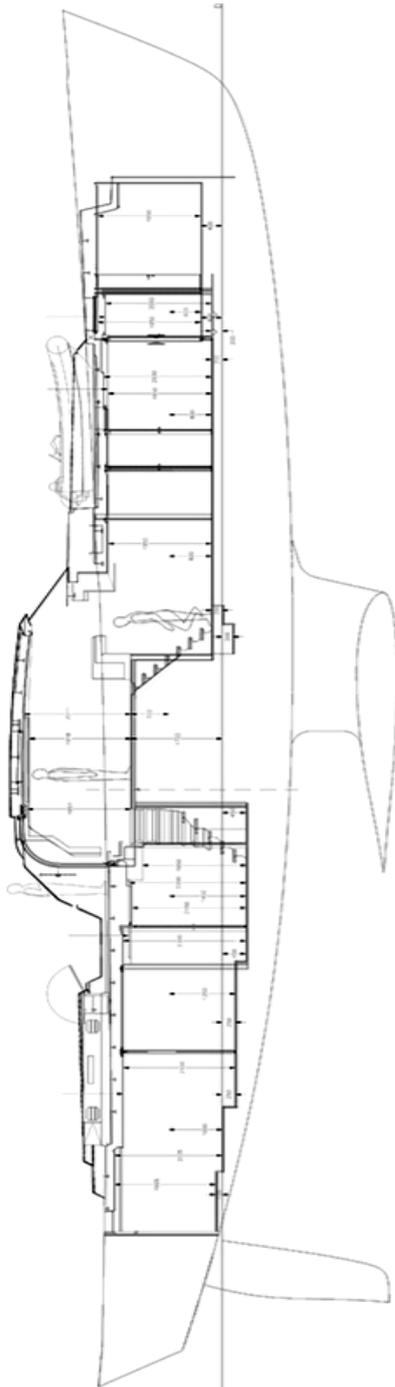


Figure 1: MY *Akalam* GA Plan

The yacht's navigation system includes a GPS, an echo sounder, radar/ARPA and a magnetic compass with auto-pilot. She is also fitted with AIS, Navtex, Inmarsat C, a VHF radio with DSC and an indicator for speed and distance through the water. The yacht is not equipped with any facility to record or store navigational data.

Crew complement

At the time of the accident, *Akalam* had a crew complement of five. The master, who is a Spanish national, was 45 years old. He held a valid Yachtmaster Offshore Certificate issued by the Maritime and Coastguard Agency of the UK. Upon departure from her last port of call before the grounding (Giardini Naxos), the master was keeping the navigational watch.

The chief mate, also a Spanish national, was issued with a *Patron De Altura De La Marina Mercante* Certificate by the Spanish authorities. At the time of the accident, he was 37 years old. The remaining crew members were the chief engineer, a stewardess and a cook.

Environment

The weather was clear with good visibility. On leaving Giardini Naxos, a gentle breeze of between six and eight knots was blowing from the Southwest. The sea was calm with no swell.

Surface Currents¹

On the Eastern coast of Sicily, the current sets South Southwest with an average rate of about 0.25 knots towards Siracusa then South Southeast away from the coast. Rates of 3 to 4 knots setting West or Northwest have very occasionally been reported South of the toe of Italy with strong persistent Northeast winds although usually, onshore drifts do not exceed 0.50 knots.

¹ Admiralty Sailing Directions Mediterranean Pilot Volume 1, NP 45, 15th Edition, 2014 pp 24.

Narrative

On the morning of 08 July 2015, the Maltese registered commercial yacht *Akalam*, sailed from Giardini Naxos to Messina, Sicily with one passenger on board. At the time of departure, *Akalam* was drawing 3.47 m (measured from the keel).

A voyage plan (Figure 2) was prepared using BA Chart 1941. The passage from Giardini Naxos to Messina was 26.6 nautical miles. The yacht was scheduled to arrive at Messina at 1115². According to the plan, the yacht was expected to do 9.5 knots. Following a request by the passenger to sail as close as possible to the Sicilian coast, the master decided to sail in water depths of not less than 20 m.

At 0820, *Akalam* weighed anchor and left Giardini Naxos. With light to gentle breeze behind her, she set out for Messina under sail and engine power, steering 039° and making 10.5 knots. At approximately 1040, *Akalam* lurched and abruptly came to a stop. She then started veering to port.

The impact was violently felt by the crew. The position 37° 54.742' N 015° 20.983' E was plotted on BA Chart 1941 and logged in the logbook (Figure 3) with the following observations, “impact with no visible rock without marks” and, “distance to run 6.5 nautical miles.”

Akalam was inspected internally for damages. No water ingress was found but there were injuries reported to the master. The engines were put to full astern and the yacht was eventually cleared of the obstruction.

FECHA	WPT	DESCRIPTION	LATITUDE	LONGITUDE	SPEED	COURSE	DIST	TO GO	ETA	CHART NUM.	TIME
08/07/15	0	Giardini Naxos Dep(08:30)	37 49,751N	015 16,375 E	9,5 KNOTS	058	1,5 MILES	25,1 MILES	08:40	1941	UTC+2
08/07/15	1	C. Taormina	37 50,623 N	015 18,035 E	9,5 KNOTS	037	0,6 MILES	24,5 MILES	08:45	1941	UTC+2
08/07/15	2	C. Scaletta	38 03,248 N	015 28,804 E	9,5 KNOTS	036	15 MILES	9,5 MILES	10:16	1941	UTC+2
08/07/15	3	WPT N. 4	38 04,864 N	015 30,326 E	9,5 KNOTS	027	7,7MILES	1,8 MILES	11:04	1941	UTC+2
08/07/15	4	Mesina	38 11,760 N	015 34,814 E	9,5 KNOTS	027	1,8 MILES	0,0 MILES	11:15	1941	UTC+2

Figure 2: Excerpt from the voyage plan

² Unless otherwise stated, all times are local time (UTC+2).

FROM: <u>SARCOUSA TONNARA</u>		TO: <u>TORRELLA MESSINA</u>		DATE: <u>08/07/15</u>																															
HW Standard Port: _____		HW Standard Port: _____		<table border="1"> <tr> <td></td> <td>Log miles</td> <td colspan="2">Eng hrs</td> <td colspan="2">Fuel</td> </tr> <tr> <td></td> <td></td> <td>P</td> <td>S</td> <td>P</td> <td>S</td> </tr> <tr> <td>Start</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Finish</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Day's run</td> <td><u>228 NM</u></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>			Log miles	Eng hrs		Fuel				P	S	P	S	Start						Finish						Day's run	<u>228 NM</u>				
	Log miles	Eng hrs				Fuel																													
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Day's run	<u>228 NM</u>																																		
LW Standard Port: _____		LW Standard Port: _____																																	
HW Local: _____		HW Local: _____																																	
LW Local: _____		LW Local: _____																																	
WEATHER: <u>WALKER LIGHT BLOWING S LIGHTS AND CALM SEA</u>																																			
TIME (ATD)	POSITION (LAST WAYPOINT)	LOG	TRACK	TIDE DIR RATE	COURSE TO STEER	DIST TO RUN	SPEED	ETA	REMARKS	WEATHER	OIL	TEMP	CHARGE																						
01:30	0: 33° 49' 40.0 N 10:15 16° 40.5 E								ANCHORAGE IN TONNARA	G																									
01:00									" CHECKING	G																									
08:00									" "	G																									
10:00									NAVIGATION TO MESSINA	G																									
10:40	0: 33° 54' 48.0 N 10:25 20° 48.3 E					01.5 km			IMPACT WITH AN UNUSABLE (MAYBE) MARK WITHOUT MARKS	G																									
11:30									ANCHORAGE IN SHORE PLACE	G																									
11:31									GOOD GROUND ALONG SHORE	G																									
12:00									TUG AROUND AREA	G																									
12:20	0: 33° 44' 02.0 N 10:15 12° 51.1 E					12.5 km			NAVIGATION TO RIPOSTO WITH TUG	G																									
21:25									ARRIVED TO RIPOSTO HARBOUR	G																									

Figure 3: Excerpts from the deck logbook

At 1045 an alert message was raised over the VHF radio and shortly afterwards *Akalam* was anchored and the main sail furled up. The chief engineer had a broken leg, the chief cook injured his left hand and the stewardess had injuries on her face and elbow.

At 1125, a local SAR service arrived alongside. Using a tender, the SAR evacuated the injured crew to the nearest beach for medical treatment ashore. The master was also injured but he opted to stay on board.

The yacht was again inspected for damage but no water ingress in the bilges was identified. No pollution was observed around the yacht. *Akalam*, however, was found to have sustained extensive damage to her hull, superstructure and fittings. A tug was brought over from Messina to tow her to a nearest marina with repair facilities. The tow commenced at 1915 and ended upon

reaching the port of Riposto, Sicily at 2115.

Structural damage

The following damage was reported:

- The lower part of the keel severely damaged with several cracks in the aluminium plates;
- Cracks in way of the forward upper part of the keel and in the junction box between the keel and the hull;
- Two propeller blades bent;
- Buckling and scattered indentation in the hull plating abaft the keel between frames 22 and 25;
- Buckling and scattered indentation in the hull plating on port and starboard side between frames 15 and 23;
- The main centre girder between frames 17 and 18 bent. Cracks in butt weld between the flat plate of the girder and

the aft frame, and in the fillet welds of the horizontal stiffeners;

- The upper part of the port fuel tank plate bent between frames 18 and 20;
- The bulkhead at frame 20 in way of the keel box slightly bent;
- The control box panel mountings in the engine-room were found broken and the door hinge and the hydraulic system in-operative;
- Substantial damage was found on deck, in the galley and accommodation superstructure, furniture and furnishings.

Shoal off Capo San Alessio³

The shoreline at Capo San Alessio is fringed by small rocks. A shoal depth of 2 m lies about 400 m to the Southeast. Anchorage can be obtained by small vessels off the village of San Alessio in the North and in depths of 9 m to 10 m.

SOLAS Regulation V/34 and IMO Resolution A.893 (21)

Provisions of SOLAS regulation V/34 on safe navigation and avoidance of dangerous situations apply to *Akalam*. Before going out to sea, a voyage plan clear of navigational hazards had to be drawn up. In preparing the voyage plan, the master must take into account the guidelines in IMO Resolution A.893 (21) to ensure safe navigation.

ANALYSIS

Aim

The purpose of a marine safety investigation is to determine the circumstances and safety factors of the accident as a basis for making recommendations, and to prevent further

marine casualties or incidents from occurring in the future.

Passage planning and navigational risks

Discussions at the IMO in preparation for the adoption of Assembly Resolution A.893(21), highlighted the importance of voyage planning and the close monitoring of the vessel's progress and position during the execution of the plan by all vessels.

Voyage planning, which is split into four components (appraisal, planning, execution and monitoring), share common characteristics with risk assessment. Evidence suggested the possibility of an inaccurate appraisal, which necessitates, *inter alia*, appropriate scale charts for the intended voyage.

Appraisal is the basis of voyage planning and problems at this early stage of the plan will cascade in further problems during:

1. the actual planning (*e.g.* minimum clearances required under the keel and position fixing);
2. execution of the voyage plan (*e.g.* particular circumstances such as shallow water and related unacceptable hazards); and
3. the progress of the vessel at the monitoring stage during the actual passage.

In one of its publications, The Nautical Institute commented on how predication and anticipation of risk (being fundamental safety-critical factors) can prepare the OOW for solutions for mitigating risk and prevent accidents.

The safety investigation has revealed problems in the above areas as detailed further below.

³ Admiralty Sailing Directions Mediterranean Pilot Volume 1, NP 45, 15th Edition, 2014 pp 460.

Immediate cause of the grounding

The immediate cause of the grounding was a deviation from the documented passage plan and the very close sailing to the coast, which was exacerbated by lack of a navigational mark over the shoal.

BA Chart 1941

Large scale charts are used for entering ports and harbours, medium scale charts for coastal navigation and small scale charts cover large geographical areas, used for ocean navigation and / or for planning of sea voyages. Guidance on limitations, interpretation and use of nautical charts is given in the Mariner's Handbook (NP 100). Chapter 2 on 'The Use of Charts and other Navigation Aids', *inter alia*, states:

A general survey of a coast which vessels only pass in proceeding from one place to another is seldom made on a scale larger than 1:50,000. In such general surveys of coasts or little frequented anchorages, the surveyor does not contemplate that ships will approach the shore without taking special precautions.

In closing the land or dangerous banks, regard must always be made to the scale of the chart used. A small error in laying down a position may mean only a few metres on a large scale chart, whereas on a small scale the same amount of displacement on the paper may mean several cables.

Akalam had on board BA Chart 1941 – Capo Passero to Capo Colonne. The chart is drawn on a scale of 1:300,000. Thus, the coastal features on the chart were not exhaustive.

Water depth

Water depths between Capo di Taormina and Messina increase very sharply from the shore into deeper waters. The depth contours are tightly packed and lie very close to the shoreline. During the course of the safety investigation, it was established that a vessel sailing close to the coast may quickly find itself in the shallows.

Logbook

A logbook is a record of data from navigational instruments, weather, tide and current. The section under remarks is used for recording critical events that occur during the navigation of the vessel. A copy of the logbook of 08 July 2015 submitted to the MSIU showed scant information on navigation and management of the yacht.

For instance, from 0800 onwards, no readings were found for log, track, tide (current), course to steer, speed, ETA or distance covered. No fixes (GPS, radar or observations) were noted. Moreover, water depths were recorded neither before nor after the accident. In the 'Remarks' section, no records of *Akalam* running aground were found.

Conduct of navigation

A comprehensive passage plan with courses and waypoints clear of navigational hazards was indeed prepared by the master. However, on leaving Giardini Naxos, it would appear that the navigation was not in accordance with the plan.

Since the navigational records were scanty, the safety investigation could not ascertain what courses were being steered by the master just before the accident. It was probable, however, that after passing Capo di Taormina, there was a deviation from the original course, with *Akalam* heading towards the shoreline in order to satisfy the passenger's wish to sail close to the Sicilian coast.

There was no evidence of use of navigational instruments. Large scale charts were unavailable and BA Chart 1941 had limited navigational information on account of its scale. It would appear that navigation was primarily conducted by eye and by following water depth readings on the echo sounder. It was also likely that the master was unaware of small rocks and shoal that abound Capo San Alessio. In fact, the master did not

anticipate anything untoward navigating so close to the shore.

The safety investigation observed an entry in the logbook, which read, 'distance to run 6.5 nm' [to Messina]. The entry in the logbook was made at 1040 and seemed to indicate that the yacht had covered 20.1 nautical miles since leaving Giardini Naxos.

The above seemed unclear because *Akalam* was reportedly aground at 1040 near Capo San Alessio, which is six nautical miles from Giardini Naxos. Since actions and events between 0820 and 1040 are unaccounted, and as current had little influence on the yacht, the MSIU concluded that the grounding position given was either incorrect or the entry 'distance to run 6.5 nm' was erroneously recorded in the logbook.

Thus, on account of the navigational discrepancy, the MSIU requested clarification. Representatives of the owners explained that *Akalam* departed Giardini Naxos and anchored off Taormina. This event was not recorded in the logbook. The master then weighed anchor at 0945 and sailed for Messina, keeping San Alessio on *Akalam*'s port side. While sailing about 100 m offshore in water depths of 20 m to 25 m, *Akalam* ran aground at 1040. At the time, she was about 70 m offshore.

CONCLUSIONS

1. The immediate cause of the grounding was a deviation from the documented passage plan and the very close sailing to the coast;
2. The coastal features on the chart available on board were not exhaustive due to the scale;
3. Since *Akalam* was sailing close to the coast, she quickly found itself in the shallows;
4. The navigation of *Akalam* was not being monitored adequately;
5. On leaving Giardini Naxos, the navigation was not in accordance with the voyage plan;
6. It was also likely that the master was unaware of small rocks and shoal that abound Capo San Alessio.

RECOMMENDATIONS

Comino Channel Shipping Limited is recommended to:

11/2016_R1 issue a Fleet Circular to highlight the importance of voyage planning;

11/2016_R2 identify, analyse and discuss navigational practices on board its yachts in order to implement rectification of identified issues.

SHIP PARTICULARS

Vessel Name:	<i>Akalam</i>
Flag:	Malta
Classification Society:	DNV GL
IMO Number:	Not applicable
Type:	Commercial Yacht
Registered Owner:	Comino Channel Shipping Ltd.
Managers:	Comino Channel Shipping Ltd.
Construction:	Aluminium
Length Overall:	32.00 m
Registered Length:	29.65 m
Gross Tonnage:	137
Minimum Safe Manning:	Not applicable
Authorised Cargo:	Not applicable

VOYAGE PARTICULARS

Port of Departure:	Giardini Naxos, Sicily
Port of Arrival:	Messina, Sicily
Type of Voyage:	Coastal
Cargo Information:	Not applicable
Manning:	5

MARINE OCCURRENCE INFORMATION

Date and Time:	08 July 2015 at 10:40
Classification of Occurrence:	Serious Marine Casualty
Location of Occurrence:	Capo San Alessio, Sicily
Place on Board	Ship / Other
Injuries / Fatalities:	Four crew members injured
Damage / Environmental Impact:	None reported
Ship Operation:	On passage
Voyage Segment:	Transit
External & Internal Environment:	Sea was calm with no swell. The wind was up to 8 knots from the Southwest. The visibility was good.
Persons on board:	6