

**Submission to the**

**House of Representatives Standing Committee  
on Communications, Transport and the Arts**

**Inquiry into managing fatigue in transport**

**by**

**Australian Marine Pilots' Association**

## **1. Structure of Marine Pilotage in Australia**

There are two types of marine pilots in Australia: coastal pilots and port pilots. Coastal pilots work in the Great Barrier Reef and port pilots work in Australia's ports. Coastal pilots are licensed and regulated by the federal government (AMSA) and port pilots are licensed and regulated by the state governments.

Whereas the coastal pilots have always owned and operated their own business, port pilots have, until recently, largely been government employees. During the last decade there has been a trend to privatise port pilotage services and this has been done successfully in most capital city ports. In the smaller ports, pilots who are not privatised are generally employees of the government or port authorities.

Pilots therefore work for an organisation (private, government or port authority) which is responsible for providing marine pilotage services in a particular port or district.

Examples of such organisations are:

- Gladstone Pilots, port authority employees, who provide pilotage services in the port of Gladstone
- Port Phillip Sea Pilots, private owners/employees, who provide pilotage services in the port of Melbourne
- Australian Reef Pilots, private contractors, who provide pilotage services in the Great Barrier Reef
- Ports Corp of South Australia Pilots, government employees, who provide pilotage services to South Australian ports.

## **2. AMPA**

The Australian Marine Pilots' Association (AMPA) is a professional association of Australia's licensed marine pilots (coastal and port). Membership is restricted to individual pilots, not pilot organisations. The Association's objectives can broadly be summarised as follows:

- To raise the level of professionalism of marine pilots
- To set and monitor standards
- To issue recommendations
- To deal with matters affecting pilots as a single body

### **3. Submission**

This submission, made on behalf of the members of the Association, does not relate to any particular or specific pilot organisation. It is based on the information presented to the Association by its membership and merely summarises the matters they wish to be brought to the attention of the Committee.

A number of marine pilot organisations will be making their own submissions to this Inquiry.

### **4. What is Marine Pilotage?**

Ships which use Australia's ports or transit the Great Barrier Reef (GBR) are involved in either international trades or coastal trades or both.

Approximately 98.5% of Australia's international trade is moved in ships and in terms of tonnes-kilometers, Australia's contribution to the world seaborne task is 13.1%.

Australia's international seaborne trade in 1997/98 was 478.8 million tonnes. Its coastal trade in 1996/97 was 49.1 million tonnes.

This trade was facilitated by approximately 60,000 ship movements which were conducted by Australia's 272 licensed marine pilots.

The most hazardous part of any ship's voyage is the transit through a port or an environmentally sensitive area such as the Great Barrier Reef. If a ship were to suffer a mechanical failure or human error which caused a loss of control in the middle of the ocean, the likelihood of consequential damage to the ship or the environment would be small. However, within port limits, where the margins of safety are greatly reduced, the chances of collateral damage are very high. 90% of all maritime accidents occur in pilotage waters.

The economic consequences of a ship grounding and blocking the entrance channel to a port and thereby severing the community's trade lifeline, or a tanker grounding and polluting the environment with its cargo, or a ship damaging a major port installation are well known.

Governments around the world recognise this danger and in order to protect the communities they represent from the disastrous consequences of maritime accidents, require ships which enter waters under their jurisdiction to embark a marine pilot who they (the government) have licensed.

(Qualification as master mariner [ship captain's license], which is the highest seafaring qualification, is the foundation qualification for pilotage and a pre-requisite to gaining a pilot's license.)

The marine pilot therefore provides a public service - a service to the community which licenses him/her. By protecting the interests of the community, it follows that the interests of the shipowners and the insurers are also protected.

Ship's masters (captains) are generally inexperienced in ship-handling and navigating their vessels through areas where the proximity of dangers requires specialised knowledge and skill. They are also generally unfamiliar with local waters, local traffic conditions, weather phenomena, tug capabilities, berths, customs and regulations. For this reason, the pilot's presence on the bridge provides a vital supplement to the knowledge and experience of the ship's crew when the ship is at its most vulnerable.

The legislation requires the ship's master (captain) to hand over the conduct of his vessel to the marine pilot. While the ship's master retains the command of the vessel, the marine pilot has the conduct of the vessel and is responsible for manoeuvring it safely through the designated pilotage waters.

Marine pilotage is therefore a vital link in the maritime transport chain.

## **5. Fatigue in Marine Pilotage**

The pilot's job is to manage a high risk operation. It is a highly specialised job, requiring specialised knowledge and specialised skill. It also requires human performance at consistently high levels. Human performance is adversely affected by fatigue. 80% of all maritime accidents are caused by human performance errors.

Each port/pilotage area is unique and its requirements in terms of pilotage are unique. Pilots therefore structure the service they provide to suit the unique requirements of the port/pilotage area.

The consequence is that, in this country, there exists no uniformity in terms of rosters and workloads for marine pilots. The time on task varies, the time on/time off ratios vary, the distance of the pilot boarding ground (the position where the pilot embarks the ship) from the port varies. Some pilots are expected to drive long (land) distances prior to and after their time on duty, others are expected to spend long periods in the pilot boat prior to and after their time on duty. Some pilots work night rosters, others work day rosters, and others work a combination of both. Some pilots are required to have a minimum break between tasks, others are not, some pilots are subject to subtle coercion to do tasks and others stick strictly to the rules they have established.

The practice in each port is the one which has evolved, over time, to suit the pilots, their organisation and the unique requirements of the port.

Pilotage is a 24 hour business. The service is provided to shipping at all times, in all weathers, 365 days a year. A rostering system in each port/pilotage area is inevitable. The consequences of disturbed circadian rhythms that most shift workers suffer are also inevitable. However, the problem for many pilots is exacerbated because of the unpredictable nature of shipping. This results in work schedules which follow no regular pattern. For example, a pilot on a weekly roster might be called to duty at 1000 hours on one day, 1700 hours the next, 0300 hours the day after and so on. The length of time the pilot might be required to work could also vary. The human body is therefore offered little opportunity to maintain a natural circadian rhythm when the pilot is on duty.

Many pilots suffer from sleep deprivation and there exists anecdotal evidence that pilots have been on the bridge of ships conducting a pilotage while struggling to stay awake. Two recent accidents on the Great Barrier Reef where the result of pilots falling asleep on the bridge while they had the conduct of the vessel.

Some pilots take drugs in order to go to sleep when the circadian rhythm is at a phase which is telling the body to stay awake and others take drugs to stay awake when the body is trying to shut down.

There have been a number of studies conducted on the human factor in marine pilotage. Among the findings are the following:

- mortality rate is three times higher than the general population (Slack, 1967; Harrington, 1972; Zorn et al, 1977)
- adrenaline levels up to seven times higher than a normal person (Berger, 1984)
- marine pilotage makes greater demands on the marine pilot than long-haul flying does to the airline pilot (Shipley, 1978)
- based on operating pulse rates, marine pilotage is more demanding than Air Traffic Control (Shipley, 1978).

## **6. National Competition Policy**

Throughout the world, marine pilotage has traditionally operated as a government-sanctioned monopoly. The reason is that pilotage has a very long history (first regulated at about 400 B.C.) and this history has provided enough lessons and sufficient experience for governments around the world to recognise the dangers of allowing competition. The reasons for this are based on safety and are similar to the reasons why there are not two (or more) Air Traffic Control towers competing with each other at airports around the world.

Nevertheless, Australia has now embraced competition policy and all pilotage services will eventually have to operate in a competitive environment.

This policy decision will affect how pilotage organisations respond to and manage the various facets of the profession.

In respect of fatigue management, the response thus far has been a mixed bag. At one extreme some organisations have closed their eyes and ears and pretended it is not an issue. At the other, pilot organisations have taken it very seriously, have sought professional assistance and advice and are in the process of establishing, or have already established, responsible fatigue management plans which can be independently verified. Somewhere in between these extremes organisations are convincing themselves that they are addressing the issue and are capable of doing so independently, without professional assistance or advice or access to relevant data and information. Others see it as a cost impost and wish to be seen to be doing something while really only tinkering at the edges. Others rely on international industry recommendations which relate to operations of lesser risk and do not relate directly to pilotage. Even if they did, there is a serious question as to whether such recommendations could realistically be enforced.

There will inevitably be a temptation by some operators to maximise their return by reducing the number of pilots available for duty and expecting the depleted number of pilots to work longer hours with shorter breaks. This has already started to happen.

Those pilot organisations which will have to tender for their work will be faced with a dilemma. Do they take a responsible approach and base their tender on the right number of pilots (the biggest cost item) required to provide the service, or should they compete with others that submit cheaper tenders based on employing fewer pilots than realistically required? The danger is that those who submit the cheaper tender are likely to be awarded the contract and that is the level to which the standard is likely to gravitate.

## **7. Recommendations**

Clearly, a national standard needs to be established so there is no doubt what is required of the pilots and the pilot organisations to properly address the issue of fatigue.

Pilot organisations have shown that, left to their own devices (self-regulation), they are likely to respond with varying degrees of appropriateness.

AMPA is in the process of establishing a national standard but this will only be a benchmark and it will be up to the individual organisations to determine whether they wish to pitch their effort at, above or below the benchmark.

In this competitive environment pilots want a level playing field. They believe this can best be achieved by a set of non-prescriptive rules which apply equally to all pilot organisations, which allow for the accommodation of the unique requirements of each port/pilotage area and which can be enforced by law.

In order to establish these rules the following steps are recommended:

- Research into the human factor in pilotage. This to be conducted within the profession and not extrapolated from other areas of the transport industry.
- Consultation with the pilotage profession to establish a national fatigue management standard which should include, but not limited to:
  1. Independently validated responsible fatigue management systems
  2. Responsibility of employer and employee to monitor fatigue levels
  3. Recognition that fatigue results from work related and non-work related causes
  4. Employer/employee consultation on best fit schedules and individual orientations to different work schedules
  5. Recognition that quality of sleep during the day is not the same as during the night
  6. Obligation of employer and employee to use specialist expertise and the latest available research in scheduling and shiftwork
  7. Health monitoring
  8. Fitness and nutrition awareness