INVESTIGATION INTO PASSENGER INJURY

HIGH SPEED PASSENGER VESSEL

“ATTITUDE”

N.E. OF FORTESCUE BAY ON THE SOUTH EAST COAST OF TASMANIA

11th APRIL 2011

MARINE AND SAFETY
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FOREWORD

Inquiries and investigations into Marine Casualties occurring within Marine and Safety Tasmania’s (MAST) jurisdiction are conducted under the provisions of the Marine and Safety (Maritime Incidents) Regulations 2007.

Incident investigation reports must be submitted to the Board of Directors of MAST.

It is MAST policy to publish such reports to increase the awareness of marine incidents so as to improve safety at sea.

Copies of the reports can be obtained from:

Marine and Safety Tasmania,
PO Box 607
Hobart TAS 7001

Or the web site:

http://www.mast.tas.gov.au (Publications)
SUMMARY

On Monday the 11th of April 2011, the high speed passenger vessel “Attitude” departed from the Pirates Bay jetty which is south of Eaglehawk Neck, on the S.E. coast of Tasmania. The time was approximately 1000 hours. There were 15 passengers on board and 2 crew including the skipper.

It was intended that the vessel do her regular tourist run southward towards Tasman Island and then return to Pirates Bay, the trip lasting approximately three hours.

On the return trip, the vessel was in the approximate position of 43 deg 07’.2 S 147 deg 59’.4 E which is to the SE of Cape Nola, when the sea conditions deteriorated and the vessel hit a series of two waves causing a pounding* effect on the forward part of the hull. A female passenger had briefly risen from her seat. As she was resuming her seat the boat’s impact with the second wave caused her to come down heavily onto the seat. Following this, she informed the crew member that she was experiencing back pain and was assisted to the aft part of the vessel which is less subject to the jarring effects of pounding.

Following the incident, the passenger’s condition was monitored by the crew member and the vessel was operated at a speed consistent with the wave conditions.

The skipper, in assessing the situation, decided to immediately return to the jetty in Pirates Bay where the passenger was met by her husband who had been informed of the vessel’s early return.

*“pounding” is a nautical term relating to the bows of the vessel leaving the surface of the sea due to large waves and the jarring effect that occurs when the bow contacts the sea surface again.
SOURCES OF INFORMATION

- Incident Report from Skipper.
- Interview with Skipper on 7th May 2011.
- Interview with crew member on 7th May 2011.
- Interview with injured passenger on 10th May 2011.
- Interview with witness on 10th May 2011.
- Bureau of Meteorology - weather report.
- Inspection of “Attitude” at Pirates Bay and subsequent trip on the vessel covering the same passage plan.
DETAILS OF HIGH SPEED PASSENGER VESSEL “ATTITUDE”

Make/design: Naiad 14
Length: 13.44m
Beam: 4.2m
Draft: 1.8m
Engines: Four 350hp Yamaha petrol outboards.
Hull materials: Aluminium monohull with rubberised inflatable side pontoons.
Superstructure: Aluminium framing covered with waterproof vinyl “roofing”.
Year built: 2009

Survey status: 1C for 48 passengers and 2 crew up to 30 nautical miles offshore.

Crew qualification requirements:
Skipper: Master 5 and Marine Engine Driver 3.
Crew: Valid ‘Elements of Shipboard Safety’ and Senior First Aid certificates.

The vessel layout is a single deck with raised passenger seats in the after part. The helm position is approximately two thirds of the way aft and helming is carried out from a standing position.

Instrumentation consists of:
Four individual engine control levers, magnetic compass, echo sounder, G.P.S. linked to a chart plotter with a ‘daylight’ screen giving position and course and speed over the ground. Communication is by V.H.F. radio and mobile phone. There is also an effective public address system using speakers which are positioned throughout the boat and the microphone is at the helm position and easily accessible by both crew for cruise commentaries etc.

Passengers are primarily seated four abreast except in the forward and aft seats (see attached photo). The seats all face forward and are identical. They consist of a waterproof, close mesh synthetic type of fabric which is tensioned on the frame to give comfort and a degree of cushioning, the top of the seat back frame is also padded. Each seat has a ‘grab bar’ attached behind it for the use of the passenger behind, this means that some seats do not have a ‘grab bar’ available to the seated passenger due to there being no seat in front of them. Each seat is also fitted with arm rests which help to prevent any sideways movement of the seated passenger. There is also a personal floatation device (life jacket) contained in a flexible bag under each seat.

Below the helm console is a small toilet for passenger use.
NARRATIVE

(This narrative is taken from the MAST incident report completed by the Skipper of “Attitude” following the incident.)

As per standard procedures, once passengers were boarded and prior to departure a full and thorough safety brief was conducted, including outlining all safety precautions in relation to people sitting towards the front of the vessel and the risk of injury, especially for passengers with pre-existing back or spinal conditions. Any passengers who had any concerns were urged to move aft.

We departed Pirates Bay and proceeded along the coastline, stopping at Tasman’s Arch and then through to Waterfall Bay. During a short stop at Waterfall Bay, I asked my deckhand, to check on the comfort of all passengers and again inform them of the safety precautions previously mentioned in the safety briefing prior to departure.

I then proceeded along the coast to the Thumbs and stopped in the lee where a passenger said she was starting to feel uncomfortable and getting a sore back. At this stage, I moved the passenger to the very aft of the vessel and moved all other passengers to the midships and aft sections of the vessel for their comfort and safety.

Proceeding from the Thumbs to Cape Hauy at position approx. 43 07.2S & 147 59.4E, travelling at 20 knots, I noticed two larger than average waves approaching. I steered the vessel into an appropriate position to navigate over the waves and backed off the throttles, reducing the speed to approximately 5-8 knots. We rode over the first wave with a slight jar, then over the second wave with a heavier but still moderate jar, as the wave had hollowed out on the back side.

While navigating the second wave, I noticed a passenger, sitting in the third row of the seats in front of the drive console. She pushed herself out of the seat and came back down with a moderate bump as she sat back in her seat. I asked the deckhand to check on the passenger. The passenger informed the deckhand that she was feeling a bit seasick and that she had strained her back when she rode out of her seat and landed.

The deckhand assisted the passenger to move further aft behind the drive console and an assessment of her condition was made. I then made the decision to proceed to the lee of Cape Hauy to have a short break and reassess the passenger’s comfort and condition in the smooth waters.

We then embarked on our return journey to Pirate’s Bay. Throughout the return journey the passenger’s comfort was regularly monitored. The deckhand phoned the passenger’s husband to inform him of the situation and arrange an earlier pick up as our estimated time of arrival had changed. Further assistance was offered but declined by the passenger.

Details of the passenger and three other witnesses were obtained for the purpose of this report.
COMMENT AND ANALYSIS

The “Attitude” is a relatively new vessel which is purpose designed and built for the tourist industry where high speed “thrill” rides are becoming more and more popular. The designers, Naiad, are New Zealand based and many boats of this ‘Rigid Inflatable’ type have been produced and are in use both in Australia and overseas. In fact there are least 5 Naiad designed vessels in operation in Tasmania conducting similar operations.

Marine and Safety Tasmania (MAST) requires all operators of passenger carrying vessels to comply with Safety Management Plans (SMPs). These plans require the assessment of risks relating to the particular vessel operations and also the training and qualification of crew etc, in fact, most SMPs for vessels of this size will usually be a document of some 20 pages. (Example SMPs are available from MAST if required)

With regard to the SMP requirements for “Attitude”, the crew qualifications and safety requirements for the day in question were complied with and the SMP certificate of compliance was current.

In the incident report, it was stated that the weather on the day was a SSE wind of 15-20 knots with a SSE swell of 1 to 1.5m and with a sea of 1 to 2 m. It was overcast with shower patches.

The Bureau of Meteorology forecast for the day in question was as follows:
“LOWER EAST COAST – Wineglass Bay to Tasman Island – Monday until midnight.
Winds: South to southeasterly 20 to 25 knots becoming southeasterly 15 to 20 knots during the afternoon. Seas: 1.5 to 2 metres. Swell: Southerly 1.5 to 3 metres.”

Prior to departure, from Pirate’s Bay, the SMP requires that the forecast weather conditions be reviewed at 0900 hrs should a cancellation of the trip be considered necessary, this review to be conducted by the nominated Skipper for the day. The SMP details the weather conditions above which trip cancellation should be considered. Soon after departure from the jetty, a safety briefing is given while in calm water with the vessel travelling slowly. Usually this safety briefing is given by the deckhand and consists of a life jacket donning demonstration and, importantly, the requirement to remain seated while travelling at speed. Passengers are also informed that should pounding occur, the seats at the rear (aft) end of the boat are less prone to jarring impact. It appears that, on the day in question, most passengers moved aft shortly after the vessel cleared the sheltered water. The injured passenger initially sat in the forward section of seats and then moved back to the third row in front of the steering console. After the jarring incident in question she was moved to the aft section of seats.

The usual format for the cruise from Pirate’s Bay is to head south and stop at various locations to view geological formations and also seal colonies and any sea life such as dolphins or whales etc. During these stops, passengers are encouraged to take photos or videos and to do this they usually leave their seats to gain a better viewing advantage. Once each viewing has been completed the vessel usually proceeds at high speed to the next viewing area depending on the distance required to travel. This ‘stop-start’ process means
that for safety and comfort each passenger has to return to their seat for the high speed passage and this can occur from 10-15 times during the cruise.

In discussions with the Skipper and deckhand, it became evident that the process of encouraging the passengers to return to their seats can sometimes be time consuming, especially with a large number of passengers. It also means that some passengers will still attempt to stand up from their seat during the high speed passage to either use a camera or get a better view. In the seats immediately forward of the helm position (see photo), it is not possible to see in a forward direction and any view is limited to each side. On the day in question, it appears that most passengers stayed in their seats due to the sea conditions even when the vessel slowed to view a particular sight. One witness also thought that at least three of the passengers suffered from seasickness.

The injured person and a witness both thought that the initial safety briefing, given by the deckhand, did not sufficiently stress the importance of moving to the aft part of the boat in order to reduce the jarring effects of the vessel pounding. However, it was also the opinion of the injured person and the witness that both the Skipper and the deckhand took responsible action after the incident and navigated the vessel at a speed conducive to the comfort of the injured passenger. The subject of the use of seatbelts was also discussed, as it was the opinion of the injured person that maybe, had she had a seatbelt, her injury may not have occurred. Her injury, following various tests and x-rays, was diagnosed as damage to a vertebrae resulting in the wearing of full body brace for a period of 3 months and not being able to resume her profession as a nurse for at least that time.

In final comment, this type of incident resulting in back/lumbar injury is not an isolated occurrence and there have been at least two similar incidents reported to MAST. Furthermore, similar incidents have been reported from other Australian States and also New Zealand.
CONCLUSIONS AND RECOMMENDATIONS

These conclusions identify the different factors contributing to the incident and should not be read as apportioning blame or liability to any particular organisation or individual.

The high speed vessel “ATTITUDE”, its’ purpose and operation.

By its’ nature, the operation of a high speed vessel is for the entertainment of tourists due to the ‘thrill’ factor of travelling at speeds in the 25-30 knot range. (40-48 kph) However, it is the responsibility of the owner, skipper and deckhand to ensure that the requirements of the Safety Management Plan are followed and adhered to. Furthermore, the safety and comfort of all passengers on the vessel are of paramount importance.

Recommendations:

- **Weather forecasts** – Despite the possible economic disadvantage of a cruise cancellation, the Skipper should carefully assess the weather forecast before committing the vessel and passengers to the three hour cruise. Alternatively, a predetermined, more sheltered, cruise itinerary should be used.

- **Passenger safety briefing** – The owner, Skippers and crew responsible for the vessel operation to discuss and compile a scripted safety briefing to cover the various safety points required in the Safety Management Plan. In particular, the mitigation of possible injury resulting from excessive pounding in heavy seas. The purpose of this scripted briefing is to ensure no salient points are omitted irrelevant of the person responsible for giving the briefing.

- **Passenger control in heavy weather** – If, in the Skipper’s opinion, the wave conditions require the movement of passengers to the aft (rear) end of the vessel, then this movement should be insisted upon rather than be made on a voluntary basis. This recommendation is, of course, subject to the passenger load at the time. If passenger movement is not possible, due to the aft seats being occupied, then operation at a reduced speed should be seriously considered consistent with wave conditions.

- **Passenger control during normal operations** – It would appear that some difficulty has been encountered in ensuring the passengers return to their seats for each high speed run despite verbal requests from the crew. It is suggested that the use of a distinct and predetermined sound signal, such as a hand held air horn, be trialled in an attempt to get the passengers attention and the requirement to be seated. This would also be advantageous in the case of non-English speaking passengers.

- **Grab bars for all passengers** – The owner to consider the fitting of grab bars for the use of passengers in seats where these bars are not provided.
ADDITIONAL COMMENTS

These recommendations relate to the general operation of this type of high speed craft in Tasmania and not the specific incident in question.

Given the volume of information from National and International sources relating to this type of tourist vessel operation and the resulting injuries being sustained, it is beyond doubt that early and substantial action needs to be taken to try and reduce the number of injuries, of this type, occurring.

In this regard, MAST is in the process of addressing this concern by organising and making arrangements for a conference, involving all interested parties in Tasmania, interstate and overseas, to be held in Hobart during September 2011. It is hoped that from this conference, a national set of guidelines for the operation of high speed vessel passenger operations will be forthcoming.

It is suggested that this conference should at least consider the following points:

The human element:

- How best to ensure the passenger stays in his/her seat and does so with minimum risk of injury.
- A simple method of seat allocation to an appropriate area of the vessel dependant on age, weight and other relevant human factors.
- The best method by which to impart the safety requirements of the individual vessel/operation to passengers.
- A list of the most important requirements that a safety briefing should contain relevant to high speed operations.
- Are existing “High Speed” training regimes for skippers and crew appropriate, or should more formal education be implemented.

The vessel element:

- Seating – it would appear that the adequacy of passenger seating for this type of operation is uncontrolled and could possibly be based on economic factors rather than ergonomic factors. In this regard, should requirements be put in place regarding the adequacy of seating and if so, what recommendations can be made.

- Grab bars – are they appropriate and needed and if so, at what height and size will they be most effective.
• Seat belts – are they effective in retaining the passenger in his/her seat and if so, what type and form should they take given the salt water environment. Also, should seat belts be considered effective, how can their use be enforced. Comments from existing users/operators should be sought.

• Vessel design – are some designs more ‘sea kindly’ than others and if so how can marine departments use this information to bring about change. Also, given the increase in numbers of this type of vessel, have any designers incorporated ‘ride control’ methods in an attempt to reduce the effects of pounding.