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CHAPTER 3

Enhancing Maritime Security in Mexico: Privatization, Militarization, or a combination of both?

Adriana ÁVILA-ZÚÑIGA-NORDFJELD¹

PhDc Maritime Administration: Law, Policy and Security
World Maritime University, Sweden

Dimitrios DALAKLIS²

Assistant Professor, (Safety & Security)
World Maritime University, Sweden

Résumé : La présente analyse examine trois options / solutions différentes que le Mexique a mis en œuvre dans ses ports et ses installations offshore afin d'améliorer le cadre de sécurité maritime du pays et d'assurer le respect du Code international de la sécurité des navires et des installations portuaires (ISPS), privatisation, militarisation et enfin leur combinaison. Les conclusions d'un travail de recherche en cours incluent des incohérences dans les données des dossiers d'incidents de sécurité nécessaires ou même leur absence totale. Les compétences et la formation inadéquates des agents de la sûreté de l'installation portuaire (PFSO) se distinguent également. Une autre question importante était l'utilisation de procédures différentes parmi les ports faisant l'objet d'une enquête pour traiter exactement les mêmes problèmes de sécurité. La conclusion claire est que, après douze ans de mise en œuvre du Code ISPS, le Mexique, qui dirige la Commission portuaire interaméricaine de l'Organisation des États américains (OEA), ne respecte pas les exigences du Code ISPS à un niveau acceptable. L'absence d'une politique nationale de sécurité maritime a entraîné une culture appauvrie de la sécurité maritime, malgré les graves problèmes de sécurité auxquels ce pays est confronté. Il est également vrai que le pays discute actuellement de la réorganisation de son appareil de sécurité maritime, avec des résultats positifs. Des outils et recommandations pour améliorer le cadre opérationnel de la sécurité maritime mexicaine sont donc envisagés, ainsi que les domaines potentiels de recherches futures.

1) p1501@wmu.se

2) dd@wmu.se



ADRIANA ÁVILA-ZÚÑIGA-NORDFJELD AND DIMITROS DALAKLIS

Abstract: *The current analysis examines three different solutions that Mexico implemented within its ports and offshore installations in order to improve the country's maritime security framework, as well as ensuring compliance with the International Ship and Port Facility Security Code (ISPS Code): privatisation, militarisation and, finally, their combination. The findings of an on-going research effort include inconsistencies within the data of the necessary security incident records, or even their total absence. Inadequate competence and training among the Port Facility Security Officers (PFSO) also stands out. Another important issue was the use of different procedures among the ports under investigation for dealing with exactly the same security incidents. The clear conclusion is that after twelve years of the ISPS Code implementation, Mexico, which is leading the Interamerican Port's Commission of the Organisation of American States (OAS), does not comply with the requirements of the ISPS Code at an acceptable level; the lack of a national maritime security policy has resulted in a poor (maritime) security culture, despite the severe (security) challenges that this nation is facing. It is also true that the country under discussion is currently reorganising its maritime security apparatus, with some positive results; tools and recommendations for enhancing the Mexican maritime security operating framework are therefore provided, along with areas of potential future research.*

Introduction

After the tragic events of September 11th, 2001, the International Maritime Organisation (IMO) developed a set of maritime security regulations for managing the risk of maritime terrorism, as well as improving security status at sea and the various port locations around the globe. These provisions were established in the new Chapter XI-2 of the Safety of Life at Sea Convention 1974, (SOLAS Convention), comprising the new International Ship and Port Facility Security Code (ISPS Code).

The IMO defines the ISPS Code as "the comprehensive set of measures to enhance the security of ships and port facilities, developed in response to the perceived threats to ships and port facilities in the wake of the 9/11 attacks in the United States". Compliance with the ISPS Code and submission of related information to the IMO is not mandatory for all IMO member states, but only for those Contracting Governments to the SOLAS 1974 Convention. However, there is no penalty mechanism in place for states that fail to effectively comply with the ISPS Code. The overall concept is not to impose penalties, but to rely on market forces and economic factors to ensure compliance (official website IMO, SOLAS 1974). However, after 12 years of implementation of the ISPS, market forces and economic factors had not been powerful enough to result in full compliance in Mexico, where serious deficiencies were detected by an on-going research effort.

The SOLAS 1974, Chapter XI-2 establishes special measures to enhance maritime security, while Regulation XI-2/3 of this chapter addresses the ISPS Code. Whereas part A of the Code establishes the mandatory provisions, the not mandatory ("recommended") part B encompasses guidelines about how to comply with the mandatory requirements of part A. This set of regulations only applies to passenger ships, including high speed passenger vessels; cargo vessels of 500 gross tonnage and over; Mobile Offshore Drilling Units (MODUs) in transit and at ports (but not fixed and floating platforms and MODUs on the oil field); and all type of port facilities serving vessels offered for international voyages. In any case, the extent to which the guidelines apply on ships will depend on the type of the ship, its cargo and number of passengers, as well as its sailing routes and the features of the port or port facilities visited by that specific ship. Regarding the application of guidelines to port facilities, it will depend on the type of carriages and vessels visiting that particular facility and its "ordinary" trading routes.

In Mexico there are 16 Federal Integrated Port Administrations (FIPA)³ where the ISPS Code applies; they are operating under concessions given by the Ministry of Communications and Transport (and called thereafter MCT⁴) and are the following:

3) Administración Integral Portuaria, in Spanish, also known as APIs.

4) Secretaría de Comunicaciones y Transportes in Spanish, and represented with the abbreviation SCT.

Altamira, Tampico, Tuxpan, Veracruz, Coatzacoalcas, Dos Bocas, Progreso, Ensenada, Guaymas, Topolobampo, Mazatlán, Puerto Vallarta, Manzanillo, Lázaro Cárdenas, Salina Cruz and Puerto Madero, (SCT, 2016). The principal requirements of the ISPS Code for ports and port facilities cover the development and implementation of the Port Security Plan (PSP) and Port Facility Security Plan (PFSP) respectively, as well as the designation of the Port Security Officer (PSO) and Port Facility Security Officer (PFSO). Other provisions cover control of compliance with maritime security measures and registration of security incidents.

According to the mandatory Part A of the ISPS Code, contracting governments have to appoint the Designated Authority to carry out certain maritime security duties/responsibilities established in the Code. This Designated Authority holds the responsibility of ensuring compliance with the maritime security measures at all ports (where the ISPS Code apply) through the Port Security Assessment (PSA) and Port Facility Security Assessment (PFSA). The revision, approval and control of compliance of the Port Security Plan (PSP) and Port Facility Security Plan (PFSP), which shall be based upon the PSA and the PFSA, are also included. In Mexico the Designated Authority is the MCT through the General Direction of Merchant Marine (GDMM).⁵

A very important function within the ISPS code is the setting of security levels, which is performed by governments through the Designated Authority. It focuses on the alert for the perceived risk of terrorist attacks, but governments may include other type of threats in their risk evaluation like pirate-type attacks against vessels and oil platforms, or even the possibility of kidnapping port(s) and terminal(s) personnel. These security levels apply both to ships sailing within the respective territorial sea, as well as into port facilities. The Designated Authority can decide on the implementation of different security levels for different ports, port facilities and different areas of their territorial waters. It is necessary to point out that the change of security levels must be clearly communicated to the associated port(s), port facilities and vessels transiting or attempting to transit those areas (IMO, 2012).

As established by IMO, there are three different security levels, where Security Level 1 is considered normal and requires the minimum appropriate protective security measures at all times. Its priority is the normal conduct of commercial operations and facilitation of trade. Security Level 2 requires additional protective security measures for the specific period of time that the risk of a security incident is heightened. Its priority is the allowance of continued commercial operations, but with increased security measures and its consequent restrictions. Security Level 3 requires specific protective security measures which shall last only for a limited period of time when risk for a security incident is probable or imminent, even when it is not possible to identify the

5) Dirección General de Marina Mercante, in Spanish.

target. It encompasses the strictest security measures and its priority is the security of the port, port facilities, vessels and society that may be affected by a security incident and can result even in the suspension of commercial operations.

The control of security response under Level 3 is transferred to the Government or other organisations responsible for dealing with significant incidents (IMO, 2012). In Mexico it is the President of the Unified Centre for Port and Maritime Security⁶ (hereafter UCMAR), who is responsible for port security and coordinates all operations under Level 3. As established by Regulation of the UCMAR published on the Official Diary of the Federation⁷ on 21 April, 2014, provision 6: "a UCMAR shall be established at all the 16 ports (FIPAs) designed to receive vessels of over 500 gross tonnage"; known as "*Puertos de Altura*", in Spanish. Additionally, provision 8 of this regulation establishes that it shall be the Commander the Navy Military Zone of each jurisdiction where an UCMAR is established who shall be the President of that respective UCMAR.

According to the Law of Ports Article 19 SECOND, the UCMAR is a group of interinstitutional coordination between the Ministry of Marine (hereafter MMAR⁸) and the MCT for the application of maritime security measures; effective prevention and/or dealing with security incidents is the aim. Article 19 THIRD, paragraph II of this law puts forward that the UCMAR shall apply all the terms and response measures within the framework of the Chapter XI-2 of the SOLAS 1974 Convention, comprising the ISPS Code and ensures the establishment of a series of functions and actions for each of the respective three security levels. Also, paragraph III states that the UCMAR shall function as the coordinator for all actions of the three different levels of government (municipal, regional and federal) in relation to maritime security.

The key instruments and concepts related to maritime security are addressed in the ISPS Code, with the aim to ensure security at ports and within an acceptable risk level. Some of these key instruments are the PSA and PFSA, which encompass the evaluation of security risks of the port or port facility. This risk evaluation must be done to develop the PSP or PFSP in the case of terminals, which then must be approved by the Designated Authority. The PSP is designed to ensure the compliance of measures and procedures aimed to protect the port, persons, cargo, port equipment and machinery and the vessels serving or buying services to that port from threats, security risks, and security incidents. The PFSP has the same objectives as the PSP, but limited to the terminal. The PSO and PFSP are the bodies responsible for ensuring that the risk evaluation (PSA/PFSA) is carried out according to the principles and guidelines of the ISPS Code, submitted and approved; to establish the respective

6) Centro Unificado para la Protección Marítima y Portuaria and represented with the abbreviation «CUMAR» in Spanish.

7) Diario Oficial de la Federación, in Spanish.

8) Secretaría de Marina, represented with the abbreviation «SEMAR» in Spanish.

PSP/PFSP based on its PSA/PFSA and get it approved as well. Once approved, the PSO/PFSO is also responsible for implementing and maintaining (or even improving via formalised procedures) the plan at all times.

Once the Designated Authority performs the necessary inspections to verify the development, implementation and compliance of the PSP/PFSP, it may issue the Statement of Compliance (SOC) for a specific period, which shall not exceed five years, the maximum period of validity. After the SOC is issued, the PSO/PFSO is also responsible for ensuring compliance with the necessary training, exercises and practices; coordinating the inspections in scene in cooperation with the respective authorities; performance of internal security audits and liaison with the Designated Authority's representatives for external audits. PSO/PFSO must attend security incidents and keep incident security records updated. Security incidents themselves must be considered in the evaluation of risk and integrated into the security plan to achieve a constant reduction of risks and the continuous improvement of port (and maritime) security.

In the case of Mexico, even if the GDMM of the MCT is the Designated Authority responsible for the revision, approval and control of compliance of the PSP(s) and PFSP(s), the UCMAR is co-responsible according to its Regulation, Article 7, paragraph II, which states that: "[UCMAR] shall participate in the evaluation of risks of maritime and port security, previous to the elaboration of the security plans and it shall propose the necessary modifications and updating to those plans". Paragraph III of this article also adds that, once the plan has been approved, the UCMAR shall participate in the verification and control of the compliance of such plans to ensure their effective implementation.

In recent years, Mexico experienced a period of extreme violence, where "extortion payments"⁹ were demanded of owners and operators of port terminals, in order not to kill them personally or damage their installations, as denounced by the Federal Deputy from the Deputy Chamber of the Federal Congress, LXII Legislature, Germán Pacheco Díaz, before Parliament, Chamber of Deputies on 5 November 2013. This led to the reorganisation of maritime security in the country, amendments to several laws and the approval of new regulations since 2014, including the Law of Ports, the regulation in relation to the UCMAR, and the Law of Navigation and Maritime Trade, among others. Additionally, the creation of the military navy unit for port security (hereafter NAUPPRO¹⁰) was decided.

9) «Cobro de Piso» in Spanish.

10) Unidad Naval de Protección Portuaria, represented with the acronym UNAPROP in Spanish.

Research Methodology

The research methodology includes the use of an extended questionnaire with 71 open questions concerning maritime security, sent to eight ports of Mexico; Altamira and Tampico (Tamps.), Tuxpan, Veracruz and Coatzacoalcos (Ver.), Dos Bocas (Tab.), Progreso (Yuc.) and Madero (Chiapas), through the National Institute of Transparency, Access to Information and Protection of Personal Data (called National Institute of Access to Information (NIAI)¹¹ hereafter). A questionnaire of 70 similar questions (but specifically addressed to oil maritime terminals) was also sent to "Pemex Exploración y Producción" through the NIAI to acquire information for the following terminals: Dos Bocas (Tabasco), Terminal Marítima de Pemex Puerto Isla del Carmen (Camp.), Arbol Grande (Tamps.), and Cobos (Ver.); as well as the following terminals from "Pemex Transformación Industrial": Madero (Tamps.), Tuxpan (Ver.), Pajaritos (Ver.), Guaymas (Son.), Salina Cruz (Oax.), Veracruz (Ver.), Lerma (Camp.), Progreso (Yuc.), Acapulco (Gro.), Lázaro Cárdenas (Mich.), Manzanillo (Col.), Mazatlan (Sin.), Topolobampo (Sin.), La Paz (B.C.S.) and Rosarito (B.C.).

An inquiry into the establishment of the NAUPPRO at the different ports of Mexico was sent to the MMAR, while another request for information about the total number of persons employed at private security companies that have got the courses 18.2 and 18.3 as required in the ISPS Code was sent to the FETNAMM¹², also through the NIAI. The NIAI was created to comply with the provisions of the General Law of Transparency promulgated in 2012. This law establishes that information from public institutions operating with money from national resources shall be open to public scrutiny with exceptions related to national security. The information delivered through the NIAI is official and publicly available.

These actions were combined with a six-day visit by the researcher to one of Mexico's three largest ports with oil terminals conducted in April 2016, where she conducted interviews and "participant observation." The questionnaire that was sent to the other ports through the NIAI was also answered by respondents at that specific port. Several employees, the PSO and PFSO(s), the Director of the port, the Master of the harbour (referred to as Regional Captainship of the Port in Mexico), the Director of the Port Customs Unit and the Commandant of the maritime police (NAUPPRO) were interviewed. In doing this, the researcher covered the four pillars for the operation of the port. The pool of data is deemed sufficient, based on the fact that nine out of sixteen ports where the ISPS Code applies (representing a coverage of 56% of them

11) Instituto Nacional de Transparencia, Acceso a la Información y Protección de Datos Personales in Spanish, and represented with the acronym INAI.

12) «Fideicomiso de Formación y Capacitación para el Personal de la Marina Mercante Nacional», and represented with the acronym FIDENA in Spanish, which may be translated to «Fund of Education and Training of the National Merchant Marines», and called FETNAMM thereafter.

and seven out of seven FIPAs situated in the Gulf of Mexico, where oil exploration and production activities take place, covering 100% of them) were included in the study; 100% of Pemex's terminals are also included, creating valid representation for the case of Mexico (see figure 1).



Source: The Secretary of Communication and Transportation (SCT)

Figure 1 Federal Integrated Ports Administrations (FIPA) in Mexico.
(Ministry of Communications and Transport, 2016).

The results from the questionnaire were further analysed through "document analysis" with an exploratory approach, to confirm or reject the inexistence of security incidents at the selected ports and oil terminals in national newspapers and media sources, using Google to have a wider coverage within the period of 2004-2015. Data was classified using codes and categories for the overall analysis to present the results and its respective discussion.

Results & Findings

According the results of the questionnaire, six ports and the maritime terminals from both "Pemex Exploración y Producción" and "Pemex Transformación Industrial" have had no security incidents at all in the course of 2010-2015. Furthermore, they officially replied that until now, there has never been any security incident; the seventh port reported that "at least five security incidents of low-impact were registered during the period 2010-2015", while the port of Tuxpan wrote that "they have the antecedent of

five maritime incidents, highlighting that it is the duty of the GDMM to classify them as low, middle or high impact". "Only one" low-impact security incident was registered at the visited port during the same period, following the questionnaire, but the field-findings from the interviews and participant observation at this port proved the existence of at least three security incidents classified as with high impact.

To each of the specific questions about security incidents concerning armed attacks for robbery at the port/port facility; confiscation and smuggling of weapons and drugs or other dangerous restricted substances in the cargo; cargo theft at the port/ port facility; theft of material and other items or machinery on the part of employees, property of the port/ port facility; personnel working under the effects of drugs and psychotropic substances; situations of vandalism and sabotage; and kidnapping of port/terminal personnel, with the exception of one port, where a weapon was confiscated, the respondents from the other eight ports and Pemex terminals replied that there has never been any security incident of that nature. This significantly differs from the findings of the document analysis through Google, as summarised in tables 1 and 2 respectively.

Table 1 Security Incidents at the Elected Ports

Security incident (Ports)	Port	Date	Reference
Confiscation of 11,720 kilos of cocaine in a container and arrest of seven persons that were "protecting" it. This confiscation of cocaine was the biggest of the Mexican history up to that date.	Tampico	7 th October, 2007	JCM, 2007.
An oceanic patrol ship, confiscated 2,479 kilos of cocaine from the fishing boat "Charamusca", which was navigating in the proximity to Port Madero in Chiapas.	Madero	27 th April, 2010	SEMAR, 2010.
Confiscation of 32 tons of monomethyl-amine, in a ship coming from China.	Veracruz	30 th April, 2012	Univision Noticias, 2012.
Confiscation of 900,928 litres of stolen hydrocarbons, transported in the vessel "Havnor", with flag from San Vicente.	Coatzacoalcos	May, 2012.	Derecho, 2016 citing Sinembargo.mx
Confiscation of 395,343 litres of stolen hydrocarbons from the vessel "Capitán Kenny", with US flag, and arrest of nine persons with Honduran nationality and the vessel, about 172 kilometres	Dos Bocas	25 th July, 2012	Diario Libre, 2012 and Fierro, 2012.



ADRIANA ÁVILA-ZÚÑIGA-NORDFJELD AND DIMITROS DALAKLIS

from Port of Dos Bocas, Tabasco.			
Confiscation of 2,360 litre of dilute cocaine in a container sent from Argentina.	Progreso	28 th April, 2014	Ángel, 2014.
Armed attack against a naval vessel resulted into one officer dead and another seriously injured.	Altamira	11 th November, 2014	Milenio.com, 2014; Narco Violencia, 2014 and Huerta, 2014.
Confiscation of 169 kg. of cocaine in a container downloaded from the ship "Monte Oliva" with German flag.	Altamira	21 st . September 2015	Letra Roja, El Color de la Información, 2015.
Confiscation of 15,800 litters of dilute cocaine, from a container unloaded from the ship "Monte Verde" coming from Panama.	Veracruz	1 st of March, 2016	Salinas, 2016.
Confiscation of the fishing vessel "Tuxpan" with 1,800 litres of stolen hydrocarbons. The combustibles had been stolen some days before to another vessel, property of Pemex, which had sailed off from the Port of Dos Bocas, Paraíso, in the Southern state of Tabasco.	Frontera	1 st of March, 2016	Ortíz, 2016.
Arrest of the fishing vessel called Vikingo II with register number 28040150232 from Tampico Tamaulipas, carrying 12 tons of stolen hydrocarbons.	Coatzacoalcos	2 nd March, 2016	Veracruzanos.info, 2016 and Imagen del Golfo, 2016.
A kidnaped Pemex's worker was rescued and liberated by the police.	Altamira	29 th July, 2016	Zona de Guerra sin Censura, 2016.
Extortion Payment was given in order to ensure the life of directors, employees, terminal operators and Pemex's contractors towards crime ring organizations.	Several Ports and oil terminals.	Several events with reference to period 2010-2013	Cámara de Diputados del H. Congreso de la Unión, LXII Leg., 2013.
Increase in confiscation of weapons, drugs and stolen hydrocarbons at marine ports with the establishment and activation of UNAPROP(s) and higher participation of the SEMAR in the administration of ports.	Several ports	Several events with reference to period 2010-2013	Cámara de Diputados del H. Congreso de la Unión, LXII Leg., 2013 and Gaviña 2016.

129% Rise in confiscation of methamphetamines from 2008 to 2012 in Mexico.	National level	Several events with reference to period 2008-2012	United Nations Office on Drugs and Crime, 2013, cited by Montalvo, 2014.
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Table 2 Security Incidents at Oil Terminals

Security incident (Pemex terminals, Offshore Tabasco)	Terminal	Date	Reference
Plundering and dismantling equipment from the (new) platform Yaxche Bravo, including theft of very costly materials.	Yaxche Bravo	15 th September, 2008	Pérez, 2010.
Plundering of the platform Kab-A	Kab-A	11 th October, 2008	Pérez, 2010.
Plundering of the platform Kix-2 where the offenders took even all the navigation lightening signs.	Kix-2	14 th October, 2008.	Pérez, 2010.
Plundering of the platform Sinan-SO	Sinan-SO	8 th March, 2009	Pérez, 2010.
Plundering of the platform Yaxche Bravo again, stealing the whole heliport. The outcome of this official investigation GPDM-SCO-D8-190-2010, has not been published yet.	Yaxche Bravo	4 th May, 2010	Pérez, 2010.
Kidnapping of 45 employees of Pemex during the year 2013.	Pemex (National level).	2013	24 Horas, El Diario Sin Límites, 2013.
Kidnapping of several directors and leaders of the worker's union as well as owners of companies giving services to Pemex in different cases (reportage)	Several States	2010-2013	Pérez, Voltairenet.org, 2010.
Pemex confirms the kidnapping of 16 employees during the period 2007-2010	Several States	2007-2013	El Economista, 2013.
Gasoline is stolen inside Pemex	Tuxpan	22 nd August, 2016	(Martínez, 2016)

Regarding ships or small boats without the required authorisations to infringe into restricted areas of navigation, the reply from the Port of Tampico was that "the Port Security Plan does not consider any restricted area of navigation and therefore there are not any register about security incidents of such situation". Altamira, Coatzacoalcas, Dos Bocas, Port Progreso and the visited port admitted to having had such situations,

while ports of Tuxpan, Veracruz and Madero as well as all the terminals from Pemex answered that they have not had such situations.

During the field visit of the researcher to the port of interest and travelling towards the open sea on board an oceanic patrol vessel, a small group of boats similar to those commonly used by smugglers was observed; the boats were located just a few meters besides the main sea passage towards the container terminal. Also, this event was noticed while a large container vessel was approaching the port facility: nothing was done to send them away and prevent a dangerous situation. The officials' reply was that: "they are just fishing; we have taken them off many times before, but they always come back". Additionally, it was noted that the average time for inspecting persons and vehicles in the access/exit control zones was just 45 seconds, a very short period of time and an indicator of low-quality inspections.

It is also interesting to consider that a small glass containing cannabis was personally noticed at the office of the PFSO from one of the terminals; he said that a few years back, they caught a person from a construction company working inside the port, with about 300 grams of cannabis: "it was like 300 grams and that is not for personal use, but for trade". The person was forced to resign, but because of time-consuming paperwork related to an official investigation, the case was not brought to court and the PFSO just kept the cannabis in a small glass container with alcohol to cure muscular damage. In an interview to another employee, it was revealed that the Pemex's oil terminal in the specific port was operating without a formally appointed PFSO since early October 2015 (almost six months before the time of the visit), when the person holding that position had retired.

With personnel from the Navy mastering the harbour since November 2013 and the creation of the NAUPPRO, the status of maritime security improved substantially at the visited port in practical terms. Other measures to improve maritime security were also implemented, such as the use of two different private security companies: one for the operation of the video vigilance system, and the other for control and vigilance of access and exit zones, to avoid security incidents at the control zones being erased from the video records. Security measures were reflected in an increase of confiscation of drugs and dangerous substances, though this improvement in performance was not reflected in incident security records (mismanagement practices prevailed). Last but not least, terminal operators, directors and employees gradually recovered the feeling of safety when the extortion payments from crime-ring organisations disappeared.

Other findings from the questionnaires, as well as other information acquired from the MMAR and the FETNAMM, through the NIAI include the following:

- Different procedures and allocated periods across the country for keeping and maintaining security incident records.

- Inexistence of security incident registers at certain ports and Pemex terminals.
- Failure to classify risks and threats at ports and oil terminals.
- Poor performance of PFSA for the 15 oil terminals of "Pemex Transformación Industrial." PFSA are the fundament of the PFSP, which have not been amended since its original approval in June 2004, despite the incidents reported by the media and a double recertification.
- Wide use of private security companies to perform specific security duties at the ports, whereas Pemex has its own security employees with support from the Navy.
- Misunderstanding of responsibilities and duties on the part of the PSO(s), PFSO(s).
- Lack of awareness of the duty for registering items' confiscation in incident security logs.
- Establishment and activation of 14 NAUPPROs from September 2014 to August 2015, with an average of 43 elements per unit at fourteen ports, including Altamira Tampico, Tuxpan, Veracruz, Coatzacoalcos, Ciudad del Carmen and Progreso.
- PSO limited training to various elements of the NAUPPRO during the period 2014-2015.
- Arrangement of 369 courses for "personnel of the port/port facility with specific security duties" (18.2 ISPS Code) and 93 courses for "security knowledge that must have the port/port facility personnel" (18.2) by the FETNAMM (established by the Designated Authority); where the total number of participants hired by private security companies amounted to 4,573 and 1,274 respectively, during the period 2010-2015.
- Deficiencies reported from Designated Authority's audits to some ports covered improving maintenance of security equipment, providing more security training, construction of walls along the port area and reinforcing surveillance and lighting equipment.
- The certificate of compliance with the ISPS and approval of PFSP of two Pemex terminals (Terminal Marítima Árbol Grande and Terminal Marítima de Cobos) were originally issued in 2006 and have not been recertified, but they are under normal operations.
- The certificate of compliance with the ISPS and approval of PFSP for the port of Tuxpan expired in 2014, but is under normal operations during "the recertification process".
- Inadequate performance of Designated Authority's audits and inspections, since they audited these ports and terminals every year during the period 2010-2015 without reporting serious deficiencies; lack of security incidents records and inadequacy in the classification of security risks.

- Testing of the "militarisation" model at the visited port, where the port administration and the Regional Captainship of the Harbour were given to personnel from the Navy.
- Improvement of interinstitutional communication and coordination at the visited port.

General Discussion

The situation illustrated in tables 1 and 2 forced the authorities to initiate the reorganisation of maritime security mechanisms in 2013, including justice reforms to provide juridical support to those changes. In addition to traffic of drugs and weapons, theft of hydrocarbons is affecting the economy of Mexico as well as the overall maritime security status. The assessment for theft of hydrocarbons amounted to 11,250,000 barrels, with an estimated economic loss of 973,125,000.00 U.S. dollars, only for 2014 (Nordfjeld & Dalaklis, 2016). Before the NAUPPRO was created in 2014, port security was mainly provided by private security companies, which increased the vulnerability and risk of port installations. Given its political significance related to national security, maritime and port security should be the responsibility of the government and international organisations, covering strategic installations, including offshore platforms. However, the level of security challenges in Mexico relating to a combination of terrorism¹³, organised crime, marine piracy and poor performance on the part of the Designated Authority, showed that the government was not able to meet its responsibilities and provide satisfactory physical protection to port and oil installations, forcing port administrations to rely on private security companies.

As expressed by Kerr (2010), private security companies can provide a security package quicker than governments because they have less bureaucracy and can operate with a lower profile than most government forces. On the other hand, they are limited by the regulatory framework, concerning the use of firearms and are more exposed to corruption and dispersion of sensitive information as a result of constant personnel rotations, which increases the risk of uncertified employees and poor training standards. Ports included in this research outsourced the "specific security duties" service to private security companies for covering vigilance access control zones, guarding of vigilance towers and inspections of cars and baggage at the access/exit control zones. Terminals have their own security management. On the other hand, Pemex choose to have its own security force for its terminals, with extra support from the Navy when necessary; this resulted into avoiding external worker rotation and the risk of spreading sensitive information concerning security routines.

13) Theft of hydrocarbons and plundering of oil and offshore installations is considered terrorism, following the new Federal Law to Prevent and Sanction Crimes Committed Concerning Hydrocarbons.

Excepting Dos Bocas, and other ports not included in the study where the respective naval unit has not yet been activated, the Navy and the NAUPPRO have taken over the security of strategic installations, including offshore and port facilities. The agreement for the creation of 19 NAUPPROs, which function as maritime police, including duties of vigilance, inspection and control within the port and ocean port roadways, was published on 31 Mars 2014. These units are additional to the elements from private security companies and are responsible for special security duties to detect trafficking of drugs, weapons and other restricted substances during the uploading and downloading operations from vessels as well as the presence of unauthorised persons. This implies a combination of the initially established security management, "privatisation of security services" and definitely some "militarisation".

As expressed by Germán Pacheco Díaz, representative from the national congress (2013), confiscation of drugs and restricted substances in cargo increased in the port of Altamira with the establishment of this maritime police. However, the kidnapping of port personnel and extortion payments to crime ring organisations remained. There are several benefits in the combination of military forces and private security companies, including the economic aspect. Regarding cooperation, private firms need to integrate their operations with relevant stakeholders (such as naval, coastguard, customs and police forces) to reduce the chances of "blue on white" incidents, maximise the opportunities to receive support, and ensure the standards of skills and professional knowledge of its work force (Kerr, 2010). When outsourcing port and maritime security to private security companies, it is still the responsibility and duty of the Designated Authority to conduct periodic and random audits and inspections at the ports to examine the compliance of the PFSP as well as security service providers, to ensure that they have the required certification and security training.

To apply a proper response to maritime security incidents, it is crucial to ensure a regional solution that includes the cooperation of international forces in a specific geographical area if necessary, particularly when the consequences of a maritime security incident will go beyond maritime boundaries, as is the case of oil spill pollution caused by safety and security incidents. As Cordner (2011) points out, major security incidents are likely to have severe environmental consequences that will transcend national boundaries; this highlights the need for government, industry and regional consultative entities to adopt a strategic risk management approach. There is simple explanation why: "No single Agency or jurisdiction currently maintains the capability, capacity or resources necessary to prevent, prepare for, respond to and recover from an armed takeover of an offshore facility. Rather, collaboration with regional partners at the local, state and federal levels ensures that an effective and safe response capability is maintained" (Applegate & Hill, 2014). But, challenges related to a regional solution implies that while strategic plans exist to identify frameworks and guidelines for command and control, they do not operationalise response architecture to implement and sustain coordinated training programmes and integrate planning and resource coordination efforts (Applegate & Hill, 2014).

The government is testing the militarisation model at the visited port where, in addition to private security companies and the NAUPPRO, the Director and the Master of the harbour are Rear Admirals from the Navy, while the President of the UCMAR is the 1st commander and Rear Admiral from that naval zone. The only civil authority in this equation is the Director of the maritime customs unit, who said that the coordination between the authorities and the port has improved substantially since the arrival of the Navy. The respondent added: "At the beginning we didn't know how it was going to function, if trade would be affected, if it would be closed, but here at this port, the external factor of security improved the trade operations and (...) the coordination is very good; we have systematic security meetings, where all the organisations involved participate." The original scepticism towards a military discipline on the part of port employees was transformed into a feeling of safety and satisfaction with the military leadership. As a result, the shipping companies recovered the trust to transport their carriages through Mexican ports, as expressed by Francisco Orozco Mendoza, Chairman of the Mexican Association of Shipping Agents,¹⁴ *Mundo Portuario* (2014). The director of the port emphasised that the main risk at the port today is related to hurricanes and stormy weather.

Additionally, during the interview with the Master of the harbour at the visited port, he pointed out that: "why am I working here, even I belong to the Navy? Yes, I am working in another Ministry. Well, in 2013 the insecurity situation at this province continued, especially at the Port. Therefore, the President ordered the MMAR that Naval Officers should be brought in to support and control the port administration and the captainship of the harbour, because the status of security was at a clearly unacceptable level. Criminals even exporting illegally extracted minerals. There was not a security plan for level 3 which should be implemented by the Navy, because in order to create a plan for level 3, there should be measures established for level 1 and level 2 in advance, but that was not achieved." It is true that Mexico signed the protocols for the ISPS Code, but the MCT did not perform an effective job and many points towards this direction were already mentioned. As a result, the law changed and the UCMAR(s) were established and now the MMAR is a co-responsible entity to address security level 1, level 2 and level 3 and more elaborated plans are now in place.

Ports and port terminals must have their own PSO and PFSO, as established in the ISPS Code. But, in the case of Mexico they were not fulfilling the requirements concerning security incident registers, which should have been created by them concerning the numerous security incidents that were identified, including confiscation of drugs, weapons and hydrocarbons made by the Navy. More importantly, this failure took place despite the fact that these events are classified as high security risks

¹⁴) Asociación Mexicana de Agentes Navieros, represented with the acronym Amanac, in Spanish.

involving confiscation and transportation to official warehouses for future destruction. Kidnapping of port personnel and terminal operators strongly affects port operations and should be handled as security incidents, even when they happen outside the port. Statistics and analysis of maritime security incidents illustrate past actions and shall be open to public scrutiny, ensuring that the government implements barriers to avoid that such events happen again; on the contrary, procedures for how to deal with such incidents in the future are included in the PFSP and must be confidential.

Handling of confiscation of drugs and other restricted items is clearly the duty of the NAUPPRO and customs' authorities, but it is the duty of the PSO/PFSO to register them accordingly in the respective security incident logs and consider them during the risk evaluation and if needed to amend accordingly the PFSP. The analysis of the root causes of security incidents is the cornerstone of the PFSA, which is the base of the PFSP, but if a new security threat is identified, adjustments are necessary. Therefore it is crucial to keep security incident records updated. Furthermore, all the above-mentioned deficiencies were not detected during the Designated Authority's audits and inspections and no matter that they went through a second filter, the MMAR, which performed the final revision of the PFSA and PFSP and should require amendments (when necessary) upon their approval. Additionally, authorities of the Tampico Port did not establish a restricted navigation area according to their answer in the questionnaire. A restricted navigation area for the port roadways and within the port proximity area should be established, not only to mitigate security risks, but also for maritime accident prevention.

It is necessary to highlight that it is recommended for the process of recertification of port and terminals to start at least a year before the expiration date of the Declaration of Compliance with the ISPS Code, to avoid that port and terminals continue operating without the required certifications, which could give grounds for suspension of port and terminal operations. Finally, as Kerr (2010) argues, the responsibility for assuring maritime security lies firmly with governments, but private security companies can attend a niche market in support of these official bodies.

Conclusions

Maritime security incidents in Mexico are numerous and involve extraordinary and complex threats such as the plundering of oil platforms, kidnapping and extortion of port personnel and terminal operators and even pirate-type attacks. The government's security strategy of combining justice reforms and providing more power to the Navy through the formulation of maritime police (NAUPPROs) and UCMARs, as well as including community engagement and the participation of different organisations from the three levels of government is functioning and has improved the overall situation. Mechanisms in place are gradually recovering control of an unacceptable situation, particularly in ports where the military model is being tested. However, this strategy must be followed along with ensuring compliance of the ISPS Code, with the issue of

record keeping standing out. It is true that the lack of a national maritime security policy has resulted in constant breaches of the ISPS Code provisions and different security procedures at the ports under examination. After twelve years of ISPS implementation, Mexico still does not comply with the requirements of the ISPS Code at an acceptable level, although some improvement is recorded because of the recent security reforms. One pressing need is to introduce a quality system that ensures the proper registration of security incidents: updating these incident records will help in the future improvement of the maritime security framework and the creation of a sustained security culture focused not only on incident prevention, but also on response to and recovery of a major security incident, including resilience plans.

In any case, in order to avoid duality and misunderstanding of security duties due to the recent involvement of the military and the difference in culture, it is recommended to set up a clear division of duties and responsibilities; the establishment of a "no-blame culture" must be considered to ensure the proper registration and thorough analysis of all respective security incidents. It is also recommended to re-evaluate the PFSPs of the ports and all Pemex terminals by considering threats that were not included in the initial creation of those documents; it is also necessary to consider the establishment of a restricted navigation area at the Tampico Port. Last but not least, it is essential to standardise the notion that the process of re-certification shall start in due time (maybe at least a year) before the period of validity of SOC expires to avoid suspension of port and terminal operations. Finally, an extensive study covering the satisfaction level in locations where the militarisation model is already in place (and how this affects trade operations and maritime security) should be performed before its further implementation throughout the country.

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