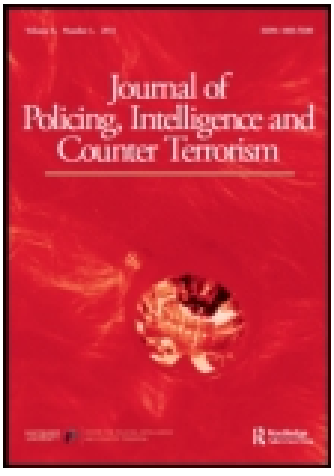

Journal of Policing, Intelligence and Counter Terrorism
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/rpic20

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Published online: 03 Aug 2011.

To cite this article: Peter Bell & Julianne Webster (2010) Teaching and Learning in Maritime Security: A Literature Review, Journal of Policing, Intelligence and Counter Terrorism, 5:2, 23-39, DOI: 10.1080/18335300.2010.9686947

To link to this article: http://dx.doi.org/10.1080/18335300.2010.9686947

Teaching and Learning in Maritime Security: A Literature Review

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ABSTRACT

With the rise in attacks and attempted attacks on marine-based critical infrastructure, maritime security is an issue of increasing importance worldwide. However, there are three significant shortfalls in the efforts to overcome potential threats to maritime security: the need for greater understanding of whether current standards of best practice are truly successful in combating and reducing the risks of terrorism and other security issues, the absence of a collective maritime security best practice framework and the need for improved access to maritime security-specific graduate and postgraduate (long) courses. This paper presents an overview of existing international, regional national standards of best practice and shows that literature concerning the measurement and/or success of standards is virtually non-existent. In addition, despite the importance of maritime workers to ensuring the safety of marine-based critical infrastructure, a similar review of available Australian education courses shows a considerable lack of availability of maritime security-specific courses other than short courses that cover only basic security matters. We argue that the absence of an Australian best practice framework informed by evaluation of current policy responses – particularly in the post 9/11 environment – leaves Australia vulnerable to maritime security threats. As this paper shows, the reality is that despite the security measures put in place post 9/11, there is still considerable work to be done to ensure Australia is equipped to overcome the threats posed to maritime security.

Introduction

In the post 9/11 era, security has been placed at the forefront of concern for governments across the globe. Given that the 9/11 terrorist attack on the World Trade Centre in New York was carried out by the use of four hijacked planes it is understandable that a large amount of government resources in Australia and across the world have been funnelled towards tightening airport security (Muraviev, 2007, p. 80; Johnson, 2008). However, an increase in attacks and attempted attacks on marine vessels and

oil terminals has turned national and international attention towards maritime security measures (Lehr et al., 2009, p. xxii; Raymond & Morrien, 2009, p. 3).

International, regional and national measures have been adopted in order to improve maritime security. Yet these measures have been widely accepted and implemented without being tested (Lehr, 2009, p. xxii). In addition to this lack of scrutiny, there is also a need to improve educational opportunities for maritime workers in order to facilitate their compliance with standards, as it is crucial that persons employed in this industry are equipped with the appropriate knowledge and skills in order to facilitate consistent implementation of standards which are capable of contributing to enhanced maritime security in Australia. In delivering these occupational standards across this industry it is particularly problematic that there are presently only a few short courses available, and that educational opportunities at graduate and/or postgraduate level are limited.

As such, this review of the maritime security literature provides an overview of current international, regional and national conventions, guidelines and regulations; and Australian-based maritime security educational opportunities. The identification and review of the available literature seeks to highlight information and best practice gaps and discusses the need for enhanced opportunities for teaching and learning in maritime security in order to strengthen Australia's security response in this area

Maritime security: Current standards

Over the previous ten years, a number of maritime standards have been published at an international, regional and national level. These include international conventions, regional guidelines and national legislation and regulations.

INTERNATIONAL STANDARDS AND CONVENTIONS

The International Maritime Organisation (IMO), established in 1959, is the United Nations (UN) body responsible for international maritime safety and environmental protection (Trelawny, n.d.). The IMO's International Convention for the Safety of Life at Sea (SOLAS Convention) was adopted on 1 November 1974 and entered into international force on 25 May 1980, although it has since been amended (IMO, 2002a). The SOLAS Convention outlines standards for ensuring maritime security and safety, including specific provisions pertaining to special measures to enhance maritime safety (Chapter XI-1) and maritime security (Chapter XI-2). Although relevant to the professional group these security measures are largely administrative and do not relate to training or certification requirements for maritime security officers.

The IMO's *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers* (STCW Convention) was adopted in 1978 and later updated in 2006. The 2006 amendments entered into international force on 1 January 2008 (IMO, 2002b). The STCW Convention outlines in detail the minimum

training requirements for seafarers as well as the minimum knowledge required for the issue of certificates of proficiency in a number of areas. Australia ratified the STCW Convention in 1983 and the Australian Marine Safety Authority (AMSA) is responsible for ensuring Australian maritime qualifications meet STCW standards (AMSA, 2006). In order to meet the requirements of the STCW Convention, maritime workers must complete short courses that generally last between 2-5 days – there is no requirement to obtain graduate or postgraduate qualifications (AMSA, 2006).

In 1988, the UN adopted the *Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation* (SUA Convention) and the Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf (SUA Protocol). These treaties entered into international force in 1992, and within Australia on 20 May 1993 (Cordner, 2008, p. 172). The purpose of the SUA treaties is to ensure that those persons who commit unlawful acts against ships are taken into custody, extradited and/or prosecuted in accordance with the law. The SUA Protocol extends the protection of the SUA Convention to include fixed platforms such as offshore oilrigs, which were not covered in the original Convention.

The SUA Convention and Protocol specify appropriate legal ramifications for those who breach maritime security, yet do not contain any preventative provisions. Bennett (2008, p. 162) argues: "This underlines the significance of the 2002 Amendments to SOLAS and the ISPS Code in particular. They impose affirmative obligations not just upon governments, but also on many of the actors in the maritime transportation system."

Since the SUA treaties came into force, the International Ship and Port Facility Security (ISPS) Code has been the most significant international standard for maritime security. The ISPS Code is contained within SOLAS and was developed by the Maritime Security Working Group of the IMO Maritime Safety Committee. It was adopted by the Conference of Contracting Governments to SOLAS on 12 December 2002 in response to the 9/11 attacks (Grewal, 2008, p. 327). Part A of the ISPS Code details minimum security requirements for governments, port officials and shipping companies while Part B contains guidelines on how to comply with Part A. According to the IMO, the ISPS Code "takes the approach that ensuring the security of ships and port facilities is basically a risk management activity and that to determine what security measures are appropriate, an assessment of the risks must be made in each particular case" (IMO, 2002e).

More specifically, the ISPS Code requires that ships and port facilities adhere to a number of minimum functional security requirements including security plans, security officers and monitoring of access and activities (IMO, 2002e).

In addition to the abovementioned requirements, the ISPS Code asserts that contracting governments must implement a graduated three level security warning system – normal, heightened and exceptional – referred to as MARSEC Levels. As the perceived threat increases, "the only logical counteraction is to reduce vulnerability" of the ship and/or port facility (IMO, 2002e). In this respect, the universal security levels provide a uniform benchmark for determining security threats across the globe, which enables either vessels or ports to respond in kind.

REGIONAL STANDARDS

Banlaoi (2008, p. 253) asserts that "Southeast Asia is fast becoming the world's maritime terrorism hotspot". This threat is exaggerated because Southeast Asian countries make up 15.8 percent of the world's total coastline length, coupled with the fact that most of these countries do not have the funds to maintain sufficient maritime security forces (Banlaoi, 2008, pp. 258-259). Despite the challenges they face, Southeast Asian countries, and indeed countries within the wider Southeast Pacific region, have reached a number of agreements on standards for maritime security.

The Association of South East Asian Nations (ASEAN) was established in 1967 and includes Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam as member states. ASEAN has gone some way in promoting political cooperation in the fight against security threats including terrorism and piracy in the Southeast Asian region by developing a number of general principals and subsequent collaborative arrangements, including the ASEAN Declaration on Transnational Crimes ('ASEAN Declaration') and the ASEAN Plan of Action to Combat Transnational Crime 2001 ('ASEAN Plan of Action') (ASEAN, 2005a).

The ASEAN Declaration provides for cooperation between member states on issues of transnational crime, which includes drug/people trafficking and terrorism (ASEAN, 2005a). It requires member states to cooperate by sharing security-related information, working more closely with "relevant agencies and organization in Dialogue Partner countries" and to coordinate with other ASEAN bodies, to name a few (ASEAN, 2005a). However, apart from this, the ASEAN Declaration doesn't contain specific requirements to improve maritime security measures. Alternatively, the ASEAN Plan of Action includes more specific provisions to improve maritime security including the requirement that certain offences (e.g. drug trafficking and money laundering) be criminalised in member states. The Plan emphasises the importance for regional training programs and opportunities for educational and professional development in order to enhance agencies existing capabilities in areas of intelligence, surveillance, investigation, detection, and in monitoring and reporting activities. (ASEAN, 2005b).

In addition to the ASEAN agreements, Indonesia, Malaysia and the Philippines signed a Trilateral Agreement ('the Agreement on Information Exchange and Establishment of Communication Procedures') in 2002, which aimed at enhancing "regional cooperation and promoting the interoperability among participating countries in curbing transnational crimes and other illegal activities occurring within their territories" (Banlaoi, 2008, p. 264). Other Asian countries have also entered into bilateral agreements in order to promote cooperation on issues of maritime and border security (Banlaoi, 2008, p. 265).

Apart from ASEAN, the Asia-Pacific Economic Cooperation (APEC) body established in 1989 also represents the collaboration of 21 Asia-Pacific 'member economies' pursuing a safer trade environment (APEC, 2009a). In addition to enhancing economic growth and encouraging trade between member economies,

APEC aims to develop efficient processes which facilitate the safe transportation of people, goods and services throughout the region through a range of cooperative economic and technical policies (APEC, 2009a). On 21 October 2001, in reaction to the 9/11 attacks, APEC released their *Statement on Counter-Terrorism* condemning the actions of terrorists, calling for improved cooperation and funding to increase security and reduce the threat of future attacks (APEC, 2009b). Later in May 2003, APEC established its Counter-Terrorism Task Force in order to assist in the identification of counter-terrorism needs as well as encouraging cooperation and collaboration on counter-terrorism efforts (APEC, 2009c).

Since its establishment, the Counter-Terrorism Task Force has facilitated the development of a range of Counter-Terrorism Action Plans (CTAPs) for various member economies including Australia (APEC, 2009d). According to APEC (2009d), "Each CTAP provides a concise checklist of counter-terrorism measures undertaken by an APEC member economy to achieve the key elements of the STAR [Secure Trade in the APEC Region] initiative". The Australian CTAP includes measures to protect ships engaged in international voyages. Amongst other things, the measures include the implementation of ship and port security plans and cooperation between member economies to enhance training in the area of ship and port security in the region (APEC, 2009d). While these measures are specific, APEC has not yet conducted research regarding their success in counteracting terrorism and other maritime security threats.

While Asia-Pacific countries have reached a number of agreements on counter-terrorism measures, Banlaoi (2008, p. 265) identifies Operation MALSINDO, a collaboration between Malaysia, Singapore and Indonesia to constantly patrol the Strait of Malacca, as the 'most encouraging' of the Southeast Asian initiatives. While no research has been carried out on the specific impact of this initiative, the number of piracy attacks recorded in the Malacca Strait has reduced since its implementation in 2004 (Banlaoi, 2008, p. 265; ICC Commercial Crime Services, n.d.).

NATIONAL STANDARDS

In the late 1990s, the Standards Australia and Standards New Zealand Technical Committee OB-007 developed the Australian and New Zealand Standard on risk management (AS/NZS 4360:1999). The original standard has since been superseded by an updated standard (AS/NZS 4360:2004), which provides the basis for risk management within the Australian and New Zealand security industries. This standard applies to the security industry more generally and the information contained within is easily transferable to a maritime setting. The AS/NZS 4360:2004 contains detailed guidelines on how to implement successful risk management strategies and asserts the need to establish the context, and identify, analyse, evaluate and treat the risk (Broadleaf Capital International Pty Ltd, 2007, p. 1).

While the AS/NZS 4360:2004 contains important guidelines on risk management, they are not legally enforceable. However, risk management standards *are* enforced

in Australia via the *Maritime Transport and Offshore Facilities Security Act 2003* ('the Maritime Act') (previously the *Maritime Transport Security Act 2003*).

The Maritime Act implements the ISPS Code in Australia and its stated purpose is "to safeguard against unlawful interference with maritime transport" (Division 2(3(1))). The newest amendments to the Maritime Act came into force in Australia on 9 February 2009 and, amongst other requirements, oblige shipping security officers to meet international training standards before being eligible to work in the industry (DoITRDLG, 2009a). While the Maritime Act implements the ISPS Code in Australia, the Office of Transport Security (OTS) is the government body responsible for overseeing the implementation of the ISPS Code.

One requirement of the ISPS Code which has been incorporated into the Maritime Act is that all individuals who work within a maritime security zone unmonitored or unescorted – such as port facility and service workers, stevedores, transport operators, seafarers on Australian ships and workers on offshore facilities – must hold and display a Maritime Security Identification Card (MSIC), issued by various commercial bodies throughout the country (DoITRDLG, 2008b; 2009b).

SUCCESS OF INTERNATIONAL, REGIONAL AND NATIONAL STANDARDS

There are multiple standards for marine-based critical infrastructure protection at an international, regional and national level. However, there has been little research carried out on the success of these standards in actually combating threats to marine-based critical infrastructure (Lehr, 2009, p. xxii). This lack of scrutiny is evident in both commercial and academic contexts and consequently in the absence of empirical research about the appropriateness and effectiveness of the standards it is difficult to conceptualise a best practice in this context. The absence of agreement across standards at the international, regional and national levels also impacts on the teaching and learning framework which supports industry compliance.

Hansen (2009, p. 74) argues that international standards for maritime security such as the ISPS have been too narrowly focused on combating terrorism, at the expense of recognising more complex maritime security threats. This limited focus is reflected in on by Bateman (2005, p. 16), who states that: "The aim of the new maritime security measures is to reduce the risks of terrorist attack on passengers, crews, ports, port personnel, ships and cargoes, and to prevent the industry being used for terrorist purposes".

Although Klein (2006) offered a critical analysis of international and national maritime security measures from a legal perspective, discussing issues such as Australia's Maritime Identification System, which was found to be noncompliant with international standards regarding *mare liberum*, or 'the freedom of the seas', he does not discuss whether maritime security measures have been successful from an operational viewpoint.

While there is little doubt that terrorism remains a threat to maritime security, it is one threat amongst a range of others, including piracy, insurgency and organised

crime (Hansen, 2009, pp. 75-77). Hansen (2009, p. 74) argues that in order to develop holistic maritime security measures, corporate organisations and government bodies must focus on the various types of threats, as well as considering the details of each. However, Hansen is alone in questioning the impact and/or suitability of the international ISPS Code.

Other criticisms of international standards of best practice for maritime security have focused on the costs to the corporate sector of implementing such measures, as well as possible delays for seaborne trade. For instance, Bateman (2005, p. 16) argued that the large number of maritime security measures currently in place in Australia and internationally are overly cumbersome and hinder the flow of maritime trade. Bateman (2005, p. 16) also suggested that the increased costs to corporate and government bodies was too onerous, particularly for developing countries. However, this argument does not take into account the potential economic impact that breach of maritime security might have on national and international trade and commerce. The general lack of empirical research on the effectiveness of these maritime security measures means that an accurate assessment of current maritime security measures cannot be undertaken. It is clear however that in order to address this shortfall in the literature that further research and evaluation must be carried out – especially by academe to ensure the independence of the findings.

Marine-based critical infrastructure protection: Educational opportunities within Australia

Whilst the evaluation and review of methods utilised to protect marine-based critical infrastructure is vital, it is also imperative that maritime workers are equipped with the appropriate knowledge and skills to overcome potential security threats. At APEC's (2008, p. 4) 2008 'Security and Vulnerabilities of the Global Supply Chain' conference, it was noted that "The human element is the weakest link in the supply chain yet security personnel is provided by the lower echelon of society". APEC members recognised that there is a need to "shape mindsets and develop a security culture" in order to create "empowered, trained people [who] are motivated and effective" (APEC, 2008, p. 4).

Currently, there are a number of AMSA/STCW compliant and non-compliant short courses available in the area of maritime security, yet there is a lack of education at a graduate and/or postgraduate level.

AMSA/STCW APPROVED MARITIME SECURITY COURSES/COURSE PROVIDERS

AMSA provides an overview of qualifications available to maritime workers in Australia. These courses include both STCW and non-STCW approved courses, all of which are listed as 'short courses'. Table 1 lists STCW approved courses.

Type of Course Offered	Relevant Institutions
Certificate of Safety Training (full course)	– Australian Maritime College – Challenger TAFE (Fremantle) – Seafood and Maritime Industries Training (Darwin) – Sunshine Coast TAFE (Caloundra) – Australasian Maritime Institute (Henderson) – TAFE NSW Hunter Institute – TAFE NSW Northern Sydney Institute – TAFE NSW Sydney Institute – Tropical North Queensland TAFE (Cairns)
Personal Survival Techniques	– Australia Maritime College – Challenger TAFE (Fremantle) – Seafood and Maritime Industries Training (Darwin) – Sunshine Coast TAFE (Caloundra) – Australasian Maritime Institute (Henderson) – TAFE NSW Hunter Institute – TAFE NSW Northern Sydney Institute – TAFE NSW Sydney Institute – Tropical North Queensland TAFE (Cairns)n maritime
Advanced Fire Fighting	– Australia Maritime College – Challenger TAFE (Fremantle) – TAFE NSW Hunter Institute
Proficiency in fast rescue boats	– Australian Maritime College – ERGT Australia – IFAP
Crisis management and human behaviour	– Australian Maritime College – Tropical North Queensland TAFE (Cairns)
Proficiency in Survival Craft and Rescue Boats other than Fast Rescue Boats	– Australian Maritime – Challenger TAFE (Fremantle) – TAFE NSW Hunter Institute – Tropical North Queensland TAFE (Cairns)
Elementary First Aid	– Australian Maritime College – Challenger TAFE (Fremantle) – Seafood & Maritime Industries Training (Darwin) – Sunshine Coast TAFE (Caloundra) – Australasian Maritime Institute (Henderson) – TAFE NSW Hunter Institute – TAFE NSW Northern Sydney Institute – TAFE NSW Sydney Institute – Tropical North Queensland TAFE (Cairns)
Ship Security Officers	– Australian Maritime College – Challenger TAFE (Fremantle) – Australasian Maritime Institute (Henderson) – Ferriby Marine (Australia) – Certified Business Solutions

Type of Course Offered	Relevant Institutions
Fire Prevention and Fire Fighting (Basic)	– Australian Maritime College – Challenger TAFE (Fremantle) – ERGT Australia – Red Alert (Darwin) – Seafood & Maritime Industries Training (Darwin) – Sunshine Coast TAFE (Caloundra) – Australasian Maritime Institute (Henderson) – TAFE NSW Hunter Institute – TAFE NSW Northern Sydney Institute – TAFE NSW Sydney Institute – Tropical North Queensland TAFE (Cairns)
Tanker Familiarisation	– Australian Maritime College – Briar Maritime Pty Ltd – Challenger TAFE (Fremantle) – Seafood & Maritime Industries Training (Darwin)
GMDSS	– Australian Maritime College – Challenger TAFE (Fremantle) – Defence Force Signals, Cerberus RAN – Seafood & Maritime Industries Training (Darwin) – Sunshine Coast Institute of TAFE (Mooloolaba) – TAFE NSW Sydney Institute – Tropical North Queensland TAFE (Cairns) – SEAMEC (Lakes Entrance Victoria)
Tanker Safety – Chemical	– Australian Maritime College – Briar Maritime Pty Ltd – Challenger TAFE (Fremantle) – TAFE NSW Hunter Institute – Australian Maritime College – Challenger TAFE (Fremantle) – TAFE NSW Hunter Institute
Medical Care for Ships Masters	– Australian Maritime College – Challenger TAFE (Fremantle) – TAFE NSW Hunter Institute (First Aid Unit)
Tanker Safety - Liquefied Gas	– Australian Maritime College – Challenger TAFE (Fremantle) – TAFE NSW Hunter institute
Medical First Aid at Sea	– Australian Maritime College – Challenger TAFE (Fremantle) – TAFE NSW Hunter Institute
Tanker Safety – Oil	– Australian Maritime College – Briar Maritime Pty Ltd – Challenger TAFE (Fremantle) – TAFE NSW Hunter Institute

Type of Course Offered	Relevant Institutions
Personal Safety & Social Responsibilities	– Australian Maritime College – Challenger TAFE (Fremantle) – Seafood & Maritime Industries Training (Darwin) – Sunshine Coast TAFE (Caloundra) – Australasian Maritime Institute (Henderson) – TAFE NSW Hunter Institute – TAFE NSW Northern Sydney Institute – TAFE NSW Sydney Institute – Tropical North Queensland TAFE (Cairns)

Table 1 – AMSA list of STCW approved maritime courses (AMSA, 2006)

All of these courses are described as 'short courses', lasting between 2-5 days (Wavelink Maritime International, n.d.) and offering the graduand a certificate or diploma qualification. None of the courses supported by AMSA offer a graduate or postgraduate level qualification. The majority of courses available are offered by TAFE institutions or associated colleges. Remaining courses are offered within the industry itself from various companies. The current AMSA (STCW approved) providers for maritime qualifications in Australia are included in Table 2.

Location	Provider
Western Australia	– Australasian Maritime Institute Pty Ltd – Challenger TAFE – ERGT Australia – Industrial Foundation for Accident Prevention
Tasmania	– Australian Maritime College – Briar Maritime Services Pty Ltd – Haigh Maritime Services – Pivot Maritime International Pty Ltd
Queensland	– Certified Business Solutions Pty Ltd – Ferriby Group of Companies Pty Ltd – Sunshine Coast Institute of TAFE – Tropical North Queensland Institute of TAFE
New South Wales	– TAFE NSW – Hunter Institute – TAFE NSW – Northern Sydney Institute – TAFE NSW – Sydney Institute
Victoria	– HMAS Cerberus – Marine Consultancy Group Pty Ltd – SEAMEC
Northern Territory	– Red Alert – Seafood & Maritime Industries Training Ltd

Table 2 – AMSA approved marine qualification providers (AMSA, 2009)

As Table 2 illustrates, the approved institutions are mainly industry-based with the exception of some TAFE institutions.

Apart from the abovementioned AMSA courses, the Australian Department of Infrastructure, Transport, Regional Development and Local Government (DoITRDLG) (2008a) also lists a number of IMO 'model courses' that were published in 2003 and designed to implement the STCW (Trelawny, n.d.; IMO, 2002c). These courses are available to Australian maritime workers through the AMSA and other maritime workers internationally via the IMO. The courses include:

- ISPS-Company Security Officer, 2003 edition;
- ISPS-Port Facility Security Officer, 2003 edition; and
- ISPS-Ship Security Officer, 2003 edition (Trelawny, n.d.; IMO, 2002c).

In addition to these courses, the Australasian Maritime Institute (AMI), established in 1992, also offers AMSA/IMO-approved courses including:

- Ship security officer;
- International Shipping Port Security ISPS;
- Control Persons using batons CPPSEC3014A (WA); and
- Restrain persons using handcuffs CPPSEC3015A (WA).

The courses last for three days and cover a range of issues including maritime security policies, ship security assessment, ship security plans, threat identification, security administration, and crime scene containment and investigations (AMI, n.d.).

In addition to the abovementioned STCW compliant courses/providers, a number of non-STCW compliant industry-based courses are available.

NON-AMSA/STCW APPROVED MARITIME SECURITY COURSES/ COURSE PROVIDERS

University level courses on maritime security are extremely uncommon in Australia, although the University of Wollongong and Macquarie University are two exceptions to this rule.

The University of Wollongong (2010a) contains the Australian National Centre for Ocean Resources and Security, which is part of the Law Faculty. The Faculty offers three courses specifically targeted at maritime issues, including:

- Master of Maritime Studies (1year full-time/48 credit points) (University of Wollongong, 2010b);
- Master of Maritime Policy (1year full-time) (University of Wollongong, 2010c); and
- Master of Maritime Studies – Research (1.5 years full time/72 credit points) (University of Wollongong, 2010d).

The Masters of Maritime Studies and Masters of Maritime Policy programmes adopt a structured approach to study, including a range of prescribed and elective subjects. These are listed in Table 3 below. While the Master of Maritime Studies

contains a prescribed independent research element (a research paper of 10,000 words), the Master of Maritime Policy only offers research subjects as electives (University of Wollongong, 2010b, 2010c).

Master of Maritime Studies		Master of Maritime Policy	
Prescribed	Elective	Prescribed	Elective
– Law of the sea – Research project in maritime studies	– Strategy and sea power – Maritime regulation and enforcement – Legal regulation of shipping – Comparative oceans policy – Maritime security law and policy – Contemporary maritime issues in the Asia-Pacific region – International maritime environmental law – Special topic in maritime studies – Minor thesis in maritime studies – Integrated marine and coastal management – International fisheries law – Fisheries management	– Law of the sea – Comparative oceans policy	– Strategy and sea power – Maritime regulation and enforcement – Legal regulation of shipping – Maritime security law and policy – Contemporary maritime issues in the Asia-Pacific region – International maritime environmental law – Special topic in maritime studies – Research project in maritime studies – Minor thesis in maritime studies – Integrated marine and coastal management – International fisheries law – Fisheries management

Table 3 - University of Wollongong, Master of Maritime Policy/Master of Maritime Studies, prescribed and elective subjects (University of Wollongong, 2010b; 2010c)

In contrast with the structured approach taken by the abovementioned two Masters courses, the University of Wollongong's Master of Maritime Studies by Research provides a more flexible programme. The programme consists of a minor research project in maritime studies (8 credit points) followed by a major thesis in maritime studies (48 credit points) (University of Wollongong, 2010d). Students are also required to complete 24 credit points worth of coursework (as per Table 3) before the thesis is completed.

In addition to the University of Wollongong's courses, Macquarie University's Centre for Policing, Intelligence and Counter Terrorism (PICT) (situated within the Faculty of Arts) previously offered training in maritime security as part of their

'Postgraduate Certificate in Transport Security' (Macquarie University, 2009a). While this course has been suspended for 2010 (Macquarie University, 2009b), the university's online unit information guide advises that it will be offered again in the future (Macquarie University, 2009c).

In addition to the University of Wollongong and Macquarie University, the Edith Cowan University in Western Australia offers 'security' as a discipline area within the School of Computer and Security Science (Faculty of Computing, Health and Science) (Edith Cowan University, 2009a). Within this discipline area the university offers a range of undergraduate and postgraduate courses, although none focus specifically on maritime security (Edith Cowan University, 2009a). One unit (SCY1115) is offered in 'Transportation Security', however this covers topics related to both maritime and aviation security rather than focusing strictly upon the former (Edith Cowan University, 2009b). Apart from this unit, there is a lack of opportunities to focus strictly upon maritime security.

While the abovementioned universities are the only ones to offer complete courses in maritime security, a number of Australian industry-based groups, such as 'Lockforce Consultancy' (2009) and 'Corporate Protection Australia' (2008), offer relevant short courses. These companies both offer courses that focus upon maritime security and training in ISPS principles (Lockforce Consultancy, 2009; Corporate Protection Australia, 2008). A number of other companies offer comparable courses, however they are all extremely similar in nature and duration, covering basic knowledge areas and rarely lasting more than three days.

Conclusion

Since the 9/11 attacks, security has become an enormous concern for governments across the globe. In the wake of 9/11 a number of security measures were put into place to secure the aviation and maritime transport sectors. Within the maritime security field, the most significant international standards of best practice include the:

- SOLAS Convention and the associated ISPS Code;
- IMO's STCW Convention; and
- UN's SUA Convention and associated SUA Protocol.

At a regional level, bodies such as ASEAN and APEC have worked to encourage cooperation and collaboration in the field of maritime security. Significant publications from these bodies include the ASEAN Declaration, ASEAN Plan of Action and APEC's CTAPs. Operation MALSINDO is recognised by Banlaoi (2008, p. 265) as the 'most encouraging' of the South-East Asian initiatives, reducing the number of piracy attacks recorded in the area since its inception (ICC Commercial Crime Services, n.d.).

While regional efforts have been encouraging, national efforts to buttress maritime security have also been implemented. Since 9/11, the Australian Government has updated the AS/NZS 4360:2004 and introduced the Maritime Act (which implements

the ISPS Code). Oversight bodies such as the OTS and AMSA have also been established to ensure that maritime companies and port authorities comply with the new security measures.

While a range of international, regional and national standards have been developed and implemented to facilitate maritime security the success of these standards remains untested and unknown. A review of current literature indicates a lack of research in this area and especially within the academic context. As Lehr (2009, p. xxii) pointed out, many standards have simply been implemented in the absence of any testing at all which means defining best practice is problematic.

In addition to the need for greater scrutiny of standards in maritime security, there is an associated need to improve educational opportunities within the field. The Australian Government is investing in the improved implementation of standards in maritime security in Australia and therefore it is imperative that maritime workers are equipped with the appropriate knowledge and skills to facilitate compliance with these standards in order to strengthen Australia's maritime security sector.

Currently, there are a range of STCW and non-STCW compliant short courses offered in Australia. However, these commonly last for less than a week and cover only basic maritime security issues without equipping students with extensive knowledge in the field. 'Long' courses – masters and postgraduate qualifications – are presently available only at University of Wollongong. The Edith Cowan University offers security as a discipline area with some coverage of maritime security issues, however there is no specific focus upon maritime security alone. In this light, there is a need for more suitable and intensive maritime security training for Australian maritime security workers. The current availability of courses falls a long way short of 'shaping the mindsets' and 'developing a security culture' as APEC envisaged.

In examining the available literature on maritime security in particular the current disparate standards derived from international, regional and national conventions, guidelines and legislative provisions; the absence of rigorous empirical research regarding their appropriateness and the corresponding maritime security educational opportunities in Australia this paper highlights three critical issues impacting the security of marine-based critical infrastructure. Firstly it is crucial for comprehensive measurement of the impact and effectiveness of the implementation and enforcement of maritime security legislation; the development of best practice standards based on these evaluations and the need for greater educational opportunities for Australian maritime workers. In highlighting these issues this paper identifies opportunities for academic-based research focussing on these three critical areas in an effort to counter the threat of increasing risks to maritime security.

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