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Technical Intelligence and Security Management within the Nigerian Territorial Waters: The Nigerian Navy Challenge

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ABSTRACT. With the world becoming a more volatile place and certainly high - threat environments becoming too far and dangerous to send personnel, the insufficiency of human intelligence has placed a greater stress on technical aids in gathering intelligence. Technology has allowed the acquisition of intelligence to rely less on human intelligence. The progeny of modern day equipment - both offensive and defensive has made provision for myriad levels in intelligence gathering. The Gulf of Guinea Basin countries rely heavily on their maritime sector for greater per cent of their exports and imports. The Gulf of Guinea is strategic to the development of West African countries and has been characterized by various maritime crimes, thus the need for technical intelligence and surveillance measures by basin countries to enhance the security of the region. Nigeria is a strategic stakeholder in the maritime security around the Gulf of Guinea with her Navy and Nigerian Maritime Administration and Safety Agency as the lead agencies responsible for her maritime security and safety. This work discusses the various leverage and the challenges of modern surveillance equipment to aid the achievement of securing the Nigerian maritime environment by the Nigerian Navy as well as her involvement in several internal security operations in Nigeria.

KEYWORDS. Intelligence, Security Management, Territorial Waters, Navy

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Introduction

Nigeria is a littoral state with greater per cent of her resources coming from the maritime sector. Nigerian Maritime Sector accounts for over 80 per cent of our international trade through transportation, fishing, oil and gas. Previously, 80 per cent of most criminal activities in the country emanates from the maritime sector. But with the advent of some technical intelligence and surveillance platforms, the criminal activities in the maritime sector have been reduced to the barest minimum. It further means the drop in the crime rating of our country and the attendant improvement of our economy is dependent on the security of the maritime corridors and territorial waters (Nte & Charles, 2013, AFRICOM, 2010).

In Nigeria, the Nigerian Navy and Nigerian Maritime Administration and Safety Agency are the agencies responsible for the security and safety of the country's maritime sector. The Navy also actively participates in various internal security operations in Nigeria as land components as such relying on some technical apparatus such as unmanned aerial vehicles, transmitters, receivers, smart watches and the likes. These have been invaluable in collecting several types of intelligence.

The West African maritime environment is threatened by maritime crimes which include crude oil theft, oil bunkering, piracy, sea robbery,

kidnapping and smuggling. The region faces small arms proliferation, human trafficking and narcotics and smuggling, illegal fishing and marine pollution. Suffice it to say that maritime security and economic prosperity are interdependent and mutually re-enforcing. Beside physical and robust patrol presence, greater part of ensuring the security and safety of the maritime domain relies heavily on the surveillance capabilities of the Nigerian Navy and the Nigerian Maritime Administration and Safety Agency. The land components involved in internal security operations also require the use of modern technical intelligence equipment in their various areas of operations. This research will try to gain an understanding of the concepts of the technical intelligence and surveillance measures outlined and initiated to ensure a secure environment within the domain as well as the Gulf of Guinea.

Considering the strategic importance of the maritime sector and Nigerian Navy's involvement in other internal security operations in Nigeria, the study tends to:

1. Highlight the usefulness of technical equipment in intelligence gathering.
2. Highlight the various intelligence surveillance measures put in place to secure the maritime sector.
3. Highlight the challenges involve in the operation of technical equipment in intelligence gathering.

It is in light of the above that this research intends to examine the following questions.

1. How can criminality in the Gulf of Guinea be combated?
2. What are the measures established by the basin countries to maintain maritime safety and security?
3. How effective has the measures put in place fared in combating maritime crime?
4. What are the achievement and challenges in deploying modern technical equipment in intelligence gathering?

In admitting the intractable effects of maritime crime on littoral states and the Navy's involvement in internal security operations, the study seeks to evaluate the following declarative hypotheses:

1. Gulf of Guinea basin countries rely heavily on technical intelligence for the safety of their maritime domain.
2. Maritime crime impinges on the economic development of affected countries.
3. Modern technical equipment is the panacea to intelligence gathering in vicious and demanding environment.

4. Collaboration among stakeholders is necessary for the feat of the agencies.

Method

The study adopted the descriptive method and relied on primary and secondary sources of data and the study gathered its primary information through formless interviews with naval personnel who are vast in practical and in-depth knowledge of intelligence and surveillance equipment. It is important to note here that due to sensitivity about the background and contributor's expectations we are not revealing our respondents as they are not permitted by their relevant authorities to speak on their behalf or to give out such information, they only spoke in anonymity. Therefore, they require the full protection of their identities and privacy.

In the same vein, the secondary sources include critical analysis of archival data from Libraries, Archives, Newspapers, Books, Journals, Publications and private collections which include documents and personal experience. The data used in this study are check and double checked in other to lend validity and reliability of the available information leading to conclusion.

Review of Related Literature

1. The Need to Secure the Maritime Sector

Modern technological improvements in telecommunications, in-transit visibility and commercial logistics have improved the capability and efficiency of vessels, seaborne commerce and maritime infrastructure. Coupled with ever-increasing economic globalization, these trends provide the potential for the ever-growing volume of import and export across global sea lanes and subsequent opportunity for sustained economic growth for Gulf of Guinea nations. However, these same attributes of the commercial maritime realm and the opportunities they present could easily be exploited by a variety of actors who could do serious harm to economic and security interests by attacking shipping, ports, and maritime population centres.

Additionally, these actors could exploit maritime commerce to destroy vessels at sea or in port, attack Nigeria with conventional weapons and traffic those weapons, as well as terrorists and illegal aliens.

2. Maritime economic activities in the region

The people and nations of Gulf of Guinea region have continued its proud history of maritime trade to this day. This is underlined by their dependence of maritime economic activities for their livelihood and for their economic expansion. Many people in the region obtain resources, earn a living off the seas and use them as a means of transport and recreation. Given the region's distinct maritime features, it is not surprising that many countries benefit from the riches of the region and derive economic activities from the maritime sector. The development of the maritime sector and accompanying infrastructures in the region provide lots of economic opportunities to communities along the coast and has benefited hinterland development as well. Many economic activities are carried out at sea and in support of activities at sea, which contributes significantly to the economic development of individual nations in the region and the region as a whole.

3. Offshore oil and gas

The offshore oil and gas industry has emerged as an essential industry to several nations in the region and has made a mark on the map of the world offshore energy sector. Nigeria, for example, which counts on crude oil and gas among its major export earners, has gained prominence in offshore oil and gas exploration and production. The oil and gas boom provides opportunities to other support service providers as well. There is huge involvement of skilled manpower and equipment such as oil rigs, floating production storage offloading vessels, tankers, and offshore service vessels that requires protection.

Naturally, the demand for supporting services by the oil and gas industry creates employment and facilitates technology transfer of technical skills and knowledge in the field to regional players.

4. Fishery

The region provides food source and conducive breeding ground for a wide variety of fish. The fishery industry provides more than just a source of protein for fishermen; it has generated many resource-based maritime economic activities. Fishing is an important source of living for regional countries bordering the Gulf of Guinea. The contribution of the region countries to the world trade of fishery commodities has been increasing in value over the past few years.

The Gulf of Guinea provides a classic example of a maritime region and a fascinating case study on the influence of the maritime sector on the socio-economic development of nations. The region is rich with resources which provide livelihood to many people. The region's maritime features and resources support industries such as fishery, offshore oil and gas, passenger transportation, shipping, ports, and marine tourism, among others. With the growing importance of seaborne trade, the maritime sector increasingly plays a significant role in the development of port cities, and coastal communities in the region, contributing to their wellbeing and prosperity.

The Nigerian Maritime Industry is an enabler and facilitator of economic growth and prosperity. About 90% of world merchandise or trade by volume is carried by seas and over 60% of all imports to West Africa are Nigeria bound. Being the biggest economy and most populous nation within the region and accounting for 65% of cargo generated within the region bring home the need for Nigeria to take the lead in securing the maritime domain. Other factors, which put Nigeria in the forefront of the fight, include the facts that: 65% of cargo coming into Gulf of Guinea end up in Nigeria; it accounts for 50% – 60% major maritime security incidences that occur in the Gulf of Guinea; it has the highest military contingent and might within the region; it has huge deposit of oil and gas making it a place of interest for international energy dynamics; and Nigeria has one of the largest delta areas of the world characterised by thousands of creeks.

For these reasons, therefore, Nigeria is pivotal to the security and stability of the Gulf of Guinea. The resources from this area account for about 95 per cent of Nigeria's foreign exchange earnings as such is the most important sector of Nigerian economy. The present day Nigeria cannot survive without the Maritime sector.

It is worthy to note that like other part of the world, in maritime security, the Nigerian Navy is the leading government institution, 'the statutory chief custodian of defence and security of (Nigeria's) economic base', which cooperates with other government agencies.

Result and Discussion

The data gathered was qualitatively analysed and presented in a descriptive mode. It is worthy to note that Nigeria is presently the

commission chairman of the Gulf of guinea nations as such her maritime force should be representative in surveillance and intelligence gathering.

1. Intelligence Gathering in the Maritime Sector

Given the forces (military and law enforcement), technology, and other resources available today, providing absolute security of our maritime borders is not possible; if it were, we are unlikely to accept the costs or burden to our economy and to our standard of living that would surely result. In protecting the maritime sector, we must reconcile the competing interests of security and prosperity. This is especially true in our ports and waterways. Intelligence and information are critical to resolving these competing interests and are the basis for a risk management approach to security.

Intelligence activities in the maritime domain rely greatly on technical equipment apart from the few that could be generated from human intelligence or open source intelligence. In intercepting threats in the maritime domain, intelligence will always be crucial whether the mission is one of national defence or of law enforcement. This explored the question of intelligence collection and distribution to support maritime law enforcement operations in the context of modern concerns about maritime security more broadly. This line of inquiry required consideration of intelligence gathering and intelligence sharing and coordinated action in each of two dimensions. Relevant intelligence for law enforcement may consist either of general awareness of the maritime domain or to specific evidence supporting a criminal prosecution. On the whole it relies on surveillance.

Maritime surveillance includes all actions necessary for identification, monitoring, and understanding activities in the maritime domain and in all other domains relevant to the maritime environment. Useful law enforcement intelligence can also be gathered in the course of a visit board and search operation (VBSS). In particular, boarding a vessel suspected of one crime may reveal evidence of another crime. On the other hand intelligence gathering in the maritime sector could also be seen as maritime domain awareness.

Maritime domain awareness means finding the ships and submarines of friends and foes, understanding the entire supply chain of cargoes, identifying people aboard vessels, understanding the infrastructures within or astride the maritime domain, and identifying anomalies and potential threats in all these areas. Maritime domain awareness is neither tracks on a screen, systems that monitor white shipping, international standards, nor something

maritime security forces have always done. Nor is it easily achieved. But achieving maritime domain awareness is critically important in today's geopolitical context, not just to guard against international terrorism but to promote commerce and safety and to respond to natural disasters, piracy, illegal migration, and arms smuggling. MDA is an important part of the maritime security strategy, and achieving it will require new technical aids regarding the roles of Nigerian navy and the rest of Gulf of Guinea member nations. Achieving maritime domain awareness is a twenty-first-century strategic imperative.

2. Application of the Strategic Maritime Domain Awareness

It was few months after the attacks of September 11th that United States government officials began discussing other avenues that terrorist might use to attack American citizens, particularly in the maritime domain. In a speech delivered in January 2002, President George W. Bush noted, "The heart of the Maritime Domain Awareness program is accurate information, intelligence, surveillance, and reconnaissance of all vessels, cargo, and people extending well beyond our traditional maritime boundaries.

Maritime domain awareness means finding the ships and submarines of friends and foes, understanding the entire supply chain of cargoes, identifying people aboard vessels, understanding the infrastructures within or astride the maritime domain, and identifying anomalies and potential threats in all these areas. Naval officers, however, focus more often than not on security aspects; for them, MDA boils down to a maritime targeting issue. Targeting in this sense, does not always involve a weapon striking an object. It may mean pointing out to a boarding team a merchant vessel that it should strike up a conversation with; identifying a cargo carrier as suspect so it can be held offshore for inspection; understanding the flows of personnel and cargo at a shore facility; or, when a weapon targeting solution is required, picking out the wheat from the chaff. In reality and while maritime domain awareness certainly has different meanings for Captains of Ports, masters of ships, and everyone in between the common requirements of safety, security, the economy, and the environment resonate among all its stakeholders.

MDA is an important part of the nation's security strategy and achieving it will require new thinking regarding the roles of national and international maritime security forces. Nigeria is a maritime nation in a

maritime world achieving maritime domain awareness is a twenty-first-century strategic imperative.

Maritime domain awareness is neither tracks on a screen, systems that monitor white shipping, international standards, nor something maritime security forces have always done. Nor is it easily achieved. But achieving maritime domain awareness is critically important in today's geopolitical context, not just to guard against international terrorism but to promote commerce

The Strategic MDA lists what is detectable and observable within the domain: vessels, people, cargo, sea lanes and infrastructure; agents such as maritime headquarters and operations centres, navies, law enforcement and federal and international actors; and capabilities for sharing information and intelligence, including command and control, vessel tracking, etc.

Observable things can be linked to the threats discussed above, while the agents and systems provide the means and ways to implement the objectives and apply the actions of maritime Security. Nigerian Navy is the largest naval force in the Gulf of Guinea, with the ability to deploy anywhere to project power, deter aggression and conduct sustained combat operations in the region. Nigerian Navy's mobility, access and combat power make her the cornerstone of Strategic Maritime Domain Awareness in the Gulf of Guinea.

Specifically, surveillance networks and coastal radars would help GoG nations react to illegal maritime activities. One such system is the Automatic Identification System (AIS). AIS will enable GoG naval forces to discern illegal contacts from legitimate commerce and to detect trafficking and piracy. Another useful surveillance tool is the Regional Maritime Awareness Capability (RMAC), which would enable navies to monitor coastal waters and respond to illegalities and anomalies. RMAC is an array of coastal radar that can detect and track vessels as far as twenty-five nautical miles from the coast in all weather conditions. Both AIS and RMAC will enhance Gulf of Guinea regional MDA networks.

In addition, there are impediments that must be overcome to bolster concept for regional MDA assurance and to prevent closures and gaps between Global and National MDA that could minimize or preclude the application of Strategic MDA.

In an attempt to expand offshore activities, a comprehensive and recognized maritime picture will require the systematic and continuous monitoring of all relevant above-water and underwater activities. This will

pose challenges. So far, underwater situational awareness has most often been restricted to operations like anti-submarine warfare or mine clearance. But in the actual sense when considering the exploitation of marine resources in contested areas, a situational picture of underwater exploitation activities could create transparency and thus advance confidence between the parties involved.

In contemplating protection concepts for key underwater infrastructures, if conflicting claims about access to offshore oil and gas reserves are indications of possible future conflicts, then it should be taken into account that critical underwater infrastructures are possible targets for attack. These attacks would serve several purposes. The sinking of Deep water Horizon made it clear that environmental damage is significant. Public outrage caused by the destruction of vulnerable ecosystems can escalate and lead to the loss of trust and confidence in the public and private actors involved in handling the crisis. In addition, there are financial losses due to the damage of costly infrastructures and revenue losses due to installations that are out of function. One can speculate about the motives, resources, and expertise of possible perpetrators, but it seems quite obvious that protection against a comprehensive set of risks e.g., natural hazards, technical vulnerabilities and use of weapons is usually taken seriously. As many underwater infrastructures would most likely affect the interests of several coastal parties, the need to manage the respective risks could create opportunities for cooperation.

Consider cooperative monitoring operations for contested Exclusive Economic Zones. An exclusive economic zone is a vital geostrategic area covering the transition between a state's territorial sea and the high seas. Current estimates assume that EEZs make up around one-third of the world's seas.

The problem is that these zones are likely to grow, as more and more countries engage in EEZ-related claims of sovereignty, security, and environmental protection. These claims are not only a source of instability in the international law of the sea but also serve as a means to limit the effectiveness of expeditionary sea power by regulating military activities in the EEZs. Therefore, maritime surveillance should put particular emphasis on monitoring developments in EEZs. All of the above activities help accomplish this task. But since there is also the risk that information gathered from these activities will be misused by coastal states to exclude others from using the EEZs, thought are usually

given to deploying international monitoring operations for particularly contested EEZs.

3. Nigerian Maritime Agencies and Collaborative Effort

Intelligence Community and a collaborative response partner with relevant maritime agencies with strong civil-military partnerships and broad power to counter threats and mitigate hazards. Nigerian Navy has become a critical asset in effecting Strategic Maritime Domain Awareness and supporting the Nigeria Maritime Administration and Safety Agency.

There is a multitude of local and international agencies as well as governments of foreign countries with a stake in national and international maritime security, and which play a critical role in implementing Strategic Maritime Domain Awareness. While a comprehensive list would be exhaustive, some of the key actors at Nigerian level include: the Navy, NIMASA, Nigerian Port Authority, and Shippers Council among others. There is also collaboration between Nigeria and the entire Gulf of Guinea basin countries. Nigerian Navy also collaborates with about thirty other navies in conducting a joint annual exercise in the Gulf of Guinea named Exercise Obangame.

While each of these agencies has unique purposes and specialized capabilities, through cooperation they can support National, Global and ultimately Strategic Maritime Domain Awareness by using these capabilities to ensure the safety and security of the maritime domain. Some key international participants include the International Maritime Organization (IMO), the International Maritime Bureau (IMB) of the International Commerce Commission (ICC) and the International Police Organization (INTERPOL). International entities help to affect the Strategic MDA and they support the maritime security by helping to counter maritime threats abroad to provide the first line of defence against potential threats. Common Intelligence and Information Sharing Capabilities and Initiatives, the national and international navy and interagency relationship cannot be maximized to effect Strategic Maritime Domain Awareness and meet maritime security objectives without a framework for cooperation, collaborative planning, and intelligence and information sharing.

To this end, ample technology, and infrastructure to support the maritime security endeavour already exists in many parts of the world, but

Africa particularly the Gulf of Guinea is an area of concern for regional maritime awareness, especially with the advent of U.S. African Command (AFRICOM). For example, the Gulf of Guinea is strategically important to the U.S. from both an economic and a security standpoint. Economically, the region has large and untapped petrochemical and mineral resources. Concerning maritime security, the International Maritime Bureau considers the gulf the second most violent coastline in the world behind the Somali coastline.

Furthermore, twenty-one acts of piracy were reported there in 2005 and illegal fishing deprives an estimated $350 million in revenue from Gulf of Guinea nations every year. Also important is that the Gulf of Guinea coastline has also become the layover point favoured by narcotics smugglers trying to reach the lucrative markets of Europe. Existing gaps in regional maritime awareness coverage along the African littorals will continue to enable illegal acts like those discussed above and thereby preclude Global and Strategic Maritime Domain Awareness from being maximized.

The two ways to rectify these gaps are multi-national maritime security exercises and investment in information technologies and awareness enhancing capabilities. A good example is the exercise Obangame conducted in March 2019 by Nigerian navy and other navies including the US Navy.

a. Nigerian Navy Maritime Surveillance Architecture

Nigerian Navy maritime surveillance architecture is a cohesive technical intelligence system of surveillance activities from ships and shore establishments against air, surface and subsurface activities. These devices or platforms are capable of detecting movement of objects from a far distance and using an automatic identification system and ground-based radar and sensors to enhance awareness of maritime traffic. The navy also uses Augusta helicopters fitted with high surveillance radar and sensors to support her surveillance activities.

b. The Nigerian Navy Falcon Eye Project

The falcon Eye project is a sophisticated Israeli-designed mass surveillance system to monitor the country's territorial waters and track movements of vessels within the Gulf of Guinea. The Falcon Eye was designed in Israel by Asia Global Technology but manufactured by United Arab Emirates (UAE)-based Falcon Eye Technology. It uses a number of electro-optic systems and cameras operated from a command centre to detect

and pinpoint movements in the maritime domain. Nigeria's system has a wild and far range from the coast and uses six electro-optical stations to monitor vessels, aircraft and offshore platforms. The project has very high frequency Automatic Identification System and Satellite Automatic Identification System capable of;

1) detecting vessels transmitting invalid voyage and AIS data.
2) detecting vessels conducting ship to ship operation.
3) detecting a vessel splitting away from another vessel.
4) detecting vessels approaching another vessel at high speed
5) detecting vessels stopping irregularly.
6) provision of vessels activities within Nigerian waters.

c. Nigerian Navy RMAC Project.

The RMAC software which is formerly called SURETRAK was the first Maritime Domain Awareness tool deployed by the Nigerian Navy for the purpose of Maritime Domain Awareness as well as maritime operations monitoring and intelligence gathering. This surveillance system integrates surveillance radars, Electro-optical cameras, automatic identification systems and marine radios into a common user interface. The capabilities which abound in these systems, enables the user to survey, monitor, record, analyse, make operational and strategic decisions about maritime operations within Nigerian territorial waters. All RMAC Centres are equipped with the following sensors:

1) Automatic Identification System. The Automatic Identification System (AIS) is a ship borne broadcast system that acts like a transponder, operating in the VHF marine band, which is capable of handling over 4,500 reports per minute and updates every two seconds to six minutes. The main function of the AIS is to provide static, dynamic and voyage related information of the vessels carrying the equipment. The range of coverage is about 44 nautical miles.
2) Surface Surveillance Radars. There are two surface surveillance radars which operate in the X-band for long range applications. Radar images are represented as symbols. They are used primarily for ocean and water area surveillance up to a range of 38 nautical miles.
3) Electro Optical Systems. The Electro Optical Systems is a surveillance camera that has both day and night capability. It operates in Omni-directional manner and provides pictorial coverage of approach to a

particular harbour and anchorage. It has a range of 3 - 5 nautical miles depending on the weather condition.

d. Regional Coordination with other GOG Member Nations and other Bodies

The responsibility for boarder surveillance lies with the GOG basin countries. Nigerian Navy is actively working with Naval and Maritime Security organisations from Angola, Benin, Cameroun, Cote d'Ivoire, Ghana, Senegal, Togo, South Africa, Sudan, Tanzania and others to increase safety and stability levels in the region for the attainment of the objective of regional coordination and information sharing on maritime security and safety. The NHQ coordinates information sharing with the Maritime Inter-Regional Coordination Centre (MICC) between Economic West African States (ECOWAS) and Economic Central African States (ECCAS).

e. ECOWAS Integrated Maritime Strategy (EIMS)

Following the launch of AU's 2050 AIM Strategy, ECOWAS initiated a process aimed at drafting a similar document with a great focus on the regional rather than the Continental level. Similar to the 2050 AIM Strategy, ECOWAS' maritime strategy also focuses on economic opportunities in the maritime domains, including the region's internal waterways and lakes. Another similarity is that ECOWAS' strategy also omits some of the abovementioned land-based reasons for maritime insecurity such as corruption and social exclusion. The strategy for example emphasises the importance of improving regional information exchange and of building more effective legal systems. However, the strategy neglects the fact that such initiatives may not contribute to maritime security in states with corrupt legal institutions or where information is a commodity, which can be traded to pirates or other groups without prosecution.

f. G7 Friends of the Gulf of Guinea Group (G7++FOGG)

In 2011, maritime security in the Gulf of Guinea was discussed for the first time during a G8 (later reduced to G7 after the exclusion of Russia) summit (Yebaoh 2014). The G7 states collectively decided to include additional states and institutions in its work on maritime security and thus created the G7 Friends of the Gulf of Guinea Group (G7++FOGG), composed of Germany, Canada, the United States, Italy, Japan, the United

Kingdom, France, Belgium, Brazil (observer), South Korea, Denmark, Spain, Norway, the Netherlands, Portugal, Switzerland, the European Union, UNODC and INTERPOL (France Diplomatie, 2014). The main focus of G7++FOGG is on piracy that is on one aspect of maritime security which is also why the group previously have invited representatives from the oil and shipping industry to participate in meetings alongside ECCAS and ECOWAS (France Diplomatie, 2014). An important aspect of G7+++ FOGG is the creation of a working group, which tries to coordinate different maritime capacity initiatives between donors and states in the region. Furthermore, G7+++FOGG has strongly supported and assisted efforts aimed at raising the necessary funds to launch the Maritime Trade Information Sharing Centre (MTISC)-GoG in Accra, Ghana (Ukeje and Mvomo Ela 2013). In this sense, G7+++ FOGG is indeed involved in efforts aimed at improving maritime security with regard to piracy in the GoG. Yet from a perspective that acknowledges the breadth of the problem of maritime security (including land-based challenges), the G7+++FOGG only aims rather narrowly at the problem of piracy, and mainly from a capacity building approach. Even though it may possibly have the political strength to do so, the forum does not address the various socio-economic root causes of piracy that exist in the region. That said, the forum still serves as an important institution for non-African states interested in contributing to maritime capacity building efforts in the region and, most importantly, to coordinate different initiatives in order to avoid duplication.

g. The Gulf of Guinea Commission (GGC)

The Gulf of Guinea Commission (GGC) was created in 1999 (Chatham House, 2012). One of the main objectives of the GGC has been to harmonise policies on the management of oil and natural resources in order to avoid conflicts (International Crises Group 2012). Thus, what characterises the GGC is the issue of oil: in 2012 seven of the eight GGC members produced five million barrels of oil every day collectively (Chatham House, 2012) and the GGC has arguably become an institution almost exclusively for oil producing states in the region. This has recently been exemplified by Ghana's application for GGC membership just as Ghana started to export oil (Government of Ghana, 2013). Although created in 1999, it was only in 2006 that its member states made an attempt to build a functioning institution (Kendemeh, 2006). Beside the delayed interest of member states, the role of the GGC has also been influenced by external developments. For example,

with the launch and subsequent implementation of the new African Peace and Security Architecture in 2002, the regional economic communities (RECs) were given a more prominent role with regard to peace and security. One of the reasons why GGC (rather than MOWCA) has been allowed to serve this role is perhaps that the institution has a more forceful drive vis-à-vis combatting the problem of piracy, since the institution is driven by oil producing states, all of whom are affected by the problem (in contrast to institutions with a much broader membership profile – not all of whom are equally affected by and focused on the problem of piracy). This also seems to explain why the GGC, rather than MOWCA, had a more prominent role during the Yaoundé Summit in 2013 together with ECOWAS and ECCAS. Yaoundé Summit, regional zones and inter-regional cooperation.

To understand the drivers behind the 2013 Yaoundé Summit, it is important to go back to the maritime initiatives taken by ECCAS in 2009. A number of security initiatives in Africa have, to varying degrees, been formulated with the involvement of external actors (notably donors) and sometimes this has caused a lack of ownership in cases where such initiatives are pushed more by donors than by states on the African continent. Following the conclusion of a regional study in 2009, ECCAS decided to develop a maritime strategy based on the following six principles: information management; community surveillance through the detection and the sharing of assets; legal and functional harmonization of States' action at sea; self-financing, through a community tax; logistics; and institutionalization of a maritime conference for Central Africa (UN 2012:12). Following the launch of this strategy, a regional maritime security centre was established in Pointe-Noire in Congo-Brazzaville.

4. Technical Intelligence Equipment of the Land Component of Nigerian Navy

Nigerian Navy also actively participates in internal security operations in Nigeria. This makes it a necessity to deploy technical intelligence equipment to aid her operations. Thus, the paradigm shift from human intelligence to technical aids has provided a myriad of intelligence level. Some of the developed nations like United States, Russia, and China etc. have continued to invest in this proven platform for intelligence collection. Technical equipment is grouped into two, namely, offensive and defensive countermeasures devices. This technical apparatus could be wired or wireless devices. The offensive devices are used to invade the enemy's territory,

installations, or operational bases for the purpose of secretly monitoring the enemy's activities. Defensive countermeasures devices on the other hand, include all the devices and measures employed to ensure an environment is free from secret monitoring, explosives, hidden radio transmitters, cameras, guns and inflammable materials. This process is known as technical sweeping. All devices used for secret monitoring are classified as technical surveillance devices. Equipment used for technical sweeping include explosive detectors, metal detectors, camera detector, frequency scanner and transmitter detector. With the development in technology the threats posed by technical surveillance devices are becoming more difficult to detect. The difficulty in detecting these devices has become a source of concern in intelligence practice. Suffice to mention that for effective deployment of any of the defensive or offensive equipment, there is need for a combination of skills and specialized knowledge about electronics, counterintelligence, security investigation application and many other disciplines.

5. Technical Intelligence Equipment and their Applications

There are different types of technical equipment available in the market today. The equipment ranges from the simple room transmitter to other sophisticated satellite surveillance equipment. Typical security equipment is categorized as follows; transmitters and receivers, bugging devices, surveillance and electronic counter surveillance devices. Others are technical equipment against terrorism.

a. Transmitters and Receivers

Transmitters and receivers are electronic devices that modulate and amplify a signal derived from speech or other sources and radiate same through an antenna or coil. Transmitters and Receivers could be wired or wireless. The signals radiated from a transmitter are normally collected through electronic equipment known as the receiver. Transmitters are built into eavesdropping devices. Most common eavesdropping devices are designed to operate within a standard frequency modulation band of 88-108 megahertz. However, with recent discoveries, eavesdropping transmitters now utilize frequencies above 3 gigahertz. These extremely high frequencies are difficult to detect during electronic counter surveillance exercise known as technical sweeping.

b. Bug Devices

Bugging devices are electronic gadgets that are used to discretely collect information, they are concealed with miniature microphone and cameras used to monitor or record conversations, Bugging devices are usually used for eavesdropping, the act of secretly listening to private conversations of others without their consent. Bugging devices are designed in different forms, shapes and sizes, Most Bugging devices are mostly house and office items with built-in transmitters. Some of these items are Alarm clocks with hidden camera, Clock-lamps-radio with hidden video camera, Concealed wall plug transmitters, Eyeglass soft case camera, Lady's handbag with hidden camera, DVD player with hidden camera and Wireless pen camera, Others include Briefcase with hidden camera, Covert necktie button with hidden camera and Wall clock hidden cameras. There are camera phones, concealed lamp transmitter and telephone modular jack amongst others. A look at some of the bugging devices:

1) The Concealed Wall Plug Transmitter
   The concealed wall plug transmitter is a type of bugging device with a very sensitive room transmitter that will easily pick up and transmit all sounds and conversations-in a 20m by 20m room. The unit can be built into a standard wall plug sockets. The sockets usually have a small pin hole for the microphone. It is usually designed to resemble the standard wall plug. This type of wall plug has the transmitter embedded in it. They usually have a transmitting range of about 250ft.
2) Concealed Lamp Transmitter
   The Concealed Lamp Transmitter is a type of bug that exhibits the same basic operating characteristics as the concealed Wall Plug Transmitters. The device does not require any special installation procedure. It can be placed in a room for the purpose of transmitting all sounds and conversations in a 20m by 20m room,
3) Automatic Telephone Recording Device
4) The Automatic Telephone Recording Device is used to automatically start a recorder within the telephone handset whenever the phone is picked up. It records the conversation and then automatically stops the recorder when the telephone is hung up. Other types have voice activated micro recorders embedded within the telephone handset.
5) Telephone Transmitters

6) Telephone transmitters are wiretaps that are concealed in standard telephone receptacles or wall jacks. They are used in place of the normal phone wall jacks. The device is usually inserted into existing telephone jack. It then transmits any communication from the line to a predetermined destination
7) The Infinity Transmitter
   The infinity transmitter is an effective portable commonly used eavesdropping device of wider coverage. It is also referred to as "Hook Switch" "Bypass" and "Third Wire Tap," The unit can be installed in a telephone handset or within the premises and activate it into a sensitive bug that will actually pick up sound and conversation within $400m^2$ area. Once the device is installed the eavesdropper can monitor target from anywhere in the world. The infinity transmitter could also be installed in other items such as power sockets and mobile handsets.
8) Cell Phone Listening Devices
   Cell Phone Listening Devices are cell phones with spy software and special transmitters that enable interception of the target telephone communications. It has the latest technology which allows undercover environmental audio stream and cellular conversations. It could also enable transfer of all SMS sent and received on the target phone. It has global coverage and works with any GSM provider in all bandwidths. It gives alert of all communication traffic of the target phone indicating the telephone number, date, time of both incoming and outgoing calls. The cell phone spy on any Bluetooth enabled devices, cell phones and laptop computers. It then behoves on all intelligence personnel to be security conscious especially of such cell phone listening devices that could be used for or against own activities. It is therefore necessary for intelligence personnel to be well updated against such technical surveillance equipment.

c. Electronic Countermeasures Equipment

Electronic Counter-surveillance also known as Technical Surveillance Countermeasures (TSCM) is the process bug sweeping. This field of TECHINT comprised of ELINT, SIGINT, and Electronic Countermeasures (ECM). The procedures are to detect the presence of technical surveillance devices and identify hazards and technical security weaknesses that could aid the conduct of technical penetration into a facility. Electronic counter surveillance equipment are specialized electronic equipment used to detect

offensive technical devices used to invade own environment. Specialized equipment used for this process of technical sweeping is known as "broom". Typical countermeasures broom or technical sweeping equipment is the Countertek ultra pro Wireless Bug Detector.

1) Countertek Ultra Pro Wireless Bug Detector
   This is multifunctional all-in-one portable countermeasures sweep unit. It is a modern, portable bug detector, hidden camera finder, telephone and telephone line detector and white noise generator. It also detects GPS tracking devices. Countertek ultra pro Wireless Bug Detector has an inbuilt noise generator that prevents telephone tapping, laser listening, parabolic listening, and recording. Other features include its ability to ensure telephones and telephone lines are secure. Countertek ultra pro Wireless Bug Detector is effective in detecting transmitters and neutralizing their effects. The DIA has seasoned technical sweep team that could be tasked for technical sweeping purposes from time to time. In view of the above it is imperative that personnel make request for technical sweep of their sensitive Offices and newly acquired equipment.
2) Technical Equipment against Terrorism
   After the September 11 attacks on the U.S., many world leaders stepped up their anti-terrorism initiatives. Innovative technologies were evolving to identify terrorists and guard against terrorist attacks. The inconveniences and discomfort of manual security checks in major entrances was resolved by the technical innovations of Backscatter X-ray system. The Backscatter X-ray scans are weaker than X-ray scans at the medical centre; it penetrates slightly the surface of the skin. The backscatter X-rays reveal to security personnel anything hidden under the clothes. These include organic and inorganic items that metal detectors alone could not detect.
3) Future Attribute Screening Technology
   The Future Attribute Screening Technology (FAST) is equipment that examines the mind as well as the body. The FAST like the backscatter X-rays mentioned earlier is a screening technology intended for use when security personnel need to quickly identify potential threats. Similar to the way a lie detector works. FAST measures your physiological responses and requires no direct physical contact with the subject being analysed. FAST incorporates multiple technological advances such as

cardiovascular and respiratory sensor, remote eye tracker, thermal cameras and high-resolution video.

4) SEEK II Device
   The SEEK II is a handheld electronic device that records a person's biometric data. It could be used to take the biometrics of arrested criminals for onward transfer to a database. Intelligence organizations need the biometrics of people they're tracking. Such database stores the photos, fingerprints, retinal scans and DNA analysis of targets. This creates comprehensive digital dossiers, which are easier, faster and reliable to access. The equipment will enable personnel to quickly retrieve necessary information to ensure appropriate action is taken without delay on the field.
5) Critical Infrastructure Inspection Management System
   Critical Infrastructure Inspection Management System (CIIMS) is equipment that helps intelligence groups have a better aerial view of targets. It enhances the function of the air surveillance groups to send and receive real-time information about activities on the ground. Consequently, it enables both air and ground forces have access to crucial data required to make swift decisions during operations.
6) Explosive and Chemical Trace Detector
   Explosive and chemical trace detectors are portable real time explosive and chemical trace detectors that can detect and analyse all types of bombs. The Model 4300 Nose of the Explosive and chemical trace detectors are portable real time analysers that can detect and analyse all types of vapours and identify traces of organic, biological and chemical compounds quickly and accurately. These bomb detectors are state-of-the-art TSCM equipment and are highly recommended to combat terrorist activities.

6. Achievements of the Nigerian Navy

Technological capabilities have made the activity of intelligence operation easy by increasing the possibilities of collecting relevant information for intelligence purposes. Numerous achievements have been recorded in the use of technical intelligence equipment. Suffice to note that the employment of these technologies by nations in the practice of intelligence has further the gap between nations. Nations with better technologies and expertise could have information about the rest of the world

at their fingertips. There are records of great strides in the business of intelligence gathering through the use of technical equipment.

SIGINT which is a major part of TECH1NT is the interception of electronic communications and other emissions. Signals are intercepted by a variety of methods, including the tapping of telephone lines and the monitoring of radio transmissions. Messages intercepted in this manner are often in coded format. Cryptology, which is the study of making and breaking codes, has become a relevant field in technical intelligence gathering.

Another aspect of TECHINT which is Photographic Intelligence (PHOTOINT) is usually conducted from aircraft. Reconnaissance aircraft can utilize thermograph and advanced radars to reveal details indiscernible in visible light. Photo intelligence from aircraft is especially valuable for monitoring the movement of military forces on the ground and for spotting the construction of military facilities. The advent of the reconnaissance satellite-has revolutionized clandestine collection.

The maritime surveillance architecture made some notable achievements within the limits of her resources. Some of these achievements include:

1) Reported over 100 cases of robbery/piracy between 2011 and 2018.
2) Assisted in vectoring Nigerian Navy vessels for search and rescue operations aboard merchant vessels at sea.
3) Rescue of merchant vessels hijacked by sea pirates and sea robbers.
4) The architecture has also served as deterrence to vessels engaged in crude oil theft and ship to ship illegal bunkering.
5) Technical intelligence equipment deployed by the land components of Nigerian Navy has also recorded huge successes in internal security operations and against Boko haram terrorist in the lake Chad Basin.

7. Challenges faced by the Nigerian Navy

As the scale, frequency of piracy and other maritime crime keeps growing over the years in the Gulf of Guinea region, there is an increasing desire among member nations of the region to promote and preserve good order at the sea. This led to the incessant calls for partnership to fight piracy and other maritime crimes in the region by governments of the region through joint surveillance and intelligence gathering. The major Challenges to the use of modern technical equipment in intelligence gathering are corruption and lack of funding. The availability of sophisticated surveillance systems is

instrumental in reducing the risk of maritime crimes. There has long been a need to further enhance maritime surveillance means through the utilization of more advanced available sensors, increased connectivity and through a shift toward net centric capabilities. Power supply is another factor hampering the successful operation of this equipment.

Conclusion

It was established that collection remains one of the most important aspects of the production of intelligence. And that the use of human intelligence (HUMINT) was the precursor of all other means of gathering information and intelligence. Intelligence business has over the years evolved from the use of HUMINT to the use of sophisticated technical equipment. The paper identified categories of security and surveillance equipment in use as offensive and defensive. The offensive devices are used to invade the enemy's territory, installations, or sensitive places for the purpose of secretly monitoring the enemy's activities. Defensive countermeasures devices on the other hand, include all the devices and measures employed to ensure that own environment is free from secret monitoring, explosives, hidden radio transmitters, cameras, guns, and inflammable materials by hostile intelligence nation. This technological advancement capability has made the activity of intelligence operation easy by increasing the possibilities of collecting relevant information for intelligence purposes. Also, it has reduced the risk Intelligence Sources exposed to hitherto; where considered dangerous for HUMINT, some of these devices such as drone can be employed for the same purpose. Numerous achievements have been recorded in the use of technical intelligence equipment. Suffice to note that the employment of these technologies by nations in the practice of intelligence has further the gap between nations. The paper extensively discussed the maritime sector, maritime crimes and maritime surveillance in the Gulf of Guinea.

Recommendations

This study recommends and suggest some important point concerning intelligence and security management in Nigerian territorial waters as follow.

1. It is necessary to introduce space technology application in surveillance particularly in the Gulf of Guinea basin countries

2. The United Nations Office for Outer Space Affairs (UNOOSA) should use its capacity to influence relevant stakeholders and governments in the region to accept and consider the use of additional satellite technology for an effective surveillance and monitoring in order to avert possible maritime crimes.
3. The United Nations specialized agencies such as United Nations Office for Drugs and Crime Prevention (UNODC), International Maritime Organization (IMO) as well as regional organisations such as ECOWAS (Economic Communities of West African States), Economic Community of Central African States (ECCAS),as well as the New Partnership for African Development (NEPAD), the African Union (AU) and others needs to add to the efforts of the governments working on surveillance in order to avert piracy in the Gulf of Guinea region.
4. The federal government should increase funding for the maritime agencies to further boost their surveillance and response capabilities.
5. Improve information sharing between gulf of Guinea countries with Foreign Intelligence and Security Services.

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