

**The Delivery of Coastal Pilotage
Services in the Great Barrier Reef
and Torres Strait**

Review Panel Report

October 2008

Table of Contents

Executive Summary	1
List of Recommendations	4
List of Abbreviations	5
1. Introduction.....	6
2. Background	8
3. Conduct of the Review.....	14
4. Safety Issues	16
5. Submission Issues.....	18
6. Service Delivery.....	21
7. Under Keel Clearance	25
8. Other Matters.....	27
9. Conclusions	29
Appendices.....	30
Appendix 1 - AMSA Media Release 02 July 2008.....	31
Appendix 2 - An Issues Paper for use in Consultation with Interested Stakeholders.....	32
Appendix 3 - List of Submissions.....	37
Appendix 4 - GBR and Torres Strait Pilotage Review Panel.....	38
Appendix 5 - Review Panel Members.....	39
Appendix 6 - Coastal Pilotage Review Panel Canberra Meeting, 3-4 September 2008.....	40
Appendix 7- Other Risk Mitigation Measures to Protect Torres Strait and the Great Barrier Reef.....	41
Appendix 8- Previous Reviews.....	44
Appendix 9 - Changes to Marine Orders Part 54 Coastal Pilotage.....	48
Appendix 10 - Australian Transport Safety Bureau incident data (GBR - 1993 to present).....	52

Executive Summary

On 2 July 2008 the Australian Maritime Safety Authority (AMSA) and the Department of Infrastructure, Transport, Regional Development and Local Government announced a review of the delivery of coastal pilotage services in the Torres Strait and Great Barrier Reef.

The review was conducted in consultation with the shipping industry, pilotage service providers, coastal pilots and their representatives, relevant Government departments/agencies and regional community interests as a consequence of issues raised about current pilotage service delivery arrangements, including the introduction of under keel clearance management systems in Torres Strait.

An Issues Paper was prepared for the purpose of initiating the consultation process and seeking formal written submissions, with senior AMSA representatives visiting those stakeholders directly affected to explain its contents.

Submissions closed on 8 August 2008 and a suitably qualified and experienced review panel was set up to examine each submission against appropriate terms of reference and make a report.

The panel met from 3-4 September 2008 and commenced its work by identifying the safety related concerns that helped prompt the review, along with the key issues raised in each submission. From this standpoint it became clear that the sanctions provisions in Marine Order Part 54 *Coastal Pilotage* might benefit from some amendment and that the introduction of under keel clearance (UKC) management in Torres Strait should be treated as a separate matter from the delivery of pilotage services.

The panel examined a number of different options for service delivery, including that put forward in the issues paper, in accordance with its terms of reference and keeping in mind the safety related concerns already identified.

In the short term, it was agreed that greater attention should be paid to overseeing the activities of pilots and service providers through improved compliance, enforcement and incentive strategies, supported by appropriate amendments to Marine Order Part 54. It was also recognised however that whilst this approach should improve regulatory compliance and the ongoing achievement of the required safety outcomes, it may take some time to have any measurable impact on the development of a culture of continuous safety improvement between all parties involved.

Further analysis led the panel to conclude that the coastal pilots' current contractual employment arrangements do not always contribute to the promotion of collegiate responsibility or the most effective risk management regime for improving safety outcomes amongst pilots and service providers operating in these environmentally sensitive waters.

It was also noted however that whilst the applicable regulatory requirements generally appear to be being met, the pilotage providers had made significant

investments in transfer equipment and associated infrastructure since the current service delivery model was first introduced.

Based on these conclusions, the panel agreed that if improved compliance, enforcement and incentive strategies do not prove effective in promoting the establishment of a collegiate approach to safety outcomes, then the introduction of an alternative model should be considered. The panel's preferred option would be to set up a coastal pilots' cooperative, contracted by Government, with its costs and fee structure pre-determined in accordance with open and transparent criteria and subject to annual contractual review – provided such an approach is deemed acceptable under Government competition policy and supporting legislation.

Under this model, arrangements for pilot transfers, including boat and helicopter transfer services and associated shore based infrastructure would be contracted by Government on the basis of open periodic tender using a number of different providers, each verified as capable of supplying the required service under the contract. One or more service providers may be selected from the tender process.

Requests for pilotage would be made to the cooperative who would arrange the pilot and associated transfer arrangements with the contracted provider and bill the ship afterwards. Payment would be made by the ship's agent to the cooperative based on the bill's two components, pilotage and transfer, with the cooperative keeping the pilotage payment and passing the transfer payment on to the nominated provider. An alternative would be to raise two separate invoices with the cooperative and transfer provider paid directly for their services similar to the way towage and pilot charges are dealt with in most ports.

Such a model would allow for open competition between providers, much in keeping with existing arrangements, whilst reducing commercial pressure on the nautical element of pilotage in the Great Barrier Reef and Torres Strait that helps contribute to safe passage through these environmentally sensitive areas.

The panel noted however that if such an approach is acceptable, substantial amendments would be necessary to the underpinning statutory requirements and careful thought would need to be given to the transition process.

Turning to UKC, panel members reached a majority view that a single management system is required, selected through an open tender process. The system would be under direct Government control with purchase, operating and upkeep costs shared between the Commonwealth and Queensland Governments, as the potential benefits would not be realised by all shipping interests required to pay the Navigation Levy.

It was also recommended that to achieve the maximum safety benefit, consideration should be given to integrating the system with the operations of *ReefVTS*, as part of its function as a navigational assistance service, with a licensed pilot available to monitor use of the UKC system and associated activities of VTS operators at all times.

The Panel made a number of recommendations in reaching the conclusions summarised above, in addition to examining a variety of other related matters raised in the submissions, the detail of which is covered in the following report. One Panel member noted that while not all the recommendations had unanimous agreement, they all had majority support.

List of Recommendations

Recommendation 1

That the sanctions and measures available to AMSA under Marine Order Part 54 to manage coastal pilotage be amended to improve their effectiveness in dealing with procedural breaches that have the potential to put ship safety at risk.

Recommendation 2

That the effectiveness in delivering safety outcomes of the improved compliance, enforcement and incentive strategies associated with the changes recommended to Marine Order Part 54 Coastal Pilotage be reviewed 12 months after the revised MO54 comes into effect. If after 12 months, the safety concerns prompting this review have not been adequately addressed, new coastal pilotage service delivery arrangements will be introduced.

(The panel's preferred option in such circumstances would be to set up a coastal pilots' cooperative, contracted by Government, with its costs and fee structure pre-determined in accordance with open and transparent criteria and subject to annual contractual review – provided such an approach is deemed acceptable under Government competition policy and supporting legislation.)

Recommendation 3

That a single under keel clearance (UKC) management system for use in Torres Strait be selected through an open tender process.

Recommendation 4

That the UKC management system acquisition, operation and upkeep costs should be shared between the Commonwealth and Queensland Governments, as the potential benefits would not be realised by all shipping interests required to pay the Navigation Levy.

Recommendation 5

That the UKC management system should be integrated with the operations of *ReefVTS*, as part of its function as a navigational assistance service, with a licensed pilot available to monitor use of the UKC system and associated activities of VTS operators at all times.

List of Abbreviations

AMSA	Australian Maritime Safety Authority
DITRD LG	Department of Infrastructure, Transport, Regional Development and Local Government
GBR	Great Barrier Reef
IMO	International Maritime Organization
NSAC	AMSA Navigational Services Advisory Committee
ReefVTS	Great Barrier Reef Vessel Traffic Service
RIS	Regulation Impact Statement
VTS	Vessel Traffic Services
UKC	Under Keel Clearance

1. Introduction

1.1 The Great Barrier Reef (GBR) is internationally recognised as a unique marine environment. It is the largest coral reef ecosystem and the world's biggest living structure. It extends over 2,300 kilometres from Lady Elliot Island off the coast south of Gladstone to the tip of Cape York Peninsula in the north.

1.2 Indigenous communities have had a close association with the coastal and marine environment in the GBR region over thousands of years for both cultural and economic reasons.

1.3 The Torres Strait is an area of rich geographical, ecological and cultural diversity, home to some 10,000 indigenous Australian inhabitants, resident on 18 island communities, and some 20,000 indigenous Papua New Guinea nationals, who live in coastal villages. They depend on the unique marine environment for subsistence fishing and gathering, with their seafood consumption being one of the highest in the world.

1.4 Torres Strait is also a major shipping channel for Australia, linking the Coral Sea in the east with the Arafura Sea in the west providing a sheltered and well surveyed passage. It has over 150 islands and numerous coral cays, exposed sandbanks and reefs, many of which are still to be properly surveyed. It is characterised by fast moving, shallow waters and at its narrowest point, north to south, is 150 kilometres across and presents a number of navigational challenges for ships with several shallow sections, considerable tidal variations and strong currents.

1.5 Both the GBR and Torres Strait are recognised internationally for their highly sensitive and pristine environments, which Australia seeks to protect from pollution and environmental damage through a range of internationally recognised ship safety and pollution prevention measures (see Appendix 7). These include restrictions on discharges from ships, adoption of ship routing and other navigational measures, such as compulsory pilotage and vessel traffic management.

1.6 Pilotage is an important factor in reducing the risk of a shipping incident during the transit of Torres Strait and the GBR. Up until 1993, the licensing, operational administration and tariff structure of marine pilotage in the GBR and Torres Strait region was the responsibility of the Queensland Government and was operated as a statutory monopoly by the Queensland Marine Board.

1.7 When the Australian Commonwealth Government assumed responsibility from Queensland for regulating coastal pilotage that same year, it adopted the policy that the pilot licensing system to be administered by the Australian Maritime Safety Authority (AMSA) was not to be used for managing service pricing.

1.8 Commercial aspects, such as pilot numbers and charges for pilotage, were to be determined by the market. Government control over these matters was to be relinquished and the provision of coastal pilotage services handed over to the private sector.

1.9 The relevant statutory requirements are to be found in Marine Order Part 54 *Coastal Pilotage*, which includes the *Queensland Pilotage Safety Management Code* and details of the *Torres Strait Pilotage Area*.

1.10 Two competing private sector providers emerged from the former statutory monopoly, with a later, third competitor mainly servicing those ships using Hydrographers Passage. The pilot providers offered pilotage services to the shipping industry. Licensed pilots contracted themselves to one of the service providers, creating a competitive pilotage service. Recruitment and training of new pilots, consistent with the AMSA licensing requirements, is arranged through the service provider.

1.11 Competition between the providers initially resulted in a significant reduction in the cost of coastal pilotage to the shipping industry. It also raised concerns that the extent of this competition had the potential to reduce the pilotage service providers' focus on safety and the model was seen by some as being generally contrary to international best practice.

1.12 A number of different reviews have been undertaken into various aspects of coastal pilotage since, and a short summary of each is given at Appendix 8, "Previous Reviews".

1.13 On 2 July 2008 AMSA and the Department of Infrastructure, Transport, Regional Development and Local Government announced a review of the delivery of coastal pilotage services in the Torres Strait and GBR.

1.14 This review was conducted in consultation with the shipping industry, pilotage service providers, coastal pilots and their representatives, relevant Government departments/agencies and regional community interests as a consequence of matters raised about current pilotage service delivery arrangements, including the introduction of under keel clearance management systems in Torres Strait.

1.15 An Issues Paper (see Appendix 2) was prepared for the purpose of initiating the consultation process and seeking formal written submissions, with senior AMSA representatives visiting those stakeholders directly affected to explain its contents.

1.16 Submissions closed on 8 August 2008 and a suitably qualified and experienced review panel (see Appendix 5) was set up to examine each submission against formal terms of reference (see Appendix 4) and make a report.

1.17 The panel met from 3-4 September 2008 and the report of its findings and recommendations follows.

2. Background

2.1 Torres Strait and the Great Barrier Reef (GBR) are not only areas of outstanding environmental and cultural significance, as mentioned in the introduction to this report, but they also make important contributions to the national economy and the economy of Queensland in particular.

2.2 These areas underpin regional tourism and the local fishing industry, as well as providing access for shipping to four major Queensland ports of Cairns, Townsville, Mackay and Gladstone. The consequences of a serious marine incident in Torres Strait or the GBR have the potential to damage both Australia's environmental and economic reputation, something which all those tasked with managing the delivery of safety outcomes within these particularly sensitive sea areas are acutely aware.

2.3 In addition to coastal pilotage there are a number of other ship safety and pollution mitigation measures in place to minimise the risks associated with commercial shipping using these sea areas. Some of these measures are preventive, others aid early detection and rapid response, but all are kept under regular review when assessing the likelihood of a serious incident.

2.4 Whilst coastal pilotage is important, it should not be considered in isolation, but rather as part of an integrated approach to managing ship safety in Torres Strait and the GBR to be viewed in combination with all the other measures listed at Appendix 7.

Queensland Coastal Pilotage

2.5 By way of more detailed background explanation, the coastal pilotage area along the Queensland coast falls into three areas:

- Torres Strait extends from Booby Island in the west to Bramble Cay in the east and includes the Prince of Wales Channel and the Great North East Channel. Since October 2006, ships are required to take a pilot in line with IMO resolution MEPC.133(53).
- The northern inner route through the Great Barrier Reef from Cape York to Cairns, the Whitsunday Islands and Hydrographers Passage. Since October 1991, compulsory pilotage has applied to the inner route and Hydrographers Passage, as per IMO resolution MEPC.45(30).
- The inner route from Cairns to the southern limit of the Great Barrier Reef, including Grafton and Palm Passages, has no mandatory pilotage, but AMSA and Maritime Safety Queensland currently recommend ships should use a licensed pilot if unfamiliar with these waters.

2.6 Torres Strait, including the Great North East Channel, is used primarily by ships trading between ports in southern Asia, Australia and New Zealand, South America, Papua New Guinea and Pacific Island nations.

2.7 The majority of tankers bound for the Australian east coast refineries also use the Torres Strait as their link with the outer route of the GBR. Ships entering or leaving the inner route of the GBR also use the Prince of Wales Channel at the western end of the Torres Strait.

2.8 During a year, over 1000 different ships use the Torres Strait making a total of more than 3,000 separate voyages. There also are over 400 recreational vessels greater than 10 metres in overall length registered with the Torres Strait Council and a large number of licensed fishing vessels and traditional fishing craft existing outside this category that operate in Torres Strait waters.

2.9 The last grounding incident within the GBR investigated by the Australian Transport Safety Bureau involving a ship under pilotage was that of the bulk carrier *Doric Chariot* on Piper Reef that occurred on 29 July 2002. The last reported grounding in Torres Strait was of the bulk carrier *Agean Falcon* in September 2002. This ship was not carrying a pilot at the time.

2.10 Appendix 10 identifies the number of incidents in the Torres Strait and GBR reported to the ATSB from 1993 to the present where there was a pilot on board. It indicates that the rate of incidents reported to the ATSB has fallen significantly over this period. Thus, there were 6 incidents from 1993-1996, 5 from 1997-2000, 3 from 2001-2004, and 2 from 2004 to the present

2.11 There is no pilotage requirement on the outer route of the Great Barrier Reef, commencing at the Great North East Channel and continuing south through the Coral Sea to rejoin the Queensland coast south of Gladstone. No licensed commercial pilotage services are provided to ships on the outer route as it is not regarded as navigationally challenging and lies within international waters. The 'outer route' of the Great Barrier Reef transits the Coral Sea between the eastern end of the Great North Channel and an area south of Gladstone, Queensland.

2.12 Following the introduction of the GBR compulsory pilotage areas in 1991, the Queensland Government asked the Australian Commonwealth Government to take over the regulation of the pilotage function. In July 1993, the Australian Maritime Safety Authority (AMSA) assumed responsibility for regulating the Queensland coastal pilotage services that provide navigational guidance to ships voyaging through the GBR and Torres Strait region.

2.13 Under Queensland control, the service had been effectively a statutory monopoly operated by a single provider, Queensland Coast and Torres Strait Pilot Service, and closely governed by State legislation and regulations. Individual coastal pilots were self employed and responsible to the Marine Board of Queensland, which licensed the pilots and appointed the secretaries who managed the infrastructure and the bookings for pilots. The pilots owned the principal assets, the pilot boats and accommodation at the pilot stations.

2.14 In line with contemporary Commonwealth regulatory and microeconomic reform policies aimed at encouraging market efficiency and flexibility, stakeholders agreed that AMSA should only regulate pilot licensing and the safety of pilotage operations. There would be no regulation of the commercial

aspects of pilotage services, such as the number of pilots, their recruitment, terms and conditions of pilot employment, pilotage fees, provision of infrastructure and/or administration of the pilotage service.

2.15 The intention of this approach was to create a more open and competitive market with pilotage licences becoming more accessible with setting of pilotage fees determined by the market.

Commonwealth Legislation

2.16 AMSA's licensing arrangements meant that any person could be licensed as a pilot provided they met minimum competency and medical fitness standards. AMSA also established a coastal pilotage training program and a *Model Code of Conduct for Coastal Pilots*.

2.17 Initially, AMSA recognised the licences already granted by Queensland to the coastal pilots as a transitional measure in introducing its own system of licensing, training and safety regulation.

2.18 In 1994, amendments were made to the *Navigation Act 1912* to add a new Part IIIA (sections 186A to 186F) to allow AMSA to regulate the licensing of coastal pilots and the safe performance of coastal pilotage. While expressed as applying to "any part of the Australian coastal sea", in practice, the licensing of coastal pilots under Part IIIA has been limited to the Torres Strait and GBR region since its introduction.

2.19 Part IIIA allowed for AMSA to make regulations in relation to coastal pilotage services and these are covered in Marine Orders Part 54 *Coastal Pilotage*. Initially this applied only to the licensing of coastal pilots, but it has been expanded subsequently to include the *Queensland Coastal Pilotage Safety Management Code*. This adopts a modern safety management systems approach to safety regulation involving both the coastal pilots and the pilotage providers.

Service Providers

2.20 Before AMSA assumed responsibility for regulating coastal pilotage on 1 July 1993, there had emerged two competing pilotage service providers through a split in the monopoly provider, Queensland Coast and Torres Strait Pilot Service.

2.21 Queensland Coastal Pilot Service Pty Ltd (now known as Torres Pilots Pty Ltd) evolved from the previous service with a small number of its pilots. Those pilots remaining established a second provider, Queensland Coast and Torres Strait Pilot Association Pty Ltd, now known as Australian Reef Pilots Ltd. Pilotage services for the inner route is an effective duopoly.

2.22 Individually, pilots continued to offer their services, generally through private personal companies as contractors to either of these pilotage service providers. The providers act as booking agents for the pilots' services and accept a commission or fee from the pilot based on a percentage of the pilotage fee or an agreed payment under the contract.

2.23 In July 1996, a third group was formed, Hydro Pilots Australia Pty Ltd, by three coastal pilots providing their own infrastructure and only servicing ships using Hydrographers Passage through helicopter transfers.

2.24 The level of competition between the providers led to an initial reduction of some 20% in pilotage fees and this commercial tension between the three provider companies remains to this day.

2.25 In response to the Issues Paper, the Service Providers, supported by some shipping industries, maintained that the current competition model delivered a safe pilotage service and stressed the potential negative impact that any change to the current system would have on their current investment in pilotage boats, helicopter assets and other service infrastructure

Coastal Pilots

2.26 There has been a consistent view put forward by coastal pilots and their representative organisations that economic regulation rather than competition would better protect the public interest in ensuring optimum safety in the provision of coastal pilotage services.

2.27 Economic regulation was seen as a way of maximising the focus on safety and avoiding duplication of capital expenses on supporting infrastructure, whilst enhancing regulatory oversight.

2.28 The pilots argue that Australian coastal pilotage has some unique features given there is only a small pool of coastal pilots operating in remote locations and over lengthy distances. They maintain that other countries have not deregulated their pilot services to the same extent and in general regard pilotage as a public service that should be regulated by Government.

2.29 The pilots claim that while Australian pilot productivity is high by world standards, competition has reduced the capacity of pilotage providers to fund capital replacement and the decrease in average pilot incomes since deregulation has increased difficulties in attracting new entrants to join what is an ageing pool of qualified pilots.

2.30 A number of independent reviews and inquiries in relation to ship safety have included examination of these concerns, see Appendix 8, but no evidence has been found to date that the competitive environment has adversely affected safety outcomes. A number of recommendations have been made to strengthen the safety regulatory regime, most of which have been implemented by AMSA.

2.31 Despite these reviews and resulting strengthened regulatory requirements, perceptions remain that the current structural arrangements continue to exacerbate the development of a safety culture in the coastal pilotage sector and impose greater complexity on the introduction of innovative and improved services, such as the adoption of under keel clearance management systems. It is also claimed that the current competition model has

had an impact on pilot salaries, job satisfaction and created new risk factors, particularly through recruitment policies.

McCoy Review

2.32 The last independent review of the coastal pilotage arrangements undertaken by Captain John McCoy in 2005 found that a “safety culture should be pervasive throughout the organisation and at all levels” and that “a safety management system should operate from the board room to the bridge of the ship”. However, he noted that this adoption of a safety culture was not as clear in terms of the activities of the pilotage providers.

2.33 Captain McCoy concluded that whilst the conduct of pilotage operations was not *prima facie* unsafe, there were significant gaps in the safety management systems at both the organisational and operational levels.

2.34 There still appears to be a wider view that commercial pressure on coastal pilots may contribute to mitigating their identification of safety improvements and optimisation of safety practices, especially if these impinge on their ability to maximise the number of ships piloted and so maintain continuity of income.

Under Keel Clearance

2.35 AMSA has been considering the introduction of under keel clearance (UKC) management in Torres Strait as an additional tool to help improve safety practices. The overall expectation is that UKC would increase safety for deep draught vessel transits, enhance protection of the environment and at the same time, enable significant cost efficiencies and ultimately have a positive impact on the Australian economy.

2.36 In general terms the management of UKC takes into account a number of hydrodynamic, hydrographic, meteorological and oceanographic (met-ocean) factors, including:

- A best estimate of actual water depth;
- Tidal height residuals and charted depth accuracies;
- A best estimate of the actual draught of the vessel;
- Squat and additional factors related to hydrodynamic and manoeuvring characteristics; and
- Allowance for other component data error estimates.

2.37 There are some components of UKC management, such as long term transit planning relying on UKC predictions, short term planning to provide passage plans using predictions that are then refined with the latest measurements of tide and meteorological conditions; and the actual transit itself, all of which may require the use of sophisticated portable computing equipment by pilots using real time met-ocean data inputs.

2.38 Predictive and real time UKC management has led to the more efficient use of fairways with limited depths, particularly in the approaches to and within ports, reducing the risk of grounding whilst allowing ships to lift additional cargo.

2.39 The introduction of pilotage in Torres Strait led AMSA to consider UKC management as a means of ensuring safer UKC allowances and more efficient use of available water depths, although actual experience of its use in comparable open and navigationally challenging waters is limited.

2.40 Ships transiting Torres Strait are currently limited to a maximum draught of 12.2 metres in conjunction with a 1 metre net UKC for draughts less than 11.9 metres; and a minimum net UKC of 10 per cent of draught for draughts of 11.9 metres or more. This requirement is contained in the *Pilot Code of Conduct* approved under *Marine Order Part 54*.

2.41 It has been noted that the shipping industry stands to gain from improved efficiencies in the event that any new UKC management arrangements enable draughts to be increased as tidal and other met-ocean conditions permit.

2.42 Conversely, it is anticipated that a more formal and systematic approach to the management of UKC would result in there being some days of the year when ships may not be able to transit Torres Strait with a draught of 12.2 metres. This is due to the accuracy of the depths currently shown on the nautical charts, although this should be overcome over time with the completion of more accurate hydrographic surveys.

2.43 Recent consultations with immediate stakeholders on the governance framework for UKC management in Torres Strait have highlighted the variables in its application mentioned above. In doing so, concerns have been raised over the potential to adequately regulate safety risks associated with the commercial provision of UKC services under the existing coastal pilotage service delivery arrangements.

Establishment of the Review

2.44 Consequently on 2 July 2008, AMSA and the Department of Infrastructure, Transport, Regional Development and Local Government commenced stakeholder consultations on the potential support for reviewing the current open competition model for provision of pilotage services in the Torres Strait and the GBR.

2.45 A discussion paper (see Appendix 2) was released to stakeholders describing the issues stemming from the current arrangements and raising the possibility of progressing to a serial competition model using a single service provider, with written submissions being sought on its contents.

2.46 The remainder of this report documents the examination of these submissions and makes recommendations on future options for the delivery of coastal pilotage services in Torres Strait and the GBR.

3. Conduct of the Review

3.1 The Commonwealth Department of Infrastructure, Transport, Regional Development and Local Government and the Australian Maritime Safety Authority (AMSA) publicly announced this review of the delivery of coastal pilotage services in the Torres Strait and the Great Barrier Reef (GBR) Issues paper through a media release (see Appendix 1) on 2 July 2008.

3.2 The review was commissioned in light of issues raised about the current service delivery arrangements; including their ability to accommodate the introduction of the use of under keel clearance (UKC) management to assist with ship navigation and potentially increase cargo carrying capacity through Torres Strait.

3.3 A paper highlighting these issues and suggesting an alternative service delivery option was prepared for the purpose of initiating preliminary discussions, as well as providing a framework to assist interested stakeholders in making written submissions (see Appendix 2).

3.4 During the first two weeks of July, senior AMSA representatives met with Torres Strait and GBR service providers, coastal pilots, shipowner/operator organisations and the Queensland State Government to discuss the contents of this paper and encourage written submissions to the review.

3.5 Meanwhile a suitably qualified and experienced panel (see Appendix 5) was selected to examine and report on submissions received against formal terms of reference prepared by AMSA and the Department (see Appendix 4).

3.6 19 submissions were received before the closing date of 8 August 2008 (see Appendix 3) and these were provided to panel members prior to them meeting face to face to consider the documents on 3 and 4 September.

3.7 The agenda for this meeting is shown at Appendix 6. After the welcome and introductions, a short presentation was given on the background to the review, including much of the information contained in section 2 of this report.

3.8 The terms of reference (see Appendix 4) and panel's modus operandi were then discussed. It was noted that when analysing the contents of each submission, particular attention was to be paid to the need for the panel to focus on the delivery of pilotage services; and the evaluation of existing and alternative options in terms of their ability to:

- deliver safety outcomes;
- protect the marine environment;
- take account of relevant local, national and international interests;
- make use of human resources, infrastructure and other necessary resources, including contemporary technological developments;
- contain costs to shipowners/operators;
- interact with other regional shipping safety arrangements;
- provide cost-effective pilotage services; and
- be consistent with general competition policy principles

3.9 It was agreed that first the key issues contained in each submission should be identified and listed. Each listed issue relating to service delivery was then to be considered separately; and from this process alternative options, including the serial competition model initially suggested in the issues paper, be carefully examined.

3.10 Following on from developing these options, the listed issues were then to be subjected to further analysis against the dot points at 3.8 above in a bid to determine the potential impact of each service delivery option considered. It was envisaged that taking this approach would help hone in on both the benefits and disadvantages of each of these options and assist in making recommendations to be included in the panel's report.

3.11 As this process got under way, it became clear that some of the safety concerns that led to this review had not been fully explored in the original issues paper and the panel sought further details from its AMSA members. This information is now provided in section 4 of this report.

3.12 During the identification and listing of the key issues contained in the submissions, it was agreed that the introduction of under keel clearance (UKC) management in Torres Strait should be treated as a separate matter from the delivery of pilotage services. Accordingly the outcomes and recommendations from the panel relating to service delivery are dealt with under section 6 and those concerning UKC management in section 7, whilst other relevant matters that arose from the submissions on which the panel reached a view are detailed in section 8 of the report.

3.13 The completed report has since been provided to AMSA and the Department to assist in developing future policy initiatives to enhance the safe management of shipping in the Great Barrier Reef and Torres Strait.

4. Safety Issues

4.1 The panel recognised in considering the submissions that one of the main concerns relating to the commissioning of this review was that the safety issues that led to it had not been fully explored in the original issues paper (see Appendix 2).

4.2 In considering both the delivery of safe outcomes and the marine environment issue, the Panel noted the assertions made by some of the submissions supporting change that despite the absence of any reported incidents in the pilotage area, there were incidents not reported. The Panel sought clarification of these claims. It became apparent that there was anecdotal accounts of breaches of the existing Marine Order, which, if substantiated, created a potentially unacceptable risk to safety and the environment.

4.3 The panel agreed that examining this matter further should be its initial priority and sought further details from its members representing the Australian Maritime Safety Authority (AMSA).

4.4 The AMSA view is that existing arrangements for the provision of pilotage services within the Great Barrier Reef (GBR) and Torres Strait have led to competition between providers to an extent that could undermine shipping safety and put the marine environment in this pristine area at increased risk if continued unchecked.

4.5 AMSA as the responsible regulator observed that the adoption of a safety culture of continuous improvement by all those operating within this particular sector of the Australian maritime industry is proving to be elusive and suggested it may be unattainable under the present service delivery model.

4.6 A number of concerns were raised in support of this conclusion, but the panel noted that objective verification may not be available in every case.

4.7 Panel members expressed appreciation for being provided with these examples as additional background to the establishment of this review, but in doing so recognised that they had no authority under their terms of reference to compel the supply of objective information relevant to the issues raised (such information is required by AMSA under MO54).

4.8 The idea of a third party audit of pilotage providers was canvassed as a mechanism for independently verifying these AMSA concerns, whilst it was also suggested that some thought might need to be given to alerting the wider shipping industry regarding these examples, possibly associated with the introduction of some form of confidential reporting system to help highlight procedural failures with a view to minimising them in future.

4.9 This led to considerable discussion about the ability of AMSA to effectively manage the current situation through the application of the sanctions and measures available under Marine Order Part 54 *Coastal Pilotage*. The overall conclusion was that they are rather limited in both their scope and effect

at present and might benefit from amendment to enable a wider range of both sanctions and incentive measures operating at differing levels to be applied, especially in the case of the service providers.

4.10 The panel also acknowledged however that whilst increasing sanction options might improve regulatory compliance, it may take some time to have any measurable impact on helping to develop a culture of continuous safety improvement by all parties involved.

4.11 Consequently AMSA was asked to provide guidance on changes to Marine Order Part 54 that would assist in better managing the type of examples mentioned at 4.5 above and this information is given at Appendix 9.

Recommendation 1

That the sanctions and measures available to AMSA under Marine Order Part 54 to manage coastal pilotage be amended to improve their effectiveness in dealing with procedural breaches that have the potential to put ship safety at risk.

5. Submission Issues

5.1 Having learnt more about the safety issues that had led to the commissioning of this review, the panel then turned its attention to examining the 19 submissions received (see Appendix 3).

5.2 Its first task was to identify and list the key issues contained in each one, a process that generated considerable discussion on the matters raised. The panel members noted the generally high quality of the submissions and would like to record their thanks to all who responded to the issues paper.

5.3 Suffice to say that similar issues were raised in a number of submissions, albeit in a variety of different ways, so for the sake of brevity, each of these has been listed and described in broadly generic fashion under three headings, as follows:

5.4 *Service Delivery Issues*

- The current service arrangements provide a safe pilotage system while meeting the Government's competition policy
- Duplication of pilot transfer infrastructure
- Maintenance of pilot transfer infrastructure
- Cost pressures on training
- Inconsistencies in pilot recruitment and training practices between providers
- Lack of standardised operating procedures between both pilots and providers
- Improved regulation in preference to changing the model
- Division of responsibilities between the pilot and provider is unclear
- Model should be based on capacity to deliver reduction of risk and improvement in safety, not commercial benefit
- Pilotage fees should be negotiated in a competitive environment
- Service delivery and UKC should be treated separately
- Regulator should set and monitor the service standard, user should ensure it is consistently met
- Service delivery in Hydrographers Passage could be separated from that in the GBR and Torres Strait
- Serial competition eventually leads to monopolistic behaviour – competitive tension is healthy and open competition should be encouraged
- Adequacy of current regulatory control and associated audit regime
- No evidence present current delivery has contributed to an increasing incident rate

5.5 *Under Keel Clearance (UKC) Issues*

- Improvement of supply chain performance

- Alignment with use of UKC by some Queensland ports
- UKC is an aid to navigation, use should be monitored through *ReefVTS* and complement existing risk mitigation measures, see Appendix 7
- Commercial benefits of UKC come before safety benefits in Torres Strait
- Differences in approach to introduction and use of UKC management
- A single system is needed now in Torres Strait
- Need for clear delineation of different roles and responsibilities of master/pilot/provider/VTS/regulator when UKC management system is in place and operating
- Reliability of UKC management systems – alternative arrangements including duplication and redundancy in case of failure
- Costs of UKC management system should be shared between AMSA, Queensland and GBR Marine Park Authority

5.6 ***Other Issues***

- Transition to (and implementation of) any changed arrangements
- The use of “notice of cause” letters to pilots, rather than masters and shipowners tends to “hide” safety issues
- Tensions between pilots and providers over nautical and technical issues
- Unprofessional working relationships between individual pilots
- Inappropriate use of pilots’ accommodation and associated impact on fatigue management
- Inability of AMSA to obtain consensus and/or consistency across a fragmented constituency
- Need for a pilot training regime that includes English language skills and is approved under legislation
- Ageing pilotage skills base
- Extension of compulsory pilotage within the GBR
- Incident reporting should be more effectively enforced
- Potential for service provider “exit assistance”
- Introduction of a “just” culture between all parties

5.7 The panel agreed that most of these issues are interlinked to some extent and many are the by-product of cause and effect from either the coastal pilotage service delivery arrangements, the dynamics between the players, or aspects associated with regional geography.

5.8 It was also noted that in general the applicable regulatory requirements appear to be being met and that the providers had made significant investments in transfer equipment and associated infrastructure since the current service delivery model was first introduced.

5.9 Whilst some may have argued that the lack of a major shipping incident in either Torres Strait or GBR for more than five years indicates that the service delivery system is operating satisfactorily, the panel took the view that when considered in light of the safety issues mentioned in section 4 of this report, the

system does appear to be under pressure. The panel noted and discussed the submissions in favour of maintaining the current arrangement, noting the absence of any shipping incident since the *Doric Chariot* grounding in July 2002. Although this was cited as evidence of a satisfactory delivery of safe pilotage services, the panel was concerned that the safety outcomes outlined in 4.5 of this report was prima facie evidence of latent risks and a flawed safety culture. It also had to be recognised that the proposed dynamic UKC program, while potentially reducing the risk in some areas, increases the risk in respect of occasions when the draught may exceed 12.2m.

5.10 Whilst the introduction of improved compliance and enforcement strategies in conjunction with amendments to Marine Order Part 54, see Recommendation 1, might help reduce this pressure, it was the opinion of the panel that the contractual employment arrangements of the pilots (see section 2 – Background) do not always contribute to the promotion of a sense of collegiate responsibility for improving safety outcomes amongst both pilots and service providers operating in these environmentally sensitive waters.

5.11 From this standpoint, the panel decided that the focus of its further work under the terms of reference in considering other options for service delivery should be to mitigate the risks stemming from the current arrangements and particularly those relating to the human element.

6. Service Delivery

6.1 In turning its attention to options for service delivery, the panel took particular note of the issues raised in sections 4 and 5 of this report and in doing so re-confirmed its decision to focus on the human element when contemplating the terms of reference applicable to this task.

6.2 The relevant terms of reference are re-stated below:

- deliver safety outcomes
- protect the marine environment
- take account of relevant local, national and international interests
- make use of human resources, infrastructure and other necessary resources, including contemporary technological developments
- contain costs to shipowners/operators
- interact with other regional shipping safety arrangements
- provide cost-effective pilotage services
- be consistent with general competition policy principles.

6.3 Having considered the options, the panel was to identify and assess the risks attendant in each case, together with any associated regulatory changes that may be required.

6.4 The service delivery models identified by the Panel and considered against the terms of reference (see above) were:

- open competition (status quo)
- status quo initially with staged regulatory change
- single provider/serial competition under contractual arrangement
- AMSA/cooperative/employment of pilots with providers supplying necessary infrastructure (contract employment)
- national coastal pilotage system under AMSA/MSQ control (direct employment; infrastructure supplied by providers).

6.5 This panel began by examining the existing open competition model for the delivery of coastal pilotage services in the Great Barrier Reef (GBR) and Torres Strait, drawing on its earlier discussion of the safety issues arising as contained in section 4 of this report.

6.6 There was broad agreement that the current situation required attention and that improved compliance, enforcement and incentive strategies, supported by appropriate changes to Marine Order Part 54 *Coastal Pilotage* as already proposed in Recommendation 1 should be introduced as promptly as the associated consultation and amendment process would allow.

6.7 In suggesting such enhancements to the existing model, the panel acknowledged that whilst these strategies may improve regulatory compliance,

they may take some time to have any measurable impact on the development of a culture of continuous safety improvement amongst all parties involved.

6.8 The panel also noted that the way in which the associated consultation and implementation processes was managed would have a bearing on the outcome and recommended that these changes be allowed to flow through the existing service delivery arrangements for a period of time and their impact reviewed, before any further proposals to implement a new model were contemplated.

6.9 Nevertheless in keeping with its terms of reference, the panel then moved on to consider the serial competition model as discussed in the issues paper prepared for the purpose of initiating the review consultation process and providing the basis for analysis of written submissions.

6.10 The panel recognised that whilst there might be safety benefits expected from this model, its initial establishment might prove to be administratively challenging. It was also noted that to continue to generate improvements, the pilotage activity would have to be tendered at regular intervals, however, the barriers to entry for a new service provider wishing to tender are severe and likely to be prohibitive. Under these circumstances, the model could be counter productive.

6.11 In addition, it would be reasonable to expect under this serial competition model for service delivery that all coastal pilots would be contracted to the initial single provider, making any subsequent transition to another provider who might win the contract problematic in terms of maintaining continuity of coastal pilotage services to the shipping industry.

6.12 The panel also noted that a number of submissions suggested that serial competition can lead to monopolistic behaviour and does not bring any guarantee of safety improvements, despite best endeavours in managing the accompanying contractual arrangements.

6.13 In light of these concerns the panel decided to examine other options rather than recommending any more consideration be given to the serial competition model suggested in the issues paper.

6.14 The panel then looked for delivery options other than those requiring individual pilots to generally offer their services as contractors to service providers and having the potential to help generate a greater sense of collegiate responsibility for improving safety outcomes.

6.15 Two versions of this model were proposed, the first and preferred being to set up a coastal pilots' cooperative, contracted by Government, with its costs and fee structure pre-determined in accordance with open and transparent criteria and subject to annual contractual review – provided such an approach is deemed acceptable under Government competition policy and supporting legislation.

6.16 Under this model, arrangements for pilot transfers, including boat and helicopter transfer services and associated shore based infrastructure would be

contracted by Government on the basis of open periodic tender using a number of different providers, each verified as capable of supplying the required service under the contract.

6.17 Requests for pilotage would be made to the cooperative who would arrange the pilot and associated transfer arrangements with the contracted provider and bill the ship afterwards. Payment would be made by the ship's agent to the cooperative based on the bill's two components, pilotage and transfer, with the cooperative keeping the pilotage payment and passing the transfer payment on to the nominated provider. An alternative would be to raise separate invoices with the cooperative and transfer provider paid directly for their services similar to the way towage and pilotage charges are dealt with in most ports.

6.18 The pilotage fee structure would be determined on a number of agreed criteria, such as ship length and tonnage, pilotage route, etc., together with an appropriate allocation to cover the cooperative's management and administration arrangements, with pilotage fees subject to annual review.

6.19 Such a model would allow for open competition between providers, much in keeping with existing arrangements, whilst reducing commercial pressure on the nautical element of pilotage in the Torres Strait and GBR that helps contribute to safe passage through these environmentally sensitive areas.

6.20 The second version of this model, should the pilots be unable to establish a cooperative as outlined above, would require the pilots to become salaried employees of Government. In other respects this model would operate in a similar manner to that already described for the cooperative, with the transfer and infrastructure providers contracted by Government.

6.21 Requests for pilotage would be made directly to the relevant Government department or agency, who again would arrange the pilot and associated transfer arrangements with the contracted provider of the shipowner's choice and then bill the ship afterwards. Payment would be made by the ship's agent to Government based on the bill's two components, pilotage and transfer, with the Government retaining the pilotage payment and passing the transfer payment on to the nominated provider.

6.22 The panel noted however that before either of these two service delivery options could be given any further consideration they would have to be deemed acceptable under Government competition policy and supporting legislation, a matter in which the panel was not qualified to make a judgement.

6.23 If found acceptable, it was the panel's view that substantial amendments would be necessary to the underpinning statutory requirements and careful thought given to any transition process, together with associated costs and benefits in moving away from current service delivery arrangements.

Recommendation 2

That the effectiveness in delivering safety outcomes of the improved compliance, enforcement and incentive strategies associated with the changes recommended to Marine Order Part 54 *Coastal Pilotage* be reviewed 12 months after the revised MO54 comes into effect. If after 12 months, the safety concerns prompting this review have not been adequately addressed, new coastal pilotage service delivery arrangements will be introduced.

7. Under Keel Clearance

7.1 The panel had previously agreed whilst identifying and listing the key issues contained in the submissions that the introduction of under keel clearance (UKC) management in Torres Strait should be treated as a separate matter from the delivery of pilotage services.

7.2 A detailed explanation of UKC management was provided by AMSA as background to assist the panel in assessing the use of this technology to assist in improving safety outcomes in this environmentally sensitive and ecologically significant area. (Section 2 – Background – Under Keel Clearance refers)

7.3 The panel recognised the potential of UKC management to ensure safer UKC allowances and the more efficient use of available water depths in Torres Strait, based on its introduction to ports having fairways where draught limitations apply. The panel consequently agreed that UKC management systems should be approached in the same way as any other aid to navigation.

7.4 The panel also noted that the margin for error when piloting deeper draught ships through Torres Strait was already minimal and practical experience of the use of UKC management in comparable open waters was limited. It also acknowledged that real time data inputs would be required, in addition to such basic information as accurate estimates of ships' draughts forward and aft whilst under pilotage.

7.5 In light of these observations panel members reached a collective view that a single UKC management system is required, selected through an open tender process. This tender process should comprehensively address not only system performance requirements and ongoing supplier support, but also ancillary matters such as duplication, redundancy and communications links in the event of failure of any one key part of the system.

7.6 Initial use should be on a trial basis only, especially given the limited margins for error, to help all parties involved develop the necessary experience and confidence in operating under a UKC management system in order to keep any associated safety risks to a minimum.

7.7 Improving the commercial benefits that may flow from allowing larger ships to transit Torres Strait at a deeper draught by using the system should be a secondary consideration to the maintenance of the overall safety of pilotage in the region, especially given the environmental and heritage significance of this waterway and the national and international attention that it receives.

7.8 It was also the panel's view that the UKC management system acquisition, operation and upkeep costs should be shared between the Commonwealth and Queensland Governments, as the potential benefits would not be realised by all shipping interests required to pay the Navigation Levy.

Recommendation 3

That a single under keel clearance (UKC) management system for use in Torres Strait be selected through an open tender process.

7.9 The panel also concluded that in order to achieve the maximum safety benefit, consideration should be given to integrating the UKC system with the operations of *ReefVTS*, as part of its function as a navigational assistance service, as defined under IMO resolution A.857(20) *Guidelines for Vessel Traffic Services*, with a licensed pilot available to monitor use of the UKC system and associated activities of VTS operators at all times.

7.10 This *ReefVTS* based pilot would assume responsibility for assisting a ship's pilot by "talking them through" the Torres Strait transit in the event of failure of any critical part of the UKC management system.

Recommendation 4

That the UKC management system acquisition, operation and upkeep costs should be shared between the Commonwealth and Queensland Governments, as the potential benefits would not be realised by all shipping interests required to pay the Navigation Levy.

7.11 The panel also noted that the introduction and use of such a system would require close cooperation between the successful UKC management system tenderer, responsible Government agencies, the service providers and coastal pilots, all of which would assist in focussing the different operational working relationships on safety outcomes in Torres Strait.

Recommendation 5

That the UKC management system should be integrated with the operations of *ReefVTS*, as part of its function as a navigational assistance service, with a licensed pilot available to monitor use of the UKC system and associated activities of VTS operators at all times.

8. Other Matters

8.1 Having considered the delivery of coastal pilotage services in the Great Barrier Reef (GBR) and Torres Strait, in keeping with its terms of reference, along with the introduction of under keel clearance (UKC) the panel re-examined the submissions received in light of the recommendations made.

8.2 Other relevant matters arising from the submissions on which the panel reached a view are detailed under:

Extending Compulsory Pilotage

8.3 The panel took note of the suggestion that the future increase in shipping traffic expected from the development of Abbot Point as a major Queensland coal exporting port could lead to the need to consider Palm Passage and potentially Grafton Passage as high risk areas that might benefit from a southerly extension to GBR compulsory pilotage from Cairns to Townsville.

8.4 The broad conclusion reached was that traffic numbers and navigational conduct in this area should continue to be monitored by *ReefVTS*, with a view to making a formal proposal to extend compulsory pilotage in this area to the AMSA Navigational Services Advisory Committee (NSAC) for consideration as soon as it appears to be warranted.

Pilot Recruitment and Retention

8.5 A number of submissions made reference to the challenges associated with the continuing recruitment and retention of coastal pilots. The majority of the panel saw this as part of a wider problem being experienced throughout the Australian maritime industry. Information received since indicates that a number of inquiries and reviews are considering different aspects of maritime recruitment, training and qualifications in bid to assist in this regard, including:

- The Parliament's House of Representatives Inquiry into Coastal Shipping Policy and Regulation;
- The Australian Maritime Safety Authority, through its review of marine qualifications from both a national and international perspective;
- The Australian Maritime Group that reports to the Australian Transport Council's Standing Committee on Transport; and
- A number of industry organisations are also understood to be examining these matters.

8.6 Given that the outcomes from a number of these inquiries and reviews are expected shortly and should bring further insight to the whole of the maritime industry's employment issues, it seemed premature for the panel to consider the recruitment and retention of coastal pilots separately at this time.

Pilots' Qualifications and Training

8.7 Some submissions commented on coastal pilots' entry level qualifications, including language skills, together with arrangements for ongoing training.

8.8 An AMSA panel representative advised that an entry level examination for coastal pilots, including the demonstration of English language skills, was being introduced to deal with any shortcomings that might have been noted previously in this regard. The panel accepted this information on the understanding that monitoring of the progress of individual pilots after passing this examination would show whether the process was satisfactory in helping to minimise any future concerns of this nature.

8.9 Looking at the ongoing training of coastal pilots, it was the conclusion of the panel that this issue was essentially one of cost and opportunity. It is understood that training costs are met through a levy on the pilotage service users included in the fee charged by the pilotage providers. It is then up to the provider to subsidise appropriate training opportunities for individual pilots from this levy.

8.10 The arrangements underpinning the ongoing training for coastal pilots are seen as being less than satisfactory by some pilots. The panel considered that whilst outside its immediate terms of reference, if this matter is not capable of being addressed during regular AMSA audits of the pilotage providers, then it should be taken up in the context of the review of Marine Order Part 54 already mentioned at Recommendation 1.

Ship Specific Safety Issues

8.11 Where submissions included ship specific incidents to illustrate possible safety issues for consideration, the panel took the broad approach that whilst helping to supply additional context to the matters under review, in general if a specific response was required or expected as result, then it should be addressed separately by AMSA as the responsible regulator; and not contained in the report of the panel.

9. Conclusions

9.1 This report has been drafted to document the outcomes from the deliberations of the panel set up to examine submissions received on the delivery of coastal pilotage services in the Great Barrier Reef and Torres Strait.

9.2 It is the understanding of the panel that this is the first part of an extensive process of review and its recommendations may, or may not, be accepted by AMSA or the Department.

9.3 Additional rounds of consultation can be expected during the course of this process, as follows:

- If the recommendations are accepted and changes to the relevant statutory requirements are deemed to be required as a consequence, then a regulation impact statement (RIS) will have to be prepared in consultation with all affected parties, in keeping with guidance provided by the Office of Best Practice Regulation, see: <http://www.finance.gov.au/obpr/proposal/ria-guidance.html>

9.4 The panel agreed that the issues surrounding coastal pilotage services are complex and largely interlinked as a consequence of the method of delivery, the dynamics between the players and other aspects associated with regional geography and the history behind the current arrangements.

9.5 Accidents are random events that in a well operated safe system cannot be predicted. In the event of an accident, the flaws and latent failures within the system become all too apparent with hindsight. Although the current pilotage system has operated with apparent safety since July 2002, the issues identified at 4.5 are indicators of attitudes and behaviours that significantly increase risk.

9.6 AMSA has already proposed that any change to coastal pilotage service delivery arrangements should also be subject to review by an international expert to test compatibility with best practice in pilotage service delivery by other major maritime nations.

9.7 Nevertheless, the panel is pleased to present this report as a first step in the review process and hopes that its contents and recommendations will provide a firm basis for AMSA and the Department to consider the future delivery of coastal pilotage services in the Great Barrier Reef and Torres Strait.

Appendices

Appendix 1 - AMSA Media Release 02 July 2008

Review of Coastal Pilotage Service Delivery in the Torres Strait and Great Barrier Reef

The Department and the Australian Maritime Safety Authority (AMSA) is reviewing the delivery of coastal pilotage services in the Torres Strait and Great Barrier Reef.

The Minister for Infrastructure, Transport, Regional Development and Local Government, the Hon Anthony Albanese MP has agreed to the review as part of the Australian Government's commitment to modernising the nation's transport system.

The review will be conducted in consultation with the shipping industry, pilotage service providers, coastal pilots and their representatives, government departments/ agencies and community interests in the Torres Strait and Great Barrier Reef.

Stakeholders have raised issues with the Minister about the current pilotage service delivery arrangements operating in the Torres Strait and Great Barrier Reef.

There also have been issues raised about the ability of the current system to accommodate the introduction of under keel clearance management systems assisting ship navigation and with the potential to improve cargo carrying capacity through the Torres Strait.

In view of these issues and the need to ensure the regulatory system can deal with future challenges, the Department and AMSA will investigate alternative models of service delivery for consideration by the Government.

Previous independent reviews of coastal pilotage regulation in the Torres Strait and Great Barrier Reef have commented upon its unique competitive situation compared to State and Territory Government arrangements for delivery of harbour pilotage in Australian ports.

Initial stakeholder consultations will commence in early July 2008.

An issues paper is available on the AMSA Internet site at http://www.amsa.gov.au/Shipping_Safety/Coastal_Pilotage/Coastal_Pilotage_Services.pdf to facilitate those discussions and also the making of written submissions by stakeholders.

Appendix 2 - An Issues Paper for use in Consultation with Interested Stakeholders

Coastal Pilotage Services in the Torres Strait and Great Barrier Reef

Summary

This paper explores issues surrounding the current use of an open competition model for the provision of pilotage services in the Great Barrier Reef and Torres Strait. It considers the possibility of progressing to a serial competition model using a single service provider and has been prepared solely for the purpose of initial consultation and discussion with interested stakeholders. The Australian Government has not yet made any decisions on changes to the current regulatory approach.

1. Introduction

1.1 The present open competition model for the provision of pilotage services in the Great Barrier Reef (GBR) and Torres Strait has been criticised by some stakeholders as not providing the optimal safety outcome for ships operating in some of Australia's most sensitive and biologically diverse marine environments.

1.2 This paper examines the safety related issues and potential associated risks and puts forward an alternative pilotage services model as one option to enhance the safety of shipping and environmental protection within this internationally recognised sea area.

2. Background

2.1 Until 1993, the licensing, operational administration and tariff structure of marine pilotage in the GBR and Torres Strait region was the responsibility of the Queensland Government and was operated as a statutory monopoly by the Queensland Marine Board.

2.2 When the Australian Government assumed responsibility from Queensland for regulating coastal pilotage, it adopted a policy that the pilot licensing system to be administered by the Australian Maritime Safety Authority (AMSA) was only for safety regulation and not to be used for managing service pricing.

2.3 Commercial aspects, such as pilot numbers and charges for pilotage, were to be and are currently determined by the market. The government no longer exercised control over these commercial aspects and private sector providers were solely responsible for delivery of coastal pilotage services.

2.4 In July 1993, AMSA assumed responsibility for the licensing and safety regulation of all Australian coastal pilotage services, although these services are presently only required in the GBR and Torres Strait. The relevant statutory requirements are contained in the *Navigation Act 1912* and Marine Orders Part

54 *Coastal Pilotage*⁽¹⁾. The Marine Order includes the Queensland Pilotage Safety Management Code and details of the Torres Strait Pilotage Area.

2.5 Two competing providers emerged from the former statutory monopoly, with a later third competitor only servicing those ships using Hydrographers Passage. Detailed information on pilotage requirements and services within the GBR and Torres Strait region can be found in the annual list of Notices to Mariners published by the Australian Hydrographic Service⁽²⁾.

2.6 Competition between the providers initially resulted in a reduction in the cost of coastal pilotage to the shipping industry. However, some stakeholders also raised concern that internationally pilotage services were not provided competitively and a high level of competition could potentially impact on the safety of services.

2.7 A number of reviews of coastal pilotage have commented upon the level of competition between coastal pilotage providers. The latest review, *AMSA Coastal Pilotage Regulation Review*⁽³⁾ was published in 2006.

2.8 This independent review noted that safety regulatory regime for coastal pilotage “contain the most comprehensive system of safety regulation of pilotage by a regulator in Australia”. The review also suggested that the existing competitive environment presented difficulties for AMSA, as the safety regulator, in applying the requirements of Marine Orders Part 54 to the three commercial pilotage service providers to deliver identical safety outcomes in each case.

2.9 Some of these difficulties have been identified as stemming from:

- the relationships between the pilotage service providers;
- the relationships between pilots contracted by different providers;
- the relationships between the pilots and providers;
- the requirements for pilot training;
- the need for duplicated infrastructure;
- the daily competition for a limited number of ships; and
- the difficulty in developing an overall safety culture.

3. Technological developments

3.1 As part of its statutory responsibilities for ship safety, AMSA stipulates a maximum draught (12.2 metres) and minimum net Under Keel Clearance (UKC) for all commercial shipping transiting Torres Strait⁽⁴⁾.

3.2 UKC is the distance between the keel of a ship and the seabed required to ensure safe navigation and avoid grounding, which could potentially place seafarers at risk and lead to a significant pollution incident.

3.3 Developments in technology have led to the introduction of predictive and real time UKC management systems in some ports, leading to the more efficient use of approach fairways with limited depths.

3.4 In general terms UKC management relies on a combination of hydrodynamic, hydrographic, meteorological and oceanographic (met-ocean) data and may require pilots to employ sophisticated portable computing equipment with real time data inputs, especially in the case of more open waters.

3.5 A recent study⁽⁵⁾ commissioned by AMSA from Thompson Clarke Shipping found that the introduction of a UKC management system should improve knowledge about actual navigational safety margins, potentially enabling ships with draughts greater than 12.2 metres to transit Torres Strait when particular tidal and met-ocean conditions permit.

3.6 A preliminary estimate of the total anticipated economic benefit from such a system to affected ship owner/operators would be from around A\$10 million to A\$13 million per year, whilst set up and running costs remain to be fully determined depending upon the system chosen and its method of implementation and delivery.

3.7 AMSA has been engaged with stakeholders over the introduction of a UKC management system for Torres Strait. An advisory committee has been established to help decide the most appropriate delivery model and associated governance arrangements⁽⁶⁾. Advisory committee members have raised issues concerning the potential to regulate safety risks in the commercial provision of UKC services under the current competitive coastal pilotage regime.

4. Possible Alternative Model of Service Delivery

4.1 The GBR and Torres Strait pilotage services are the only pilotage regime in Australia that operates in an openly competitive environment. By way of comparison Australian ports function with a single pilotage provider.

4.2 In February 2008 the National Transport Commission briefed the Australian Transport Council on *National Transport Policy Framework – a New Beginning*⁽⁷⁾. This document contains several broad references to the types of issues already mentioned concerning pilotage services, including the need to focus on wage payment methods and workplace conditions to bring about better transport system safety, as well as improving protection for the environment.

4.3 In line with wanting to ensure the robustness of the regulatory system to deal with future challenges, the Department of Infrastructure, Transport, Regional Development and Local Government and AMSA are investigating alternative models of service delivery to address the issues identified in previous reviews. This issues paper looks at the possibility of one such option, that being a serial competition model using a single service provider to replace the existing open competition model for the provision of pilotage services in the GBR and Torres Strait.

4.4 This model would involve in general terms a periodic tender process for a single provider of pilotage services, in a similar manner to many Australian ports. Pilotage fees to be charged by the successful tenderer would be a factor to be considered in the tender evaluation process, along with a number of other key criteria such as the provision of appropriate training, safety and

environmental management, infrastructure and pilotage equipment, as well as the use of technological advances, such as a UKC management system.

4.5 The potential benefits of changing the service provision arrangements to a serial competition model include:

- improving the relationships between individual pilots, as a single provider allocating ships should help reduce any perception of commercial influence on the choice of pilot to undertake a particular pilotage task
- stabilising and strengthening over time the relationship between the pilots and the single provider;
- preventing the financial penalisation of pilots for refusing pilotage to substandard vessels;
- ensuring requirements for consistent pilot training and associated funding could be clearly stated in the contract; and
- reducing the need for duplicated infrastructure and daily competition for a limited number of ships.

The relationships between pilotage service providers would be formalised by using comprehensive transition planning within the tender process to cover the start and end of each contract period.

4.6 Contract management would be underpinned by an audit regime and include suitable incentives for the introduction of continuous improvement initiatives, whilst enhanced mechanisms for ensuring compliance will provide the necessary assurance that essential performance requirements are consistently met.

4.7 The serial competition single provider model also has the potential to generate a number of associated benefits for key players who may wish to take advantage of the opportunities presented if this path were to be followed, for example:

- expansion and/or consolidation options for existing service providers;
- greater pricing certainty for ship owner/operators using the service; and
- more stable employment conditions for pilots in the longer term.

5. Next Steps

5.1 This issues paper has been prepared for the purposes of initial consultation with interested stakeholders.

5.2 It is intended that key stakeholders, including representatives of the pilotage providers, pilots and affected Torres Strait Islander communities and ship owner/operators will be consulted individually, together with other interested parties, including relevant Australian and State Government departments and agencies.

5.3 Feedback from this initial consultation will be collated and analysed before any proposed changes are progressed and these will be accompanied by further consultations with interested stakeholders, including the preparation of a detailed regulation impact assessment for any significant proposed changes.

July 2008

References

- (1) Marine Orders Part 54 “Coastal Pilotage”, see:
http://www.amsa.gov.au/shipping_safety/marine_orders/Marine_Orders_currently_in_force.asp
- (2) Annual Australian Notices to Mariners in force on 1 January 2008, numbers 10C, 21 and 23, see <http://www.hydro.gov.au/n2m/notices.htm>
- (3) AMSA Coastal Pilotage Regulation Review, Captain John McCoy, December 2005, see:
http://www.amsa.gov.au/Shipping_Safety/Coastal_Pilotage/
- (4) AMSA Marine Notice 23/2007 Draught Limitation in Torres Strait, see:
http://www.amsa.gov.au/Shipping_Safety/Marine_Notices/2007/23-2007.asp
- (5) Under Keel Clearance – Final Thompson Clarke Shipping Report, see:
http://www.amsa.gov.au/Shipping_Safety/Great_Barrier_Reef_and_Torres_Strait/Under_Keel_Clearance_management.asp
- (6) Public Brief on Torres Strait UKC Governance Arrangements, see:
http://www.amsa.gov.au/Shipping_Safety/Great_Barrier_Reef_and_Torres_Strait/Under_Keel_Clearance_management.asp
- (7) National Transport Policy Framework – A New Beginning, see:
<http://www.ntc.gov.au/DocView.aspx?page=A02216506300390020>

Appendix 3 - List of Submissions

To be provided subject to consent from authors.

Appendix 4 - GBR and Torres Strait Pilotage Review Panel

Terms of Reference

The Australian Maritime Safety Authority (AMSA) and the Commonwealth Department of Infrastructure, Transport, Regional Development and Local Government are reviewing the delivery of coastal pilotage services in the Great Barrier Reef (GBR) and the Torres Strait – see Appendix 1.

An issues paper has been prepared to facilitate initial discussion and assist in the provision of written submissions by interested stakeholders – see Appendix 2. Initial consultations with key stakeholders were held in July 2008.

A suitable qualified and experienced Panel has been set up to review submissions received and report on policy options for the future delivery of coastal pilotage services.

This panel has the following terms of reference:

1. Identify and advise on options for delivering coastal pilotage services in the GBR and Torres Strait, and evaluate each option in terms of its ability to:
 - 1.1 deliver safety outcomes;
 - 1.2 protect the marine environment;
 - 1.3 take account of relevant local, national and international interests;
 - 1.4 make use of human resources, infrastructure and other necessary resources, including contemporary technological developments;
 - 1.5 contain costs to shipowners/operators;
 - 1.6 interact with other regional shipping safety arrangements;
 - 1.7 provide cost-effective pilotage services; and
 - 1.8 be consistent with general competition policy principles.
2. Identify and assess the risks attendant to each option, and any associated regulatory changes that may be required.
3. When examining these matters, the Panel is to consider stakeholders' written submissions and feedback from consultations.
4. Make a report of the review to AMSA and the Department.

Appendix 5 - Review Panel Members

To be provided subject to consent of Panel members.

Appendix 6 - Coastal Pilotage Review Panel Canberra Meeting, 3-4 September 2008

Agenda

1. Welcome and introductions
2. Background to the review
3. Terms of reference and panel's modus operandi
4. Identification and listing of the issues contained in each submission
5. Consideration of the issues raised in submissions
6. Consideration of preferred model
7. Consideration of specific issues in light of preferred model
8. Summary of outcomes and close

Appendix 7- Other Risk Mitigation Measures to Protect Torres Strait and the Great Barrier Reef

In addition to coastal pilotage, the Australian Maritime Safety Authority (AMSA), Maritime Safety Queensland (MSQ) and the Great Barrier Reef Marine Park Authority (GBRMPA) continue to cooperate in the development, implementation and review of a range of other risk mitigation measures employed in the Great Barrier Reef and Torres Strait to improve ship safety and environmental protection.

These preventive, monitoring and response measures include:

1. Coastal Vessel Traffic Service (REEFVTS) - a joint AMSA/MSQ service currently operating through a facility located near Mackay, Queensland. It uses modern communications and automated ship reporting technology to provide a near real-time traffic image of ships transiting the region.

The *REEFVTS* designated area extends from the Torres Strait and the Great North East Channel to include the waters of the Great Barrier Reef from Cape York southwards to the Capricorn Channel off the coast between Mackay and Gladstone. All ships of 50 metres or more in length and all oil tankers, liquefied gas carriers and chemical tankers regardless of length are required to supply a pre-entry report and route plan before entering the *REEFVTS* designated area. Ships then provide automated position reporting via Inmarsat C satellite system while transiting the area.

2. Automatic Identification System (AIS) - a shipboard broadcast transponder system that automatically exchanges data (such as identity, position, course, speed, and ship characteristics) with other ships and shore based facilities fitted with the system. AMSA has given priority to installing this system infrastructure in the Torres Strait and Great Barrier Reef to benefit from its potential to provide accurate data on ship movements and improve navigational safety.

AMSA has established base stations throughout the region, with the latest stations built in 2007 providing coverage of the Torres Strait's Great North East Channel, including sites at Dalrymple and Darnley Islands at its eastern limit; and the south of Cairns, including Hydrographers Passage. AMSA's work is complementing the rollout by Maritime Safety Queensland of base stations in all ports and some high traffic coastal sites.

3. The AMSA National Aids to Navigation Network - has more sites in Queensland waters than any other State or Territory due to the importance of assisting safe navigation in this regional area's hazardous waters. AMSA's Five Year Strategic Plan for Marine Aids to Navigation includes in its work program ongoing improvements to the aids to navigation network in the region.

In addition, met-ocean sensors are being established within the shipping route in Torres Strait to provide more accurate data on tidal heights, currents and tidal streams and wave movement along with improved communication systems to provide input in real-time to shipboard navigational systems, such as under keel clearance management systems.

4. Electronic Navigation Charts - for the entire Torres Strait and Great Barrier Reef region have been prepared by the Hydrographic Service of the Royal Australian Navy. These are required to provide input to modern Electronic Chart Display and Information Systems used for navigation on board most ships trading internationally.

5. Differential Global Positioning System (DGPS) - is a method of providing discrepancy corrections to the Global Positioning System (GPS) to improve positional accuracy to better than 10 metres (usually two to four metres in the case of AMSA DGPS stations). It also monitors the integrity of the GPS signal and warns users to disregard a satellite within seconds of it operating outside specification compared to some hours of such warnings through the GPS. AMSA has a network of 16 stations around the Australian coast, of which seven are located in Queensland providing coverage of the Queensland coast from Karumba in the Gulf of Carpentaria to south of Brisbane.

6. Emergency Towage Services - in the region have been established as part of the National Maritime Emergency Response Arrangements, with AMSA contracting the dedicated emergency towage vessel, *ETV Pacific Responder*, permanently operating in the northern Great Barrier Reef and the Torres Strait.

7. National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances (the National Plan) - is managed by AMSA. It coordinates the provision of oil and chemical pollution preparedness and response services, in consultation with State and Northern Territory Governments, port corporations and authorities, emergency services and the shipping, oil, exploration, and chemical industries. These services include response planning, training personnel, maintaining stockpiles of response equipment and conducting regular exercises testing the effectiveness of these arrangements.

The National Plan includes two specialised plans for the Torres Strait, *Marine Pollution Contingency Plan for Torres Strait (TORRESPLAN)* and the Great Barrier Reef, the *Marine Pollution Contingency Plan for the Great Barrier Reef (REEFPLAN)*. The primary combat agency under these plans with operational responsibility to respond to ship-sourced marine pollution is the Queensland Government through the Queensland National Plan State Committee, with assistance from other National Plan stakeholders as required.

These special plans are regularly reviewed and tested by simulated oil or chemical pollution response exercises involving all interested parties in the region. Major stockpiles of response equipment are maintained at Townsville and Brisbane, with equipment also located at other major Queensland ports.

8. International Convention for Prevention of Pollution by Ships - specifically prohibits ship discharges in the Torres Strait and Great Barrier Reef.

9. Torres Strait Marine Safety Program - is a special program to strengthen the maritime safety culture in the Torres Strait aimed at reducing the high number of search and rescue incidents in the region.

AMSA is working with Maritime Safety Queensland and the Torres Strait community through the Torres Strait Regional Authority to develop and implement joint initiatives in three main areas: improving access to training and safe boating education across the Torres Strait, conducting a census and baseline survey to gain data on Torres Strait vessels, and expanding availability of safety equipment (including life jackets, flares and distress beacons).

Appendix 8- Previous Reviews

Since 1993, there have been several reviews of the safety regulation of the coastal pilotage service, as follows:

1993 Prices Surveillance Authority Inquiry

During consultations with stakeholders in early 1993, users of coastal pilotage services expressed concern at Queensland's existing level of coastal pilotage fees and the ability of the single provider to exercise monopoly power in a deregulated environment. Both AMSA and the Queensland Department of Transport approached the Prices Surveillance Authority (PSA) to assess the current level and structure of coastal pilotage fees. The Australian Government also asked the PSA to conduct a formal inquiry into the appropriateness of the fees, the effect of the industry structure, regulation and barriers to entry on pricing and competition, as well as the need for the PSA to have an ongoing role in monitoring of pilotage fees.

In September 1993, the PSA report endorsed the "market approach" adopted by AMSA in only regulating pilot licensing. It concludes many users already benefited from a significant reduction in pilot charges (around 20%) and increased transparency, simplicity and negotiability of charges.

The PSA did not consider the provision of coastal pilotage services was a natural monopoly and the market was found to be quite contestable, as reflected in the emergence of two pilotage providers. It concluded that even if a monopoly provider should emerge in the future, the environment was still regarded as being contestable as coastal pilots had the choice of establishing their own agencies or being employed directly by larger ship operators. The PSA recognised some economies of scale in relation to pilot transfer services had been lost with the two providers establishing separate infrastructure leading to excess capacity. However, it foresaw future rationalisation over the longer term and that the pilot transfer market also appeared to be contestable.

The PSA analysis showed that the reduction in pilotage fees had been accompanied by a decline in pilot earnings, but the PSA concluded that pilot incomes before 1 July 1993 reflected monopoly power inherent in the previous arrangements.

1994 Crone Review

During 1993, there was considerable concern expressed by Australian Reef Pilots Ltd and its contracted coastal pilots and pilot representative organisations about the impact of the new regulatory arrangements on safety.

These concerns centred on the impact on pilot earnings of the "price war" between the two providers severely undercutting pilot fees; the providers' recruitment practices, which had increased the number of pilots from 44 to 57 further exacerbating the reduction in pilot earnings by reducing work opportunities; encouragement to retired pilots, some in their 70s, to return to pilotage work; the discriminatory allocation of pilotage work to individual pilots by the providers; and a claimed decline in professional standards and increased

risk of a shipping incident, with coastal pilots being stressed and seeking to work longer hours to improve their earning capacity.

In 1994, AMSA commissioned a former senior executive from the Department of Transport, Mr Patrick Crone, to conduct a review of the claims that the lack of commercial regulation compromised safety in the region. The review concluded that, provided effective safety audit and control mechanisms were in place, there was no evidence that the absence of direct commercial regulation posed a threat to the safety of the Great Barrier Reef and Torres Strait. It also found no evidence of a shortage of suitable applicants for coastal pilot licences.

1999 House of Representatives Standing Committee on Communications, Transport and the Arts Inquiry, *Beyond the Midnight Oil - Managing Fatigue in Transport*

In relation to marine pilotage, the report highlighted the importance of fatigue as a causal factor in maritime incidents, with the proportion of incidents attributable to marine pilot fatigue assessed as being in the range 10 to 25 per cent.

The report recommended the Australian Government should ensure national guidelines on marine pilotage standards should include coverage of fatigue management and it should impose a national regulatory regime to implement the guidelines if they were not adopted by the States and Territories. It also recommended that the AMSA model code of conduct for coastal pilotage should have the section on fatigue management expanded to specify the maximum duration of a pilot's tour of duty and length of rest break.

The submission to the inquiry by the Australian Marine Pilots' Association addressed the adverse impact of competition leading to marine pilots working longer hours and being subject to commercial pressures that may lead to a compromise in safety standards.

2000 Holden Review

In April 2000, a further independent review of safety measures in the Great Barrier Reef was commissioned by AMSA and Queensland Transport from three maritime experts, Captains Holden, Ross and Mansell, which included the examination of the coastal pilotage service.

The report found that both pilotage service providers, Torres Pilots and Australian Reef Pilots, were still operating in an intensively competitive environment that influenced their management and organisation practices and these may operate to the disadvantage and disincentive of the pilots.

The review found that the morale of pilots was considerably below that expected from self-employed, professional people. However, the third provider, Hydro Pilots, which was managed by the coastal pilots themselves, presented an enthusiastic and innovative team spirit. It concluded that, in principle, pilots raised little objection to an open, competitive market, provided they could access it through an efficient, level playing field.

Individual pilots also were concerned with the standards of transfer launches, including poor seaworthiness standards, equipment and safe operation. They also objected to predatory pricing practices considerably disadvantaging pilots and the duplication of transfer services. The safety and cost of helicopters also was raised. Pilots were fearful that reporting of unsafe conditions would lead to them being penalised by their service providers by a reduced allocation of pilotage work. Some pilots suggested there should be an open tender process for the provision of single pilotage transfer systems at each transfer location.

The review recommended that a competitive structure for the provision of safe pilotage and regulation that has minimal impact on commercial economic issues should remain the hallmark of coastal pilotage policy. It concluded that the two pilotage service providers were the primary source of competitive pressures on pilots and recommended greater regulation of the providers and improved training requirements for new recruits to address a perceived lack of experience and expertise.

2001 Review of Great Barrier Reef Ship Safety and Pollution Prevention Measures

The review was established by the Australian Government in response to a shipping incident in the Great Barrier Reef when a container ship grounded near Cairns outside the compulsory pilotage area and after the coastal pilot had disembarked the vessel. The review team included the Chief Executive Officer of AMSA, the General Manager of Maritime Safety Queensland, the Chair of the Great Barrier Reef Marine Park Authority and a senior officer of the Department.

The review received a number of submissions from coastal pilots and pilot representatives advising that the deregulation of the coastal pilot market in 1993 had increased operational pressures on pilots leading to increased fatigue, declining competency, reduced capital investment in infrastructure and making the industry less attractive to new entrants.

The report noted that the Commonwealth Government had clearly decided, in agreeing to regulate coastal pilotage, that it was not appropriate to directly control the supply or pricing of pilot services, and that appropriate review mechanisms were available through the Australian Competition and Consumer Commission.

The review supported adoption by AMSA of the safety management systems approach in Marine Orders Part 54 as an effective way to address safety outcomes in the competitive environment for pilotage services.

2005 McCoy Review

AMSA commissioned an independent review of its safety regulation of coastal pilotage services in the Great Barrier Reef and Torres Strait by Captain John McCoy, a former Chairman and Chief Executive of the Marine Board of Victoria.

The review assessed the effectiveness of recent initiatives by AMSA to strengthen safety regulation, including enhancements to the safety management system, development of the check pilot scheme, improved fatigue management measures, upgraded training and ongoing professional development schemes.

The review examined all aspects of coastal pilotage safety regulation and overall found that the system of safety regulation was the most comprehensive in Australia and was fundamentally sound. Captain McCoy made a number of recommendations to address ancillary issues, including improving relations between pilotage service providers and coastal pilots, the safety of pilot boats and the application by pilotage service providers of safety management systems and codes.

During the review, Captain McCoy consulted widely with the three pilotage service providers, coastal pilots and pilot representative bodies. He received submissions from a number of coastal pilots and their representative bodies about the impact of the current level of competition between the three pilotage service providers on the safety of pilotage services. The report found that the robust and sound safety regulatory systems mean that the effects of competition are not reducing safety outcomes.

The review concluded that, as AMSA only has responsibility for safety regulation, the pilots advocacy for reintroduction of economic regulation was beyond AMSA's safety regulatory purview and hence outside its terms of reference. However, it observed that no evidence was found supporting claims that safety had been compromised because of competition.

Captain McCoy noted that a change in the competitive regime would require a change in Government policy, amendments to legislation and AMSA to adopt different regulatory methods. He suggested a cost/benefit analysis of the different regulatory options may be a way to consider the different views and discussed some alternative arrangements in an appendix to his report.

Appendix 9 - Changes to Marine Orders Part 54 Coastal Pilotage

At present, Marine Orders Part 54 *Coastal Pilotage* contains the following penal provisions:

6.4 Issue of licences, restricted licences and trainee pilot licences

6.4.8 *The person to whom an interim document has been issued must surrender it to the Manager:*

(a) within 14 days of the issue, renewal, cancellation or suspension of the licence or restricted licence to which it refers; or

(b) when so required by the Manager.

6.5 Cancellation, suspension or variation of licences and restricted licences

6.5.8 *The holder of a licence or restricted licence that has been cancelled or suspended must surrender it to the Manager within 14 days of that cancellation or suspension.*

6.6 Replacement of licences, restricted licences and trainee pilot licences

6.6.2 *When a lost licence, referred to in 6.6.1 has been recovered and returned to the holder, the holder must return the recovered licence to the Manager within 14 days.*

7.1 Queensland Coastal Pilotage Safety Management Code

A pilot must carry out his or her duties in accordance with the Queensland Coastal Pilotage Safety Management Code.

8.1 Document of Compliance

8.1.1 *A person must not act as a pilotage provider unless that person is the holder of a valid Document of Compliance.*

8.2 Queensland Coastal Pilotage Safety Management Code

A pilotage provider must operate in accordance with the Queensland Coastal Pilotage Safety Management Code.

Action under these Marine Orders can be taken against a licensed pilot as follows:

6.5 Cancellation, suspension or variation of licences and restricted licences

6.5.1 *If, in relation to a licence or restricted licence, the Manager determines that:*

(a) the holder has demonstrated incompetence or misconduct relating to the performance of his or her duties as a pilot; or

- (b) the holder is unable from any cause to perform properly the duties appropriate to the licence or restricted licence; or*
- (c) the licence or restricted licence was obtained by reason of a false representation,*
the Manager may:
- (d) cancel the licence or restricted licence; or*
- (e) suspend the licence or restricted licence until specified conditions are met;*
or
- (f) impose restrictions on the purposes for which the licence or restricted licence is valid for use until specified conditions are met.*

6.5.2 *Examples of the conditions that the Manager might specify under 6.5.1(e) or (f) are:*

- (a) successful completion of a particular course;*
- (b) passing an oral examination in appropriate operational knowledge;*
- (c) completion of additional transits as observer;*
- (d) undertaking one or more voyages with a check pilot;10*
- (e) production of references.*

6.5.3 *Examples of restrictions that the Manager might impose under 6.5.1(f) are:*

- (a) restriction on draught of ship;*
- (b) restriction on type of ship;*
- (c) restriction on area of operation.*

Action can only be taken to suspend or cancel a pilot's licence as follows:

6.5.4 *The Manager must not suspend or cancel a licence or restricted licence under 6.5.1 until the following steps have been completed:*

- (a) the Manager considers that there are prima facie grounds for believing that one or more of the circumstances listed in 6.5.1 exist in relation to the licence or restricted licence;*
- (b) the holder has been informed that action against his or her licence or restricted licence is contemplated, and the reason why;*
- (c) the holder has been provided with copies of any documents which the Manager will be using to make his or her decision;*
- (d) the holder has been allowed sufficient time, which must not be less than 28 days, during which he or she may make submissions, which need not be in writing, in relation to the decision;*
- (e) the Manager has given proper consideration to submissions made by the holder.*

6.5.5 *If a decision has been made to cancel or suspend a licence or restricted licence, the Manager must cause to be given to the holder notice in writing of:*

- (a) the decision;*
- (b) the right of review contained in provision 5; and*
- (c) the date on which the cancellation or suspension is to take effect.*

In the case of a grounding or collision however the following action can be taken against a pilot:

6.5.12 *If a ship under pilotage is involved in a grounding, or collides with another ship or any other object, the Manager must, as soon as practical after being advised of the grounding or collision, suspend for a period not exceeding seven days the licence or restricted licence of the pilot having conduct of the vessel.*

6.5.13 *If a ship under pilotage is involved in a grounding, or collides with another ship or any other object, and the General Manager is satisfied that it is in the interests of safety or the protection of the marine environment that the licence or restricted licence of the pilot having conduct of the vessel be suspended pending:*

- (a) a decision on whether action should be taken under 6.5.1; or*
- (b) the completion of the procedures specified in 6.5.4, the General Manager may suspend the licence or restricted licence of the pilot for such period not exceeding six months as is reasonably necessary for a decision to be taken under 6.5.1 or the completion of the procedures specified in 6.5.4.*

The range of actions that can be taken against a pilotage provider under similar circumstances however is much less prescriptive and/or comprehensive, being limited to those under provisions 8.1 and 8.2 already mentioned above, with the ultimate sanction being:

8.1.5 *If the systems and procedures of a pilotage provider fail to conform in a major respect with the Queensland Coastal Pilotage Safety Management Code, the General Manager may withdraw that pilotage provider's Document of Compliance.*

Possible Interim changes to MO54:

- Regular reporting (period to be determined) to enable AMSA to monitor:
 - the operational safety activities of providers, e.g. status of pilot boats.
 - the fatigue management of pilots and pilot boat crews by the providers.
 - incident reports made by pilots or pilot boats crews.
 - pilots adherence to and compliance with requirements of Deep Draft Passage Plans.

- Regular reporting (period to be determined but less frequent than the above) to enable AMSA to monitor:
 - audits and management reviews conducted by providers.
 - safety meetings that could be required to be attended by pilots and any actions resulting from those meetings.
 - any training undertaken by pilots and pilot boat crews.

Possible longer term Changes to an Amended MO54:

- Introduction of a tailored Safety Management System including.

- Standard Operating Procedures.
- Training requirements.
- Emergency procedures.
- Deep draft (UKC) requirements.
- Improved Pilots Code of Conduct including.
 - Fatigue management.
- Improved/Strengthened pilot boat transfer standards.
 - Safe procedures and limitations.
 - Boat construction and equipment.
- Reporting requirements.
- Methodology for participation in operational and safety meetings by pilots and management.
- Feedback from safety meetings to industry.
- Strengthened control over pilot recruiting methods.
- Strengthened punitive provisions for providers and pilots.

Appendix 10 - Australian Transport Safety Bureau incident data (GBR - 1993 to present)

Incident Date	Location	Loc Type	Vessel Name	Vessel Type	Summary text
Incidents since 1993 in Great Barrier reef where Pilot is on Board					
02/11/1993			<i>Blossom Forever</i>		The south bound Blossom Forever was slowly overtaking the Pearl Prosperity in an area of the GBR where the maximum width of fairway reduced from about 1.5 miles to about 1 mile. The differential in speed meant that the overtaking manoeuvre would take about 45 minutes or about 10 miles to complete. The two pilots had been in contact by VHF & it was mutually agreed that the Blossom Forever would overtake on the Pearl Prosperity's port side. The Pearl Prosperity's Pilot considered that the vessel was unnecessarily close & the passing distance would be less than a cable (185m). The ship's master commented on the fact to the Pilot, who was becoming concerned. He therefore contacted the Pilot on board the Blossom Forever & suggested that he alter course away from the Pearl Prosperity. The Blossom Forever's Pilot agreed & the distance between the ships increased & the passing manoeuvre was completed safely.
15/11/1993	Waterwitch Reef		<i>Iron Shortland</i>	Bulk Carrier	On 15 Nov 93 the Palm Monarch was overtaking the Iron Shortland. Both vessels were in ballast, each vessel being in excess of 225m in length. The two ships were in the same area of the GBR as the incident of 2 Nov 93, but in this case the vessels were north bound. Palm Monarch overtook Iron Shortland & the converging courses put the overtaking ship close ahead with both ships on course to pass to the east of Waterwitch Reef. The Master of Iron Shortland expressed concern at the closeness of the other ship & the Pilot altered the ship's course to port, to pass to the west of Waterwitch Reef & any potential risk of collision was averted.

30/03/1995	South Ledge Reef GBR	Coastal waters (within 12 miles)	<i>Carola</i>	Container ship	The <i>Carola</i> sailed from Sydney on 25 Mar bound for Singapore by way of the inner route of the GBR. At 0100 on 29 Mar the vessel embarked a licensed pilot off Cairns for the passage through the inner route to Goods Is. At about 0230 on 30 mar the Pilot left the bridge in an area where there was to be no alteration of course for about 2 hours & where other shipping & fishing boats presented no potential hazard. The Pilot gave clear directions to the 2nd Mate the OOW that he was to be called at a position that he had marked on the chart, or if the mate had any concerns. At a little after 0400 the Mate relieved the 2nd Mate, who passed on the instruction about calling the Pilot. At 0458 on 30 mar the vessel ran aground on South Ledge Reef. The damage was assessed, soundings of the ship's tanks were taken. It was established that the fore peak tank was breached & some water was entering the bow thruster space, however the ship's pumps were able to handle the ingress of water. There were no injuries & no pollution resulted from the grounding.
------------	-------------------------	---	---------------	----------------	--

18/07/1996	Piper Reef, GBR	Coastal waters (within 12 miles)	<i>Peacock</i>	Refrigerated cargo ship	<p>The Panamanian flag refrigerated cargo vessel <i>Peacock</i>, on a ballast passage from Singapore to New Plymouth, New Zealand, embarked a licensed pilot off Goods Island at 1630 AEST on 17 July 1996 for the passage through the Torres Strait and the Inner Two Way Route of the Great Barrier Reef. At about 0155 on 18 July 1996, the vessel grounded on Piper Reef at full speed, in a position 100 metres eastward of the light beacon. Initial attempts to refloat the vessel by going astern on the engine were unsuccessful. <i>Peacock</i> remained stranded on Piper Reef until the late afternoon of 26 July 1996, when salvors successfully refloated the vessel after having transferred some of the fuel oil bunkers to a barge. The vessel's hull was not breached and no pollution occurred. However, machinery tests showed that only one steering motor was fully functional, therefore <i>Peacock</i> was towed to Cairns for necessary repairs. The pilot sat in the pilots' chair and lost situational awareness, in all probability fell asleep. The pilot's recent work schedule, particularly the high proportion of nights of disrupted sleep, had caused chronic fatigue. The absence of bridge resource management procedures and monitoring of the situation by the watch-officer resulted in the pilot's failure to order the necessary course alteration to go unnoticed. There was no formal control framework in place to monitor a coastal pilot's nights of disturbed sleep, to prevent the development of chronic fatigue.</p>
------------	-----------------	----------------------------------	----------------	-------------------------	---

26/11/1996	South of Low Isles Great Barrier Reef	Coastal waters (within 12 miles)	<i>Maersk Tapah</i>	Bulk Carrier	In the afternoon of 26 Nov '96, the Aust FV Nimbus was on passage from Cairns to Thursday Island in company with the FV Anniki, after both vessels had completed a refit. Each vessel was towing a string of dories or dinghies in line astern - Nimbus was towing five. The Singapore flag bulk carrier Maersk Tapah was on passage from Gladstone to India with a full load of coal. The navigation was under the control of a licensed pilot. Both vessels were making for a point to the east of Low Isles, about 30 miles north of Cairns. At about 1522, while Maersk Tapah was overtaking Nimbus the two vessels collided. Nimbus sustained damage to its bow & wooden hull. Nobody was hurt & no pollution resulted from the collision. The Pilot on Maersk Tapah ensured that Nimbus required no assistance & the two vessels exchanged details. Maersk tapah continued on its voyage to India & Nimbus resumed passage for Thursday Island.
29/04/1997	GBR - 5 Miles West of Booby Island	Coastal waters (within 12 miles)	<i>Maersk Taupo</i>	Bulk Carrier	At 0245 29 Apr 97, the Reefcentre advised the MRCC that the vessel Maersk Taupo had a fire aboard. The report was made by the embarking pilot when the vessel was 5 miles west of Booby Island (1036S 14155E). A call to the ship confirmed. The incident was minor & that the fire had been in a piece of electrical equipment. The vessel resumed passage through the Torres Strait at 0414 29 Apr 97. The vessel is on passage to Singapore to out of area & will not stop in Australia.

13/03/1997	Heath Reef, Great Barrier Reef	Archipelago	<i>River Embley</i>	Bulk Carrier	<p>On the afternoon of 13 March 1997, the Royal Australian Naval patrol vessel Fremantle left an anchorage off the Flinders Group of Islands, at the eastern side of Princess Charlotte Bay, and, in company with two other patrol boats following astern, commenced passage for Thursday Island. The vessels followed a planned route utilising the inner route of the Great Barrier Reef at a speed of about 15 knots. At this time the Australian Bulk carrier River Embley was on a south bound loaded passage approaching Piper Reef some 150 miles to the north. River Embley was loaded to a draught of about 12.2 m and while underway, at speeds of between 13 and 14 knots, was drawing about 13.5 m allowing for squat. The navigation was under the direction of a licensed Reef pilot. At about 2100, the three warships were approaching Heath Reef from the South and River Embley was approaching the reef from the north. The depth of water in the area meant that River Embley was obliged to keep to the eastern side of the two way route and pass about 3 cables off Heath Reef. VHF contact between those on the bridge of HMAS Fremantle and River Embley was established and the message passed that River Embley was a deep draught vessel and the distance the Pilot intended passing off the Reef. The vessels were closing at about 28.5 knots on nearly reciprocal courses with the first two of the three patrol boats crossing ahead of River Embley. A few minutes after 2100, the lead patrol boat HMAS Fremantle crossed ahead of River Embley, followed by the second vessel in line, the third altered course to pass between River Embley and Heath Reef. HMAS Fremantle made a number of slight alterations and, at about 2108 the rudder was put 20° to starboard. The patrol boat collided with River Embley. There were some slight injuries sustained aboard the patrol vessel as a result of the collision, but nobody on either vessel was seriously hurt. No pollution resulted from the collision. Damage was sustained to the port side of the patrol boat and some damage was caused to the hull plating close to River Embley.</p>
------------	--------------------------------	-------------	---------------------	--------------	--

26/11/1998	Prince of Wales Channel		<i>Fu Yu Shan</i>		Vessel Fu Yu Shan sailed through the Torres Strait and Great North East Channel of the GBR without the services of a licenced pilot. When approaching the Prince of Wales channel Fu Yu Shan was involved in dangerous close quarter ssituations with two other ships the Ganga Sagar and Bunga Terasek. Both had pilots onboard.
17/05/1999	Heath Reef	Coastal waters (within 12 miles)	<i>New Reach</i>	General cargo ship	The Panama flag general cargo ship New Reach sailed from Cairns, at 0654 on 16 May 1999 bound for Penang, with a full cargo of sugar. A licensed pilot was embarked to take charge of the navigation through the inner route of the Great Barrier Reef. At about 1020 on 16 May, New Reach passed Low Isles, the southern limit of the compulsory pilotage area. The pilotage proceeded routinely until about 0311 on 17 May, when after making a routine mandatory report to the Reef Reporting Centre, the pilot realised that the light on Heath Reef was in the wrong position relative to the ship's heading. He altered course to port to bring New reach to the west of Heath Reef. At about 0320 the ship grounded in shallow waters about 220 m south of the reef edge on a heading of 327°, about one hour before low water. Nobody was hurt as a result of the grounding & no oil or other pollutant escaped from the ship. At about 0920 on 17 May, New Reach was refloated under its own power &, after reporting to the Reef Centre, went to anchor south of Night Island, 17 nm to the north. The Aust authorities issued detention orders. At 1314 the vessel was given permission to move to Lloyd Bay, close to the Lockhart River Settlement & its airstrip. On 18 May, divers, surveyors & other officials boarded the vessel. A new pilot also joined New Reach to relieve the pilot on board. After an underwater inspection by the divers & an examination of the fore peak tank by the class society surveyor, the ship was cleared to resume its voyage. The vessel cleared Booby Island at 0530 on 19 May.

25/03/2000	Off Cape Direction	<i>Silver Bin</i>	Bulk Carrier	<p>On the morning of 25 March 2000 the 39 015 tonnes deadweight, Liberian flag, geared bulk carrier Silver Bin was heading south to Townsville via the inner route of the Great Barrier Reef. An Australian Reef Pilot, who had boarded the vessel at Booby Island the previous evening, was conducting the navigation of the ship. The sea was slight, with an easterly breeze of less than 10 knots, and no swell. The ship was making headway at just under 12 knots. During the morning, visibility had been reduced by an occasional rain squall. On the bridge with the pilot were the master, third mate and a quartermaster who was hand-steering the vessel.</p> <p>At 1145, 5 miles¹ north of Chapman Island, the pilot had a radio conversation with a yacht in the area. This conversation was overheard by the skipper of Chinderah Star, a prawn trawler, approximately 3.6 miles south of Chapman Island, heading north at 9.2 knots in the shipping channel. The skipper, in the wheelhouse of the trawler, identified the ship on his radar and visually, but did not make radio contact. His two deck hands were asleep in the cabin below.</p> <p>After the course change, a rain squall moved into the shipping channel from east of Chapman Island, and enveloped Silver Bin in heavy rain. The crew of the ship estimated the range of visibility in the heavy rain at 160 m. Chinderah Star was also enveloped by the squall and the skipper lost sight of Silver Bin both visually and on radar as a result of rain clutter. The crew on Silver Bin's bridge were still unaware of the northbound trawler in the channel despite their visual and radar watch. Neither vessel altered speed or course. Silver Bin and Chinderah Star collided at 1209, 0.5 miles west of the Chapman Island light, the fishing trawler's starboard side making contact with the ship's starboard shoulder under the flare of the bow. The fishing vessel sustained significant damage to the wheelhouse, the starboard trawl boom and along its starboard side. There were no injuries as a result of the collision. The decision was made to return to Cairns to repair the collision damage.</p>
------------	--------------------	-------------------	--------------	---

16/06/2001	Stainer Island	<i>Kota Wangi</i>	<p>AusSAR Telefax Message: Close quarter incident. The following report from reefcentre is passed for your information. The pilot requested that reef centre is passed for your information. The pilot requested that reefcentre note the incident as the Kota Wangi had to take action to avoid a collision. Operator remarks: This report to add request by pilot to report a close quarter situation with a fishing vessel at Stainer Island. Vessel did not anser on VHF and no ID possible. Sitation dangerous. Also second fishing vessel in a no fishing zone in the same area.</p>	
26/06/2002	Piper Reef, GBR	<i>Doric Chariot</i>	Bulk Carrier	<p>On 26 July 2002 Doric Chariot sailed from Hay Point, Queensland on a voyage to India via the Great Barrier Reef inner passage and Singapore. A pilot was engaged for the Reef passage. The voyage initially proceeded normally and, as the ship approached Eel Reef light, the pilot requested a slight course alteration to allow more sea room for passing a south bound ship. After passing this ship the pilot requested another course adjustment to bring the ship back toward the planned track. He then spoke with the OOW about the time he should next be called and sat on the daybed at the side of the wheelhouse to take a rest before the ship arrived at the next reporting position near Piper Reef. The ship continued under the direction of the OOW until the pilot was next called. When the pilot stood up and looked at the ship's position with reference to the two beacons ahead at Piper and Inset Reefs, he immediately realised that the ship was to the west of the two-way route and approaching the southern end of Piper Reef. He ordered 'hard a starboard' and, shortly afterwar'd 'full astern' but it was too late. The ship started to swing to starboard but, within about one and a half minutes, the ship ran aground to the south of Piper Reef light.</p>

5/01/2004	3nm SSE of Creech Reef in LADS Passage	Coastal waters (within 12 miles)	<i>Bunga Orkid Tiga</i>	Bulk Carrier	<p>Bunga Orkid Tiga had discharged a cargo of grain in Tanjon Priok, Jakarta Indonesia, and was enroute in ballast to Brisbane where it was going to load approximately 30,000 tonnes of blended coal for Hawaii. At 1012 on Sunday 4 January 2004, a Great Barrier Reef pilot boarded the ship at the pilot boarding ground at Booby Island (to the west of the Torres Strait). Throughout the 4th, the voyage proceeded uneventfully, following the passage plan through the Inner Route. The weather during the day was very good, with excellent visibility and light winds. Bunga Orkid Tiga entered Lads Passage just after midnight on 5 January. The pilot left the bridge to rest at about 0215. He provided a thorough hand-over to the Officer of the Watch (OOW) concerning tidal set, an alteration of course off Creech Reef and left clear instructions for calling him if, and when, required. Stella VII sailed from Port Douglas on the evening of 3 January. On sailing, the crew switched on the lights for a power driven vessel underway and also the lights (red over white) of a fishing vessel engaged in fishing, other than trawling. Whilst on board, the seven man crew maintained two-hour sea watches. Only one of the crew members, the skipper, had qualifications for standing a navigational watch. At 0327, Stella VII was sighted visually by the OOW and lookout on Bunga Orkid Tiga and was estimated to be one point (11¼°) on the port bow. At about the same time, the fisherman on watch on Stella VII detected the bulk carrier on radar just to starboard of the heading line. Stella VII was seen to cross from the port bow to fine on the starboard bow, thereafter both vessels were on nearly reciprocal courses. The relative bearing of Stella VII remained steady at about two degrees over the next 30 minutes or so during which time the OOW on the bulk carrier made two small course adjustments to port and, at about 0354, a small alteration to starboard. On board Stella VII, four or five small adjustments to starboard were made, from the time the fisherman on watch first saw the ship to just before impact. At about 0402 the two vessels collided. At the moment of the collision, Bunga Orkid Tiga was under full port rudder and Stella VII was altering substantially to starboard. Nobody was injured as a result of the collision but Stella VII sustained significant damage. Following the collision Bunga Orkid Tiga stood by Stella VII until the fishing vessel's crew had established that it could return safely to port.</p>
-----------	--	----------------------------------	-------------------------	--------------	---

22/08/2005	Near Pipon reporting position		<i>Bunga Teratai</i>	Container ship	Bunga Teratai southbound, ARF pilot on board. HMAS Townsville northbound. Townsville made a sharp port turn across in front of Bunga when 1.5 miles ahead. No radio communication.
23/05/2006	Great Barrier Reef Inner Route South East of Hannibal Islands	Coastal waters (within 12 miles)	<i>Nexoe Maersk</i>	Container ship	Nexoe Maersk's bridge watch consisted of the first mate, a helmsman and a lookout. The coastal pilot on board the northbound Nexoe Maersk was resting at the time in the pilot's cabin below. If conditions permit, it is usual for coastal pilots to rest in the area where the incident occurred. The ship's speed was about 22 knots in good visibility and other weather conditions. The deck hand of the southbound Discovery III was alone in the wheelhouse and the fishing vessel's speed was about 7.5 knots. The information from statements and records obtained from persons involved is consistent with the following conclusions. The collision was caused by the Nexoe Maersk altering course to starboard and the Discovery III altering course to port in a head on situation. The Discovery III suffered minor damage on the starboard side. The Nexoe Maersk attempted to attract the attention of the fishing vessel by using the daylight signalling lamp and the radio-telephone. The deck hand on the fishing vessel may not have heard or understood the calls of Nexoe Maersk due to language difficulties. His view may have been restricted by a deck crane on the fishing vessel's foredeck. The steering console on the fishing vessel is on the starboard side of the wheelhouse. Not allowing for parallax when in this position when lining up Nexoe Maersk could have caused the deck hand to visualise Nexoe Maersk to be on his starboard side instead of dead ahead. The Nexoe Maersk contacted the Discovery III after the collision to confirm the fishing vessel and crew were safe. Both vessels continued on their respective voyages. The Australian Maritime Safety Authority and Marine Safety Queensland conducted interviews and obtained information used in this report.

