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COMBATTING MARITIME PIRACY

by

Christopher B.R. Cobb

December, 1994

Thesis Advisor: Gordon H. McCormick

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The solution to this 'problem within a problem' is in two parts. First, mechanisms must be established to encourage elements within the industry to act individually towards the collective goal. Second, institutional mechanisms must be created to bring the elements together in support of a collective solution. This thesis analyzes the two elements of this solution and goes on to discuss how a policy resolution might be achieved. International collective action would provide the optimal response. In practice, however, many obstacles are likely to stand in the way of this goal. A comprehensive set of less complex, localized cooperative actions may ultimately prove to be the only realistic solution to the piracy problem.

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COMBATTING MARITIME PIRACY

by

Christopher B. R. Cobb
Lieutenant, United States Navy
B.S., Old Dominion University, 1989

Submitted in partial fulfillment
of the requirements for the degree of

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Author: CBR Cobb
Christopher B.R. Cobb

Approved by:
Gordon H. McCormick, Thesis Advisor

W. P. Hughes Jr.
Wayne P. Hughes, Jr., Second Reader

R. Mitchell Brown
for Thomas C. Bruneau, Chairman
Department of National Security Affairs

ABSTRACT

In the past six years, acts of maritime piracy have been occurring with increasing frequency in many regions of the world. Adverse effects from these attacks are suffered not just by elements of the shipping industry but, by extension, society in general. The global nature of this problem suggests the need for a collective solution at the international level. Therein lies a further problem. While all would benefit from an end to piracy, not one of the affected actors is prepared to unilaterally commit to the necessary collective action.

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EXECUTIVE SUMMARY

Piracy is no longer confined to the pages of adventure novels, the stories of swashbucklers and Black Beard. The lure of an abundance of lightly-defended floating "cash cows," combined with inadequate regional police actions has led to a resurgence of the problem. No less fearsome than their predecessors, the pirates of today are ruthless, desperate criminals who often will not hesitate to harm their victims. Attacks are often violent, and injuries and deaths occur all too frequently. The effects of attack, however, extend beyond the immediate victims. Ship companies suffer financial losses stemming directly from cargo theft and indirectly from tarnished reputations and customer flight. The potential exists for far greater costs. Negligent security litigation, stemming from the failure of a ship operator to reasonably provide adequate security, could result in substantial awards in the event of injury or death of a crew member during a pirate attack. While the insurance industry will foot some of the bill, it is the consumer, ultimately, who will suffer when shipping industry losses filter through. Environmental damage caused by a collision during attack could be catastrophic.

The number of incidents reported has decreased during 1994. However, the trends over the previous five years were increasing in many regions of the world. Southeast Asia continues to experience the highest concentration of piracy incidents in the world. Well over 50% of the world's reported attacks occurred there. Other significant regions have been Northeast Asia, Indonesia, West Africa, and South America. Considerable activity was also reported in East Africa during 1994. Under-reporting of incidents is a consistent problem. It has been estimated that the true level of attacks may be twice what is reported officially.

While most incidents of piracy are considered short-term (pirates often remain on board for less than thirty minutes), incidents of long-term (seizures which last for several days and involve the theft of whole cargos) are becoming more frequent and represent the emergence of a more organized form of piracy. A new and worrying development has been the establishment of "Phantom Ship" operations. Ships, operating with false identities, load cargos and head out of port. Once at sea, the ships deviate from their scheduled route to visit

an alternate port, where the freight will be unloaded and sold. These operations require considerable preparations and are known to be the work of organized criminal syndicates. Annual losses to the shipping industry may be as much as $800m.

A disturbing development in the South China Sea has been a recent increase in "customs interdictions" by Chinese military units. Cargo vessels have been increasingly subjected to very violent attacks. Many have been arrested for "safety or customs" violations and escorted into port. Cargos have been confiscated and ransoms demanded for release of the vessels. Some of these incidents have occurred far beyond China's 200nm Exclusive Economic Zone (EEZ) and may represent efforts to claim ownership of the vast resources surrounding the Spratly and Paracel Islands.

The global nature of maritime piracy suggests a need for an international collective solution. The ramifications of attack extend throughout the industry and into society in general. All would benefit from the eradication of piracy. The necessary collective solution, however, has proven almost impossible to achieve. Each player has his own incentives not to contribute towards solving the problem. As a result all are exposed to continued attack. The need to solve the problem of piracy introduces a second problem: how to induce cooperation.

The nature of the solution to this "second problem" is in two parts. First, mechanisms must be established within the industry to act individually towards the collective goal. Second, institutional mechanisms must be created to bring the elements together in support of a collective solution. The provision of counter-piracy coverage is an example of a "public good." A characteristic of a public good is that, in the absence of some enforcement body, actors will seek to avoid contributing to the costs of its provision. This occurs despite the fact that all benefit from the service. Positive incentives must be generated to encourage all beneficiaries to contribute. Some form of benefits package could be produced and made available only to those states which had contributed. Alternatively, a means of coercion must be established so that all are forced to 'pay their fair share.' To this end taxation may be an applicable tool. The establishment of a strong control structure is a pre-requisite to any

coercive action. The inadequacy of existing control structures has, so far, hampered efforts to solve piracy's collective action problem.

Reviewing other cases of cooperative action in combatting international security problems provides insights into the development of meaningful policies in the fight against piracy. The case of air piracy is relevant here. The development of coordinated international action against air hijackers was frustrated by a lack of consensus amongst international actors. In the end, it was less complex, localized cooperative actions which provided the most constructive solution. Experiences so far in the battle against piracy appear to parallel this precedent. While international efforts have yielded ineffectual legislation, regional cooperation has proven far more beneficial. Prospects for successful action against pirates may depend on the negotiation of multiple bilateral agreements at the regional level. In this respect, agreements signed in 1992 between Singapore, Indonesia, and Malaysia may provide a prototype for international cooperation and the best hope for the future.

Piracy is likely to remain a persistent problem in many regions of the world. Under-reporting of incidents by the industry causes an inaccurate count of the true nature of the problem. Consequently, counter-piracy resources are under-allocated. The result is a decreased level of deterrence which only exacerbates the problem. Increased violence is likely to be associated with inadequate police activity. Brazil and the South China Sea are two sub-regions which have already become renowned for the level of gratuitous violence associated with pirate activity. Other regions may follow this lead. While increasing rates of short-term piracy will be the first manifestation of inadequate anti-piracy enforcement, long-term and permanent seizures of vessels are also likely to increase in frequency. The huge profits to be made from such heists will encourage others to follow suit.

Constructing any form of international collective response to the piracy problem is likely to be frustrated by difficulties in reaching consensus. For many, however, maritime piracy has not yet reached the level at which concerted action is generally deemed necessary. Financial losses to the industry have seemingly remained tolerable, so piracy has been viewed by many as a nuisance. Without a strong impetus from constituents, governments have been reticent to commit to the battle. The situation will probably get worse before

concerted actions are taken. The question of air travel safety took on a far greater significance after the 1989 destruction of Pan American's flight 103. In much the same way, it may take an environmental disaster following the grounding or collision of a tanker during a pirate attack, before the world takes seriously the threat of piracy. It is only a matter of time.

I. INTRODUCTION

In an era of sophisticated technology and multi-media communications, many are surprised that seaborne piracy did not disappear with the age of the sail. Today, ships are increasingly being targeted, not just on the high seas but in territorial waters, sometimes even while moored in port. According to the Naval Postgraduate School's Violence-At-Sea Database, in the last five years the number of pirate attacks against commercial vessels has increased dramatically. During 1989 there were 28 cases. In 1990, that figure more than doubled to 59. During the following year the numbers almost tripled to 163. Although there was a slight reduction in 1992, the figured climbed again in 1993 to peak at 164.[1]

Piracy no longer refers only to "mugging at sea." Organized crime has become involved. Drug-smuggling and gun-running are also associated with modern-day piracy. There are cases of whole cargos being unloaded at sea. Occasionally ships have been boarded, renamed and spirited away, to become what is known as "Phantom Ships." Perhaps more disturbing are instances of possible state sponsorship. Recent reports in the Hong Kong press indicate that interdictions of cargo vessels in the South China Sea are the work of uniformed PRC officers conducting "anti-smuggling inspections." On numerous occasions commercial vessels have been fired upon with automatic weapons, crew members have been beaten, and cargos stolen. Some reports identified officials of the Chinese Public Security Bureau as having sometimes participated in hostile boardings. On January 27 1994, the *Alicia Star* was interdicted by a Guongdong customs patrol boat between Taiwan and the Philippines, well beyond China's 200 nautical mile exclusive economic zone. The ship was

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[1] The Naval Postgraduate School's "Violence-At-Sea" Database, initially compiled by LCDR Mark Farley, contains information of attacks as reported since 1 January 1989. The work is unclassified and is compiled from multiple sources including the Office of Naval Intelligence (ONI), the Defense Mapping Agency (DMA), the International Chamber of Commerce - International Maritime Bureau (ICC-IMB), the United Nations-International Maritime Organization (IMO), Lloyds' Weekly Casualty Reports and Lloyds' List, The Maritime Security Council (MSC), the Baltic and International Maritime Council (BIMCO), and directly from numerous ship companies. It is the most extensive source of its kind.

escorted to Shanwei, PRC, where its cargo of $5 million worth of cigarettes was seized and confiscated. A fine was imposed against the vessel's owners and the ship was held three months before being released.

The effects of pirate attack can be expected to become far more serious with time. Ships left effectively unmanned during and immediately after an attack, can one day be expected to be involved in an underway collision should such events continue. In the past five years, 25% of attacks were conducted against fuel tankers.[2] On several occasions, ships were left to operate on autopilot for up to an hour. An unguided Very Large Crude Carrier (VLCC) travelling, for example, through the congested sea lanes of the Malacca and Singapore Straits, could easily hit another vessel or become grounded. The resulting oil spill could cause ecological damage perhaps more severe than that of the *Exxon Valdez*.

Curiously, pirate attacks often go unreported. The United Nations' International Maritime Organization (IMO) conservatively estimates that only one-in-two incidents are officially documented.[3] Numerous reasons explain the proclivity for under-reporting. Shipping companies which are the victims of these attacks, it turns out, have little incentive to report instances of piracy. Reporting may involve in-port delays and added costs. Competitors may use the information to stress the comparative safety of their own operations. Insurance companies can also be expected to use evidence of attack to justify charging shipping lines increased premiums. Meanwhile, the effects of piracy are experienced across society. While crew members are the immediate victims of attack, consumers worldwide bear the financial costs. Losses suffered by insurance companies and shipping lines eventually result in higher prices. The victims of an attack-induced ecological catastrophe would not be limited to the local inhabitants; clean-up and compensation costs would soon filter through the system.

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[2] Naval Postgraduate School "Violence-At-Sea" (VAS) Database.

[3] If IMO estimates are correct, over 325 instances of piracy against commercial vessels would have taken place in 1993.

This thesis will proceed in four sections. First, it will examine recent statistical trends in maritime piracy based on the Violence-At-Sea (VAS) Database. This will establish the extent of the piracy problem. Comparisons will be drawn between the most recent data (through September 1994) and an earlier analysis carried out by LCDR Mark Farley in "International and Regional Trends in Maritime Piracy 1989-1993".[4] The negative effects of piracy will be reviewed. Recent developments concerning Phantom Ships and possible state-sponsorship of piratic actions in the South China Sea will also be investigated.

Second, the international aspects of the piracy problem will be investigated. Here it will argue that long-term suppression can only be achieved with cooperative action. The disincentives that have thus far stood in the way of cooperative counter-piracy measures, as experienced by industry and international players, will be reviewed. The 'Prisoner's Dilemma' model will be used to help explain why cooperation in the field of anti-piracy has been stymied. Strategies to be applied to ensure collective action in the suppression of piracy will be investigated. The need for international and industry-wide institutional frameworks will be presented as a "necessary" condition for success. Collective actions taken to resolve the international airline hijacking problem of the 1960s, 70s, and 80s will be offered as a template to solve the piracy problem.

The conclusions section will provide an overview of the major themes of the thesis. There will be a review of the problem, the two-part nature of the solution to the problem, and the methods of effecting changes. An assessment will be made of prospects for resolving the problem, whether regional or international. The general contention is that, although international collective action would be the most effective policy, many obstacles frustrate its achievement. A comprehensive series of less complex, localized cooperative actions may provide the most constructive solution.

The final section of this thesis comprises its appendices.

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[4] Farley, Mark C. LCDR, International and Regional Trends in Maritime Piracy 1989-1993. Thesis, Naval Postgraduate School, Department of National Security Affairs, Monterey, 1993.

Appendix A consists of a selection of charts created using the Naval Postgraduate School's "Violence-At-Sea" (VAS) Database.

Appendix B will discuss the 1992 pirate attack against the *Baltimar Zephyr*. It was media coverage surrounding this incident which finally succeeded in bringing to world attention the true extent of modern day maritime piracy.

Appendix C will focus on the possibility that pirates in Indonesia actively avoid attacking Indonesian vessels. A comparison will be made of rates of attack suffered by eleven ship's registries whose vessels were most frequently attacked during the last six years, with attacks recorded against Indonesian-flagged vessels. The evidence will show that, contrary to former belief, target-selection by pirates may take place.

Appendix D will describe Analysis of Variance (ANOVA) procedures which have been conducted to verify the value of bilateral agreements signed in 1992 between Singapore and Indonesia, and between Indonesia and Malaysia. The analyses are based on information contained in the VAS Database. Results suggest the utility of regional bilateral agreements in limiting the local piracy problem.

Appendix E will provide a review of some tactical solutions to the problem of piracy (the "sufficient" condition for success). A survey of ship company initiatives will outline methods of "target-hardening" ships. The arming of crew members and use of armed guards, both very controversial issues, will also be examined.

It should be noted that the definition of "Piracy" used throughout this work is <u>not</u> that agreed to at the 1982 United Nations' Convention on the Law of the Sea (Article 101). The U.N.'s interpretation clouds the issue by confining piratic acts to attacks conducted in international waters by private individuals for private gains. Many more cases of maritime robbery, however, take place within territorial waters than on the high seas. From the perspective of all components of the shipping industry, there is no tangible difference between attacks occurring in either venue. Consequently, the definition of piracy advanced by the 1992 International Maritime Bureau has been adopted for the purposes of this analysis.

> The act of boarding any vessel with the intent to commit theft or other crime and with the capability to use force in the furtherance of the act.[5]

There are advantages to this definition. It clarifies the situation by capturing under the same category, all cases of attack against vessels on the high seas, in territorial waters, and in port. The identity of the attacker is also irrelevant. Incidents of attack, whether conducted by private individuals or government actors, fall under the same classification.

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[5] Special Report - Piracy, ICC International Maritime Bureau publication, June 1992, p. 2.

II. THE PIRACY PROBLEM, A SITUATION UPDATE

A. OVERVIEW

This chapter will provide a snapshot of the current piracy situation. Section one will provide a brief account of the pirate attack on the *Baltimar Zephyr*. This will give the reader a glimpse of dangers facing the crews of commercial vessels plying the seas. (A more complete account of this case will be found in Appendix B). The effects of attack, as they pertain to crew members, the industry, and regional governments, will be analyzed in section two. Section three will be based on the Naval Postgraduate School's Violence-At-Sea Database. International and regional trends in maritime piracy will be analyzed. Fluctuations in the data will be examined to determine how the problem has evolved since 1989 and, in particular, during the past year. This may provide clues to the future.[6] The final section will outline recent anti-shipping developments. Phantom Ship operations will be described, and there will be an overview of the piracy situation in the South China Sea.

B. PIRATE ATTACK ON BALTIMAR ZEPHYR

MV *Baltimar Zephyr* attacked by pirates in position 04 Degs 08 Mins South, 107 Degs 09 Mins East at 2354 Hrs. Vessel Transiting from Freemantle, Australia to Singapore. Captain and Chief Mate Shot Dead. One person unaccounted for. All crews are staying at the bridge, no one wants to leave the bridge, all in shock, afraid, in a distress situation. They are navigating the ship to Singapore with difficulty. So reads the Regional Piracy Center's grim logbook entry for 12 December 1992.[7]

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[6] In December 1993, LCDR Mark Farley, a student at the Naval Postgraduate School, completed a thesis entitled International and Regional Trends in Maritime Piracy 1989-1993. The bulk of his work was based on the Violence-At-Sea (VAS) Database, which he created. The VAS database includes all reported instances of piracy from 1 January 1989. Farley's analyses of piracy trends both, regional and international, were current through 31 August 1993. The database is now current through 30 September 1994.

[7] The International Chamber of Commerce-affiliated International Maritime Bureau runs a Regional Piracy Center in Kuala Lumpur, Malaysia. The IMB-RPC

The attack on the Bahamanian-registered vessel was not an isolated incident. Over the past decade, hundreds of attacks have taken place against commercial vessels around the world. Sadly, even the level of violence involved in this case was not extraordinary. Physical violence against crew members is common during pirate attacks. More than a few crew members have been murdered by pirates. Perhaps the only differentiating factor here was that the master of the ship was a British subject. The incident on the *Baltimar Zephyr* was seized upon by a scandal-hungry media and became one of the most publicized cases of modern-day maritime piracy. There have been beneficial results from the media blitz. World attention has been focused on a re-emerging problem. This may result in action to correct the situation.

C. THE EFFECTS OF ATTACK

The ramifications of piracy are extensive. The immediate victims of pirate attack are the crew members aboard targeted vessels. They are normally threatened, often beaten, sometimes murdered. The fear of attack is very real in the minds of many seafarers. The shipping industry suffers financial loss, both directly and indirectly. Often the losses through robbery alone are containable. More difficult to mend, however, may be the tarnished reputations that repeated attack may cause. The potential exists also for the shipping industry to incur crippling losses. The effects of an underway collision occurring during or immediately after attack, could be catastrophic. In those instances where crew members were injured or killed during pirate attacks, negligent security litigation might be filed, charging shipping companies with failure to provide adequate security. Awards could be costly to the industry. Perceptions of a local piracy problem might adversely affect the local economy. Levels of international investment may be influenced by the safety of regional shipping. Ports may suffer if trade is transferred to safer regions. By way of example, Singapore, in providing a pirate-free environment, has benefitted from an increase in the number of ships

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collates information on pirate attacks and issues threat warnings to ships throughout the region.

calling for bunkers. There can be a clear incentive to shift disembarkation points to less dangerous areas.

D. THE CURRENT SITUATION

Romantic stories of seventeenth and eighteenth century marauders have left many with the notion that piracy somehow went the way of the sail. This is far from the truth. The attack on the *Baltimar Zephyr* presents a graphic example of dangers presently facing the crews of merchant ships in many regions of the world.

Just how bad has the situation become? The Naval Postgraduate School maintains a database which includes all reported attacks against commercial shipping since the beginning of 1989. A study of the data through September 1994 indicates that changes in the incidence of piracy have occurred in six (of twelve) most dangerous regions around the world.

1. International Overview

The figures in Appendix A are provided for the purposes of this analysis. Figure 1 lists the sub-regions included in each of the twelve major regions of the Violence-At-Sea Database. Figure 2 is a map of the world. Figure 3 is a map of Southeast Asia. Figures 4-14 are described below.

Accurate analysis of the piracy situation worldwide is hampered by the level of under-reporting of incidents, which has been estimated at upwards of 50%. Depictions presented in this thesis are dependent on the raw data available. True rates of attack are likely to be considerably higher than is suggested in the graphs. The rate of reporting varies from region to region. South/East Asia (Region 1) continues to record the largest number of attacks. Part of the reason for this may be the presence of local response units. The Hong Kong Marine Rescue and Coordination Center (HKMRCC) and the International Maritime Bureau's Regional Piracy Center (IMB-RPC), in Kuala Lumpur, serve as response centers and regional clearing houses for information on pirate attacks. The efficient handling of reports encourages masters to forward details of attacks. By contrast, the total apathy shown by many South American government authorities, in particular those of Brazil, has dissuaded

the shipping industry from filing reports. Attacks recorded in South America (Region 8) (Figure 12) are considerably under-represented.

Figure 4 depicts the most recent changes in the number of pirate attacks taking place worldwide. Total numbers were up in 1993, reaching a final count of 167 attacks. However, the number of attacks has since decreased. The graph shows the projected number of attacks through the close of the year, a total of 114 instances, based on data through 30 September 1994. While the decrease is heartening, it should not necessarily be assumed that this represents the beginning of a long-term downward trend. The number of attacks world wide between 1981 and 1983 was at approximately the same level as in 1991.[8]

A more complete picture may be obtained by looking at the regional situation (Figure 5). The projected levels of attack for 1994 were off for all regions except East Africa (Region 6). Increases here may have been associated with the recent unrest in Somalia. Throughout the six-year time frame, the largest numbers of attacks were registered in the following five regions: South/East Asia (Region 1), Northeast Asia (Region 2), Indonesia (Region 3), West Africa (Region 5), and South America (Region 8). Figure 6 provides the number of attacks in each of these regions. Figure 7 identifies the percentage of worldwide attacks occurring in each of these regions. A breakdown of attacks in Region 1, showing trends in six major sub-regions, is featured in Figure 8. Similar breakdowns for Regions 2, 3, 5, and 8 are found in Figures 9-12. Figure 13 provides an overview of the frequency of attack by vessel type. Figure 14 shows annual fluctuations in the reported use of firearms by pirates for the five major regions.

2. Regional Assessment

[8] See the International Maritime Bureau Chronology of Pirate Attacks on Merchant Vessels for 1981-1987 in Piracy At Sea, Eric Ellen (ed.), (London: ICC Publishing, SA, 1989) Appendix 1.

a. Region 1: South/East Asia

South/East Asia continues to witness the highest concentration of piracy incidents in the world. Well over half (56%) of the attacks worldwide were recorded here (enough cases, in fact, to allow the conduct of statistical studies, see Appendix D). The severity of the problem has caused world attention to remain focused on the achievement of a regional solution. Industry-generated diplomatic pressure exerted on the Chinese Government has led to a reduction in the number of interdictions by Chinese Public Security Bureau (PSB) units in the "Hong Kong-Luzon-Hainan" (HLH) Triangle (see section F, below). Also, the series of bilateral agreements signed in July 1992 between Singapore and Indonesia, and Indonesia and Malaysia (see Chapter III) has improved the security of adjacent sea lanes of communication running past or through their waters. During 1994, no attacks were recorded in the Anambas Islands and attacks in the Malacca Strait remained constant. Although there were reports this year of piracy in the Phillip Channel and the Singapore Straits (compared with no incidents in 1993) the levels remained well below those of 1991 and 1992.

A review of attacks recorded in Region 1 over the past six years indicates that the majority took place during the first half of the year, especially January through April. Regional weather conditions provide the most likely explanation for the distribution of attacks.

According to the depiction in Figure 14, the reported use of firearms halved from the high in 1989 of 87%. For three years the level appeared to settle at a little over 40% and has decreased this year to about 18%. However, this does not provide an accurate picture. In the last two years there have been <u>at least 50</u> interdictions of cargo vessels off the coast of mainland China by Chinese military units. Many of these incidents very closely resembled acts of piracy and most involved the firing of weapons. Few, however, have been reported in official channels.

b. Region 2: Northeast Asia

A very marked increase in the number of attacks in Region 2 occurred during 1993 (see Figure 6). This has been followed by a steep fall in the number of attacks. Eight incidents were recorded during 1994, which is one third of the previous total. Figure 9 gives a breakdown of the sub-regional trends. Attacks in the East China Sea, which had jumped from two in 1992 to eleven in 1993, have since decreased to a projected total of four attacks this year. No attacks were registered in the Yellow Sea or Korean Strait, and attacks in the China sub-region decreased by a third to settle at four incidents in 1994. Efforts at suppression appear to have worked.

There is evidence to suggest that many of the attacks in this region also were the work of Chinese military units of one form or another. Efforts to lay claim to the Spratly Islands may provide one explanation for the Chinese exploits; illegal actions in the continuation of a counter-smuggling campaign may provide another (see section F below).

Pressure from the shipping industry, which eventually resulted in action by the International Maritime Organization, may have played a part in reducing the level of attack. In June 1993, the Russian Foreign Minister issued a formal protest note to the Beijing Government, complaining of Chinese harassment of Russian merchant ships.[9] The attacks continued; four were recorded in June and July alone. In July 1993 the decision was made to send a naval presence to the region. That month, the Kara CG-561 Petropavlovsk was deployed to the East China Sea. China subsequently apologized for the attacks on Russian shipping and announced that illegal search and seizure of Russian vessels would be halted.

There has been a marked reduction in pirates' use of firearms in this region. In 1993, over fifty percent of the attacks reported mentioned the presence of firearms. In 1994, the figure stood at approximately 13%. This rate seems low, and may suggest a reduction in the level of military involvement.

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[9] According to the Violence-At-Sea Database, twelve of the twenty-five worldwide attacks against Russian vessels occurred in this region.

c. Region 3: Indonesia

Attacks in Region 3 have decreased steadily since 1992 (see Figure 6). That year witnessed a jump from fifteen incidents to thirty-four. In 1993 there were sixteen incidents. The projected number for 1994 is eleven. On a sub-regional basis, the largest decreases were recorded after 1992 in the Andaman Sea, the Java Sea, and in the vicinity of the Bintan Islands (Figure 10). Sumatra is one area, however, which appears to have bucked the trend. While all other areas witnessed reductions or maintained levels of attack in 1993, this sub-region experienced a tenfold increase in attacks. This may have been caused by the juggling of enforcement assets which may have opened a window of opportunity for regional pirates. Although the number of attacks reduced considerably in 1994, Sumatra remains the most piracy-prone sub-region of Region 3.

Pirates use of firearms in Region 3 has decreased from a high in 1990 of 66% to approximately 28% in 1994 (see Figure 14). Incidents of attack in Indonesian waters may provide evidence of target selectivity by indigenous pirates. This will be investigated in Appendix C.

To a large extent, the reduction in the number of attacks in Region 3 was due to intense international pressure which followed the jump in the level of attacks during 1992 (see Chapter III). Bilateral agreements with neighboring states have helped more effectively police the region and the purchase of thirty-nine naval vessels from the former East German Navy has increased the counter-piracy resource base.

d. Region 5: West Africa

Attacks in West Africa have fallen considerably (see Figure 6). From 1990 through 1992 the numbers of attack doubled each year to peak at sixteen incidents. In 1993 there was a reduction to fourteen attacks. The figure for 1994 was five. Figure 11 gives a sub-regional breakdown. Angola and Cameroon, which have figured significantly in former years, witnessed no attacks during 1994. Attacks occurred only in Nigeria (which, overall, has been the most piracy-prone area of Region 5) and Senegal, where three attacks took place.

The pirates' use of firearms in Region 5 decreased considerably during 1994 (Figure 14). The rate had slowly decreased from the high in 1990 of 74% to 50% in 1993, before falling to 24% in 1994. These figures do not provide any kind of projection to the future. The region is generally politically unsettled. The level of attacks appear to mirror more closely the state of regional political unrest than anything else. Increases experienced in Angola in 1992/93 and Cameroon in 1992 may provide relevant examples.

e. Region 8: South America

Reports of pirate attacks in South America, after having increased each year since 1989, underwent a slight downturn in 1994 to settle at a total of 16 incidents. Little value can be gained from such information, however. The rate of under-reporting in South America is probably worse than in any other region.

Figure 12 provides a breakdown of attacks by sub-region. During 1994, attacks were reported only in Brazil, Ecuador, and Guyana. Brazil registered the highest number of attacks for the region, eleven incidents. After an incident-free year, attacks in Ecuador reached a total of four. Guyana experienced two attacks, to match the level of 1993.

Attacks in South America are typically violent. The use of firearms by pirates has been higher than in other regions (Figure 14). Annual increases in the rate of firearms use were registered from 1989 through 1992, when the rate peaked at 88%. Curiously, the rate decreased to 16% in 1993 but has more than doubled during 1994 to reach a rate of 44%.

The authorities in many parts of the region, but particularly in Brazil, display a complete disinterest in the problem of piracy. The attitude of the Brazilian government was highlighted during a recent meeting between Brazilian port and naval officials and the shipping agents of various lines. During the discussion, a high ranking naval officer explained why attacks occurred so frequently in Brazilian ports. Ships' crews, he said, insisted on departing for shore the moment vessels came to anchor. Leaving the ships unattended in such a manner was simply asking for trouble. When pressed over the issue of inadequate police patrols in port, the same official indicated that ships desiring protection

ought to pay for private security guards. This "official" reaction does not bode well to the future safety of shipping in the region.

E. PHANTOM SHIPS

Pirate attacks taking place while vessels are underway may be classified as short-term, long-term, and permanent. The majority of cases belong under the first heading. Pirates remain on board for about thirty minutes and a typical "haul" is in the region of $12,000. Long-term seizures are highly organized operations. They involve the take-over of a vessel and its diversion to a distant rendez-vous point. The ship will typically be held for several days while the cargo is transferred at sea. Once this is accomplished, the ship and its crew will be released. The third form of piracy, that of permanent seizures, is by far the most complex. "Phantom Ship" operations involve the spiriting away of vessels for the purpose of stealing cargos. The operations are performed by specialized international criminal gangs working through extensive infrastructures. Detailed planning and organization, and good market knowledge, are required to perform these crimes.

1. Organization of a Phantom Ship Operation

A "Phantom Ship" is a vessel, with a false identity, used to conduct maritime fraud. The ship will arrive in port, presenting itself as a legitimate carrier. A cargo will be loaded, bills of lading will be presented to the trader, and the vessel will sail. Later, when the consignee makes inquiries about his cargo, he will learn that the ship and cargo have disappeared. The ship will have diverted to another port, its cargo sold. Once the vessel has discharged its cargo, it can re-register with a different identity and repeat the crime.

Phantom ships may originate from a number of sources. They may have been purchased on the second-hand market, perhaps bought for breaking but then reactivated; they may have been chartered; or they may have been borrowed from another syndicate. In many cases, however, ships are hijacked from anchor or while underway, the crews being set adrift or murdered. It is here that the link to piracy is clear.

Since 1986, the International Chamber of Commerce - International Maritime Bureau (ICC-IMB) has investigated two dozen phantom ships, and no doubt there have been more

cases. It is estimated that up to twelve phantom ships may be operating presently in Southeast Asia alone.[10] Cumulative losses to the shipping industry are substantial. The average cargo loss in such operations is estimated at $2-3m per incident.

How is such a crime organized? Once a ship has been acquired it must be provided with a new identity. For about $2,000 a provisional certificate of registry can be obtained with few questions asked. This allows the ship to trade for up to three months. In some cases documentation requirements are so lax that a verbal description is all that is required. Alternatively a faxed document may be considered adequate for registration purposes. False information provided to the registering authorities may concern the vessel's previous names, tonnages, dimensions, and the owner's identity. Other necessary paperwork (safety certificates, etc.) can be obtained from corrupt officials so that the vessel, at least on paper, complies with all IMO requirements and can trade legitimately.

A crew with fictitious identities must be provided for the phantom ship. Two dozen men, furnished with false ID's and passports, will need to act the role of crew members for up to ten days. The clandestine existence of these crew members may provide clues to the true nature of the operation. Few ships pull into port without allowing crew members to go ashore; even fewer receive and send no mail.

What are some other indications of a phantom ship operation? Phantom ships typically fit a profile. Normally less than 10,000 tons in size, the vessels are usually 15-20 years old and are flagged by either Panama or Honduras (in 95% of the cases investigated by the ICC-IMB, rogue ships had Panamanian or Honduran registry). A ship's late arrival in port may provide a danger signal. Most crew members are not properly trained, their ships tend to be in a very poor state of repair. Many suffer engine breakdowns. The ship's agent always works alone (no one else ever answers the phone!) in a temporary office rented or sublet for cash. The company is rarely located where registered and is sometimes established only a few days before the operation begins. Documentation is usually hand-delivered rather than mailed. Freight charges are typically collected by the agent, then transferred to the

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[10] Capt J. Abhyankar, Deputy Director, ICC-IMB, 20 July 1994.

personal account of someone other than the owner. A review of Lloyd's Registry may indicate no listing for the ship. An examination of crew members documents may raise questions of authenticity. Passports may have been issued on a Sunday. Certificates of competency, which normally take up to ten years to complete, may have been issued within a far shorter period.

2. The *Silver Med*, a Phantom Ship

The following account, drawn from the files of the ICC-IMB and from information forwarded by Liberian Services, presents a classic case of a phantom ship operation. On 13 September 1988, while anchored in Manila Bay, the Liberian-flagged *Silver Med* (5350 gross tons) was hijacked by eight armed men. The vessel sailed for Palawan Island, south of Manila, where twenty nine crew members and passengers were allowed to swim ashore. Two weeks later the ship, now named *Lambamba*, was observed near Sultan Shoal, off Singapore Island. On 5 October she was seen anchored off Sabah, Indonesia, but departed before a police launch could reach her. The next sighting was at Samarinda, Indonesia, where the vessel, now called *Sea Rex*, was seen loading plywood bound for the port of Huang Pu in China. The ship never reached her official destination. Instead she diverted to Zamboanga, where her cargo was illegally discharged.

In January 1989, now sporting the name *Stamford*, the ship collected cargo from Malaysia and Singapore. The consignment of steel, palmolein, palm stearin and natural rubber never reached its Chinese destination. Instead, the "*Star Ace,*" travelled to the Philippines, where she was finally interdicted by customs officials. Four Filipinos and three Singapore nationals were taken into custody.[11] The arrests were made just in time; plans had been made to sell the ship for scrap.[12] In the space of three months, the *Silver Med* had undergone no fewer than four name changes and had stolen at least two ship loads of cargo.

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[11] ICC-IMB, Special Report Piracy, London, June 1992, pp 5-7.

[12] Seatrade Week, Jan 27-Feb 2, 1989.

3. The Investigation of Phantom Ships

Costs to the shipping industry from phantom ship operations are substantial. It has been estimated that losses of up to $800m per year are involved.[13] The international nature of these crimes suggests that investigation should fall under the domain of INTERPOL. However, to date, INTERPOL has not handled any cases.[14] Instead, this task has been left to commercial investigative bodies. In the past eight years, the ICC-International Maritime Bureau has conducted around two dozen investigations of phantom ships. The ICC-IMB has also been instrumental in publicizing the problem. In the late 1980's a special report, Organized Crime in the Far East, was published. This outlined the modus operandi of phantom ship operations.

The ship's registry may be of considerable assistance in prompting the search for phantom ships and in encouraging legal action by states in whose waters these vessels may anchor. In the case of the *Silver Med*, Liberian Services contacted the U.S. Maritime Administration and requested assistance from the State Department and U.S. Navy. The U.S. Defense Mapping Agency subsequently issued an Anti-Shipping Activity Message (ASAM) which outlined the case. Requests were made to the Singapore, Indonesian and Philippine authorities to take action when *Silver Med* anchored within their territorial waters. As a result, the ship was finally arrested in the Philippines.

Phantom Ship operations can represent a near perfect crime. Huge profits may be made within a short period. Although an extensive infrastructure is a prerequisite and detailed planning and organization are needed, the chances of detection and subsequent prosecution are minimal. It is most likely that phantom ship operations will become more frequent.

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[13] Mr. Eric Ellen, Director, ICC-IMB, 20 July 1994.

[14] Mr. Eckert Kemelmeier, Head of Sub-Division 1, ICPO-INTERPOL General Secretariat, in a paper presented at the ICC-IMB Regional Meeting on Phantom Ships and Piracy, Kuala Lumpur, Malaysia, 19-20 July 1994.

F. STATE-SUPPORTED PIRACY?

The chase begins. A small coastal freighter struggles to outrun the approaching patrol boat. Bullets riddle the ship's bridge, a rocket-propelled grenade is launched across the bow. Warning enough, the ship slows to receive a boarding party. Crew members are threatened, trussed-up, then beaten. Radios and navigational equipment are destroyed. The ship is escorted to a Chinese port where its cargo is confiscated. Crew members are coerced into signing statements indicating their involvement in smuggling. The vessel is held, perhaps for up to three months, pending payment of fines.

Since 1992, attacks of this sort have been occurring at an increasing rate in a section of the South China Sea known as the Hong Kong-Luzon-Hainan (HLH) Triangle (see Figure 3). Many of these attacks bear the hallmarks of Chinese military involvement.

Ship interdictions in the South China Sea fall into two categories: those taking place along the coastal trading route, and those occurring far out to sea. Vietnamese-owned vessels have borne the brunt of Chinese actions close to shore. This may represent the targeting of an adversary's shipping. A more likely explanation, however, is that Vietnamese ships are heavily involved in smuggling. Chinese military actions on the high seas may represent cases of coercive diplomacy. The interdiction of commercial vessels in the waters surrounding the Spratly Islands could be a device in China's claim to the rich resources of the region's ocean floors.

1. Coastal Interdictions

According to Chinese officials, vessel interdictions off the coast of China are being conducted as part of a campaign to stem the flow of luxury goods illicitly entering the mainland. In 1987, customs duties on goods such as air conditioners, electronic equipment, and automobiles was doubled to 100%. Many shipowners, attracted by the possibility of huge financial rewards and limited risk, began coordinating "unscheduled" stops along the Chinese coast to unload "excess" cargo. Local authorities were heavily involved in this

smuggling. Until recently the trade was coordinated, sometimes even organized, by local military units.[15]

Until 1992, efforts by the Beijing authorities to eradicate the smuggling problem had come to nothing. That year a system of cash incentives was implemented. Payments of up to 50% of the value of an impounded cargo were made to those military units directly involved in the capture of contraband.[16] Local authorities' enforcement of the law was made preferable to flouting it; the number of interceptions skyrocketed. Vietnamese ships which had previously been assisted, were now targeted by Chinese military units. Soon, anti-smuggling activity had became so effective that Public Security Bureau (PSB) units stationed further from Hong Kong found themselves excluded from the interdiction business. Some of these units migrated towards Hong Kong waters. Turf battles developed and, on occasion, shots were fired between competing units.

In the rush to be first to interdict a suspect vessel, it was only a matter of time before incursions were made within Her Majesty's waters. The Chinese explained many such incidents as "navigational errors." China may have used this opportunity to flex its muscle in what would soon be sovereign territory. Another aspect of the race to gather prizes has been the indiscriminate targeting of virtually all Vietnamese vessels departing Hong Kong, even those with fully manifested, legitimate cargos.

2. Interdictions in International Waters

While the number of attacks along the Chinese coast increased after 1992, so too did incidents taking place far out to sea. In some cases vessels were boarded more than 500km from the Chinese coast. Although Chinese involvement was documented in many of these cases, Beijing steadfastly refused to comment on the attacks.

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[15] Interview with Mr. Greg Torode, Reporter, South China Morning Post, 23 July 1994.

[16] Far Eastern Economic Review, 16 June 1994, p. 26.

It is possible that interdictions of cargo vessels in international waters were part of the Chinese anti-smuggling campaign. However, the type of cargo carried, and the size of some of the ships being boarded (many were too large to be accommodated in any but the largest of port facility), stretches the credibility of many such claims.[17] For example, in April 1994, while located approximately 270km north of the Philippines, the 4,872-ton Panamanian-registered *Sun Kung #8* was chased for 45 minutes by a Chinese patrol boat. Eventually, two officers, armed with grenades and pistols, jumped on board. Pistols were pointed at the master's head, and the manifest and cargo were inspected. Once it was established that the cargo consisted only of teak logs, the boarding party departed.

The trauma experienced by crew members was intense; the ship's master was still shaking two days later while official statements were being collected by Hong Kong Marine Department officials.[18] There can be little doubt that this was an official interception; Captain Chan, master of the ship, was able to provide the name and serial number of the patrol boat involved. A question is raised. The *Sun Kung #8* did not fit the profile of a smuggling craft; why was it targeted?

China has laid claim to two sets of islands in the South China Sea. The Paracel Islands, eleven coral formations located 175 nautical miles southeast of Hainan Island; and the Spratly Archipelago, comprising 127 coral atolls, cays, and sand spits (some of them visible only during low tide), located 550nm further south. In themselves they do not represent anything of great value. However, tests have indicated that vast resources exist below the ocean floor; for this reason other nations too have claimed sovereignty.

China may be using anti-smuggling activity as a tool in its bid for control of the South China Sea. By simply exercising her "right" to board and inspect vessels in the disputed region, she reinforces her credibility concerning claims to regional control.

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[17] Ibid, p. 23.

[18] Interview with Mr. Duncan Drummond, Principle Surveyor, Hong Kong Government, 26 July 1994.

3. Actions Taken To Limit Interdiction

In 1993, a report on piracy was prepared by the Hong Kong Government's Marine Department, for submission to the IMO's MSC 62 meeting in London. Officials at the Department, concerned more with underscoring the sufferings of mariners than with the strict legal definition of piracy, included in this document all reported instances of hostile action (interceptions, incursions, and pirate attacks)[19] against commercial traffic for the previous year.

Diplomatic niceties precluded any such emotional display. Publication of the document would have caused embarrassment to the Chinese. This would have reinforced existing frictions between Britain and China (China had been deeply angered by the earlier introduction of a democracy package for the Hong Kong Chinese). The Hong Kong Government's Security Branch, acting under direction of the British Foreign Office, insisted the paper be withdrawn. It was important, they intimated, to stick to the item on the IMO agenda, which was "piracy."[20] Most of the cases in the report did not technically constitute piracy and should not have been included. A sanitized version, devoid of all reference to Chinese involvement in attacks, was to be submitted.

The fact that the British Government should have wanted to avoid difficulties is understandable. Transfer of authority in Hong Kong is due to take place in 1997. There are great concerns that the transition should run smoothly. The Chinese might, if provoked, attempt to seize power earlier. In this case the British would be incapable of reacting effectively. Unfortunately, avoiding the issue of Chinese interdictions served only to reinforce the problem; the number of attacks recorded in the South China Sea increased throughout 1993 and into 1994 (see Figure 8). Moreover, the whole issue called into

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[19] In this case, "interception" refers to the Chinese military boarding of vessels outside of Hong Kong waters, "incursion" refers to Chinese military boardings within Hong Kong waters.

[20] Interview with Mr Jim Morris, Deputy Secretary for Security, Hong Kong Government Secretariat, Security Branch, 27 July 1994.

question the status of Hong Kong as a free port. Several flags, including those of Denmark and Germany, voiced concerns over the safety of their own ships in the region.

An escalation in the number of attacks caused tensions between the Marine Department and the Security Branch to increase. In March 1994, the Marine Department prepared another report for submission to the IMO. During the previous eighteen months, ninety-eight instances of attack had been recorded throughout the South China Sea. Forty-seven of these identified official Chinese involvement.[21]

On 10 March 1994, the IMB publically announced that the PLA (N) and Chinese paramilitary organizations were conducting acts of piracy. Small freighters were being boarded and subsequently arrested for "customs or safety violations." Vessels were being taken to close ports where the cargos were confiscated as smuggled goods.

Timely coverage of this issue by Hong Kong's South China Morning Post ensured that this report was not concealed. Investigative reporter Greg Torode obtained a leaked copy of the report and wrote an article which highlighted the level of violence involved in many of the attacks. Carefully timed for maximum effect, the article ran on the front page the day after Admiral Metropoulos, Chairman of the IMO, arrived for a counter-piracy fact-finding mission. The article successfully focused world attention on the hazards posed by anti-shipping activities and ensured that the Security Branch could not side-step the issue.[22]

In the wake of Metropoulos' visit, the Chinese adopted an abrupt change of posture. Beijing announced that some of the incidents taking place in the South China Sea were "legitimate counter-smuggling operations." However, they blamed most of the interceptions on rogue elements of the customs and public security forces. The Admiral's visit also prompted official acceptance of responsibility for some of the interdictions in international waters. These too, the Chinese indicated, were motivated by the desire to curb smuggling. Thus was raised a rather curious concept, that of the "pre-emptive anti-smuggling raid."

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21 South China Morning Post, 16 March 1994.

22 South China Morning Post, 16 March 1994, p. 1.

Having admitted to the "chaotic state of some of its anti-smuggling units," Beijing announced the introduction of arm bands and certificates of authenticity for official anti-contraband customs personnel. Beijing further declared that ship masters were authorized to ignore rogue units,[23] although the wisdom of such action was not explored. Since April 1994, there has been a decrease in the number of maritime incidents in the South China Sea.[24]

China has reaped considerable benefit from counter-smuggling activities. The material gains have been substantial. Cargoes valued at many of thousands of dollars have been confiscated. From a deterrent standpoint, China has sent a firm message to those involved in the illicit trade. Meanwhile, at the strategic level, China has issued a tacit signal that ships of other states might, in future, be targeted by Chinese enforcement units. This may have been warning enough to ensure compliant behavior from neighboring states.

G. SUMMARY

Piracy is a problem which adversely affects all sections of society, from crew members, to company shareholders, to consumers in general. It is not an issue which will soon disappear, in fact quite the reverse. While total reported attack figures are down somewhat for the year, levels of reporting may have deteriorated now that media coverage of the problem has decreased.

More than half of the incidents of attack have been registered in the South/East Asia region. Attacks here are down considerably from the high of 1991. Reductions here are due largely to the exercise of diplomatic and industry pressure for action on the part of coastal governments. Northeast Asia has registered a considerable reduction in the rate of attack. Again diplomatic pressure exerted on the Chinese may have helped change the situation.

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23 Far Eastern Economic Review, 16 June 1994, p. 23.

24 According to official records of the Hong Kong Government's Marine Department, thirteen incidents took place during the first three months of 1994. Fifteen cases were recorded during the following six months.

The Russian example suggests, however, that establishing a naval presence in the region may have been more effective in ending attacks against Russian merchantmen than were diplomatic initiatives.

The influence of adverse international attention has resulted in a marked reduction in the number of incidents reported in the Indonesia Region. Bilateral agreements and the exercise of combined military operations have had a positive effect. The situation in West Africa defies analysis. With the exception, perhaps of Nigeria, rates of attack in this region appear to be more dependent on the state of local political turmoil than on anything else. South America continues to be one of the most violent regions. The rate of under-reporting is considered high in this region. Attacks are centered for the most part on Brazil. The situation in Brazil is likely to deteriorate unless concerted action is taken soon.

While most pirate attacks are classified as short-term, an increasing number of long-term arrests of vessels are being made. A new phenomenon has been the emergence of permanent seizures, "Phantom Ships" as they are known. These attacks are conducted by organized crime syndicates operating out of Taiwan, Hong Kong, Singapore and Thailand. In a variety of manner, ships are acquired, furnished with a spurious identity, and allowed to ply the seas in search of cargo. The large amounts of money involved in this kind of heist mark it as the crime of the future. Cases are likely to increase in number.

Chinese interdictions of vessels both within her territorial waters and on the high seas may provide an example of state-supported piracy. Under the pretext of conducting counter-smuggling action, vessels have been boarded, seized, and escorted into port. Typically cargos are confiscated and fines levied on the vessels' owners. In some cases it has been suggested that this was the work of "rogue elements." Certain of the interdictions occurring far out to sea may be designed as a strategy towards resolving favorably (in China's eyes) the issue of sovereignty over the Spratly Islands. Diplomatic, media and industry pressure has helped resolve this issue. These tactics may provide a model for the suppression of piracy in other regions of the world.

III. SOLVING THE PROBLEM OF MARITIME PIRACY

This chapter is in two parts. Sections A, B, and C seek to explain why the necessary level of cooperation for a collective solution to the problem of piracy has not been reached. Sections D through I provide recommendations for the resolution of this problem.

Although maritime piracy may resemble a local or national problem, it is in fact an international problem. The effects of attack are felt throughout industry and across the world. A solution to the problem requires international and inter-industry cooperation. This kind of cooperation is not easily achieved. The "Prisoner's Dilemma" can be used to help explain why short-term incentives for defection outweigh the long-term benefits of coordinated action. How can this short-sighted approach be altered? An analysis of the provision of "Public Goods" will be conducted to search for possible solutions. This concept will be applied to a problem currently facing the shipping industry, the need for action to retain the services of the ICC-IMB's Regional Piracy Center in Kuala Lumpur, Malaysia.

A lasting solution to the problem of suppressing piracy requires the creation of industry-wide and international institutional frameworks. This "necessary" condition for success has proved difficult to attain. While regional initiatives have been generally effective in the battle against piracy, international agreements have stumbled. Reaching consensus among the nations of the world has been fraught with frustrations. As a result, counter-measures have been less productive and the problem of piracy has persisted. Why has this happened? How can the situation be improved? An analysis of other international security problems requiring cooperative action may provide an initial perspective on the nature of the problem and the nature of the solution.

According to the Violence-At-Sea Database, ships are targeted more by type than by nationality; there is little evidence of selective attacks against the ships of any one nation.[25] The example of Vietnamese vessels being targeted by the Chinese is the exception. The

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[25] Farley, Mark C., International and Regional Trends in Maritime Piracy 1989-1993, (Monterey, CA: Naval Postgraduate School, 1993), p. 16.

international nature of the piracy problem is reinforced by its fungible qualities. While there is no evidence to indicate that pirate groups relocate in the face of increased anti-piracy activity, a clamp-down in one region may result in increased numbers of attack elsewhere. Reinforcing counter-piracy operations in one region normally requires the transfer of resources from outlying areas. Fewer enforcement assets in these outlying areas will allow greater freedom of action to the indigenous pirates, and activity in those areas may increase.

Jurisdictional issues complicate this problem. Frictions over territorial sovereignty represent a common stumbling block. The Malacca Straits, for example, pass through waters controlled by Indonesia, Malaysia, and Singapore. Escaping marauders, can and frequently do, elude capture by crossing international boundaries. The atomized nature of the shipping industry further obscures the picture. For example, a vessel registered with a certain flag state may be owned by a corporation headquartered elsewhere, and insured by a company from a third country. Maritime piracy is a transnational and trans-industry problem. A collective solution at the international and inter-industry level is required.

A. CONTRADICTIONS IN THE FIELD OF CONTAINING PIRACY

Piracy reaps its toll on all sections of society. Ship's crew members are subjected to abuse and violence, the shipping industry suffers financial losses, consumers in general pay higher prices for the goods they purchase. All have a vested interest in eradicating the problem. However, a closer inspection of the issue reveals contradictions.

The shipping industry suffers the immediate effects of attack, yet they have strangely been reluctant to take action. This is apparent in the area of incident reporting. An initial requirement for the effective suppression of piracy is to have comprehensive documentation of all attacks. Good statistical information is required to identify problem areas and bring pressure to bear to ensure that adequate counter-measures are taken. Unfortunately, shipping companies are often reticent to acknowledge attacks against their vessels. This happens for a number of reasons. First, shipowners often perceive indifference on the part of coastal governments in whose waters attacks occur. This strengthens their belief that reporting incidents of piracy serves no tangible benefit. Second, financial concerns weigh heavily in

the decision not to report. Insurance companies might raise premiums based on evidence of increased risk. Reports could stimulate calls by seamen's unions for hazardous payments. The fear that documentation of attack might be used by competitors to highlight the relative safety of their own operations reinforces the industry's reporting malaise. Finally, thorough documentation of attacks might suggest that shipowners were aware of the dangers and yet failed to adequately protect their employees. Such evidence could possibly be used in legal battles surrounding injury and wrongful death suits. The result, as suggested above, is that an estimated 1 out of every 2 incidents of maritime piracy goes unreported.

Analogous incentives affect many afflicted states in whose waters attacks take place. Their inability to adequately patrol territorial waters is often an embarrassment. Corruption is rife in some of these regions. Local officials may receive kickbacks to turn a blind eye to pirates' activities. In certain cases, navy and coast guard units are actively involved.[26] In these instances, governments would have strong incentives to discourage reporting. Coastal states, in certain instances, are actually suspected of piracy. Another consideration is that proceeds from pirate raids may provide a much-needed boost to the local economy. Eradication of piracy may be at odds with the welfare of the local inhabitants and might be "unofficially" discouraged. In the eyes of these coastal states, the fact that commercial vessels generally represent the interests of the "first world" may further legitimize pirate actions.

Local governments may be unaware of the true extent of the problem and so may not assign adequate resources. Under-reporting of attacks serves to perpetuate this situation. Elsewhere, governments may be aware of the magnitude of the problem but fail to equip their enforcement units adequately. In areas of the Philippines where guerrilla activity is prevalent, members of local coast guard detachments have refused to fight the better armed

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[26] It has been alleged that, prior to 1992, as many as half of the instances of piracy in Indonesian waters were conducted by elements of the Indonesian Navy. Similarly, certain instances of attack off the Colombian coast have been credited to members of the Coast Guard. At the end of the day they would change out of their uniforms and spend the night engaged in piracy.

and equipped insurgents who are responsible for many of the pirate attacks. Where attacks have occurred, diplomatic protests lodged with the regional states is often recommended as an effective response. Unfortunately, the need for smooth relations may encourage diplomats to downplay the true nature of concerns. As a result, ineffective signals will be transmitted to the responsible governments and the problem is less likely to be resolved.

B. THE PARADOX OF COLLECTIVE ACTION

The suppression of maritime piracy can be represented as a classic case of the "Prisoner's Dilemma." In the Prisoner's Dilemma, two partners have been arrested for a crime. Each is separated so that he cannot communicate with the other. The authorities need information to successfully prosecute. If each refuses to talk, both will be freed. If one talks and the other remains silent, he will be sentenced to one year while his partner is jailed for ten. If both confess, each will receive five years. The crucial aspect of the Prisoner's Dilemma is the players' inability to communicate. This creates an atmosphere of wariness. Each player fears that his responsible actions (i.e. keeping quiet) will be exploited by the other and result in a ten year sentence. The overwhelming incentive to avoid the worst case motivates each player to talk. As players independently opt to talk, the optimal solution, freedom, is eluded; players make the conscious decision to settle for the suboptimal outcome, a one or five year sentence. This scenario may be related to the case of piracy. Although it is in everyone's best interest to cooperate in solving the piracy problem, all prefer not to contribute to the solution because there is no guarantee that all others will donate. As a result all must suffer the suboptimal solution, piracy's endurance. To resolve the issue, mechanisms must be created to initiate communications and establish trust, and/or an enforceable social contract must be developed to keep all players in line.

C. PROVIDING FOR THE PUBLIC GOOD

Why do coastal states in some of the world's worst pirate regions balk at the idea of providing greater protection for international shipping? Third World states blame their inability to adequately police territorial waters on a paucity of resources. While this argument

is not entirely without merit, there are additional considerations that bear on the problem. Counter-piracy activity is funded by the coastal state, yet benefits are reaped by all vessels transiting through the region. Security for those who transit territorial waters is a "free good." Coastal states are placed in the position where they are providing benefits for which they are not being adequately compensated; the states are, in fact, providing "public goods."

In a similar manner, responsibility for the construction and maintenance of aids to navigation has been a topic of debate throughout history. Lighthouses, for example, provided utility to the owning nation's shipping. However, benefits spilled over, providing assistance to the vessels of countries which had contributed nothing towards installation or upkeep. The situation was tolerated because benefits enjoyed by the nation providing such equipment more than compensated for the marginal costs involved; the fact that others were getting a "free ride" was immaterial. As time passed, other more expensive "public goods" were desired. In many such instances it was not feasible for a single actor to shoulder the full expense of innovations to benefit the group as a whole. Cooperative agreements between two or more members of the group became necessary for the provision of such products. The free rider problem associated with providing public goods in these cases was magnified.

A public (or collective) good is distinguished by two features. The first is called "non-exclusiveness." An actor may have produced a good which provides benefits for other actors even though they may have contributed nothing towards the costs of the good. It is impossible for other actors to be prevented from taking a "free ride."[27] The second feature is that of "jointness" of supply. Consumption of the good by one actor does not reduce the supply available to others.[28] Counter-piracy activity is an example of a collective good. Keeping the seas free of piracy ensures the safety of ships of all trading nations, not just of

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[27] Sandler, Todd, "The Design of Supranational Structures," in International Studies Quarterly, Vol 21 No. 2, June 1977, p. 255.

[28] Russett, Bruce M., "Collective Goods and International Organization," in International Organization, Vol 25: No. 1, Winter 1971, p. 846.

those that have paid for the coverage. The level of security provided is not affected by the number of ships transiting through the region.

Two problems are associated with the provision of a public good. The first, that of the free-rider, is associated with benefit spill over. Members of a group have little incentive to contribute to the purchase of the group's collective interest if that service is already being provided by another. Why should they pay unless they are compelled to do so? The second aspect concerns the suboptimal provision of the good. Free-riders may seek to misrepresent their preference for the good in the hope that others will pay for its provision. The true value of the good may thus remain unrecognized and a lower-than-optimal provision of the public good may result. This equilibrium outcome can prove to be unsatisfactory to all actors.

The concept of public goods may be applied to the case of counter-piracy. All states benefit from a solution to the piracy problem. If each state is forced to pay a section of the total costs of the solution, then each will reap marginal benefits which are greater than the marginal costs incurred. However, if one state is already paying the full cost of the counter-piracy coverage (for which all benefit) soliciting voluntary incremental contributions from other states will be very difficult. Other states have no incentive to contribute towards counter-piracy because they cannot be prevented from receiving the benefits. Exclusive funding for this coverage will continue only if the marginal benefits enjoyed by the provider clearly outweigh the marginal costs involved. If this is no longer the case, the provider may under-allocate resources towards correcting the problem. The result will be inadequate protection from piracy. Alternatively, the provider may cease financing counter-piracy altogether, in which case, unrestricted piracy will return. Each alternative provides a less than optimal outcome for all players.

How can other states be induced to share the costs of providing counter-piracy protection and so ensure optimal production of the services? Establishing some form of property rights over counter-piracy protection would provide one solution. The example of defense alliances may be pertinent here. There are very low costs associated with expanding the coverage to another state, added membership can help lower the individual costs by

spreading further the burden, and it is possible to exclude non members from coverage.[29] In much the same way, rationing benefits only to those states which had contributed towards their fair share of the costs of counter-piracy activity and excluding all others might be viable in this case. If enforcement patrols were to answer only the distress calls of fully paid subscribers, other former free riders might be induced to pay. Once pirates became aware of the situation it is likely that they would begin targeting vessels not afforded the coverage. This would serve to reinforce the individual state's need to join the group.

Providing positive inducements for states to contribute towards the public good, counter-piracy protection, is an alternative approach. If the group can provide its members with private as well as public goods, individual states may seek to join the group. The provision of some form of emergency response service to member states' shipping, which went beyond mere piracy protection, might satisfy this objective.[30] Prestige and social/political standing associated with membership could provide another form of inducement. Finally, applying Thomas Schelling's concept of the *prominent solution,* if the costs of contributing were perceived to be equitable and not excessive, beneficiaries might prefer to pay rather than evade.[31]

Another method would be through direct coercion. The power to enforce participation would need to be delegated by individual states to a central authority equipped with a strong regulatory mechanism.[32] The more effective the control structure is at enforcing payment, the harder it will be to take a free ride, and the greater the incentive for individuals to contribute to the group project.[33] A mechanism for charging all beneficiaries and using the proceeds to pay for protection against piracy must be developed. Taxation may

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[29] Snidal, Duncan, "Public Goods, Property Rights, and Political Organizations," in International Studies Quarterly, Vol. 23, No. 4, December 1979, p. 550.

[30] What is envisioned here is coverage analogous to the services provided to members of automobile clubs.

[31] Russett, p. 858.

[32] Snidal, p. 558.

[33] Ibid, p. 560.

provide an effective tool for forcing all members to contribute and thus effectively distributing costs. Individuals are prepared to pay taxes to cover the cost of public goods because they know that all others are also required to pay. Excluding non-contributors from reaping the benefits of protection could be easily accomplished. Subsequent targeting by pirates of the shipping of non-contributing states would induce pressure from the shipping industry to coerce evading flag states into becoming contributors to the collective action.

D. PROVIDING FOR THE PUBLIC GOOD, AN APPLICATION

Maintenance of the International Chamber of Commerce - International Maritime Bureau's Regional Piracy Center (RPC) provides a specific example of the dilemma of public goods. There is no question that the RPC's operation in Kuala Lumpur, Malaysia, has considerably benefited the shipping industry in general. Since October 1, 1992, the Center has acted as a focal point for documenting, analyzing, and reporting instances of piracy in Southeast Asia. At no expense to inquiring vessels, on a 24-hour basis, the Center provides tailored threat analyses and recommendations for attack avoidance. Initially the Center's $90,000 annual operating budget was financed by voluntary contributions from the shipping and insurance industry, in particular, by members the Hong Kong Shipowner's Association. Unfortunately, contributions have since lagged to such an extent that as of July 1994, the very future of the RPC was at issue.

It is easy to explain why the shipping industry prefers not to continue contributing. On an individual basis, each component derives a certain utility from his contribution towards operation of the RPC. However, because some refuse to "pay their fair share," those who do contribute may end up overpaying for their benefits. The rational decision is to limit contributions. Unfortunately, this may result in the discontinuation or limitation of services provided by the RPC, a situation from which none of the players can hope to profit.

There are potential solutions to the problem. In the absence of a sudden change of heart on the part of the shipping industry, the Center might begin servicing inquiries only from IMB members. The exclusive nature of services provided might actually boost the

roles of the organization and thus spread costs. In the absence of increased affiliation, IMB membership dues might need to be increased to absorb the added expense of the Center. Alternatively, the Center could begin charging for fielding inquiries. The disadvantage of these two suggestions is that, even if reports of pirate attacks continued to be accepted at no cost, a general erosion of goodwill from the industry might result in a decreased level of pirate incident reporting. A further option would be to solicit funding for the Center's maintenance from the International Maritime Organization. The IMO might, in turn, assess a levy against ship's registries, a form of taxation which would vary according to the number of vessels registered.

E. COOPERATIVE ACTION IN THE SUPPRESSION OF PIRACY

It has been established that maritime piracy is an international problem and that, as such, it will require an international cooperative solution. How should this be structured? An analysis of responses to other international security problems may provide clues to the successful handling of piracy.

The problem of aircraft hijacking is analogous to the shipping industry's piracy problem. In the late 1960s, a marked increase in the number of aircraft hijackings occurred. World attention was focused on the issue and a number of countermeasures were taken, including the passage of international and regional agreements. A sharp reduction in the number of attacks was registered after 1972 (see Table 1). Legal differences exist between hijacking and maritime piracy. Hijacking normally takes place within territorial airspace, is conducted by passengers, and often has political objectives; piracy takes place in international waters and involves private vessels attacking ships at random for private financial gain. Nevertheless, parallels between the two are close enough to allow a comparison. Each involves the threat or use of violence and the disruption of international transportation. Each suffers from disputes over the interpretations of their definitions. Both require a collective solution involving the industry and the international community. Contrasting results obtained in the case of hijacking with evidence in the case of piracy may

be useful. Predictions and recommendations could be used to provide a template for the suppression of piracy.

Year	Successful	Unsuccessful		Total
		Foiled in Flight	Foiled on Ground	
1968	33	0	5	38
1969	70	7	5	82
1970	46	10	16	72
1971	24	5	33	62
1972	37	4	29	70
1973	14	4	10	28
1974	10	3	15	29
1975	6	3	17	26
1976	8	1	8	17
1977	9	4	19	32
1978	11	10	10	31
1979	12	4	11	27
1980	19	4	18	41
1981	14	2	18	34
1982	14	4	18	41
1983	14	6	15	35

Table 1
Worldwide Hijack Attempts 1968-1983

Table 1[34] shows the total number of aircraft hijack attempts carried out annually from 1968-83. An increase in the level of attacks after 1977 is explained by a significant rise in the number of those motivated to seek political asylum.[35]

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[34] Wilkinson, Paul, Terrorism and the Liberal State, (New York, NY: University Press, 1986) p. 227.

[35] Ibid., p. 245.

Air piracy, "the forcible diversion of an aircraft in flight against the will of its air crew,"[36] was first documented in May 1930, when Peruvian revolutionaries, intending to drop propaganda material over Lima, commandeered a Pan American mail plane. A series of cases was recorded in Europe immediately after World War II, when hijacking was occasionally employed by political refugees attempting to flee to the West. It increased again during the 1960s, when a series of seizures occurred between the United States and Cuba. It was not until 1968, however, that international hijacking became a significant political issue. That year marked the beginning of three distinct periods of Arab-sponsored attacks. A one year hiatus in 1973 separated the first two phases (1968-73, 1974-78). The third phase lasted from 1983 through 1988.[37]

F. COUNTERMEASURES

Cooperative measures to suppress the problem of hijacking developed in a comprehensive manner. Under the auspices of the United Nations' General Assembly, the consciousness of the international community was awakened. Three important international conventions outlawing air piracy were adopted. The first of these global initiatives was source to much heated debate between member nations. The second two conventions proved less controversial. On the positive side, universal security measures were initiated. However, the wording of each set of agreements provided serious legal loop-holes which undermined their overall value. Regional agreements (bilateral and multilateral) were also negotiated. Bilateral agreements, although theoretically inferior to multilateral, were easier to establish and maintain. A series of bilateral agreements may create a lattice-work of coverage to match the effects of multilateral agreements.

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[36] Gal-Or, Noemi, International Cooperation to Suppress Terrorism, (New York, NY: St Martin's Press, Inc., 1985) p. 88.

[37] St. John, Peter, Air Piracy, Airport Security, & International Terrorism, (Westport, CT: Quorum Books, 1991) P. 6.

1. Global Initiatives

The United Nations' International Civil Aviation Organization (ICAO) has provided the vehicle for most of the global initiatives against hijacking. A series of conventions were held. The first of these, the *Tokyo Convention on Offenses and Certain Other Acts Committed on Board Aircraft*, was brought forward in 1963. The findings of this convention remained a source of argument for several years. However, the arrival of international hijacking in 1968 caused a flurry of diplomatic activity. The convention was ratified in 1969.

The terms of this agreement allowed the "Contracting State" (i.e. the country where hijackers were arrested) to exercise jurisdiction. Alternatively, suspects could be extradited to the flag state of the aircraft, or to the state of nationality of the persons detained. The legislation, however, was of limited utility. Signatories were encouraged but not obliged to take action. Furthermore, the Convention was not universally accepted; by late 1975, only seventy-seven states had signed the document.

The *Hague Convention for the Suppression of the Unlawful Seizure of Aircraft* (1970), and the *Montreal Convention for the Suppression of Unlawful Acts Against the Safety of Civil Aviation* (1971) jointly served to strengthen the weak provisions of the Tokyo Conference. Internationally-sanctioned penalties were to be applied to hijackers and those intending to use explosives on board aircraft. Contracting States were obliged to extradite or try offenders; where litigation was chosen, "severe penalties" were to be applied.[38] The overall value of the agreement was eroded, however, by a clause allowing signatory states to waive extradition requirements by granting political asylum to certain hijackers.

Although all three conventions had been ratified by 1971, no reduction in the number of attacks took place until 1973 (see Table 1). Loop holes written into the wording of the stipulated agreements, and the inadequacy of mechanisms to coerce states into applying terms of the agreements go a long way towards explaining these disappointing results. Additionally, legislative differences between states have meant that hijackers may be

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[38] Brenchley, Frank, Living with Terrorism: The Problem of Air Piracy, (London: The Institute for the Study of Conflict, Conflict Studies #184) p. 10-11.

afforded a "more safe" haven by selecting a lenient state in which to surrender. These issues brought into question the value and feasibility of global cooperation. The relevance of the United Nations as a vehicle for coordinated action also became a contentious issue. Protracted arguments over the wording of U.N. resolutions highlighted a fundamental lack of agreement among member states. Some states have chosen to view selected cases of hijacking as the legitimate actions of "freedom fighters."[39] Others, displaying a jealous regard for national sovereignty, preferred to eschew Conventions.[40]

In theory, full international cooperation would provide the best solution to the hijacking problem. In practice, however, the necessary concurrence has proved beyond reach. How can this problem be solved? One solution may to draw upon existing institutions to provide a springboard for action on the problem. Steps are being taken to reach this goal. For example, in 1984, INTERPOL was allowed to investigate hijackings. This has considerably improved the sharing of intelligence amongst cooperating nations.

Governments have not been alone in seeking international cooperative solutions; industry, too, has voiced concerns. The International Air Transport Association (IATA), representing the world's airlines, has recommended development of an international response force, an international jurisdictional center, and an international advisory group to support governments during attacks.[41] U.S. airlines have called for the creation of an ICAO-organized international police force specifically trained to combat terrorist hijackers.[42]

2. Regional Initiatives

Regional cooperation, which takes the form of bilateral or multilateral agreements, requires mutual understanding and a readiness to shift responsibility to the international framework. Many states prefer to avoid the loss of independence associated with this transfer of responsibility. Differences in political regimes, legal systems, and bureaucratic

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[39] Wilkinson, p. 254.

[40] Ibid., p. 27.

[41] Ibid., p. 187.

[42] Ibid, p. 99.

apparatuses tend to dampen cooperation. However, regional organizations where members are politically and economically interdependent (for example ASEAN, NATO, and the EEC) are more likely to witness successful agreements.[43]

Bilateral agreements, the more common version of regional cooperation, are less complicated and require smaller transfers of national sovereignty than do multilateral agreements. Although bilateral agreements are generally considered to be inferior to multilateral agreements, a network of bilateral agreements may create a pattern of cooperation that will be just as effective as a multilateral agreement.[44] The first major bilateral agreement concerning aircraft hijackings sprang from an unlikely setting. In 1973, following an epidemic of hijackings to Cuba, the United States entered into negotiations with Havana. Castro recognized that most of the hijackers entering Cuba were not politically motivated but were merely criminals seeking to escape their native jurisdiction. He agreed to the prompt repatriation of planes and passengers.[45] Since then, the United States has signed 28 further agreements, including one with the former Soviet Union.[46] Other nations have followed suit. Afghanistan and the former USSR, Iran and the former USSR, and Bulgaria and Yugoslavia have each signed similar agreements.

The 1978 *European Convention on the Suppression of Terrorism* provides an example of a multilateral agreement. Although not binding by international law and limited to the member States of the Council of Europe, it is widely viewed as an effective symbol of Western cooperation.[47] The agreement encouraged the extradition of hijackers. In addition, it called for an aerial boycott against any State which failed to return an aircraft to

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[43] Gal-Or, p. 74.

[44] Ibid., p. 70.

[45] Ibid, p. 12.

[46] Crenshaw, Martha, Terrorism and International Cooperation, (Boulder, CO: Westview Press, 1989) p. 29.

[47] Gal-Or, p. 75.

its owner or refused to extradite or try hijackers. Similarly, the 1978 *Bonn Declaration on Hijacking, and the Venice Declaration* of 1987, identified the intent of each of the seven Economic Summit states to take sanctions against states harboring terrorists. Both were "very valuable assertion(s) of the political will of the states."[48]

To summarize, in a utopian world, international agreements and global cooperation in the suppression of hijacking would offer the most effective policy. However, problems of consensus among members of the United Nations tend to limit the value of these initiatives. The use of bilateral initiatives proved to be an effective tool against air piracy. The total number of hijackings was reduced from 70 in 1972 to 28 in 1973, and remained consistently lower through 1983 (see Table 1). This coincides with the signing of the bilateral agreement between the United States and Cuba and the subsequent negotiation of 28 similar agreements world wide.

G. APPLICATIONS TO THE SUPPRESSION OF MARITIME PIRACY

1. Global Initiatives

At the global level, the United Nations' International Maritime Organization (IMO) has taken up the anti-piracy banner. In 1982, the *U.N. Convention on the Law of the Sea* was held. Piracy was one topic of debate, and the Convention's findings on piracy were incorporated into the final document. The international nature of the problem was identified in Article 100 of the Convention, which describes the duty of all States to "co-operate to the fullest extent in the repression of piracy on the high seas or in any other place outside the jurisdiction of any State." The fact that attacks continued and actually became more frequent in the twelve years since ratification suggests this form of international cooperative action has not been effective.

In much the same way that controversy has surrounded the right of states to describe hijackers as "freedom fighters" and so waive extradition requirements, arguments have raged

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[48] Fiortta, D., "Aviation Security: International Responses," paper presented at the ICAO meeting in Montreal, Canada, May 10, 1988, quoted in St. John, p. 185.

for years over the definition of the term "piracy." The legal definition has always excluded attacks occurring against ships while in territorial waters. This definition may have been appropriate when territorial waters were limited to three miles. However, the extension of this limit to twelve miles, and the incorporation of Exclusive Economic Zones (EEZs) of up to 200nm, has complicated the issue. Jurisdictional waters have been extended to the point where two-thirds of all cases of "armed robbery at sea" now occur outside of international waters.[49] These incidents are excluded from the purview of the Convention.

Adhering strictly to the legal definition of piracy has been in the interests of those states in whose waters attacks are rife. Governments in some of the world's problem areas have been able to declare that, despite a rash of attacks in territorial waters, no "piracy" problem exists within their jurisdiction. Diplomats, too, may prefer the definition remain vague; the need to address the controversial issue of piracy may thus be avoided. The legal niceties of these discussions fail to address a crucial point. From the perspective of the victim mariner, there is little difference between an attack taking place just outside territorial waters and one occurring within.

A major theme of the 1982 Convention was the creation of 200nm EEZs. This means that certain of the world's busiest sea lanes now pass through territorial waters. Article 44 of the Convention was written to address the duties of States bordering international straits. These include the obligation to ensure free passage and to publicize hazards to navigation (i.e. pirate attacks) in those regions in which they occur. Frequent pirate attacks might be interpreted as a hindrance to free passage and could, under the terms of the Convention, result in international sanctions and the requirement for payment of reparations by the State.[50] The intent of this motion was to stimulate responsible counter-piracy actions by regional states. However, implementing the action would frequently be unrealistic. Piracy

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[49] VAS Database.

[50] Scott, David L., Piracy, Terrorism, and Crime at Sea, paper presented at Dalhousie University's "Colloquium on Maritime Security and Conflict Resolution," Halifax, Nova Scotia, June 1993, p. 44.

occurs because states refuse to adequately fund protective measures. This is often due to a paucity of resources. It is unlikely such states would be in the position to pay compensation.[51] [52]

2. Regional Initiatives

The construction of regional anti-piracy agreements has often proved to be quite complicated. Southeast Asia provides a classic example. For many years the possibility of cooperation in the region was severely hindered by mistrust between the major local state actors. Indonesia, in particular, was viewed by its neighbors as the regional hegemon, searching for any opportunity to exert influence. There has been similar friction between Singapore and Malaysia.

In July 1992, largely as a result of strong world media pressure,[53] bilateral agreements were signed between Singapore and Indonesia and between Indonesia and Malaysia. These agreements improved communications between the patrolling units of each diad, called for joint operations where appropriate, and permitted signatories to pursue suspect vessels across territorial boundaries. Arrests, however, were to be made by the sovereign force.[54] Similar

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[51] Ibid., p. 45.

[52] It is interesting to look at some early proposals made by the League of Nations. According to the American Journal of International Law, Special Supplement 2-3 (1926):228-29, in 1926, "Draft Provisions for the Suppression of Piracy" were compiled. Article 5 would have permitted foreign vessels to pursue pirates into the territorial waters of any littoral state which was unable to adequately patrol the region. Sadly the issue of piracy became less prominent and the draft was not acted upon. Perhaps this concept needs to be revisited.

[53] Media attention was focused largely as a result of efforts on the part of the ASEAN and Hong Kong Shipowners' Associations.

[54] Other opportunities for regional action exist. At a briefing held at the Naval Postgraduate School, Capt. Boris Makeen, Special Consultant to Adm. Sergei Gorshkov, presented the possibility of cooperative efforts between the U.S. Navy and the Russian Fleets to jointly patrol those areas troubled by pirate activity.

agreements have since been signed between Indonesia and the Philippines for their contiguous borders on the Celebes Sea,[55] and between Thailand and Malaysia.[56]

Figure 8 speaks to the effectiveness of these arrangements. Attacks in the region had increased significantly from 1989 through 1992. However, during 1993 no attacks were reported in either the Malacca or Singapore Straits. This occurred at a time when attacks were increasing worldwide (see Figure 5). Analysis of Variance (ANOVA) procedures were performed, comparing worldwide figures with those of the region immediately before and after the agreement was signed (see Figures 16-18). Results of these ANOVA procedures suggest that the bilateral agreements may have been effective (see Appendix D).

Various issues would need to be addressed before multilateral forces could be assigned a regional anti-piracy role. The configuration of forces would have to be tailored to the specific threat, for example, additional helicopters and patrol boats would be needed to conduct operations effectively. Rules of engagement and areas of operation for military forces would need to be specified. The majority of pirate attacks take place within territorial waters; warships would need authorization to conduct patrols through these regions. Improved coordination would need to be established between players at the military, diplomatic and governmental levels.

The use of standing international institutions (e.g. NATO and INTERPOL) was recommended as a means of controlling hijacking. Similar institutions could be used in the battle against maritime piracy. During the past five years, over half of the attacks worldwide took place in Southeast Asia.[57] ASEAN in this respect, might serve as a standing regional institution for addressing this issue. INTERPOL has voiced interest in fighting anti-shipping

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[55] "Accord Signed with Indonesia to Fight Sea Piracy" (text). Quezon City ABS-CBN Broadcasting Corporation DZMM in Tagalog 0400 GMT (16 Oct 1992) HK1610062992. Translation by FBIS Hong Kong. 160629Z Oct 1992).

[56] Telephone interview with Capt Hanson, U.S. Naval Attache, Thailand, 30 October 1994. Thailand has not suffered an attack against a commercial vessel in two years; attacks are against fishing vessels and refugee craft. Thailand is currently negotiating an anti-piracy agreement with Burma.

[57] VAS Database.

activity. That interest was reinforced recently when a senior representative of INTERPOL presented a paper outlining police intelligence-sharing possibilities to the ICC-IMB-sponsored *Conference on Piracy and Phantom Ships.*[58]

H. SOME RECOMMENDATIONS

Maritime piracy is an international problem; its negative ramifications are experienced throughout the industry and society. A cooperative solution is required. This solution, however, has proven to be illusory. While all players would be better off in a world without piracy, each has his own motives to avoid the collective action needed to effectively suppress the problem. The need to solve the problem of piracy in itself introduces a second problem: how to induce cooperation.

The provision of counter-piracy protection is an example of a "public good." The two major features of the public good, "non-exclusiveness" and "jointness," are well-represented in this case. Protection is presently afforded to contributors and non-contributors alike, and available counter-piracy coverage is not noticeably eroded by utilization. If a group of states is already paying the price of enforcement, there is very little incentive for non-members to begin voluntarily contributing towards the costs. Positive incentives and/or some means of coercion must be developed to ensure universal participation. A benefits package made available only to those states which contribute to solving the problem is one approach. Alternatively, universal taxation may provide a suitable tool for funding collective counter-piracy action. To this end, the establishment of a strong control structure, able to ensure that all contribute to collective action, is crucial. It is the inadequacy of such institutions which has so far hampered efforts to solve the collective action problem associated with providing counter-piracy protection.

International cooperative organizations which have been used to fight the hijacking and piracy problems have become focal points for intense debate. Each debate tends to be

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[58] Eckert Kemmelmeier, Head of INTERPOL's Sub-Division of Crime Against Property and Persons, attended the IMB's Conference on Piracy and Phantom Ships in Kuala Lumpur, Malaysia, July 18-19, 1994.

resolved at the level of the lowest common denominator. Furthermore, resolutions tend to be extremely slow to reach fruition, which does not help repair immediate problems. By contrast, bilateral and multilateral regional agreements proved useful in both the hijacking and piracy examples. The aggressive pursuit of regional action, in particular bilateral agreements, may be the best course. Bilateral agreements are uncomplicated in design and effective in action. The fact that multiple, overlapping bilateral agreements may display the qualities of multilateral coverage further strengthens this argument.

A review of methods used in the case of hijacking provides pointers towards resolving the counter-piracy dilemma. The first and most important requirement for establishing effective international cooperative action against piracy, is to adequately define the term 'piracy.' The use of interpretational technicalities to evade the piracy problem benefits no one but the pirates. A second crucial requirement is to insist that international conventions be furnished with enforcement sanctions for use against those states that refuse to implement terms of the agreements. Third, states should be subjected to diplomatic and political pressure from other signatories to ensure that uniformly severe penalties are enforced against all pirates. To this end also, industry groups and trade unions should be given every encouragement to exert pressure on wayward states.[59] Fourth, the use of standing bodies (ASEAN, INTERPOL, and various trade groups, for example) could be productive. A consortium of shipping companies which refused to service ports in problem areas might refocus the attitudes of certain coastal governments and ensure greater action. Fifth, the United States could effectively take a lead in multilateral actions to police problem areas. One final suggestion, the IATA's recommendation for creation of a supranational body, with its own court and international prison, might be applied in the case of piracy. Unfortunately, given the example of U.N. enforcement organizations (IMO, ICAO etc.), reaching the level of agreement needed to establish such a body is unlikely in the short term.

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[59] In 1968, the International Federation of Airline Pilots Association threatened a complete boycott of Algeria unless an El Al plane which had been hijacked in Algeria was released promptly. The situation was resolved within a very short time.

The fight against maritime piracy requires action at the international level. In general, global initiatives have been stymied by lack of consensus. This has yielded ineffectual legislation. Regional cooperation has proven far more beneficial. Prospects for successful action against pirates may depend on the negotiation of multiple bilateral agreements. Agreements signed in 1992 between Singapore, Indonesia, and Malaysia provide a template for future international cooperation and the best hope for a lasting solution to the problem.

IV. CONCLUSIONS

A. THE PROBLEM OF PIRACY

Piracy is no longer confined to the pages of adventure novels, the stories of swashbucklers and Black Beard. The lure of an abundance of lightly-defended floating "cash cows," combined with inadequate regional police actions has led to a resurgence of the problem. No less fearsome than their predecessors, the pirates of today are ruthless, desperate criminals who often will not hesitate to harm their victims. Attacks are often violent, and injuries and deaths occur all too frequently. The effects of attack, however, extend beyond the immediate victims. Ship companies suffer financial losses stemming directly from cargo theft and indirectly from tarnished reputations and customer flight. The potential exists for far greater costs. Negligent security litigation, stemming from the failure of a ship operator to reasonably provide adequate security, could result in substantial awards in the event of injury or death of a crew member during a pirate attack. While the insurance industry will foot some of the bill, it is the consumer, ultimately, who will suffer when shipping industry losses filter through. Environmental damage caused by a collision during attack could be catastrophic.

The number of incidents reported has decreased during 1994. However, the trends over the previous five years were increasing in many regions of the world. Southeast Asia continues to experience the highest concentration of piracy incidents in the world. Well over 50% of the world's reported attacks occurred there. Other significant regions have been Northeast Asia, Indonesia, West Africa, and South America. Considerable activity was also reported in East Africa during 1994. Under-reporting of incidents is a consistent problem. It has been estimated that the true level of attacks may be twice what is reported officially.

While most incidents of piracy are considered short-term (pirates often remain on board for less than thirty minutes), incidents of long-term (seizures which last for several days and involve the theft of whole cargos) are becoming more frequent and represent the emergence of a more organized form of piracy. A new and worrying development has been the establishment of "Phantom Ship" operations. Ships, operating with false identities, load

cargos and head out of port. Once at sea, the ships deviate from their scheduled route to visit an alternate port, where the freight will be unloaded and sold. These operations require considerable preparations and are known to be the work of organized criminal syndicates. Annual losses to the shipping industry may be as much as $800m.

A disturbing development in the South China Sea has been a recent increase in "customs interdictions" by Chinese military units. Cargo vessels have been increasingly subjected to very violent attacks. Many have been arrested for "safety or customs" violations and escorted into port. Cargos have been confiscated and ransoms demanded for release of the vessels. Some of these incidents have occurred far beyond China's 200nm Exclusive Economic Zone (EEZ) and may represent efforts to claim ownership of the vast resources surrounding the Spratly and Paracel Islands.

The global nature of maritime piracy suggests a need for an international collective solution. The ramifications of attack extend throughout the industry and into society in general. All would benefit from the eradication of piracy. The necessary collective solution, however, has proven almost impossible to achieve. Each player has his own incentives not to contribute towards solving the problem. As a result all are exposed to continued attack. The need to solve the problem of piracy introduces a second problem: how to induce cooperation.

The nature of the solution to this "second problem" is in two parts. First, mechanisms must be established within the industry to act individually towards the collective goal. Second, institutional mechanisms must be created to bring the elements together in support of a collective solution. The provision of counter-piracy coverage is an example of a "public good." A characteristic of a public good is that, in the absence of some enforcement body, actors will seek to avoid contributing to the costs of its provision. This occurs despite the fact that all benefit from the service. Positive incentives must be generated to encourage all beneficiaries to contribute. Some form of benefits package could be produced and made available only to those states which had contributed. Alternatively, a means of coercion must be established so that all are forced to 'pay their fair share.' To this end taxation may be an

applicable tool. The establishment of a strong control structure is a pre-requisite to any coercive action. The inadequacy of existing control structures has, so far, hampered efforts to solve piracy's collective action problem.

Reviewing other cases of cooperative action in combatting international security problems provides insights into the development of meaningful policies in the fight against piracy. The case of air piracy is relevant here. The development of coordinated international action against air hijackers was frustrated by a lack of consensus amongst international actors. In the end, it was less complex, localized cooperative actions which provided the most constructive solution. Experiences so far in the battle against piracy appear to parallel this precedent. While international efforts have yielded ineffectual legislation, regional cooperation has proven far more beneficial. Prospects for successful action against pirates may depend on the negotiation of multiple bilateral agreements at the regional level. In this respect, agreements signed in 1992 between Singapore, Indonesia, and Malaysia may provide a prototype for international cooperation and the best hope for the future.

Piracy is likely to remain a persistent problem in many regions of the world. Under-reporting of incidents by the industry causes an inaccurate count of the true nature of the problem. Consequently, counter-piracy resources are under-allocated. The result is a decreased level of deterrence which only exacerbates the problem. Increased violence is likely to be associated with inadequate police activity. Brazil and the South China Sea are two sub-regions which have already become renowned for the level of gratuitous violence associated with pirate activity. Other regions may follow this lead. While increasing rates of short-term piracy will be the first manifestation of inadequate anti-piracy enforcement, long-term and permanent seizures of vessels are also likely to increase in frequency. The huge profits to be made from such heists will encourage others to follow suit.

Constructing any form of international collective response to the piracy problem is likely to be frustrated by difficulties in reaching consensus. For many, however, maritime piracy has not yet reached the level at which concerted action is generally deemed necessary. Financial losses to the industry have seemingly remained tolerable, so piracy has been

viewed by many as a nuisance. Without a strong impetus from constituents, governments have been reticent to commit to the battle. The situation will probably get worse before concerted actions are taken. The question of air travel safety took on a far greater significance after the 1989 destruction of Pan American's flight 103. In much the same way, it may take an environmental disaster following the grounding or collision of a tanker during a pirate attack, before the world takes seriously the threat of piracy. It is only a matter of time.

APPENDIX A. FIGURES

Figure 1

GENERAL REGION BREAKDOWN

1. **South/East Asia**

1. Anambas Islands
2. Burma (BM)
3. South China Sea
4. East Malaysia
5. Gulf of Thailand
6. Malaysia (MY)
7. Hong Kong
8. Malacca Strait
9. Pacific Ocean
10. Philippines (RP)
11. Phillip Channel
12. Singapore (SN)
13. Singapore Strait
14. Taiwan (TW)
15. Taiwan Strait

2. **North/East Asia**

1. East China Sea
2. Sea of Japan
3. Yellow Sea
4. China (CH)
5. Korean Strait

3. **Indonesia**

1. Andaman Sea
2. Borneo
3. Celebes Sea
4. Java Sea
5. Sumatra
6. Java
7. Vicinity Bintan Island
8. Kepulauan Lingga

4. **Mediterranean**

1. Algeria (AG)
2. Lebanon (LE)
3. Greece (GR)
4. France (FR)

5. **West Africa**

1. Angola (AO)
2. Ghana (GH)
3. Guinea (GV)
4. Ivory Coast (IV)
5. Nigeria (NI)
6. Senagal (SG)
7. Sierra Leone (SL)
8. Cameroon (CM)

6. **East Africa**

1. Djbouti (DJ)
2. Gulf of Aden
3. Madagascar (MA)
4. Red Sea
5. Somalia (SO)
6. Tanzania (TZ)
7. Ethiopia (ET)

7. **Central America**

1. Belize (BH)
2. Costa Rica (CS)
3. El Salvador (ES)
4. Guatemala (GT)
5. Honduras (HO)
6. Nicaragua (NU)
7. Panama (PM)

Figure 1 (cont)

GENERAL REGION BREAKDOWN

South America

1. Brazil (BR)
2. Colombia (CO)
3. Ecuador (EC)
4. Guyana (GY)
5. Paraguay (PA)
6. Peru (PE)
7. Venezuela (VE)

9. **India**

1. Arabian Sea
2. Bangladesh (BG)
3. Bay of Bengal
4. Indian Ocean
5. Sri Lanka (CE)

10. **North Atlantic**

1. Belgium (BE)
2. Germany (GE)

11. **Middle East**

1. Persian Gulf
2. Saudi Arabia (SA)
3. Gulf of Oman
4. Strait of Hormuz

12. **Miscellaneous**

1. Australia
2. Black Sea
3. Caribbean Sea
4. Romania (RO)
5. South Africa (SF)

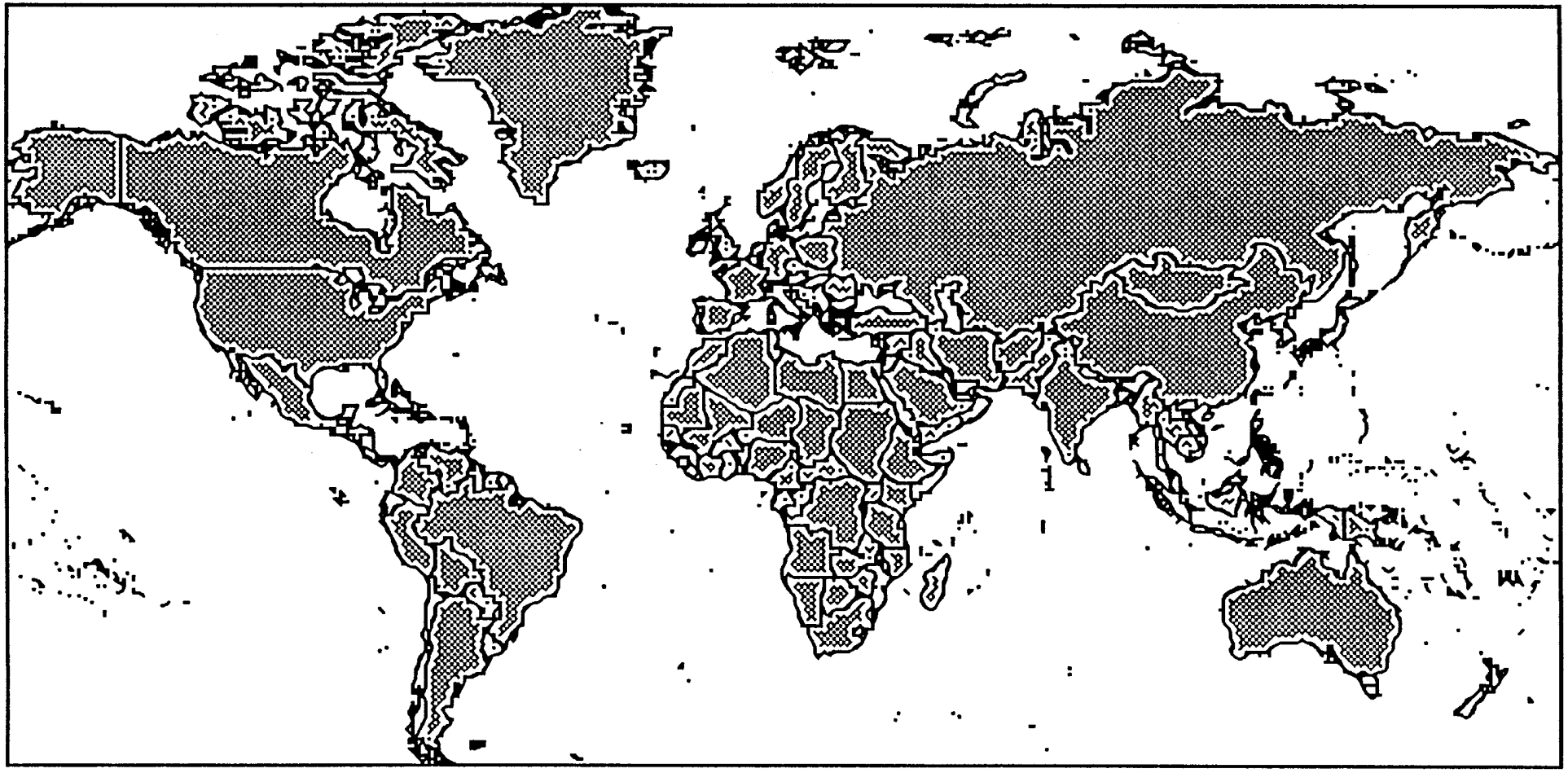
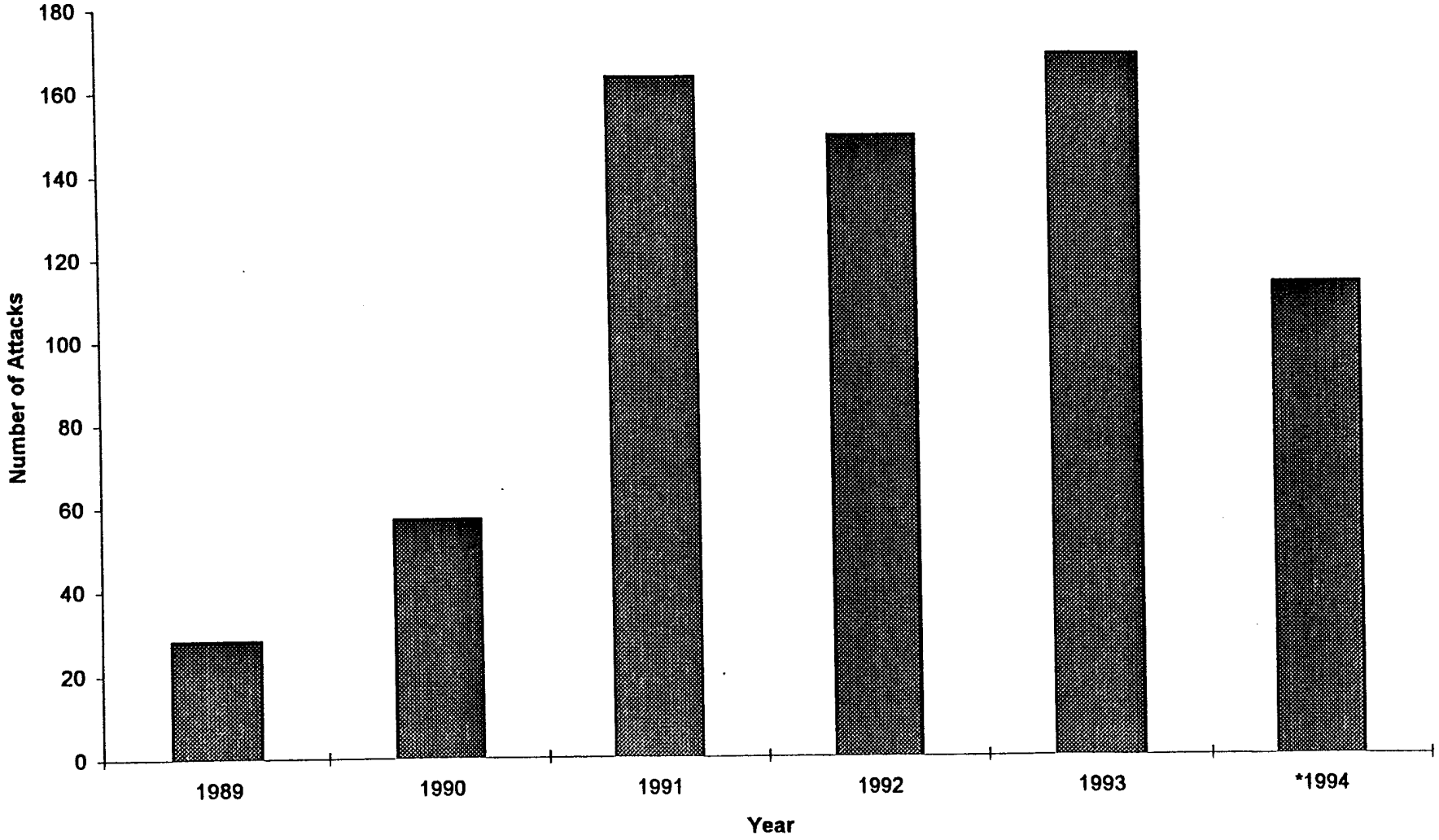


Figure 2
World Map

Figure 3
Southeast Asia

Piracy Attacks By Year Worldwide

678 Total Attacks



*1994 Projected
Based on data through 9/94

Figure 4

Attacks By Region 1989 - 1994

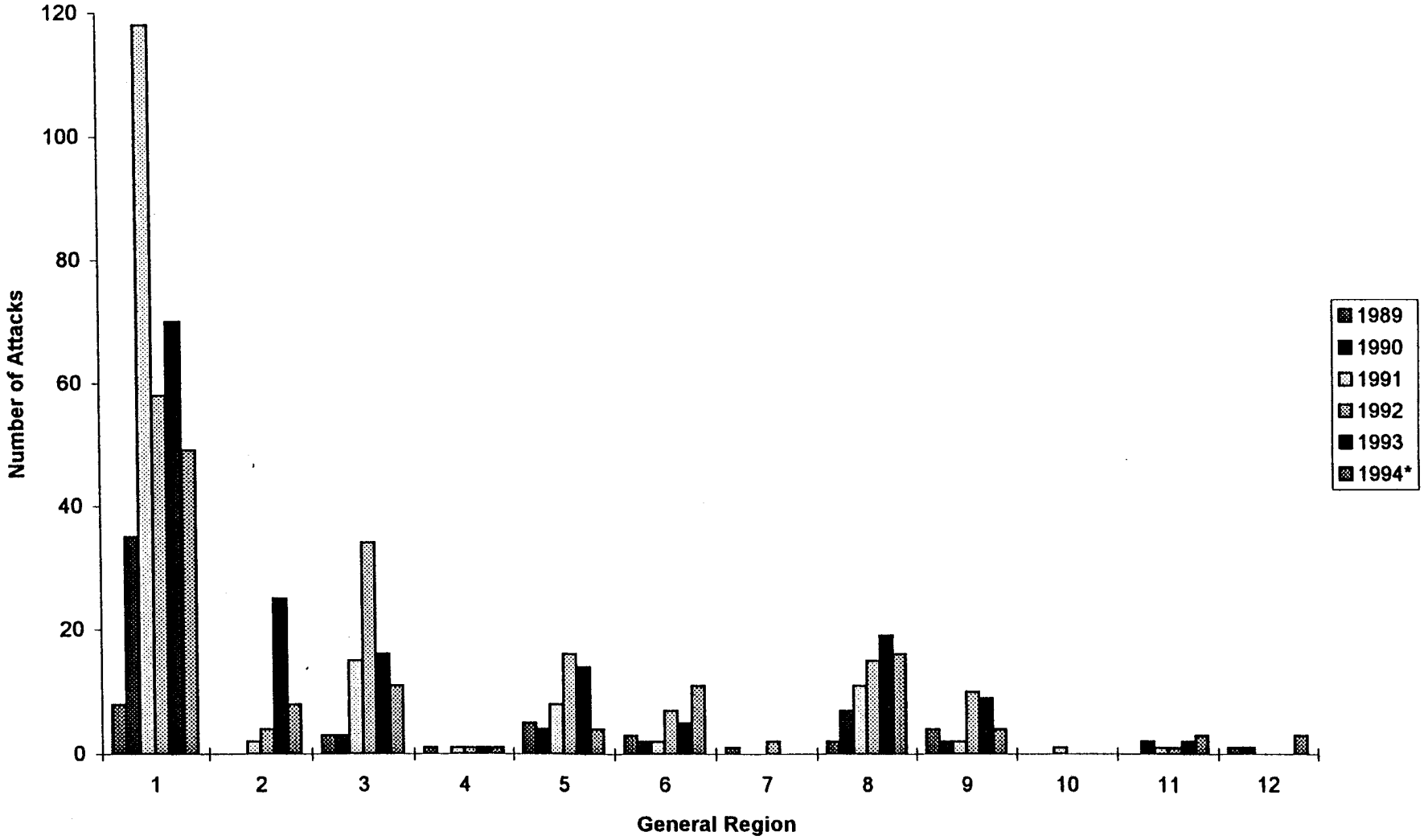
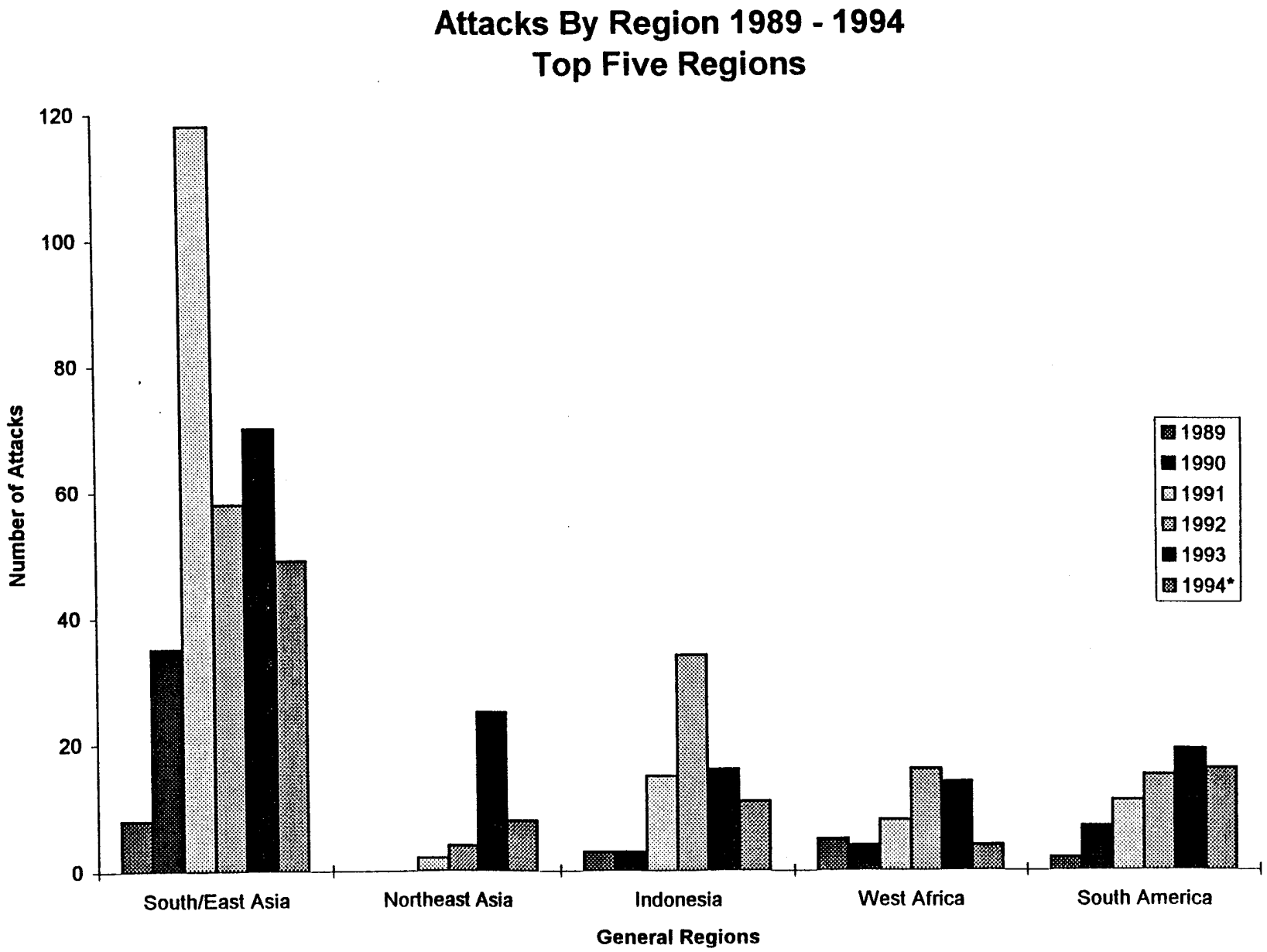


Figure 5

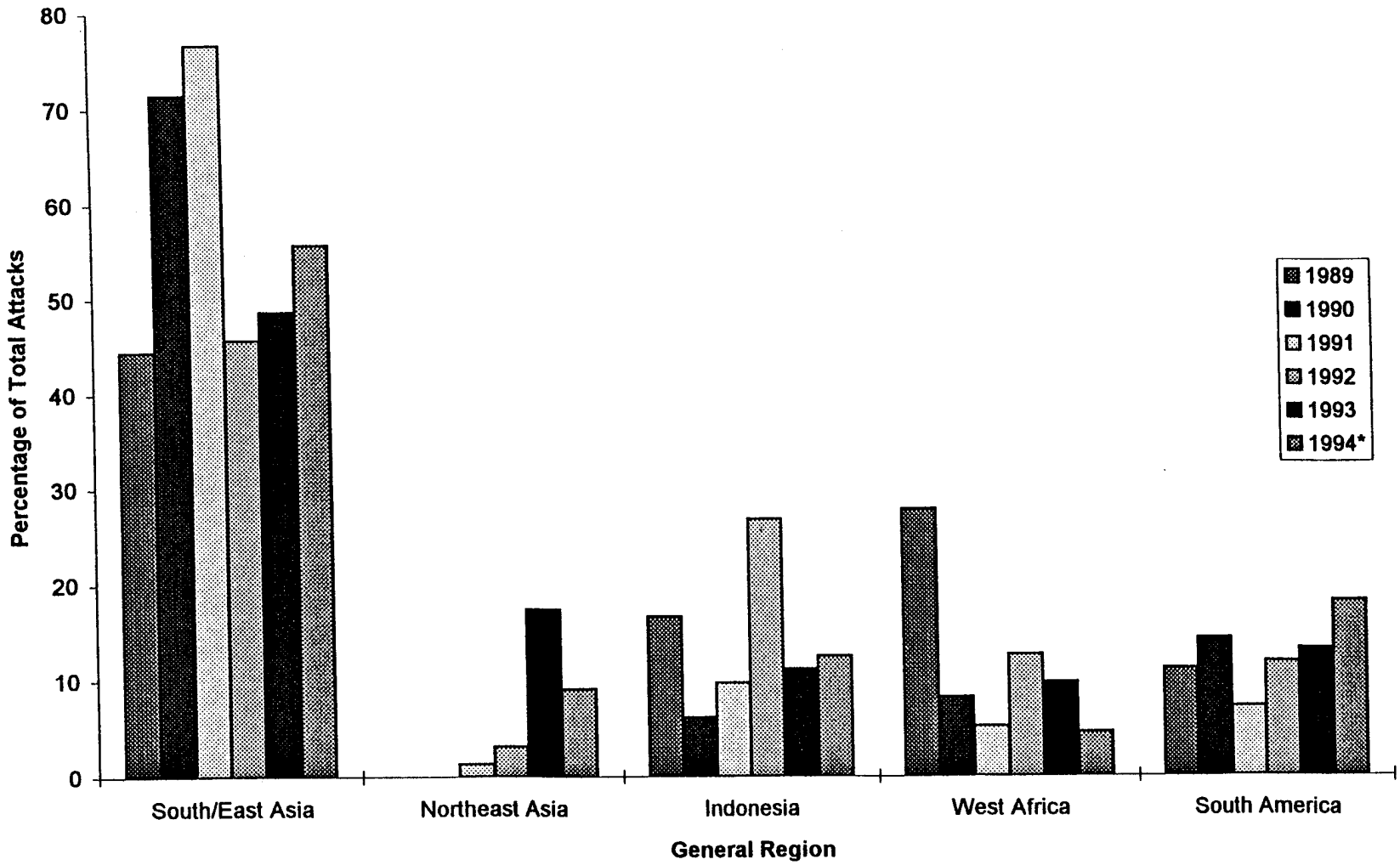
*1994 Projected
Based on Data though 9/94



*1994 Projected
Based on data through 9/94

Figure 6

Attacks By Year - Regional Percentage
Top Five Regions



*1994 Projected
Based on data through 9/94

Figure 7

Attacks By Subregion in General Region 1 1989 - 1994

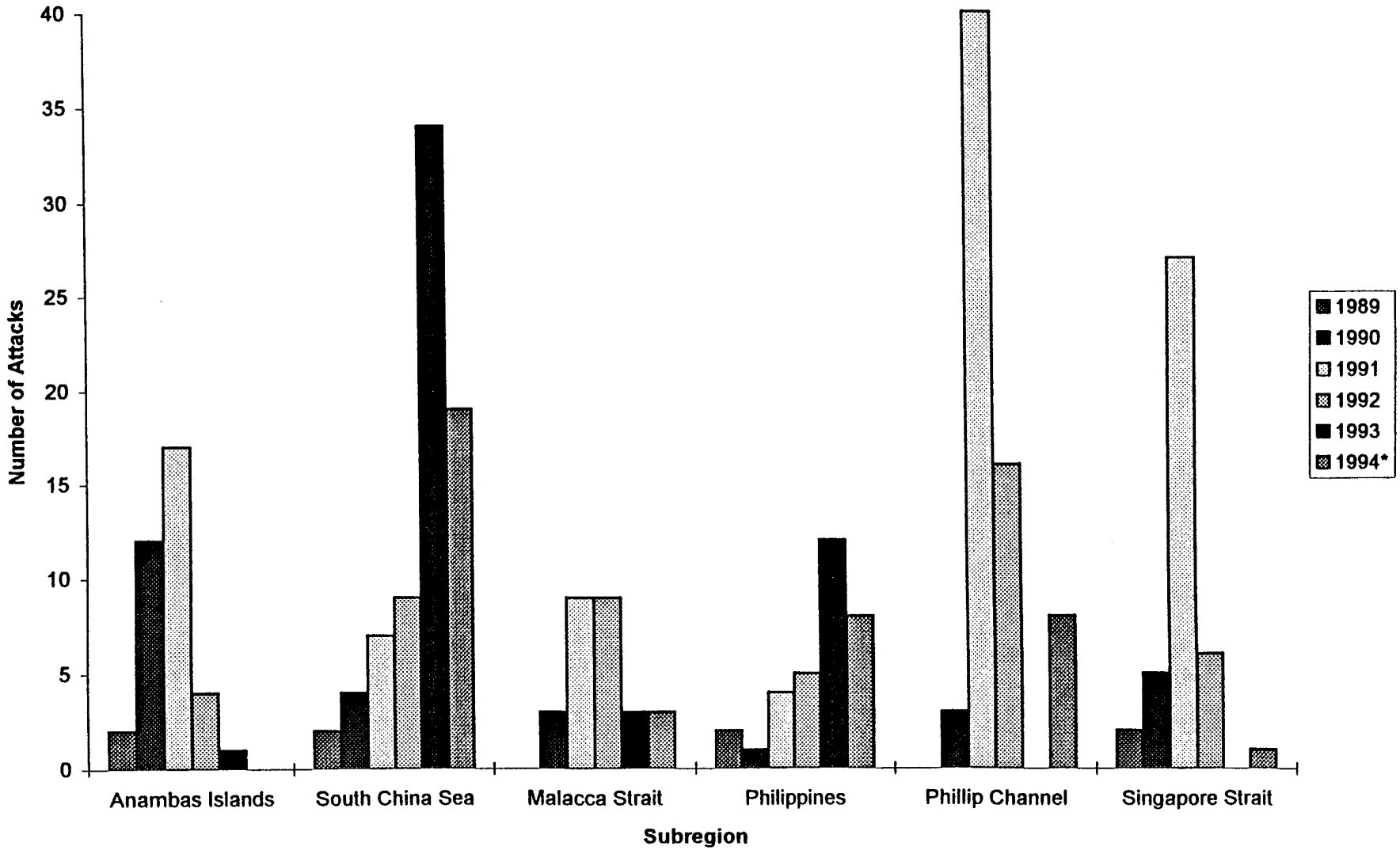


Figure 8

*1994 Projected
Based on data through 9/94

Attacks by Subregion in General Region 2 1989-1994

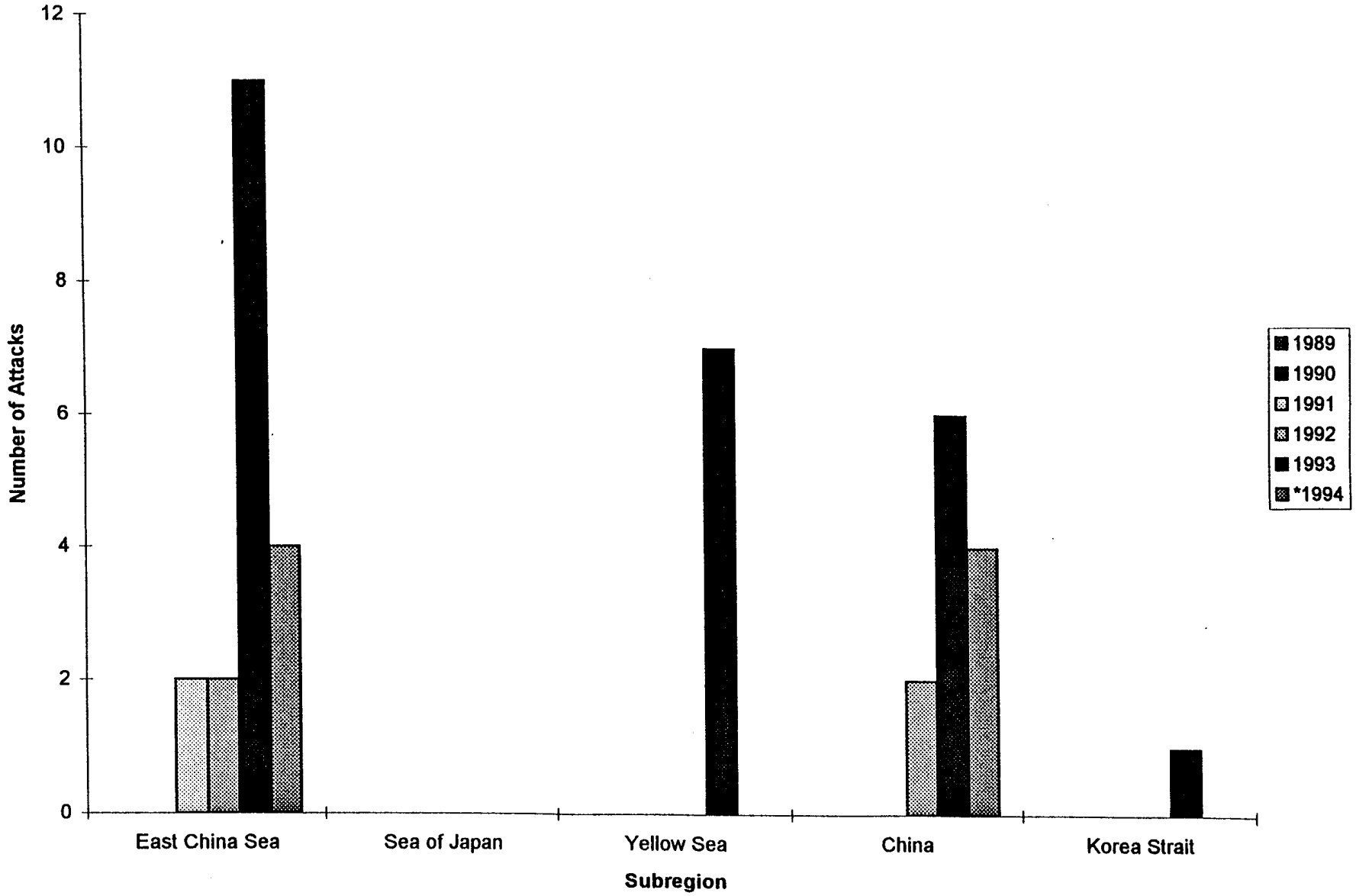
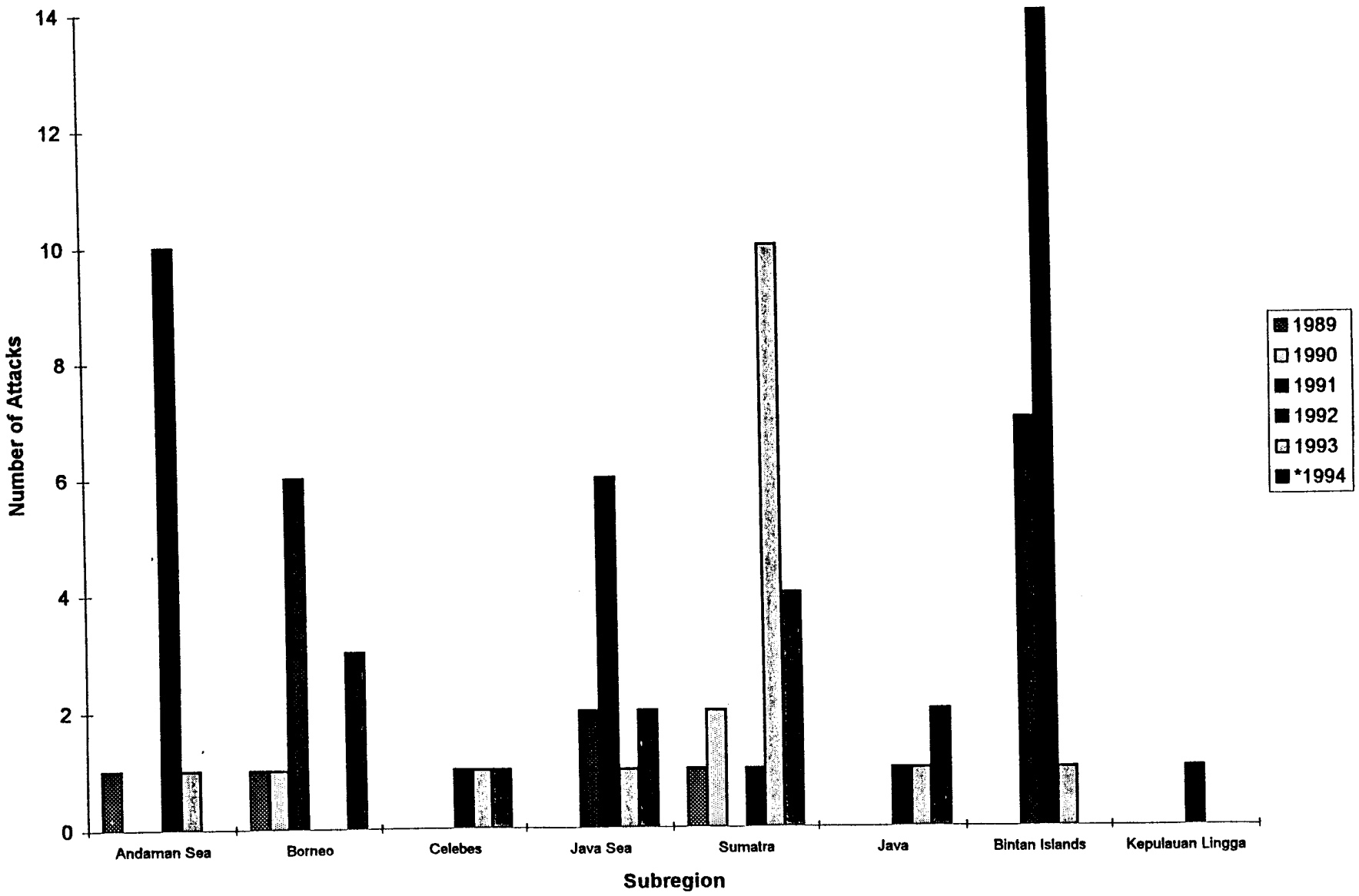


Figure 9

* 1994 Projected
Based on data through 9/94

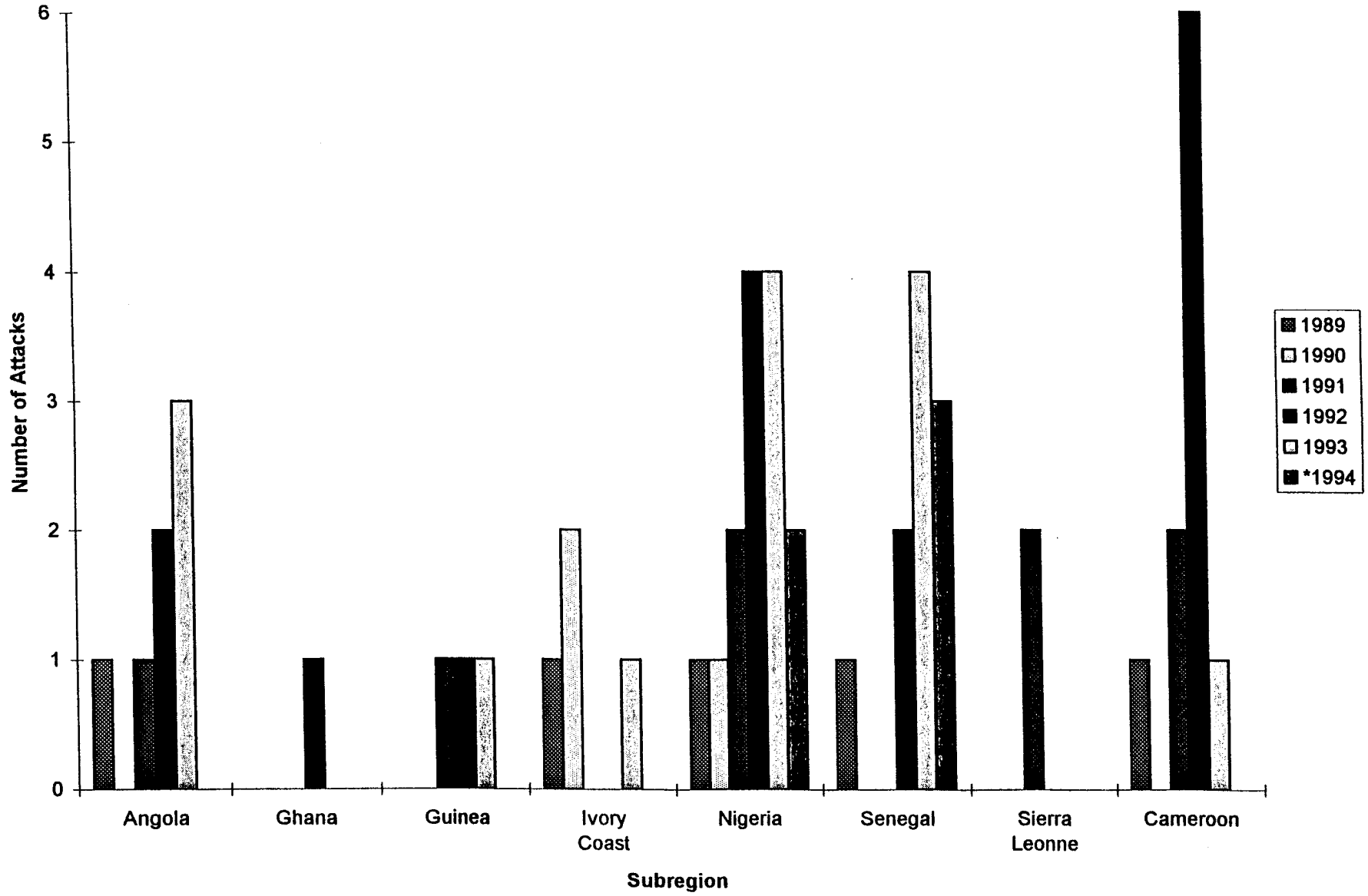
Attacks By Subregion in General Region 3 1989-1994



* 1994 Projected
Based on data through 9/94

Figure 10

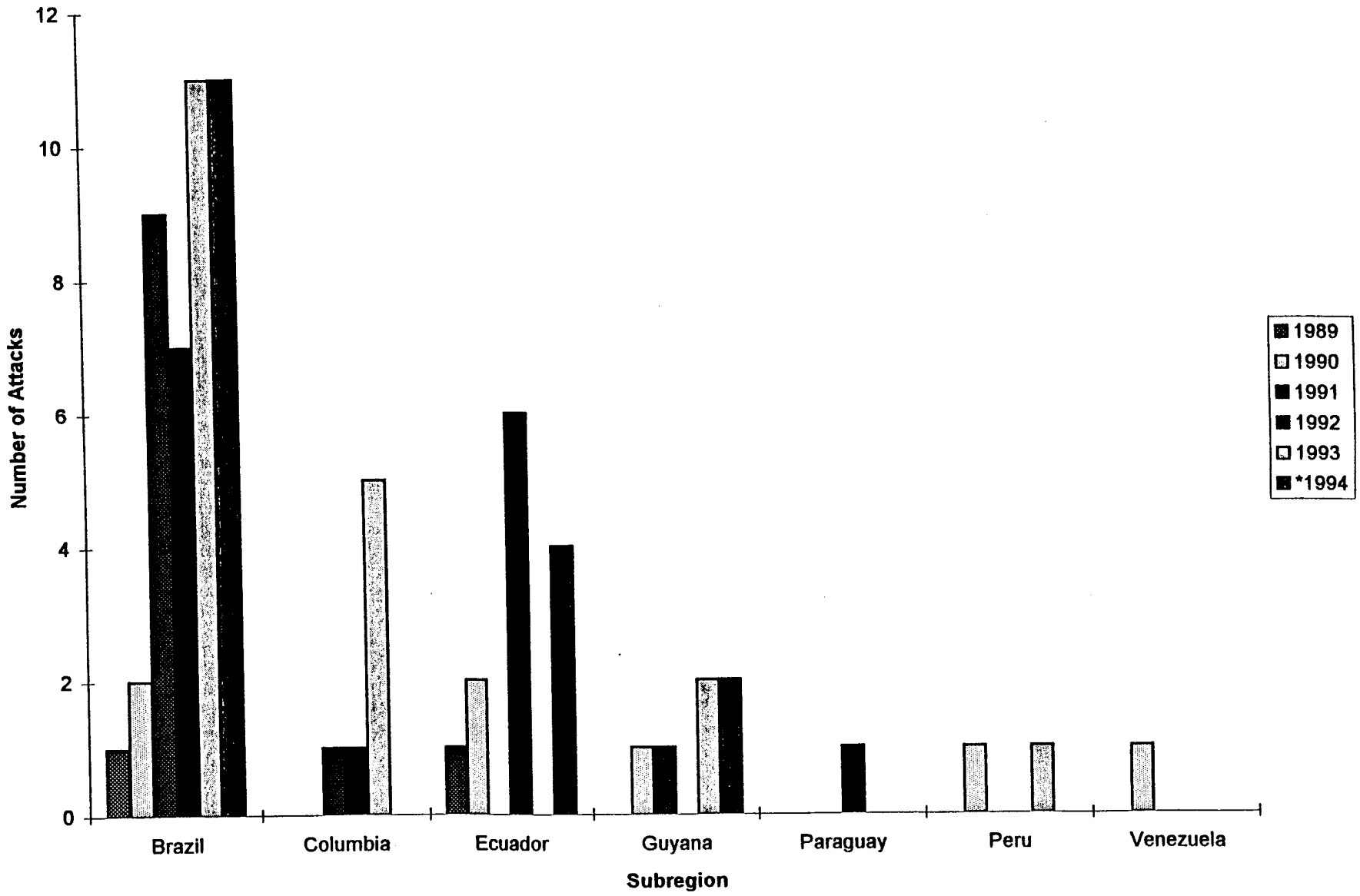
Attacks By Subregion in General Region 5 1989-1994



* 1994 Projected
Based on data through 9/94

Figure 11

Attacks By Subregion in General Region 8 1989-1994



* 1994 Projected
Based on data though 9/94

Figure 12

Attacks By Vessel Type 1989 - 1994*

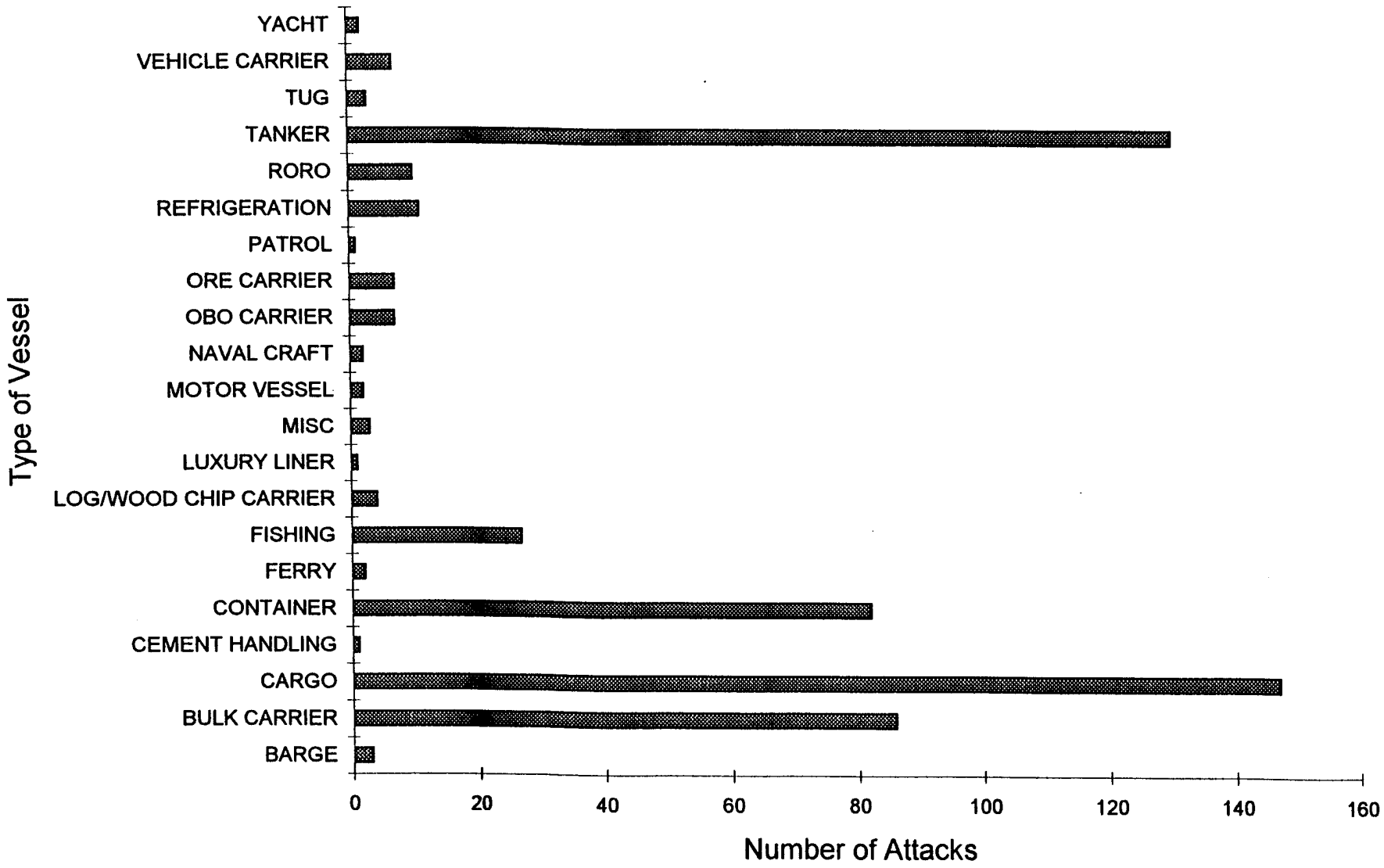
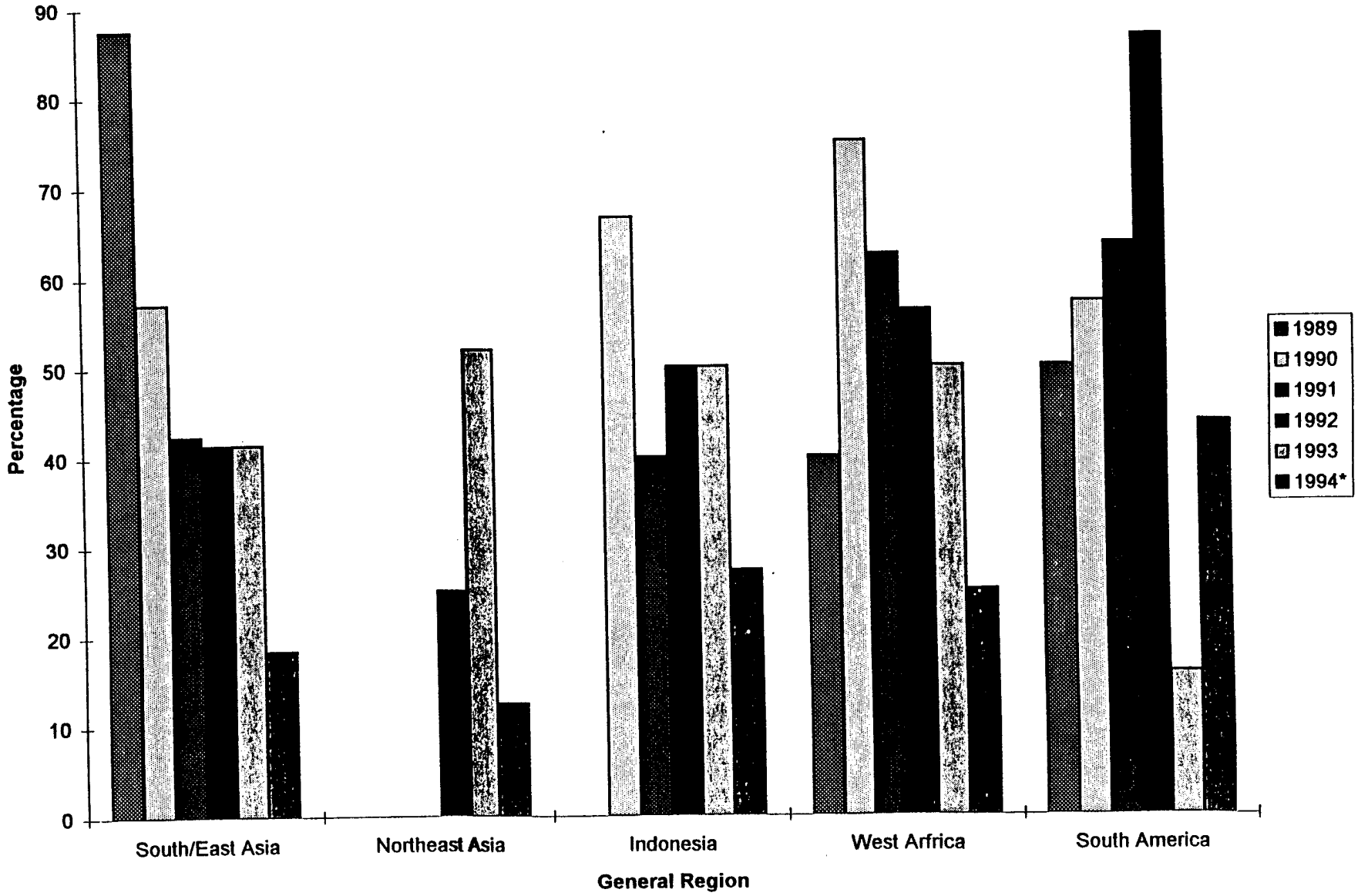


Figure 13

*1994 Data through 9/94

Reported Use of Firearms 1989-1994
Top Five Regions



*1994 Projected
Based on data through 9/94

Figure 14

APPENDIX B. PIRATE ATTACK ON THE BALTIMAR ZEPHYR

The pirate attack on the *Baltimar Zephyr*, although more violent than most, was not extraordinary. By 1992, incidents of piracy in Indonesian waters were a frequent occurrence. What was unusual, however, was the subsequent treatment of crew members by Indonesian officials investigating the incident. The inept handling of the case created a media outcry and prompted a backlash from elements of the shipping industry. The following account, drawn from files of the IMB's Regional Piracy Center in Kuala Lumpur, Malaysia, highlights the dangers now faced by merchantmen operating in many parts of the world .

2354 HRS, December 11th 1992. The *Baltimar Zephyr* was making what seemed like an uneventful transit through the Sunda Strait. The day's last watch was almost over. Things were far from normal, however. Unseen by any of the crew, a speedboat had approached the stern of the ship. Grappling hooks had been thrown and six armed pirates had clambered aboard. Quickly they made their way to the bridge. The chief officer, with a pistol pointed at his head, was forced to lead the way to the Captain's stateroom. A piece of paper with a handwritten message was thrust at the master: "I need your all money if you do not like hurt. No speak. Follow order. Also you take crew money."(sic) Thirty minutes later, the captain and chief officer lay dead, the contents of the ship's safe were missing, crew's quarters had been ransacked, and the pirates were gone. But this was just the beginning.

Distress calls made after the attack were ignored by local authorities. Nearby ships refused to assist; they, too, were defenseless against marauders.[60] The IMARSAT call was finally intercepted and information forwarded by the Maritime Rescue Coordination Center at Stavanger, Norway.

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[60] Daily Commercial News, 16 December 1992.

The *Baltimar Zephyr*'s local agent passed instructions for the ship to proceed directly for Singapore. However, a day later she was intercepted by an Indonesian gunboat and forced to detour to Tamjung Uban Naval Base on Bintan Island. Here an investigation of the incident was to be conducted.

What followed amounted to nothing less than a cover-up by the Indonesian authorities. Crew members were arrested, interrogated for six days, and forced to sign statements written in Indonesian, a language they could not understand. The relief master who arrived from Singapore was refused access to the ship. He, too, was held in detention. It became clear that the Indonesians wanted to suppress any reference to piracy. At one point an investigating officer asked the relieving master if the original distress call could be altered, "All this is embarrassing," he said, "the signal talks about pirates."[61]

Intense pressure from the IMB and coverage in the world's press eventually secured the release of vessel and crew. However, the ship sailed only after the relief master had signed a statement embracing the official conclusion. Indonesian officials announced the results of their investigation: there was insufficient proof of piracy, it was more likely the officers were killed by crew members.

Evidence presented by the Indonesians was entirely circumstantial. The speed of the vessel (twelve knots) and the state of the seas (sea state 2) made it unlikely that an attack had taken place. (Indonesian officials were convinced that local pirates' vessels operated at a maximum speed of 8 knots). The ransom note was never wet, indicating that it had originated on board the ship. Three unfired bullets found in the ship suggested the work of amateurs. Finally, pirate attacks in Indonesian waters "never lasted more than twenty minutes and never involved injury to crew members."[62] 'How could anyone suggest this was not an inside job?' concluded the investigators.

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[61] Lloyd's List, 30 December 1992, p. 5.

[62] Ibid., p. 5.

The Indonesian conclusion provoked almost as much outrage as did the initial attack. Eric Ellen, Director of the International Maritime Bureau, was enraged with suggestions of a mutiny. At a press conference he described the actions as "an exercise in saving face," and suggested that if the Indonesians had evidence of mutiny "they should make an arrest."[63] Peter Cowling, Chairman of the Hong Kong Shipowners Association considered the report a "blatant attempt to deflect public criticism of the Indonesian authorities."[64] Chris Horrocks, Director of the International Shipping Federation (ISF), delivered a strongly worded message to the Indonesian ambassador in London, urging that the Indonesian government "step up its efforts to eliminate the presence of such criminals, either by increasing the resources of its law enforcement authorities or in co-operation with other foreign governments which may be able to assist Indonesia."[65] No less indignant was the Merchant Marine Officer's Union. John Newman, NUMAST general secretary, described the report as "nothing short of a blatantly inept attempt to cover up the appalling record of attacks on merchant ships in the region."[66]

Why would the Indonesians have acted this way? Following the dramatic rise in the number of attacks in the Malacca and Singapore Straits in 1991, intense pressure had been placed on the Indonesian Government to improve the state of its counter-piracy operations. A determined naval campaign under the leadership of Admiral Yusuf Effendi had yielded considerable success. This latest setback was something neither the Admiral nor the

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[63] NUMAST, the Merchant Marine Officer's Union, obtained a copy of the report prepared by the Indonesian Sea Security Operations Command.

[64] Tradewinds, 24 December 1992.

[65] Letter sent by P.J. Cowling, Chairman, Hong Kong Shipowners Association, to Asian Shipowner's Forum and Danish Shipowners Association, 24 December 1992.

[66] Letter from J.C.S. Horrocks, Director of the International Shipowners Federation, to His Excellency, the Ambassador of the Republic of Indonesia in London, delivered 16 December 1992.

Indonesian Government wanted publicized. By denouncing the reports of piracy and presenting alternative explanations for the deaths, the image of the Indonesian Navy would have been bolstered and possible criticism of the Jakarta Government would have been deflected.

Ironically, the attempt to deflect criticism of Indonesia's counter-piracy program served instead to highlight allegations of previous complicity by military units tasked with patrolling the region. In some cases, apparently, crews of the same patrol vessels tasked with guarding against pirate attack, were suspected of moonlighting as pirates.[67] It is a common assumption in the shipping community that until 1992 the Indonesian navy, marine police, or customs agents were involved in up to 50% of the local pirate attacks.[68]

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[67] The Independent, 17 March 1993.

[68] Michael Farlie, Director, Hong Kong Shipowners Association, 29 July 1994.

APPENDIX C. PIRATE ATTACKS: SELECTIVE TARGETING?

The flag state of vessels attacked by pirates is a field of the Violence-At-Sea Database. This information can be used to identify possible targeting of vessels by pirates. It has been widely accepted that, with a couple of exceptions (notably the Chinese actions against Vietnamese and Russian ships), pirates' targeting of vessels by flag of registry does not occur. However, this may not be the case.

Table 2 provides information on ship attacks conducted against Indonesian ships, as well as against eleven flag states whose vessels have been attacked most frequently by pirates. Columns 1 and 2 list these fleets in order of numerical size.[69] Column 3, shows the number of ship attacks worldwide for each registry. The number of these vessels attacked in Regions 1 and 3 is indicated in Column 4. Column 5 provides the percentage of ships from each fleet which have been subjected to attack worldwide. Column 6 lists the percentage of each fleet subjected to attack in Regions 1 and 3. Column 7 gives the average size of ships in gross tons (GRT) for each fleet.

In conducting the following analysis, certain assumptions have been made. First, it has been assumed that ships of the listed registries operate randomly throughout the world, so that all are equally exposed to the threat of attack.[70] Second, the distribution of ship types amongst the fleets of each state were considered to be approximately uniform[71]. Third, while

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[69] The World Factbook, 1993 (Central Intelligence Agency: Washington, D.C., 1994). Vessels of 1000 gross tonnage (GRT) or over are included.

[70] It could be argued, however, that ships registered to the local states (Hong Kong, Indonesia, Malaysia, and Singapore) operated more frequently in Regions 1 and 2. If this were the case they would be more exposed to attack than ships of other registries.

[71] However, the average size of a fleets ships (as displayed in column 7) may provide incites. The assumption here is that smaller ships are more vulnerable to attack.

there is a general trend in under-reporting of attacks, certain states may be more conscientious at documenting cases. The assumption is made that Hong Kong-, Singapore-, Malaysian-, and the United States-flagged vessels report more consistently than do the vessels of other states. Reports of ship attacks suffered by the conscientious states are likely to more closely mirror the true picture.

Reporting pirate attacks could be influenced by either of two factors. In some instances, reporting rates may be determined by the ship owners. In other cases the level of incident reporting may reflect government policy. Table 2 indicates that ships registered with "Flags of Convenience" (Panama, Liberia, Cyprus, Greece, and the Bahamas) have reported rates of attack far below the benchmark levels of Hong Kong and Malaysia. Under-reporting in these instances may be explained by shipowners' preferences. The state of registry has little reason to influence the level of reporting.

Explanations for the low level of reports of attack against Japanese, Russian, and Indonesian ships most likely fall under the second category. The Japanese Government may wish to project an image of immunity from attack so as to capture more business for their shipping industry. Similarly, the Russian Government has chosen (at least until recently) to limit reports of attack. This may have been for political reasons. Russia may have feared the erosion of prestige that victimization by pirates might have caused.

In Table 2, the lowest level of attack against shipping was registered by Indonesian-flagged vessels. According to the VAS Database, only 1.7% of the Indonesian fleet worldwide has been attacked since 1989. None of these attacks occurred in Regions 1 or 3. This occurred despite the fact that 56% of the world's attacks in the past six years took place in Region 1 alone. The extraordinarily low level of attack is made all the more noteworthy when the size of vessels in the Indonesian merchant fleet is considered. The average size of ships in the Indonesian inventory is 4,404 gross tons (GRT), a fraction of the size of the

average ship in neighboring fleets. Although smaller ships are typically more vulnerable to attack, the expected results are not found in Table 2.

Country	Merchant Fleet	Reported Attacks Worldwide	Reported Attacks Regions 1 & 3	Percentage of Fleet Attacked Worldwide	Percentage of Fleet Attacked in Regions 1 & 3	Average Ship Size (GRT)
Panama	3244	60	13	1.8	0.4	15,830
Liberia	1648	34	10	2.1	0.6	33,469
Cyprus	1299	28	10	2.1	1.0	16,200
Greece	998	33	7	3.3	0.7	25,534
Japan	950	28	4	2.8	0.4	22,189
Russia	865	23	3	2.7	0.4	9,334
Bahamas	853	20	3	2.3	0.4	23,606
Singapore	492	26	4	5.3	0.8	19,844
U.S.	385	22	8	5.7	2.0	32,641
Malaysia	184	21	4	11.4	2.1	10,162
Hong Kong	176	18	4	10.2	2.2	33,352
Indonesia	401	7	0	1.7	0	4,404

Table 2

Comparison of the Attack Rates of Ship's Registries Whose Ships Were Most Frequently Attacked With Those Rates Experienced By Indonesian-Flagged Vessels.

There are three possible explanations for the abnormally low level of attack against Indonesian-flagged ships. First, security measures on board Indonesian merchantmen might be so effective that pirates were dissuaded from even attempting to attack. A second, more reasonable, explanation is that Indonesia may have sought to side-step international criticism

of its regional anti-piracy program. Reporting incidents against Indonesian vessels, especially those taking place in Regions 1 and 3, might bring adverse attention to the area.

The third explanation is more complex. Local pirates may actually avoid targeting Indonesian-flagged ships. Presently, the Indonesian Government may view piracy as a nuisance suffered only by the shipping industry of other states. This could explain Indonesia's reluctance to allocate more of her scarce resources to the problem. Pirates in Indonesia have a vested interest to maintain this status quo. They may have reached some form of tacit understanding: to avoid targeting domestic shipping in return for unhindered operations. Allegations of official involvement in piracy provide further reinforce for this argument. It has been generally acknowledged that up to 50% of the pirate attacks in 1991 and 1992 were conducted by elements of the Indonesian Navy.[72] This fact would provide Indonesian officials with more than enough incentive to cover up reports of attack.

The obligation of all states to report incidents of piracy to the International Maritime Organization has been in effect since 1982. Pressure must be exerted on the Indonesian Government to begin accurately reporting incidents of piracy suffered by her merchantmen. Once cases are fully documented, the true nature of the regional problem will become evident. Failure by the Indonesian Government to adequately address the issue of under-reporting may imply that foreign-flagged vessels are, indeed, being targeted by Indonesian pirates. In this case, further corrective action by foreign governments and the shipping industry will become necessary.

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[72] Michael Farlie, Director of the Hong Kong Shipowners Association, quoted in London Seatrade Review, described pirate operations in Indonesian waters as marked with "a certain speed, assurance and precision that smacks of military training."

APPENDIX D. EFFECTIVENESS OF BILATERAL AGREEMENTS

In July 1992, two separate bilateral counter-piracy agreements were signed in Southeast Asia. One of these was between Singapore and Indonesia, the second between Indonesia and Malaysia. How effective were these attempts at a cooperative solution?

Figure 8 shows a significant decreases in the number of reported attacks during and after 1992 in the Anambas Islands, the Phillip Channel, and the Malacca and Singapore Straits sub-regions. Bilateral agreements were in effect in each of these sub-regions. Similar decreases in the number of attacks were not registered in the Philippines or South China Sea sub-regions of Southeast Asia (Figure 8) or in the rest of the world (Figure 5).

Was this regional decrease in the number of attacks due simply to chance or were the agreements effective? Conducting Analysis of Variance (ANOVA) procedures on data from the VAS database before and after the date of signature can answer this question.

For this analysis, three separate calculations were performed. Comparisons were made of the numbers of attack per month before and after signature for the following areas. First, in Region 1, for the sub-regions affected by bilateral agreements. Second, in Region 1, for those sub-regions not subject to bilateral agreements. Third, for the world, excluding Region 1. Each was conducted using a 95% Confidence Interval.

Analyses were conducted for the thirty-nine months in the data set prior to the signing of the agreements, and for the subsequent twenty-eight months. Figures 15-17 present results of these analyses. In the means tables presented, the variable "BILAT" is coded "No" for those months before the bilateral agreements were signed, and "Yes" for those months during which the bilateral agreements were in place.

Figure 15 shows the mean number of piracy incidents before and after signing the bilateral agreements for those sub-regions of Region 1 which were directly affected by the agreements. Figure 16 provides similar information for those sub-regions of Region 1 which were not covered by the bilateral agreements. Figure 17 provides control for the effects, the mean number of attacks before and after July 1992 for the world, not including Region 1.

Results of the first analysis (sub-regions of Region 1 exposed to bilateral agreements) revealed that, after July 1992, the average number of attacks recorded decreased from 4.128 to 0.607 per month. The P-value in this instance was 0.0009 (a 9 in 10,000 possibility that this change was due to chance).

The second analysis (sub-regions of Region 1 not exposed to bilateral agreements) registered an increase in the average number of attacks per month, after July 1992, from 1.154 to 3.714. The P-value in this case was <0.0001 (less than a 1 in 10,000 possibility that this change was due to chance).

In the third analysis (world excluding Region 1) the average number of attacks after July 1992 increased from 3.744 to 6.0 per month. The P-value in this case was 0.0197 (a 197 in 10,000 possibility that this change was due to chance).

The evidence presented in this series of ANOVA procedures shows that the mean number of attacks per month in those sub-regions affected by bilateral agreements decreased to one seventh of its former level. Meanwhile, the mean number of attacks per month in remaining regions of Southeast Asia more than tripled. The mean number of attacks per month in the rest of the world almost doubled. This suggests that bilateral agreements have been beneficial to the suppression of piracy. Furthermore, the results may indicate a limited shift in piracy from those sub-regions covered by the bilateral agreements to those sub-regions not covered by the agreements. The increase in the mean rate of attack in these sub-regions was significantly higher than in the rest of the world.

FIGURE #15: Analysis of Variance forTime Period (Before/After Bilateral Agreement (BILAT?)) and Incidence of Piracy in Region Covered by Bilateral Agreement (SEA).

ANOVA Table for SEA

	DF	Sum of Squares	Mean Square	F-Value	P-Value
BILAT?	1	202.067	202.067	12.127	.0009
Residual	65	1083.038	16.662		

Model II estimate of between component variance: 5.688

Means Table for SEA
Effect: BILAT?

	Count	Mean	Std. Dev.	Std. Err.
No	39	4.128	5.262	.843
Yes	28	.607	1.066	.201

Interaction Bar Plot for SEA
Effect: BILAT?
Error Bars: ± 1 Standard Error(s)

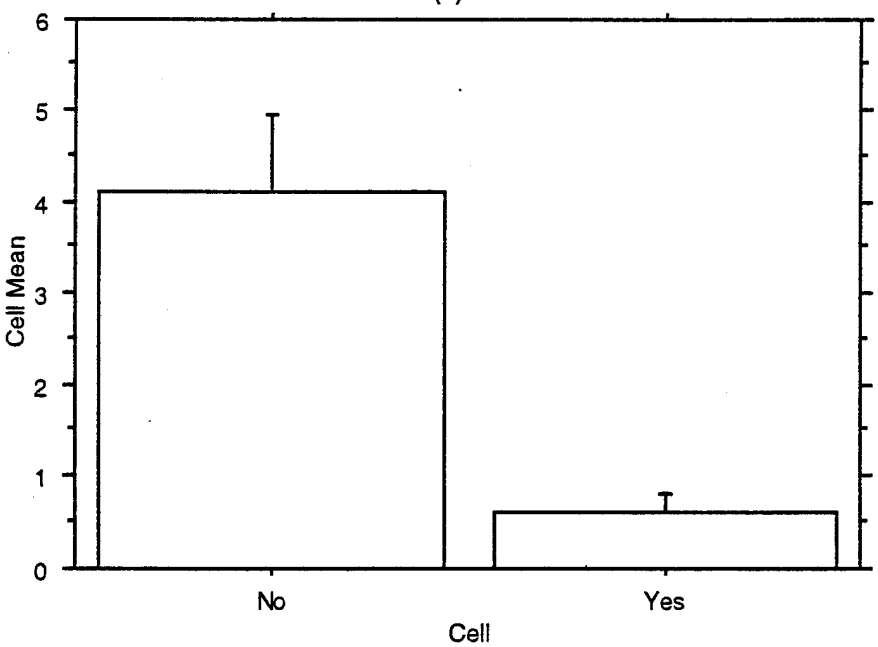


FIGURE #16: Analysis of Variance forTime Period (Before/After Bilateral Agreement (BILAT?)) and Incidence of Piracy in South-East Asia in Areas NOT Covered by Bilateral Agreement (NO BILAT).

ANOVA Table for NO BILAT

	DF	Sum of Squares	Mean Square	F-Value	P-Value
BILAT?	1	106.851	106.851	20.870	<.0001
Residual	65	332.791	5.120		

Model II estimate of between component variance: 3.121

Means Table for NO BILAT
Effect: BILAT?

	Count	Mean	Std. Dev.	Std. Err.
No	39	1.15	1.014	.162
Yes	28	3.71	3.298	.623

Interaction Bar Plot for NO BILAT
Effect: BILAT?
Error Bars: ± 1 Standard Error(s)

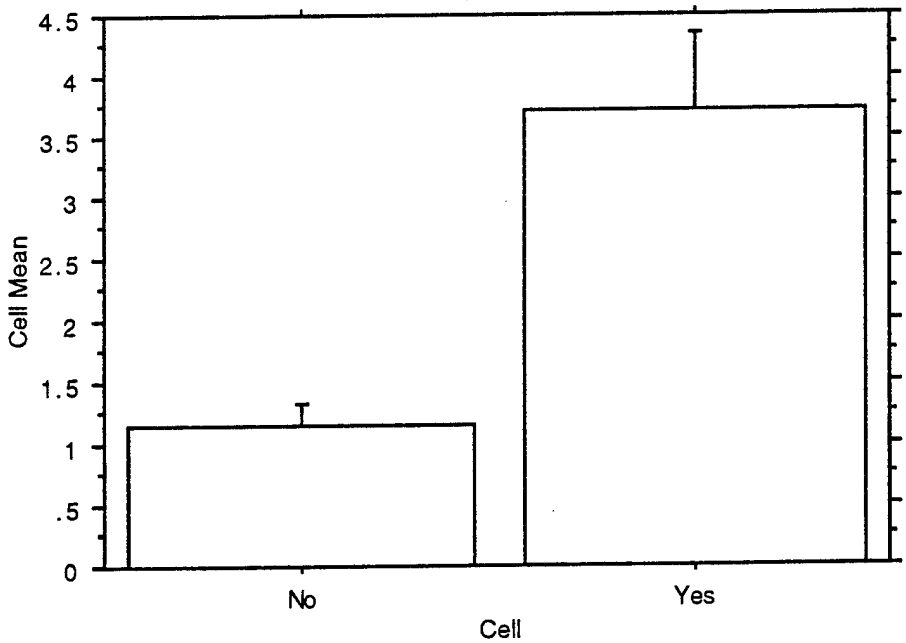


FIGURE #17: Analysis of Variance forTime Period (Before/After Bilateral Agreement (BILAT?))and Incidence of Piracy Worldwide - excluding South-East Asia (TOTAL W/O SE ASIA).

ANOVA Table for TOTAL W/O SE ASIA

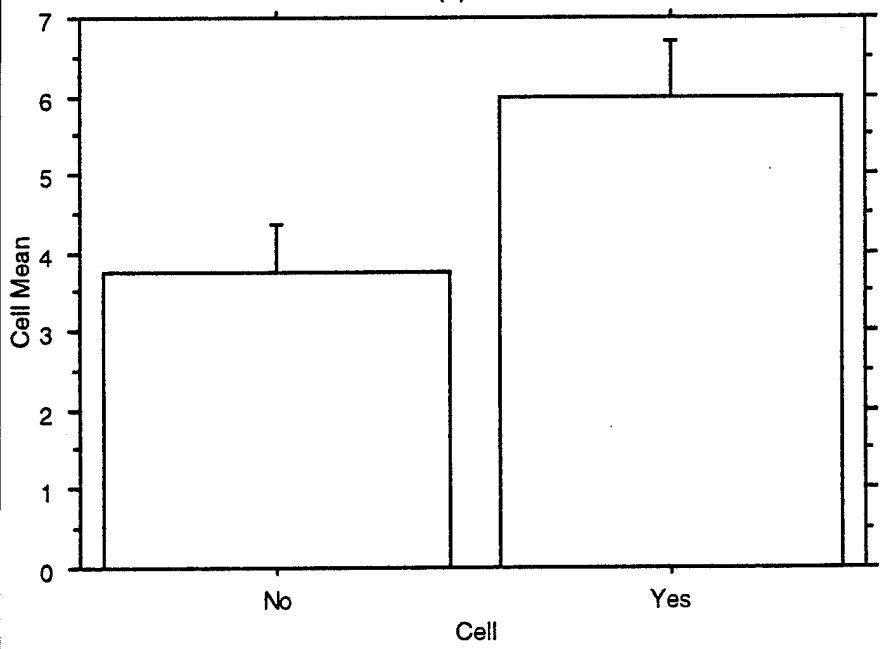
	DF	Sum of Squares	Mean Square	F-Value	P-Value
BILAT?	1	82.982	82.982	5.717	.0197
Residual	65	943.436	14.514		

Model II estimate of between component variance: 2.1

Means Table for TOTAL W/O SE ASIA
Effect: BILAT?

	Count	Mean	Std. Dev.	Std. Err.
No	39	3.744	3.912	.626
Yes	28	6.000	3.662	.692

Interaction Bar Plot for TOTAL W/O SE ASIA
Effect: BILAT?
Error Bars: ± 1 Standard Error(s)



APPENDIX E. INDUSTRY INITIATIVES

"Maritime burglary" and "mugging at sea" are terms used to describe many recent acts of piracy against commercial vessels. The analogy between urban crime and marauding at sea is sound. Attacks are similar conceptually to the crimes of opportunity taking place on the streets of many cities. Pirate gangs, like their urban counterparts, search for easy prey. Preparation and awareness provide the most effective defense against attack. Many raiders are discouraged from attacking simply by visible evidence of good ship security and vigilance. The mere knowledge that they may have been detected is often enough to deter aggression.

1. Target Hardening

Methods of "target-hardening" ships to increase protection from attack range from the standard to the truly imaginative. Security lighting, locks, and alarms can be installed. Sophisticated sensing and detection devices (infra red, CCTV, etc.), and access control mechanisms can be fitted. Detachable barbed wire can be mounted on deck rails. One shipowner is reported to have rigged piping along the deck rail so that a supply of superheated water, straight from the boiler room, can be directed over the side of the ship. Technological innovations are also being investigated. Superglue pellets, designed to break under foot, could be thrown on the deck of a ship under attack, and hyper-sliding compounds spread around the ship might incapacitate boarders.[73]

A range of other tactics are available. The shipping industry and related government and non-government agencies have published recommendations designed to frustrate attack.[74] Most of these provide general precautions; guidelines for the ship's master and crew. They are well thought-out and, although not fool-proof, in cases where advice has

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[73] Paul R. Evancoe, Special Programs, Techmatics, Inc., April 1994.

[74] The International Shipping Federation's, "Pirates and Armed Robbers, a Master's Guide" and U.S. Department of Transportation Maritime Administration's pamphlet, "Piracy Countermeasures" provide examples.

been followed, potential attacks have been averted. The following provides an overview of counter-piracy procedures.

A ship security plan should be drafted, outlining actions to be taken by the crew. This plan should be implemented any time the vessel nears an area noted for pirate attacks. Training exercises should be conducted regularly to ensure that crew members are fully aware of correct procedures in case of attack. Physical security of the ship should be augmented. Access to the ship should be sealed-off from the outside and accommodation spaces, in particular, should be protected. Containers, and all portable equipment on the deck, should be secured. Safe areas should be designated for the crew in the event that the ship is overrun. Fire hoses should be charged and the deck wash system should be kept in operation at all times while transiting through danger areas. Emergency radio signals for use in the event of pirate attack should be coordinated with ships in the area and the shore authorities. Adequate deck lighting should be used at night.[75]

In only one out of three cases where a pirate craft was detected before attack was boarding successful.[76] This fact emphasizes the crucial need for increased vigilance in problem regions. Random p patrolling of the decks may be enough to convince a potential aggressor that his presence will be discovered. Increased watch standing is recommended, particularly during the early morning hours. The majority of boardings take place at the stern of the ship, an area shielded from the radar sweep of most vessels. This vulnerability can be compensated for by fitting a short range yacht radar so that the area is covered.

Suspect craft can sometimes be picked up as a weak radar reflection. Most of the time they will operate without running lights, thus distinguishing themselves from fishing vessels. They may display erratic behavior. For instance, in the shipping lanes of Southeast Asia, pirate boats often travel parallel to but just out of sight of their potential targets. Later,

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[75] However, Michael Farlie, Director of the Hong Kong Shipowners Association, has noted complaints from some members operating vessels in the Malacca Straits, that the use of such lighting served to better identify the ship as a target.

[76] Naval Postgraduate School, VAS Database.

boats will stand off at about a quarter of a mile from the stern of the ship. Once the decision has been made to attack, the craft will approach at high speed.

If a suspect craft should approach, alarms should be sounded and extra lighting activated. A searchlight trained on the approaching vessel may dazzle the occupants of the craft. The ship's speed should be increased and the course changed, preferably seaward. Emergency radio calls should be transmitted. The firehose can be used against potential boarders, signal flares can be fired and, if grappling hooks are being used, attempts can be made to cut the lines. Most authorities recommend against the use of weapons once pirates are aboard. The best course, they indicate, is to ensure all crew members retire to the safe area and wait out the attack.

In some regions of the world, attacks take place more frequently once the ship is at anchor or has tied up in port. Situational awareness is again the best defense. It is often preferable for the ship to steam between 20 and 40 miles from shore while waiting for a berth. When this is not possible, an anchorage site should be selected away from traffic lanes. Visual and radar watches should be used at all times. Adequate lighting should be maintained and deck watches should patrol topside. Fire hoses should be constantly charged. Finally, access to the ship should be refused to local traders.

2. Firearms For Ship's Self-Defense

The use of signal flare guns has been suggested to ward off pirates. However, many shipping organizations, the IMO, and the IMB have strongly recommended against using firearms for shipboard self-defense. Repelling attackers with firearms, they suggest, would be escalatory. Pirates would resort more frequently to the use of similar weapons.[77] However, according to the Violence-At-Sea Database, the number of attacks involving firearms world wide more than doubled, from 30 to 70 between 1990 and 1991. The figure remained at about this level through 1993. This suggests that pirates' use of firearms may be unrelated the use of arms on board ships. Other concerns have been voiced. Crew

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[77] Rear Admiral Mitroupolus, Director of Security, International Maritime Organization, during BBC TV interview, June 1992.

members are not trained to use weapons; they should not have to resort to their use. In the case of wrongful death, shipping companies might find themselves liable and subject to litigation. Finally, weapons available to crew members might possibly be used to settle personal disputes while at sea.

The environment is rapidly changing. The shipping industry has failed to adapt. Pirates, with nothing to fear and everything to gain from the use of firearms, no longer hesitate to employ weapons. Pistols, shotguns, rifles, even sometimes rocket propelled grenades are being used against commercial vessels.

Ulterior motives may lie behind the official campaign against the use of firearms on board ship. For example the IMO may have strong incentives to downplay the issue. Serious jurisdictional and diplomatic problems are associated with what might amount to the exercise of "police action" by one state within the territorial waters of another. Meanwhile, by evading the issue, the shipping industry may avoid added training and salaries expenses.

Ironically, the greatest beneficiary of this pacifist approach is the pirate himself. While the vast majority of ships remain unarmed, the most he fears is that a fire hose may be used against him while he boards the vessel. Once he has safely reached the main deck, he can do what he pleases with little fear of injury.

3. Armed Guards On Board Ship

Most of the industry's arguments against the use of firearms are not relevant when considering the stationing of trained security guards on board ship. In fact, the benefits of such a policy are numerous. Concerns for ship companies' liability could possibly be shed, the responsibilities instead being assumed by the security firm. Crew members could focus on what they were originally contracted for, that is, operating the vessel. Moreover, if security personnel were to join the ship only during the two- or three-day transit through danger areas, and guards were cycled through a number of ships, costs could be reasonably contained.

The Wackenhut Corporation (TWC) is one of several security companies which can provide armed ship's security forces. In 1989, TWC formed a new division, the Maritime

Security Division (MSD), to deal with the piracy problem. MSD can provide highly trained, professional security personnel to join ships in dangerous regions of the world, on a temporary or permanent basis.[78]

Unfortunately, the shipping industry has been reluctant to fund such measures. In the short-run, this policy may save costs. The long-term price, however, may be high. Associated with the increased incidence rate of piracy has been a higher frequency in the use of firearms by pirates (see Figure 14).[79] This trend, and with it the associated injuries and deaths of crew members, is not likely to be reversed. Wrongful death suits could be filed in those cases where crew members were killed and it could be shown that inadequate protection was provided against a known piracy threat.[80]

The possibility of enormous environmental damage may provide another incentive for increased action by the shipping industry. A giant fuel tanker, temporarily incapacitated during attack, could become grounded or involved in an underway-collision. Financial losses stemming from the incident, and the related negative publicity, would be enough to refocus priorities amongst all members of the industry.

4. Armed Guards On Board Ship, A Case Example

One Florida shipping operation has bucked the industry trend. The company, which runs a tug and barge service between Panama, Costa Rica, and Honduras, became the target of a series of repeated pirate attacks in 1990. In the course of eighteen months, a dozen attacks were staged against the unmanned barges. Losses of over $500,000 were sustained.

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[78] Kenneth Gale Hawks, Vice President, Maritime Security, The Wackenhut Corporation, telephone interview, 15 April 1994.

[79] Figure 14 indicates a reduction in the use of firearms by pirates. However, the reliability of this depiction is suspect. It is possible that information on the pirates' use of firearms is not always included in reports. Many of the interdictions in the South China Sea include the firing of weapons; most of these incidents have not yet been formally documented. Attacks in the Philippines are also said to frequently involve the use of firearms, yet many incidents remain officially unrecorded.

[80] Kenneth Gale Hawkes, Maritime Security (Centerville, Maryland: Cornell Maritime Press, 1989) p. 71.

Perhaps of greater concern than the financial losses involved was the gradual erosion of the company's reputation. Although cargo owners were compensated by the line, goods did not arrive as ordered. Shippers threatened to transfer business elsewhere unless the situation improved.

Operations Support Services (OSS), a Florida-based security firm was contracted by the shipping company to provide armed guards. The assignment of guards to each of the barges has proved worthwhile. In the three years since service began on the weekly transit, not one successful attack has taken place. The barge company has continued contracting OSS's services. This suggests that the method is cost effective.[81]

Conclusions cannot be drawn from one case alone. However, the fact that a cost-effective solution was found to this particular problem suggests that using armed guards to protect commercial shipping operations may, in certain instances, be worth considering.

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[81] Michael McNicholas, President, Operations Support Services, 12 April 1994.

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50250 Kuala Lumpur
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7010 Little River Turnpike
Annandale, VA 22003

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