



**NAVAL  
POSTGRADUATE  
SCHOOL**

**MONTEREY, CALIFORNIA**

**SOF-MAGTF CAPABILITIES INTEGRATIONS ANALYSIS AND  
OPERATIONAL MODELING (CONTINUATION)**

by

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September 2022

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## **ABSTRACT**

The Strategic Shaping and Reconnaissance (SSR) concept is the Marine Corps' special operations contribution to the national defense requirements for both strategic competition and, when required, conflict. This research, working in conjunction with ongoing NPS efforts examining Expeditionary Advance Base Operations (EABO), focuses on exploring, assessing and identify mechanisms that will allow United States Marine Forces Special Operations Command (MARSOC) to better serve as a bridge for capabilities integration with SOF and deployed MAGTFs to fully maximize the complementary capabilities of each formation. Specifically, this effort examines MARSOC operating concepts with a focus on Strategic Shaping and Reconnaissance (SSR) and the tie-ins to the USMC Expeditionary Advanced Based Operations (EABO) concept for 21st Century warfighting in the contact, blunt, and surge layers of competition and conflict. This research examines SSR activities across the spectrum of cooperation, competition, and conflict to gain awareness of adversarial intentions and capabilities in order to deter, disrupt, deny or increase the adversary's risk. The full set of insights were provided to the sponsor via the Controlled Unclassified Information (CUI) Wargaming Executive Summary submitted to the sponsor in June, 2022.

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# I. EXECUTIVE SUMMARY

## Project Summary

This research, working in conjunction with ongoing NPS efforts examining Expeditionary Advance Base Operations (EABO), focuses on exploring, assessing and identify mechanisms that will allow United States Marine Forces Special Operations Command (MARSOC) to better serve as a bridge for capabilities integration with SOF and deployed MAGTFs to fully maximize the complementary capabilities of each formation. Specifically, this effort examines MARSOC operating concepts with a focus on Strategic Shaping and Reconnaissance (SSR) and the tie-ins to the USMC Expeditionary Advanced Based Operations (EABO) concept for 21st Century warfighting in the contact, blunt, and surge layers of competition and conflict. This research examines SSR activities across the spectrum of cooperation, competition, and conflict to gain awareness of adversarial intentions and capabilities in order to deter, disrupt, deny or increase the adversary's risk.

The research leveraged the Naval Postgraduate School (NPS) Warfare Innovation Continuum (WIC) and multiple Joint Campaign Analysis (JCA) and Wargaming Applications courses to develop its insights.

The primary focus of this effort was to explore how MARSOC can operationalize SSR to achieve effects in competition in a littoral environment. The effort was based on an exchange of ideas between MARSOC and NPS researchers to better understand SSR operational concepts and identified three critical MARSOC issues for exploration. The research identified a potential set of SSR supported platforms and multiple operational techniques for the employment of those platforms.

**Keywords:** *wargaming, campaign analysis, expeditionary advanced based operations, EABO, marine air ground task force, MAGTF, marine forces special operations command, MARSOC, strategic shaping and reconnaissance, SSR*

## Background

The Strategic Shaping and Reconnaissance (SSR) concept is the Marine Corps' special operations contribution to the national defense requirements for both strategic competition and, when required, conflict. SSR is an evolving MARSOC operating concept that ties into future special operations force (SOF) operations and the USMC Expeditionary Advanced Based Operations (EABO) concept for 21st Century warfighting in the contact, blunt, and surge layers of competition and conflict. SSR includes those activities conducted by special operations elements in cooperation, competition, and conflict to gain awareness of adversarial intentions and capabilities in order to deter, disrupt, deny or increase the adversary's risk. SSR encompasses a wide array of skills and equipment to provide shaping and influence effects. Effects are achieved through a hybrid approach utilizing selected SOF core activities and programs applied through special and intelligence operations, direct and indirect actions, and the persistent development of ally and partner relations.

Marine Special Operations Forces (MARSOF) conducting SSR possess the capability to operate in the competition continuum and transition to conflict if competition fails. MARSOF employs capabilities in the multi-domain environment that provide target analysis against networks in competition and conflict. Emphasis is placed upon strategic mobile targets, and critical infrastructure to determine intent, providing the supported commander current and detailed collections and, when required, Direct Action against a specific network, facility, or individual associated with threats against the nation's interests.

The wargames utilized in this work familiarized participants and observers with SSR concepts and their potential employment in a South China Sea scenario. Under the NPS WIC construct, an NPS student team, in the JCA course, conducted a mini-study examining a set of potential critical issues in an operational environment. This mini-study was followed by an NPS faculty-advised student wargaming team in the Wargaming Applications course, that designed, developed, conducted, and analyzed a wargame leveraging the findings from the mini-study. The wargames modeled SOF utilization of the principles of SSR in a competition environment to best posture SOF to deter escalation of events.

The overarching objective of this effort was to explore how can MARSOC operationalize SSR to achieve effects across the continuum of cooperation, competition, and conflict in a littoral environment. This effort focused on gaining insights into the following three major issues:

1. What maritime platforms best support an SSR mission in a littoral environment?
2. What tactics, techniques, and procedures (TTPs) should be used for littoral mobility in support of SSR missions?
3. How do external agencies, including the interagency, China, local media, and the special operations task force (SOTF) react to the SSR platforms and TTPs?

## **Findings and Conclusions**

The full set of insights were provided to the sponsor via the Controlled Unclassified Information (CUI) Wargaming Executive Summary submitted to the sponsor in June, 2022.

**Issue 1:** This effort examined the potential for SSR missions both in an island-hopping and riverine scenario.

**Issue 2:** The overwhelming majority of teams utilized overt actions to create a clear narrative for their actions.

## **Recommendations for Further Research**

Strategic Shaping and Reconnaissance (SSR) is still a nascent concept that require further research to better understand how the Marine Special Operations Forces MARSOF community can use it to operate more effectively to establish a position of advantage, while preventing the escalation of violence. Essentially, these employment mechanisms will need to mature through continued programs of wargaming and campaign analysis research to best serve MARSOC and the Special Operations Forces (SOF) community.

**Acronyms**

EABO	Expeditionary Advanced Based Operations
JCA	Joint Campaign Analysis
MARSOC	United States Marine Forces Special Operations Command
MARSOF	Marine Special Operations Forces
NPS	Naval Postgraduate School
PNF	partner nation forces
SOF	Special Operations Forces
SOTF	special operations task force
SSR	strategic, shaping and reconnaissance
TTP	tactics, techniques and procedures
WIC	Warfare Innovation Continuum

## **II. INTRODUCTION**

### **A. STRATEGIC SHAPING AND RECONNAISSANCE BACKGROUND**

Strategic Shaping and Reconnaissance (SSR) concept is the Marine Corps' special operations contribution to the national defense requirements for both strategic competition and, when required, conflict. SSR is an evolving MARSOC operating concept that ties into future special operations force (SOF) operations and the USMC Expeditionary Advanced Based Operations (EABO) concept for 21st Century warfighting in the contact, blunt, and surge layers of competition and conflict. SSR includes those activities conducted by special operations elements in cooperation, competition, and conflict to gain awareness of adversarial intentions and capabilities in order to deter, disrupt, deny or increase the adversary's risk. SSR encompasses a wide array of skills and equipment to provide shaping and influence effects. Effects are achieved through a hybrid approach utilizing selected SOF core activities and programs applied through special and intelligence operations, direct and indirect actions, and the persistent development of ally and partner relations.

Marine Special Operations Forces (MARSOFF) conducting SSR possess the capability to operate in the competition continuum and transition to conflict if competition fails. MARSOFF employs capabilities in the multi-domain environment that provide target analysis against networks in competition and conflict. Emphasis is placed upon strategic mobile targets, and critical infrastructure to determine intent, providing the supported commander current and detailed collections and, when required, Direct Action against a specific network, facility, or individual associated with threats against the nation's interests.

MARSOC approached the Naval Postgraduate School to help explore how can MARSOC operationalize SSR to achieve effects across the continuum of cooperation, competition, and conflict in a littoral environment.

### **B. RESEARCH SUMMARY**

This research examined the potential impact of 20 maritime platforms ranging from civilian and commercial vessels to military naval platforms and assessed their potential impact on tactical mission utilization by the maritime planning teams. The effort focused on gaining insights and identify which set of maritime platforms best support strategic shaping and

reconnaissance through several venues. These venues included leveraging the NPS defense analysis and operations research department faculty and students, conducting a Gray Zone Innovation workshop and designing and executing an analytical wargame to capture challenges and opportunities in a plausible great power competition (GPC) “gray zone” scenario. These venues were purposely linked to provide a better assessment and understanding of the potential concepts for SOF employment of maritime platforms in support of SSR, and their implications for operations across the competition continuum. MARSOC supported the effort during all phases of the research to provide additional guidance and direction.

### **C. RESEARCH EXECUTION CONCEPT OF OPERATION**

This research leveraged the Naval Postgraduate School Warfare Innovation Continuum (WIC), a Gray Zone Innovation workshop, multiple Joint Campaign Analysis (JCA) mini-studies and a Wargaming Applications course to develop its insights. Under the NPS WIC construct, an NPS student mini-study team, conducted in the JCA course, informed and underpinned the design and conduct of further research into MARSOC’s three critical issues. The mini-study informed the follow on NPS faculty-advised student wargaming team in the Wargaming Applications course. This team designed, developed, conducted, and analyzed a wargame leveraging the findings from the mini-study team. The wargames utilized in this work familiarized participants and observers with both SSR concepts and maritime platforms for employment. The wargame modeled SOF utilization of maritime platforms in a South China Sea scenario to best posture SOF to achieve its objectives.

#### **1. Warfare Innovation Continuum**

Under the NWSI umbrella, the Warfare Innovation Continuum (WIC) encompasses the research, education, and experimentation efforts, ongoing at NPS. The goal is to align scheduled resident course projects, integrated research, and special campus events into a broad set of coordinated activities that will help provide insight into opportunities for future naval operations and fleet design. Exploring a new topic area each fiscal year, the WIC is a coordinated effort to execute a series of cross-campus educational and research activities that share a central theme. Courses, workshops, and research projects are synchronized to leverage and benefit from prior research that results in a robust body of work focused on each annual topic area.

By incorporating topics of fleet interest into established academic courses, through the WIC structure students and faculty promote research that aligns with fleet priorities while simultaneously achieving the educational requirements for the graduate students. This research effort took advantage of the 2021-2022 “Hybrid Force 2045” WIC structure to support the analysis of SSR and maritime platforms. The “Hybrid Force 2045” aligns activities to address the question

*“How might emerging technologies, new operational concepts, and alternative fleet designs contribute to a more effective naval force across the spectrum from competition to conflict? How do the alternative fleet designs enhance the effectiveness and resilience of joint, combined and coalition forces across all domains?”*

## **2. Maritime Gray Zone Warfare Innovation Workshop**

The Naval Postgraduate School Warfare Innovation Workshop acts as an innovation engine, leveraging operationally-focused students and defense-oriented faculty to address complex fleet issues – from technical to ethical and from concept-generation to experimentation. Small teams of early career professionals from the fleet, Navy labs, industry, and academia with diverse experience levels and perspectives spend three and a half days rapidly generating concepts of employment and evaluate risk within a future conflict scenario. Government, military, industry, and academic leaders vet these ideas before disseminating results back to Naval leadership. Sponsored by and the Naval Warfare Studies Institute and CRUSER), the Maritime Gray Zone Warfare Innovation workshop was held at NPS from 16-19 November 2021 (See Appendix A). During the four-day workshop, three teams were facilitated through a rapid concept generation process using tools of user-centered design to respond to the workshop design challenge:

*How might emerging technologies, new operational concepts, and new force capabilities contribute to a more effective force in the geo-political competitive phase to deter adversaries, strengthen allied relations, and shape the strategic and operational environment?*

After initial input on the problem space from an array of subject matter experts and eight contact hours of focused concept generation and development work, the three teams presented their best ideas on the final afternoon of this four-day workshop.

The Maritime Gray Zone Warfare Innovation Workshop was linked with the NPS Defense Analysis curriculum. To address pandemic mitigation concerns, the workshop was

offered in a hybrid participation format. The Maritime Gray Zone (MGZ) Warfare Innovation Workshop (WIW) occurred 6-19 November 2021 on the NPS campus in Monterey with remote participants joining us on the NPS "Virtual Campus" via MS Teams.

In addition to addressing the design challenge, participants were asked three specific questions:

1. Do we have the right capabilities to confront these problems?
2. Do we have the right concepts to confront these problems and.
3. Do we plan to integrate them the right way? And if so, how?

Each of the three teams crafted their own problem statement.

1. Team 109: How do we impose costs on the Chinese Communist Party in order to support U.S. and allies and partners objectives around the world in a way that achieves our policy objectives without unnecessarily escalating tensions with China?
2. Team 111: How might we counter China's Belt and Road Initiative to enable and empower our partner's resilience and growth?
3. Team 113: How might we enable embedded SOF teams in the Gray Zone to communicate status and intent internally and externally across the spectrum of conflict, while managing signature to reduce risk of exposure?

Three student teams had eight hours to go from a blank sheet of paper to their final concepts. After initial input on the problem space from an array of subject matter experts and eight contact hours of focused concept generation, and a final briefing from all teams at the end of the four-day workshop. Team 109 was closer aligned to providing insights for the MARSOC effort and they generated a list of 210 different ideas to address their problem statement.<sup>1</sup>

### **3. Joint Campaign Analysis**

The Joint Campaign Analysis course studies the development, use, and recent applications of campaign analysis in actual procurement, force structure and operations planning. Emphasis is on formulating the problem, choosing assumptions, structuring the analysis, and measuring effectiveness. A mini-study team of four mid-career students supported this research

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<sup>1</sup> Englehorn Lyla, NWSI Maritime Gray Zone Warfare Innovation Workshop Final Report, November 2021.

effort. The mini-study team worked from January to March on exploring what physical capabilities and additional operations may be employed to deter action and/or impose risk on Chinese maritime gray zone activities. The team explored both overt and covert operations, employed by MARSOC, NSW, or conventional naval forces. This included specific ways to challenge Chinese world-wide influence. The team used decision tree analysis where the selected activity will place China in a position, they must decide several courses of action. The team had the opportunity to consider the following maritime gray zone activities.

1. Employment of Team Maru's littoral denial system in Luzon strait and/or Taiwan Strait.
2. Employment of acoustic devices around Chinese Fishing junks to scare fish away.
3. Gift LMACCs to Indonesia and Philippines with a law enforcement detachment and conduct joint patrols with US LMACCs with MARSOC embarked.
4. Conducting non-lethal (or lethal) non-attributional maritime sabotage in critical Belt and Road nodes and arcs.
5. Employing permanent forces to achieve an objective to close Arctic passages when ordered, and others from the NPS Maritime Gray Zone Task Force Workshop.

The team also developed a methodology to assess candidate intermediate force capabilities or actions on a specific U.S. objective in countering a specific Chinese activity. The results of the mini-study team helped MARSOC refine their focus and objective for the wargaming team. This effort resulted in MARSOC determining that the wargaming team should address the following three critical issues.

1. What maritime platforms best support an SSR mission in a littoral environment?
2. What tactics, techniques, and procedures (TTPs) should be used for littoral mobility in support of SSR missions?
3. How do external agencies, including the interagency, China, local media, and the special operations task force (SOTF) react to the SSR platforms and TTPs?

#### **4. Wargaming Applications**

The NPS resident wargaming applications course, when linked with the analysis efforts coming out of the Joint Campaign Analysis course, provides a powerful mechanism to gain additional insights into a sponsor's problem. The intent of the resident NPS wargaming

applications course is to educate students on how to initiate, design, develop, conduct, and analyze a wargame for an external sponsor. Six mid-career officers formed the wargaming team to support this research effort and worked with MARSOC from March to June 2022. The team worked directly with MARSOC to refine, define and develop the research statement for the analysis effort. This “problem definition” effort was an iterative process of problem decomposition and structuring between the wargaming team and MARSOC. The end result was a clearer analysis statement: explore how can MARSOC operationalize SSR to achieve effects across the continuum of cooperation, competition, and conflict in a littoral environment.

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### **III. MARSOC SUPPORTED WARGAME CONDUCT AND ANALYSIS**

This section outlines the wargame construct and analysis effort of a set of SSR concepts and maritime platforms identified through the WIC and discussions with MARSOC. This effort was supported by a wargaming study team consisting of the following members: Maj Ryan Gauntt, USAF, MSgt David Nass, USMC; Maj Mareks Runts, Latvian SOF; Maj Antti Heinola, Finnish SOF; Capt Alex Fisher, USMC; Capt Wei Ting Goh, Singapore Army. The team worked with MARSOC from March to June 2022 to design the wargame “Littoral Mobility” to analyze and documented the findings for MARSOC. The Objective of the game was to explore how can MARSOC operationalize SSR to achieve effects across the continuum of cooperation, competition, and conflict in a littoral environment. The players in the game operated in a fictional world shaped by the collective experiences of SOF officers in competition spaces across the globe. In addition, the game’s design enabled players to expand their knowledge of SOF operations and SSR concepts.

#### **A. Problem Statement and Issues**

**Objective:** Determine what maritime platforms best support shaping and strategic reconnaissance (SSR) missions and tactics, techniques, and procedures (TTPs) to be used for littoral mobility operations?”.

#### **MARSOC**

1. What maritime platforms best support an SSR mission in a littoral environment?
2. What tactics, techniques, and procedures (TTPs) should be used for littoral mobility in support of SSR missions?
3. How do external agencies, including the interagency, China, local media, and the special operations task force (SOTF) react to the SSR platforms and TTPs?

#### **B. Wargame Description:**

**Wargame Design:** A hybrid mixed wargame with each maritime planning team (MPT) planning independently (closed session) before briefing the SOTF Commander. In the open format, the SOTF Commander decides on the risk levels of the mission, which a dice roll uses to determine mission outcomes. With the outcome defined, China, the local media, and the interagency respond with a reaction based on the mission outcome. All MPTs execute their turn independently and brief separately.

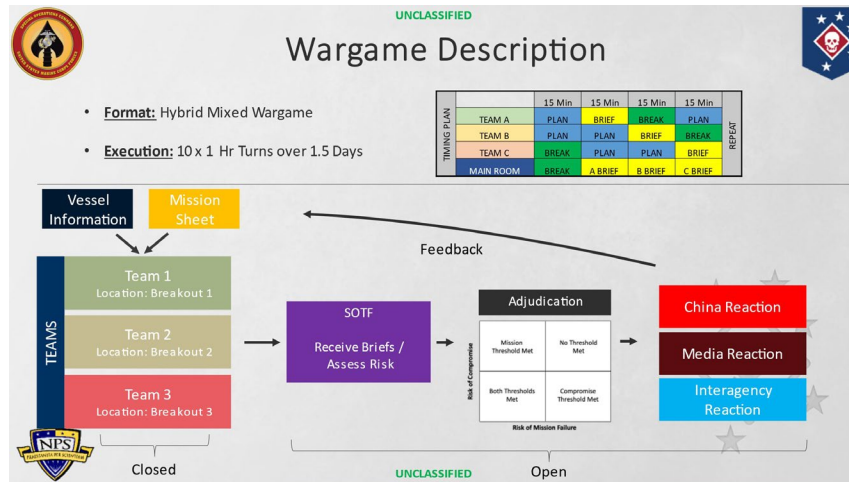


Figure 1. Littoral Mobility Description.

## C. KEY CONSTRAINTS, LIMITATIONS, AND ASSUMPTIONS.

### 1. Constraints:

- Wargame shall consider scenarios set in South China Sea/INDOPACOM area, including major metropolitan regions between years 2023-2025.
- Mobility platforms shall be developed by the wargame team; sponsor will not provide any.
- Wargame must be conducted at UNCLASSIFIED level.

### 2. Limitations.

- The team does not have a Chinese SME to ensure the range of valid Chinese response/ reactions to the mission plan are in line with their culture and current geopolitical climate.

- b. The team is unable to enumerate all available crafts and vessels available in public and military purchase, therefore categories/classes, and not specific vessels, are used.
- c. For military vessels/ ships, only publicly available metrics and characteristics are used.

**3. Assumptions.**

- a. Valid actions for player representing China would be generalized by the team in consultation with published literature and research and NSA China Studies faculty members.
- b. Broad classes of crafts and vessels with an approximation of basic characteristics and capabilities is sufficient as options to players.
- c. It is assumed that publicly available metrics and characteristics of military capabilities accurately represent the actual performance.
- d. Partner Nation Force (PNF) support for all operations has been granted by the PNF Commander.
- e. Proper coordination has been conducted with country team officials prior to mission execution.
- f. SSR support consists of only three types of mobility operations: 1) Island-hopping, 2) brown-water, and 3) intra-island operations.
- g. The weather and terrain of area of interests would be similar to the Philippines, and no natural disasters would occur (e.g. typhoons) during the wargame.
- h. The media and PRC would be made aware of and respond to every mission, regardless of whether the mission was compromised or not.
- i. The reactions of players have no impact on subsequent missions; each mission is treated independently from each other.

**D. SIGNIFICANT FINDINGS.**

The full set of insights were provided to the sponsor via the Controlled Unclassified Information (CUI) Wargaming Executive Summary submitted to the sponsor in June, 2022.

## **E. RECOMMENDATIONS**

Strategic Shaping and Reconnaissance (SSR) is still a nascent concept that require further research to better understand how the Marine Special Operations Forces community can use it to operate more effectively to establish a position of advantage, while preventing the escalation of violence. Essentially, these employment mechanisms will need to mature through continued programs of wargaming and campaign analysis research to best serve MARSOC and the Special Operations Forces (SOF) community.

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## **IV. FINDINGS AND RECOMMENDATIONS**

The overarching objective of this effort was to explore how can MARSOC operationalize SSR to achieve effects across the continuum of cooperation, competition, and conflict in a littoral environment. This effort focused on gaining insights into the following three major issues:

1. What maritime platforms best support an SSR mission in a littoral environment?
2. What tactics, techniques, and procedures (TTPs) should be used for littoral mobility in support of SSR missions?
3. How do external agencies, including the interagency, China, local media, and the special operations task force (SOTF) react to the SSR platforms and TTPs?

### **A. FINDINGS**

The full set of insights were provided to the sponsor via the Controlled Unclassified Information (CUI) Wargaming Executive Summary submitted to the sponsor in June, 2022.

#### **1. Issue 1 Findings:**

This effort examined the potential for SSR missions both in an island-hopping and riverine scenario.

#### **2. Issue 2 Finding:**

The overwhelming majority of teams utilized overt actions to create a clear narrative for their actions.

### **B. RECOMENDATIONS**

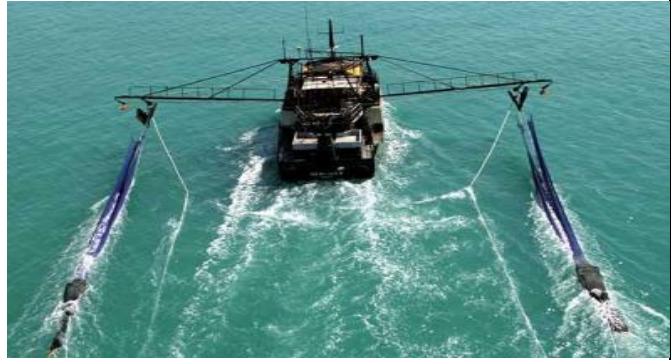
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## APPENDIX A: MARITIME PLATFORMS CONSIDERED IN WARGAME



### Fishing Trawler (Small)

- Speed (kts): 11
- Range (nm): 900
- Capacity: approx. 10
- Ease of Use: 3
- Sea Condition: 2
- Dingy Class Capability: 2xB
- Size: 2
- Commonness/Ubiquity: 5



### Fishing Trawler (Medium)

- Speed (kts): 16
- Range (nm): 1500
- Capacity: approx. 20 (crew separate, provided)
- Ease of Use: 3
- Sea Condition: 3
- Dingy Class Capability: 1xC
- Size: 3
- Commonness/Ubiquity: 5





### Fishing Trawler (Large)

- Speed (kts): 20
- Range (nm): 2,000
- Capacity: approx. 30 (crew separate, provided)
- Ease of Use: 4
- Sea Condition: 5
- Dingy Class Capability: 4xC
- Size: 4
- Commonness/Ubiquity: 4



### Container ship (Large)

- Speed (kts): 22
- Range (nm): 3,000
- Capacity: a lot (crew separate, provided)
- Ease of Use: 5
- Sea Condition: 5
- Dingy Class Capability: 100xC
- Size: 5
- Commonness/Ubiquity: 4





### Yacht (Large)

- Speed (kts): 25
- Range (nm): 1500
- Capacity: approx. 40 (crew separate, provided)
- Ease of Use: 4
- Sea Condition: 4
- Dingy Class Capability: 2xC
- Size: 4
- Commonness/Ubiquity: 2



### Yacht (Medium)

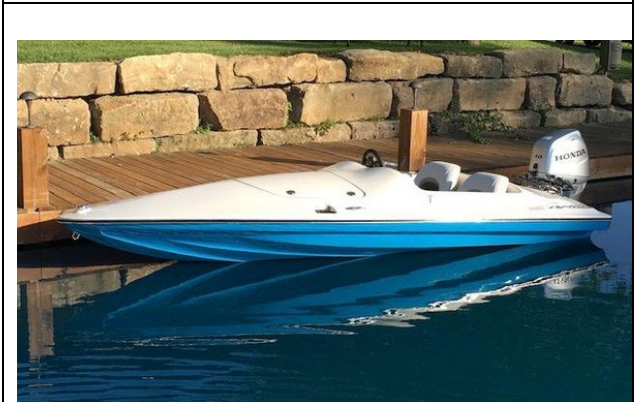
- Speed (kts): 18
- Range (nm): 400
- Capacity: approx. 20
- Ease of Use: 3
- Sea Condition: 3
- Dingy Class Capability: 1xB
- Size: 3
- Commonness/Ubiquity: 3

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**Inflatable Boat**

- Speed (kts): 15
- Range (nm): 50
- Capacity: approx. 6
- Ease of Use: 1
- Sea Condition: 1
- Dingy Class Capability: 1xA
- Size: 1
- Commonness/Ubiquity: 4



**Speedboat (Small)**

- Speed (kts): 25
- Range (nm): 100
- Capacity: 2
- Ease of Use: 2
- Sea Condition: 1
- Dingy Class Capability: None
- Size: 1
- Commonness/Ubiquity: 5





### Speedboat (Medium)

- Speed (kts): 40
- Range (nm): 400
- Capacity: approx. 10
- Ease of Use: 2
- Sea Condition: 2
- Dingy Class Capability: 1xA
- Size: 2
- Commonness/Ubiquity: 5



### Sailboat (Large)

- Speed (kts): sails- 35 knots/engine-10 knots
- Range (nm): sails-unlimited/engine-500
- Capacity: approx. 15
- Ease of Use: 5
- Sea Condition: 4
- Dingy Class Capability: 1x A
- Size: 3
- Commonness/Ubiquity: 2





**Sailboat (Medium)**

- Speed (kts): sails- 7 knots/engine-4 knots
- Range (nm): sails-unlimited/engine-100
- Capacity: approx. 8
- Ease of Use: 4
- Sea Condition: 3
- Dingy Class Capability: 1xA
- Size: 2
- Commonness/Ubiquity: 4



**Vehicle Cargo Ship RO/RO**

- Speed (knt): 10
- Range (nm): 150
- Capacity: a lot
- Ease of Use: 4
- Sea Condition: 2
- Dingy Class Capability: 4x C
- Size: 3
- Commonness/Ubiquity: 1





# OUT OF PLAY

## LCS and Destroyer

- Speed (kts): 40
- Range (nm): 3,000
- Capacity: 2xPlatoon
- Ease of Use: 5
- Sea Condition: 5
- Dingy Class Capability: 10xC
- Size: 5
- Commonness/Ubiquity: 1



## Patrol Boat (Large)

- Speed (kts): 35
- Range (nm): 2,000
- Capacity: approx. 15 (crew separate, provided)
- Ease of use: 4
- Sea condition: 5
- Dingy class capability: 2xC
- Size: 4
- Commonness/Ubiquity: 1





### Patrol Boat (Medium)

- Speed (kts): 45
- Range (nm): 1000
- Capacity: approx. 10 (crew separate, provided)
- Ease of Use: 4
- Sea Condition: 5
- Dingy Class Capability: 2xB
- Size: 3
- Commonness/Ubiquity: 2



### Patrol Boat (Small)

- Speed (kts): 35
- Range (nm): 500
- Capacity: approx. 6 (crew separate, provided)
- Ease of Use: 3
- Sea Condition: 4
- Dingy Class Capability: 1xB
- Size: 2
- Commonness/Ubiquity: 3



### Zodiac

- Speed (kts): 10
- Range (nm): 20
- Capacity: approx. 8
- Ease of Use: 1
- Sea Condition: 1
- Dingy Class Capability: 1xA
- Size: 1
- Commonness/Ubiquity: 1



### RHIB

- Speed (kts): 60
- Range (nm): 400
- Capacity: approx. 12
- Ease of Use: 2
- Sea Condition: 3
- Dingy Class Capability: 1xA
- Size: 2
- Commonness/Ubiquity: 3





### Jet Ski

- Speed (kts): 45
- Range (nm): 80
- Capacity: 2 PAX
- Ease of Use: 1
- Sea Condition: 1
- Dingy Class Capability: None
- Size: 1
- Commonness/Ubiquity: 4



### Fishing Boat

- Speed (knt): 10
- Range (nm): 50
- Capacity: approx. 6-8
- Ease of Use: 1
- Sea Condition: 1
- Dingy Class Capability: None
- Size: 1
- Commonness/Ubiquity: 5





### Kayak

- Speed (kts): 3
- Range (nm): 5
- Capacity: 1-2 PAX
- Ease of Use: 1
- Sea Condition: 1
- Dingy Class Capability: None
- Size: 1
- Commonness/Ubiquity: 4

## APPENDIX B: WARGAME TEAM EXECUTIVE SUMMARY TO MARSOC

**1. Problem Statement:** In this wargame, we attempt to answer the question of “*What maritime platforms best support shaping and strategic reconnaissance (SSR) missions and tactics, techniques, and procedures (TTPs) to be used for littoral mobility operations?*”. The key issues to be investigated are:

- a. What maritime platforms best support a strategic shaping and reconnaissance (SSR) mission in a littoral environment?
- b. What tactics, techniques, and procedures (TTPs) should be used for littoral mobility in support of SSR missions?
- c. How do external agencies, including the interagency, China, local media, and the Special Operations Task Force react to the SSR platforms and TTPs?

**2. Scenario.** This wargame utilized a notional scenario, where Special Operations Forces (SOF) in a foreign country conduct SSR missions alongside Partnered Nation Forces (PNF). The Partner Nation (PN) welcomes US training support and both nations enjoy strong military ties. The PNF and US forces conduct various special reconnaissance missions including technical, physical, and aerial surveillance. In total, teams planned insertion over 10 mission vignettes designed to represent various SSR operations while conducting island-hopping, brown-water, and inter-island transits.

**a. Geographic region:** Indo-Pacom Area

**b. Time:** 2022 – 2025

**c. Road to war:**

The host nation, Domina Islands, is a small island chain in the South China Sea approximately 1,000 nautical miles south of China. The islands span approximately 10,000 square nautical miles and act as a primary trading outpost for many Asian countries. These islands are ruled by an authoritative democracy, with each island having a local governing body. Throughout the 2010s, Chinese companies have been buying land and building facilities to take advantage of the trade routes and nutrient rich soil for growing and harvesting of goods. There are rumors that the

Chinese government is funding these companies to establish strategic dominance in the area. Two of the cities, Zaco and Bal, are world renowned tourist destination for fishing and recreational boating. Their clear waters bring a constant flow of tourists who want to experience an ‘off-the-grid’, secluded vacation.

The Domina Island People’s Army (DIPA) is the country’s professional military. While they have presence across the islands, most forces are stationed on Mala, in the port capital city of Zaco. DIPA provides security forces through satellite units among the islands and utilize patrol boats for security operations throughout the waterways. The United States has maintained a working relationship with top DIPA Generals and has continued to share intelligence with each other regarding Chinese tensions in the area. A recent increase in Chinese presence has been noted off the western coast of Ventura, where it appears they are constructing a small manmade island chain. While no aggressive action has been seen from the Chinese, the US continues to monitor SIGINT traffic and is deploying Special Operations forces to the area to conduct more reconnaissance, surveillance, and HUMINT operations.

**3. Player Role List:** Three teams acting as Maritime Planning Teams (MPT), consisting of two to four personnel. One player served as the SOTF Commander. One player served as an Interagency representative. One player served as a local media representative. One player served as a Chinese official.

**a. Player Role Objective(s):**

- i. **Maritime planning teams (3 teams of 2 personnel):** To conduct tactical planning of missions utilizing a given list of maritime vessels. The MPTs will submit for approval their mission plan to the SOTF commander. Mission planning focuses on the transit to and from the mission area (maritime mobility) and less on the specific SR mission tasking.
- ii. **SOTF Commander (1 player):** To provide assessment of any risk of compromise and risk to mission. This player is also to give insights on their approval or denial of a given mission briefed to them.

iii. **Interagency (1 player):** To provide their assessment of the damage to diplomatic ties and US representation based on mission outcome. This player will also determine what actions, if any, they would expect such agencies to take based on the implications of the mission.

iv. **Local media (1 player):** To provide their assessment of the lens, positive or negative, that the compromise or success of a given mission will have and if they would report the mission on local, regional, or national media.

v. **China (1 player):** To assess their reaction to US and host nation actions based on mission outcomes. This player will also choose, if any, subsequent actions to take; including using various intelligence assets to attempt to gain more information on USSOF activities.

**b. Available Resources/ Actions for each player:**

i. **Maritime Planning team.** The MPT have at their disposal 20 maritime platforms ranging from civilian and commercial vessels to military naval platforms. There is no limit to the number and type of platform(s) each MPT can utilize for each mission.

ii. **SOTF Commander.** The SOTF commander decides on the *overall risk* and a *compromise risk* to the mission on an ordinal scale of low, medium, or high. The SOTF Commander's assessment goes into the adjudication of the mission outcome, which is then fed to the other players.

iii. **Interagency.** This player determines the overall positive or negative reaction to the mission outcome from the scale of -5 to 5, with 5 the most favorable. Additionally, they comment on what, if any actions they would expect to come from the Embassy team.

iv. **Local Media.** This player determines the overall positive or negative reaction to the mission outcome from the scale of -5 to 5, with 5 being the most favorable reaction. In addition, this player will determine the geographical reach of the

media platform to post an update on the activity by the US and host nation forces. Specifically, the player decides if the media post would have a reach of 1) local reporting, 2) regional reporting, 3) national reporting, or 4) no report.

v. **China.** This player determines the overall positive or negative reaction to the mission outcome from the scale of -5 to 5, with 5 the most favorable. In addition, this player will determine if any of the following actions would be taken: 1) Send Urgent Report, 2) Increase technical surveillance, 3) increase HUMINT, 4) Fly aviation over suspected US activity, 5) Use patrol boats to stop and question suspected US activity, 6) Note in scheduled report.

**c. Relationships:** Only the MPTs are subordinate commands to the SOTF Commander.

**d. Player Experience.**

i. **Maritime Planning Team.** Four experienced Marine Raider enlisted and officer operators. Two conventional Marine officers with maritime backgrounds. Two international SOF field grade officers with maritime backgrounds.

ii. **SOTF Commander.** An O-5 Marine Raider with experience as an operational SOTF Commander.

iii. **Local Media:** A Marine O-4 with experience as a public affairs officer deployed in Southeast Asia.

iv. **Interagency.** A foreign service officer with experience service in overseas embassies. This player was not acting as an official representative of the State Department, rather, volunteered to assist in a personal capacity.

v. **China.** A Marine O-4 currently attending NPS as a foreign affairs officer.

**4. Wargame Description:**

**a. Wargame Design:** A hybrid mixed wargame with each MPT planning independently (closed session) before briefing the SOTF Commander. In the open format, the SOTF Commander decides on the risk levels of the mission, which a dice roll uses to determine mission outcomes. With the outcome defined, China, the local media, and the interagency respond with a reaction based on the mission outcome. All MPTs execute their turn independently and brief separately.

**b. Wargame Execution:** In total, each MPT will complete 10 turns for a total of 30 runs; each turn is independent of the previous turns, i.e., no story progression for each mission set. Each MPT plan simultaneously but independently. In each turn, the MPT will execute the following activities sequentially:

i. **Receipt of Mission.** The MPT are provided a pre-set mission card. They can ask any questions or clear up any doubts they have with the facilitator before and during planning. Each mobility operation can be classified as either 1) Island-hopping, 2) intra-island operations, or 3) riverine operation.

ii. **Planning.** The MPT develops a movement plan to include platform and TTPs of choice to fulfill the mission. Their plan is filled out on a pre-formatted briefing sheet to standardize briefing.

iii. **Briefing.** The MPT briefs the SOTF Commander, in the presence of the China, local media, and interagency players, the movement plan, emphasizing the quantity and types of assets required to fulfill the mission, the distribution of PNF and US force across each asset, broad course of actions or tactics required, and any assumptions made for the mission.

iv. **SOTF Commander Decision.** The SOTF commander uses their professional military judgement and experience to determine a risk to mission level and risk of compromise level (Low, Medium, High).

v. **Adjudication of decisions.** A 20-sided die is rolled for risk to mission and risk of compromise. The value of the roll, when compared to the threshold set my risk level, determine if the threshold is met for each metric.

vi. **Responds from China, Media and Interagency.** China, local media and interagency respond to the outcome of the mission.

### **5. Methods, Models, and Tools (MMTs). a. Adjudication:**

Player decisions and strategy are determined in a closed environment during their team planning sessions. The teams then conduct a mission brief on a common map for the SOTF commander, media representative, China representative, and interagency representative. The SOTF commander then assesses the team's plan on a risk to mission and risk of compromise on a scale of low, medium, and high. A low corresponds to a threshold of 5, medium to 10, and high to 17. Based on this risk assessment, players roll a 20-sided die to determine the outcome of their mission. If the die matches or exceeds the threshold value, the roll succeeds. Based on the roll outcome, the facilitators provide a short summary of the outcome that each agency representative uses to determine their score, negative five to positive five, and how their respective agency or player would view the outcome of that mission. Each mission is played as an independent event and mission results do not build off previous success or failures. If an issue arises with a plan briefed by a maritime planning team, the wargame facilitator will determine the course of action.

The success/fail thresholds used for the dice roll are not meant to realistically represent actual

a. mission success and failure. The low/medium/high thresholds are artificially inflated to allow for a range of outcomes to which the third-party players respond. The goal is to get a range of responses rather than a (reasonably realistic) assumption that if the mission is approved to go by a commander, regardless of risk, it will most likely succeed.

b. **Player Feedback/Updates:** Each team has a data collector using spread sheets and questionnaires to gather real time data on their decisions throughout their turns. The lead

facilitator briefs each team on their follow on turns prior to sending them into their planning sessions. Key player interviews occur at the mid-way and ending point of the game.

## **6. Key Constraints, Limitations, and Assumptions:**

### **a. Constraints**

- i. Wargame shall consider scenarios set in South China Sea/INDOPACOM area, including major metropolitan regions between years 2023-2025.
- ii. Mobility platforms shall be developed by the wargame team; sponsor will not provide any.
- iii. Wargame must be conducted at UNCLASSIFIED level.

### **b. Limitations**

- i. The team does not have a Chinese SME to ensure the range of valid Chinese response/ reactions to the mission plan are in line with their culture and current geopolitical climate.
- ii. The team is unable to enumerate all available crafts and vessels available in public and military purchase, therefore categories/classes, and not specific vessels, are used.
- iii. For military vessels/ ships, only publicly available metrics and characteristics are used.

### **c. Assumptions to accommodate Limitations**

- i. Valid actions for player representing China would be generalized by the team in consultation with published literature and research and NSA China Studies faculty members.

ii. Broad classes of crafts and vessels with an approximation of basic characteristics and capabilities is sufficient as options to players.

iii. It is assumed that publicly available metrics and characteristics of military capabilities accurately represent the actual performance.

**d. Assumptions from Sponsor**

i. Partner Nation Force (PNF) support for all operations has been granted by the PNF Commander.

ii. Proper coordination has been conducted with country team officials prior to mission execution.

iii. SSR support consists of only three types of mobility operations: 1) Island-hopping, 2) brown-water, and 3) intra-island operations.

**e. Assumptions from Analysis Team**

i. The weather and terrain of area of interests would be similar to the Philippines, and no natural disasters would occur (e.g. typhoons) during the wargame.

ii. The media and PRC would be made aware of and respond to every mission, regardless of whether the mission was compromised or not.

iii. The reactions of players have no impact on subsequent missions; each mission is treated independently from each other.

**7. Findings:**

The full set of insights were provided to the sponsor via the Controlled Unclassified Information (CUI) Wargaming Executive Summary submitted to the sponsor in June, 2022.

**8. Study Team/ Directors:** Maj Ryan Gauntt (USAF), MSgt David Nass (USMC), Maj Mareks Runts (Latvian SOF), Maj Antti Heinola (FINSOF), Capt Alex Fisher (USMC), Capt Wei Ting Goh (Singapore Army).

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# APENDIX C: WARGAME TEAM FINAL REPORT TO MARSOC

## NPS / MARSOC Maritime Littoral Wargame Final Report June 7-9 2022

1. **Purpose of Wargame / Problem Statement:** In this wargame, we attempt to answer the question of “*What maritime platforms best support shaping and strategic reconnaissance (SSR) missions and tactics, techniques, and procedures (TTPs) to be used for littoral mobility operations?*”. The key issues to be investigated are:
  - 1.1. What maritime platforms best support a strategic shaping and reconnaissance (SSR) mission in a littoral environment?
  - 1.2. What tactics, techniques, and procedures (TTPs) should be used for littoral mobility in support of SSR missions?
  - 1.3. How do external agencies, including the interagency, China, local media, and Special Operations Task Force react to the SSR platforms and TTPs?
2. **Background**
  - 2.1. In the past 48 months, MARSOC has released a new operating concept called *Strategic Shaping and Reconnaissance (SSR)*. SSR is broadly defined as “encompassing those activities conducted by special operations elements in cooperation, competition, and conflict to gain awareness of adversarial intentions and capabilities in order to deter, disrupt, deny or increase the adversary’s risk.” This wargame was focused on the capabilities and tactics needed to conduct maritime littoral operations in support of SSR.
  - 2.2. This wargame is part of a larger wargame effort led by MARSOCs Combat Development and Integration (CD&I) including previous wargames conducted by the Center for Naval Activities (CNA) and future wargames planned with the Naval Postgraduate School.
  - 2.3. This wargame utilized JP 3-05 *Special Operations* to describe and create unclassified special reconnaissance missions.
  - 2.4. The wargame was tested four times by the wargaming team. The design of the wargame was conducted in a 10-week period. Each week included from 2 to 6 hours of work on the wargame by 6 team members. This was the first wargame designed by the

wargaming team, which consisted of one air force officer, one Marine officer, one Marine enlisted, and three international officers. In addition to the wargame team, a team of 3 METOC students worked on providing the seasonal weather and current data for the wargame scenario.

3. **Scenario.** This wargame utilized a notional scenario, where Special Operations Forces (SOF) in a foreign country conduct SSR missions alongside Partnered Nation Forces (PNF). The Partner Nation (PN) welcomes US training support and both nations enjoy strong military ties. The PNF and US forces conduct various special reconnaissance missions including technical, physical, and aerial surveillance. In total, three maritime planning teams planned the insertion for 10 mission vignettes designed to represent various SSR operations while conducting island-hopping, brown-water, and inter-island transits.



Figure B.1 Littoral Wargame Map

3.1. **Geographic region:** INDOPACOM Area

3.2. **Time:** 2022 – 2025

3.3. **Road to war:** The host nation, Domina Islands, is a small island chain in the South China Sea approximately 1,000 nautical miles south of China. These islands are ruled by an authoritative democracy, with each island itself having their own governing body. The government is most powerful in the large port cities, with rural areas tending to be more ungoverned. Over the past decade, China has been investing in civilian and military infrastructure in the area, and is actively looking to bolster rural tribal militias to

counter the U.S. backed government. The island chain is a world-renowned tourist destination for fishing and recreational boating. The Domina Island People's Army (DIPA) is the professional military primarily stationed in Mala in the port capital city of Zaco that focuses on security operations in the larger urban areas and maintaining safe passage and legality of fishing and commercial shipping. MARSOC has deployed an SSR element to the Domina Islands to partner with their special operations forces and conduct intelligence operations against malign Chinese and violent extremist organizations.

4. **Player Role List:** Three teams acting as Maritime Planning Teams (MPT), consisting of two to four personnel. One player served as the Special Operations Task Force (SOTF) Commander. One player served as an interagency representative. One player served as a local media representative. One player served as a Chinese official.

#### 4.1. **Player Role Objective(s):**

- 4.1.1. **Maritime planning teams.** To conduct tactical planning of missions utilizing a given list of maritime vessels. The MPTs will brief their plan for approval to the SOTF Commander.
- 4.1.2. **SOTF Commander.** To provide assessment on risk of compromise and overall mission risk. This player is also to give insights on their reasoning for this assessment.
- 4.1.3. **Interagency.** To provide their assessment of the damage to diplomatic ties based on the outcome of the missions by the planning teams. This player will also determine what actions, if any, they would take based on the implications of the mission.
- 4.1.4. **Local media.** To provide their assessment of the lens, positive or negative, that the outcome of a given mission will have and if they would report the mission on local, regional, or national media.
- 4.1.5. **China.** To assess their reaction of US and host nation actions based on mission outcomes. This player will also choose, if any, any subsequent actions taken including using various intelligence assets to attempt to gain more information on USSOF activities.

#### 4.2. **Available Resources / Actions for each player:**

- 4.2.1. **Maritime Planning team.** The MPT have at their disposal 20 maritime platforms ranging from civilian and commercial ships and boats to military naval platforms. There is no limit to the number and type of platform(s) each MPT can utilize for each mission.
- 4.2.2. **SOTF Commander.** The SOTF commander decides on the *overall risk* and *compromise risk* to the mission on an ordinal scale of low, medium, or high. The SOTF Commander's assessment will affect the interagency, China, and local media players.
- 4.2.3. **Interagency.** This player determines the overall positive or negative reaction to the mission outcome from the scale of -5 to 5 with 5 being the most favorable reaction.
- 4.2.4. **Local Media.** This player determines the overall positive or negative reaction to the mission outcome from the scale of -5 to 5 with 5 being the most favorable reaction. In addition, this player will determine the geographical reach of the media platform to post an update on the activity by the US and host nation forces. Specifically, the player decides if the media post would have a reach of 1) local reporting, 2) regional reporting, 3) national reporting, or 4) no report.
- 4.2.5. **China.** This player determines the overall positive or negative reaction to the mission outcome from the scale of -5 to 5 with 5 being the most favorable reaction. In addition, this player will determine what escalatory steps they might take in response.

#### 4.3. **Player Experience.**

- 4.3.1. **Maritime Planning Team.** Four experienced Marine Raider enlisted and officer operators. Two conventional Marine Officers with maritime backgrounds. Two international SOF field grade officers with maritime backgrounds.
- 4.3.2. **SOTF Commander.** An O-5 Marine Raider with experience as an operational SOTF Commander.
- 4.3.3. **Local Media:** A Marine O-4 with experience as a public affairs officer deployed in Southeast Asia.
- 4.3.4. **Interagency.** A foreign service officer with experience service in overseas embassies. This player was not acting as an official representative of the State

Department, but rather volunteered to assist in a personal capacity using their expertise.

4.3.5. **China.** A Marine O-4 currently attending NPS as a foreign affairs officer.

5. **Wargame Description:**

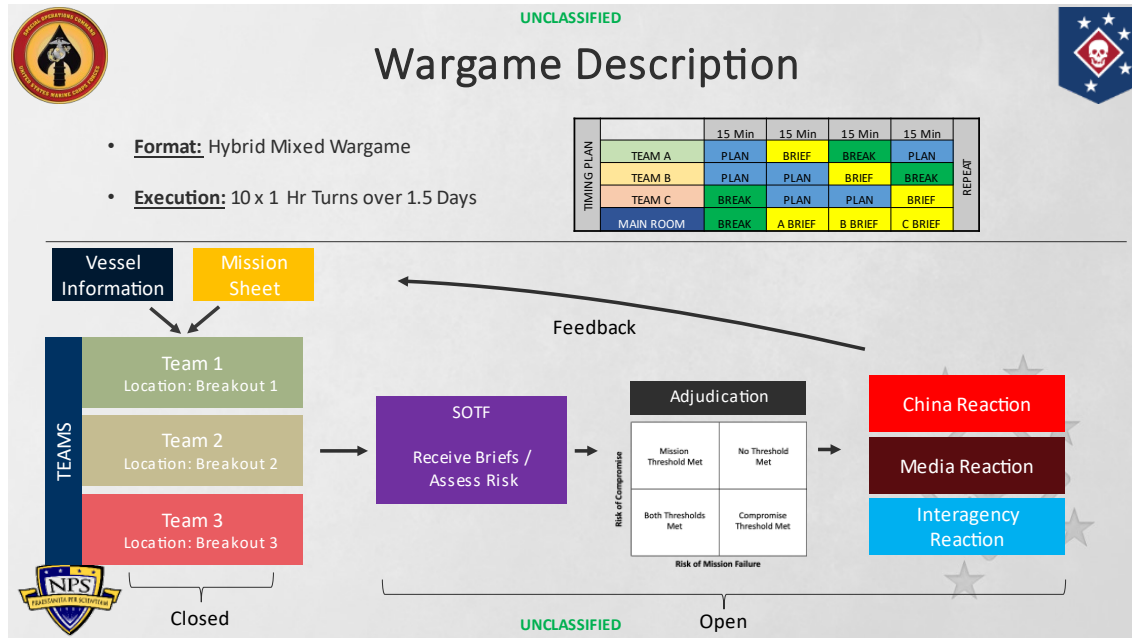


Figure B.2. Wargame Description

5.1. **Wargame Design:** A hybrid mixed wargame with each MPT planning independently (closed session) before briefing the SOTF Commander. In the open format, the SOTF Commander decides on the risk levels of the mission, which a dice roll uses to determine mission outcomes. With the outcome defined, China, the local media, and the interagency respond with a reaction based on the mission outcome. All MPTs execute their turn independently and brief separately.

5.2. **Wargame Execution:** In total, each MPT will complete 10 turns for a total of 30 runs; each turn is independent of the previous turns, i.e., no story progression for each mission set. Each MPT plan simultaneously but independently. In each turn, the MPT will execute the following activities sequentially:

5.2.1. **Receipt of Mission.** The MPT is provided a pre-set mission card. They can ask any questions or clear up any doubts they have with the facilitators before and during planning. Each mobility operation can be classified as either 1) Island-hopping, 2) intra-island operations, or 3) riverine operation. The below picture and

table show one sample mission card and the overall types of mission given to the players (some missions met multiple types).

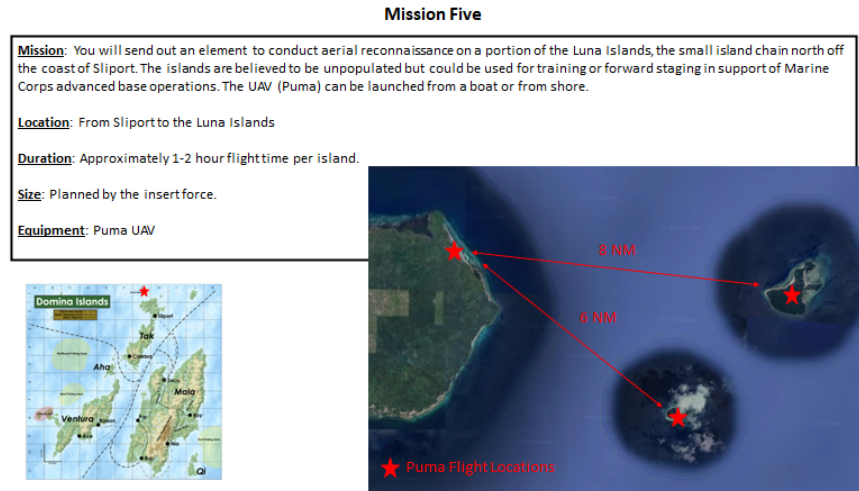


Figure B.3 Mission Set

Littoral Type	
Island Hopping	6
Intra-Island	4
Riverine	3

Mission Type	
Resupply	2
Insert R&S	3
Technical Collection	3
Fly UAS	2
Forward Stage	2

Mission Duration	
Insert + Leave	5
Linger <24hr	3
Over 96 hr	2

5.2.2. **Planning.** The MPT develops a movement plan to include platform and TTPs of choice to fulfill the mission. Their plan is filled out on a pre-formatted briefing sheet to standardize briefing (see Appendix II)

5.2.3. **Briefing.** The MPT briefs the SOTF Commander, in the presence of the China, local media, and interagency players, the movement plan, emphasizing the quantity and types of assets required to fulfill the mission, the distribution of PNF and US force across each asset, broad course of actions or tactics required, and any assumptions made for the mission.

5.2.4. **SOTF Commander Decision.** The SOTF commander uses their professional military judgement and experience to determine a risk to mission level and risk of compromise level (Low, Medium, High).

5.2.5. **Adjudication of decisions.** A 20-sided die is rolled for risk to mission and risk of compromise. The value of the roll, when compared to the threshold set by risk level, determines if the threshold is met for each metric.

5.2.6. **Response from China, Media and Interagency.** China, local media and interagency respond to the outcome of the mission.

## **6. Methods, Models, and Tools (MMTs).**

### **6.1. Adjudication:**

Player decisions and strategy are determined in a closed environment during their team planning sessions. The teams then conduct a mission brief on a common map for the SOTF commander, media representative, China representative, and interagency representative. The SOTF commander then assesses the team's plan on a risk to mission and risk of compromise on a scale of low, medium, and high. A low corresponds to a threshold of 5, medium to 10, and high to 17. Based on this risk assessment, players roll a 20-sided die to determine the outcome of their mission. If the die matches or exceeds the threshold value, the roll succeeds. Based on the roll outcome, the facilitators provide a short summary of the outcome that each agency representative uses to determine their score, negative five to positive five, and how their respective agency or player would view the outcome of that mission. Each mission is played as an independent event and mission results do not build off previous success or failures. If an issue arises with a plan briefed by a maritime planning team, the wargame facilitator will determine the course of action.

The success/fail thresholds used for the dice roll are not meant to realistically represent actual mission success and failure. The low/medium/high thresholds are artificially inflated to allow for a range of outcomes to which the third-party players respond. The goal is to get a range of responses rather than a (reasonably realistic) assumption that if the mission is approved to go by a commander, regardless of risk, it will most likely succeed.

6.2. **Player Feedback/updates:** Each team has a facilitator-provided data collector using spread sheets and questionnaires to gather real time data on their decisions throughout their turns. The lead facilitator briefs each team on their follow on turns prior to sending them into their planning sessions. Key player interviews occur at the mid-way and ending point of the game.

## **7. Key Constraints, Limitations, and Assumptions:**

## **7.1. Constraints**

- 7.1.1. Wargame shall consider scenarios set in South China Sea/INDOPACOM area, including major metropolitan regions between Year 2023-2025
- 7.1.2. Mobility platforms shall be developed by the wargame team; sponsor will not provide any.
- 7.1.3. Wargame must be conducted at UNCLASS level.

## **7.2. Limitations**

- 7.2.1. The team does not have a Chinese SME to ensure the range of valid Chinese response/ reactions to the mission plan are in line with their culture and current geopolitical climate.
- 7.2.2. The team would not be able to enumerate all available crafts and vessels available in public and military purchase, therefore categories/classes and not specific vessels would be used.
- 7.2.3. For military vessels/ ships, only publicly available metrics and characteristics would be used.

## **7.3. Assumptions to accommodate Limitations**

- 7.3.1. Valid actions for player representing China would be generalized by the team in consultation with published literature and research and NSA China Studies faculty members.
- 7.3.2. Broad classes of crafts and vessels with an approximation of basic characteristics and capabilities are sufficient as options to players.
- 7.3.3. It is assumed that publicly available metrics and characteristics of military capabilities accurately represent the actual performance.

## **7.4. Assumptions from Sponsor**

- 7.4.1. Partner Nation Force (PNF) support for all operations has been granted by the PNF Commander.
- 7.4.2. Proper coordination has been conducted with country team officials prior to mission execution.
- 7.4.3. SSR would consist of only three types of mobility operations: 1) Island-hopping, 2) brown-water, and 3) intra-island operations.

## **7.5. Assumptions from Analysis Team**

- 7.5.1. The weather and terrain of area of interests are similar to the Philippines, and no natural disasters occur (e.g. typhoons) during the wargame.
- 7.5.2. All operations are covert, and no information is provided to other wargame participants outside of the US prior to its execution.
- 7.5.3. The media and PRC would be made aware of the operation during and after it is executed.
- 7.5.4. The reactions of players have no impact on subsequent missions; each mission is treated independently from each other.

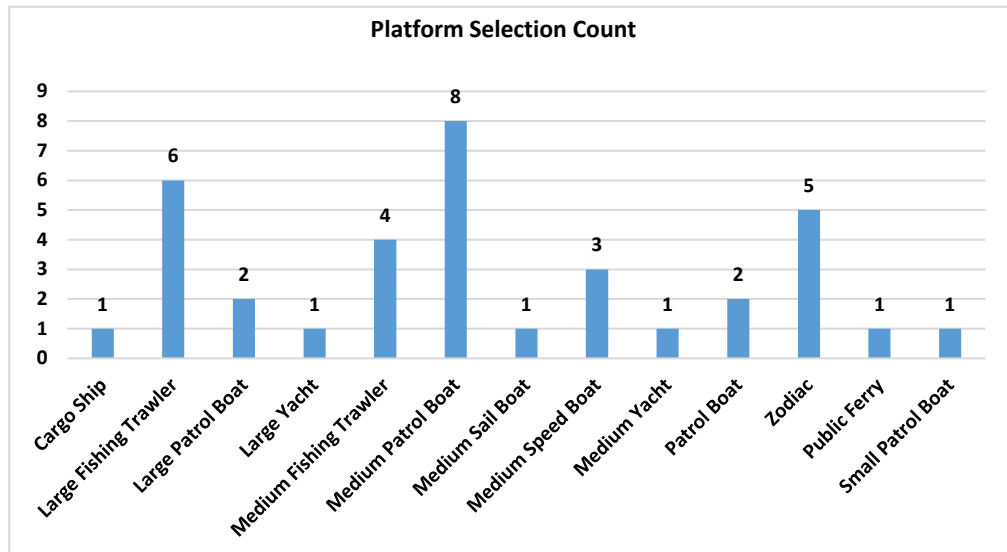
**Key Findings.** The full set of insights were provided to the sponsor via the Controlled Unclassified Information (CUI) Wargaming Executive Summary submitted to the sponsor in June, 2022.

**8. Details of wargame analysis.**

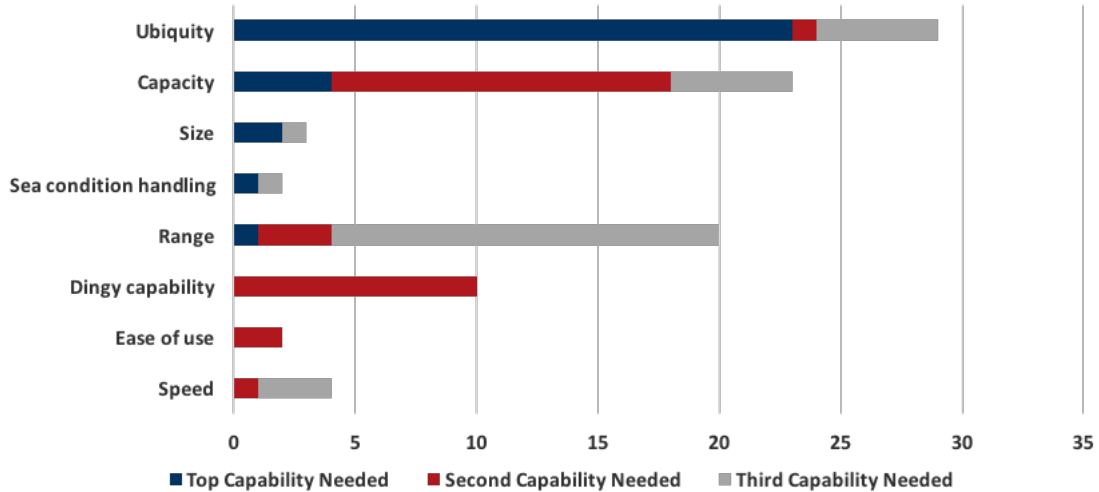
**Each of the three maritime planning teams planned ten missions for a total of thirty missions. The wargame team used these thirty missions to analyze and graphically depict the choices of the players as seen in the detailed findings below.**

**8.1. Key Issue One:** *What maritime platforms best support a strategic shaping and reconnaissance (SSR) mission in a littoral environment?*

8.1.1. The following graph depicts the primary platform(s) of choice for the 30 missions. Platforms that were not used at all are not depicted.

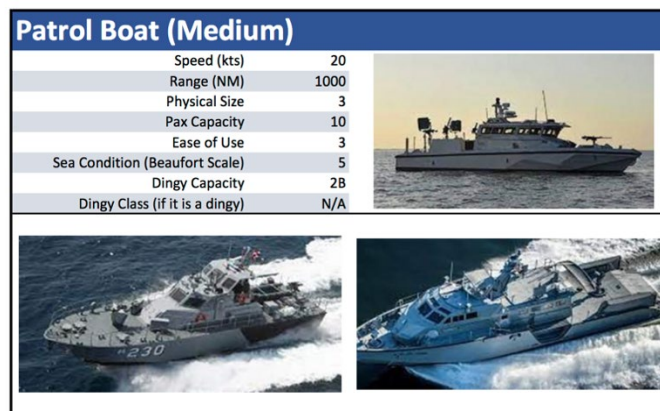


8.1.2. During each turn, the players were asked to annotate the top three capability preferences they were looking for in each platform. The following graph depicts the overall capabilities preferences looked for most.



**Figure B.4. Capability Preferences**

8.1.3. The primary platform of choice was a host nation owned medium patrol boat. Often, this boat was used in conjunction with coast guard type activities such as patrolling waterways, safeguarding ports, or looking for illegal fishermen. The boat was also used to transit to or from bilateral, partner nation training. The medium patrol boat provided the distance and capacity for troops and parasite boats.



**Figure B.4. Primary Platform**

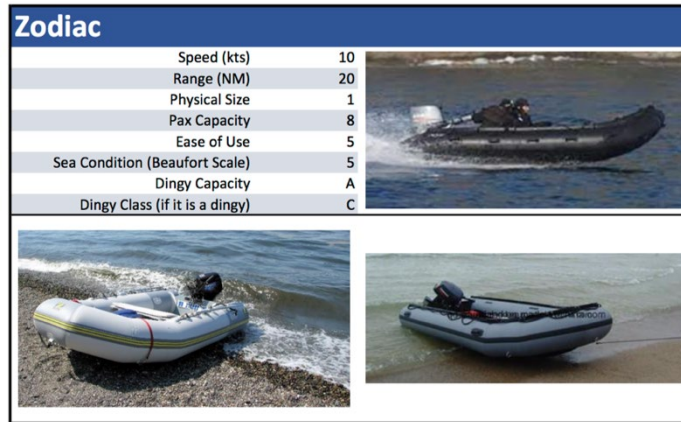
8.1.4. The alternative platform of choice was a medium or large sized fishing trawler. This platform was often picked due to its ability to blend in with local fishing

lanes. These vessels provided the size necessary to carry the mission personnel and parasite boats. The fishing trawler also provided the range and relative comfort for long duration operations (being on the water longer than 96 hours).



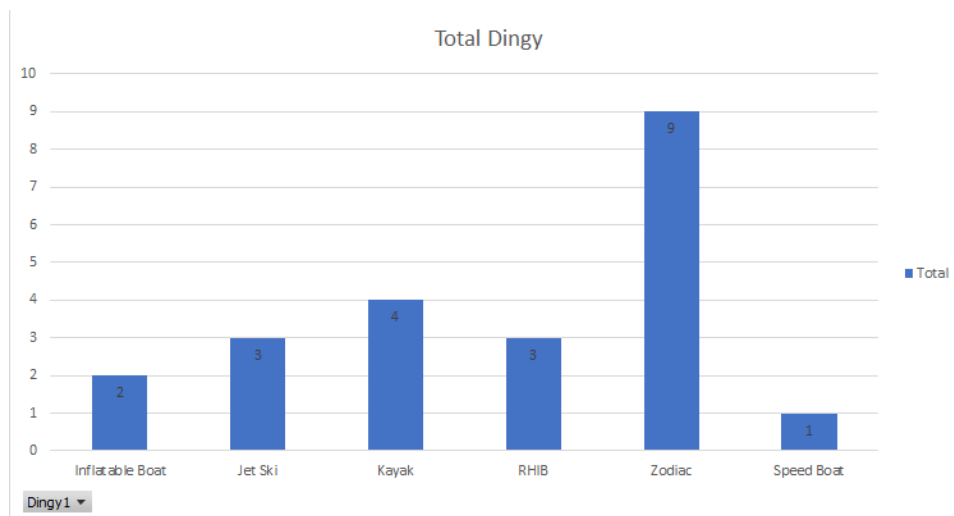
**Figure B.5. Alternative Platforms**

8.1.5. For riverine operations where the host parasite TTP was not utilized (a single platform was used for the entire insert), the platform of choice was a zodiac. The zodiac was picked due to the personnel capacity, noise signature through either low engine throttle or paddling, and ability to traverse a river. Note, “zodiac” means more the class of boat and not necessarily the typical zodiac used by US forces. Civilian models are options.



**Figure B.7.Civilian Options**

8.1.6. The following depicts the parasite or dingy (a dingy is a small boat launched from a larger vessel) platform of choice.



8.1.7. Overwhelmingly, the players chose the zodiac as the parasite platform of choice. Of important note, the players preferred a civilian style parasite boat if using a civilian style vessel. For example, a civilian (non-black / Evinrude motor) boat if using a zodiac with a fishing trawler.

8.1.8. When given a mission that consisted of a forward staging of equipment for future operations, players preferred to take numerous types of parasite boats to allow the most flexibility when planning their missions.

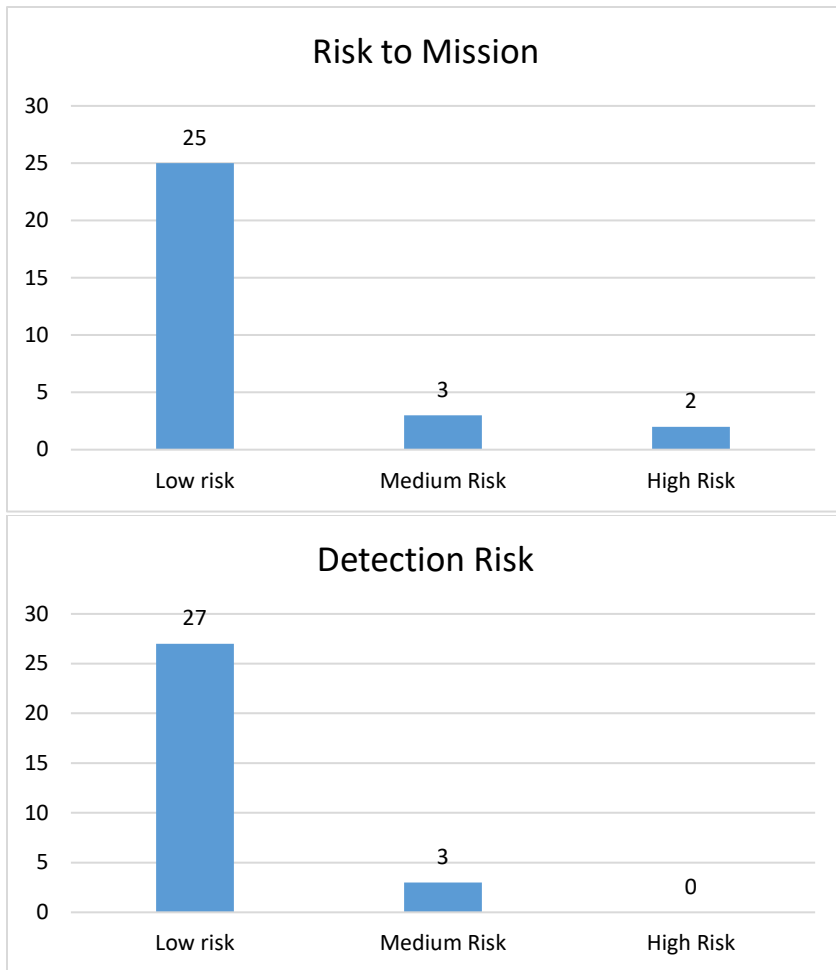
8.2. **Key Issue Two:** *What tactics, techniques, and procedures (TTPs) should be used for littoral mobility in support of SSR missions?*

- 8.2.1. **Mission Size.** Players planned their missions with larger than expected mission force sizes. Over 15 missions where the team was not constrained on the number of people they must insert or bring, the average size of the force was 12 personnel (mix of U.S. and PNF). This is three times the minimum force (2 US / 2 PNF). Only 2 / 15 missions (13%) were planned to use the minimum force size.
- 8.2.2. **Travel Tactics.** When utilizing more than one primary boat, players kept their entire force together instead of traveling separately. This was true regardless of military or civilian boat usage.
- 8.2.3. **Host / Parasite Tactic.** Players overwhelmingly preferred to use a host / parasite tactic, inserting all or a portion of the force in smaller sized parasite boats once they were closer to their objective. On some occasions, the team would use a contract boat and insert their entire force, with the vessel continuing back to port without any USSOF or PNF. Other times, the team would leave a portion of their force on the host boat to serve as a command and control node. Even when planning short distance missions, teams preferred to use a medium size boat with parasite boats in case they were needed for a contingency operation.
- 8.2.4. **Tactics that Support a Narrative.** Players used tactics that supported a broader narrative or innocent circumstance. The most frequent narratives were partner nation training, commercial fishing, or recreational fishing and diving. The narrative allowed the team to be in an area and conduct the special reconnaissance task. On occasion, the teams became too focused on the narrative instead of the special reconnaissance task and created a larger footprint than necessary or were assessed as higher risk by the SOTF commander. For example, bringing two medium sized boats to help “sell” the idea they are commercial fishing, or unnecessarily taking risk going to shore with USSOF and / or equipment to sell a recreational harbor stop.
- 8.2.5. **Bilateral Use of Coast Guard or Harbor Type Vessels and Tactics.** In this maritime setting, players often used tactics that utilized coast guard or harbor

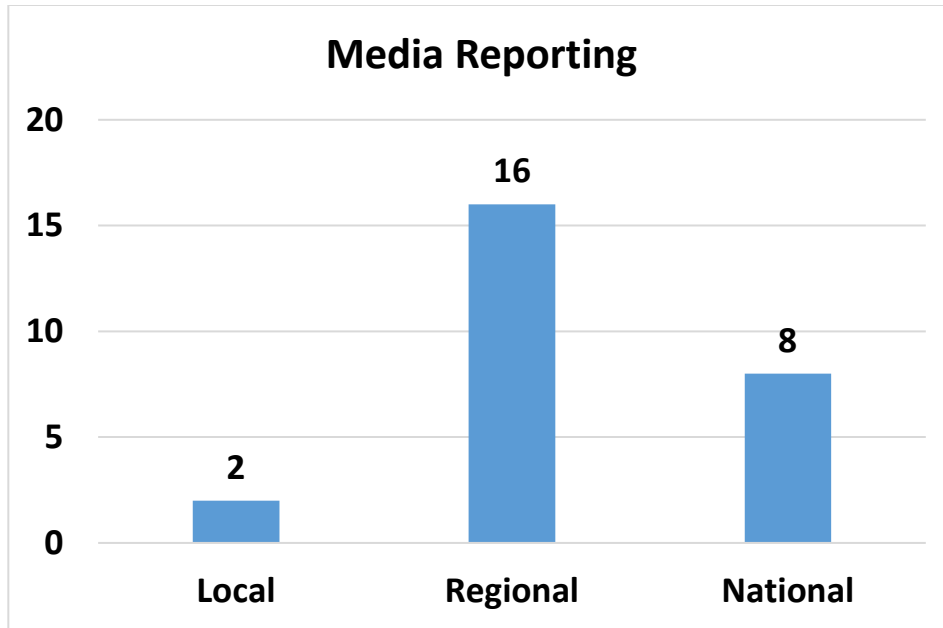
police tactics. This included patrolling fishing areas for illegal activity, sitting at the mouth of a harbor in a patrol boat, and conducting visit, board, search, and seizure (VBSS) training. The game allowed for the assumption that the SSR element would be able to link into this infrastructure. *This finding could be used as a means to explore partner forces that have these types of missions, platforms, and authorities.*

**8.3. Key Issue Three:** *How do external agencies, including the interagency, China, local media, and Special Operations Task Force react to the SSR platforms and TTPs?*

8.3.1. The SOTF viewed most missions that had a plausible innocent circumstance (i.e., partner training or recreational activity that fit into the scenario) as low risk. The SOTF was particularly concerned about the location of U.S. personnel and equipment, specifically when using a civilian-style boat. When conducting a low-profile mission using civilian boats, the SOTF preferred that USSOF were out of sight and that any equipment remained on the boat in USSOF custody for the duration of the mission. The following graphs depict the SOTF assessment for risk to mission and risk to compromise / detection.



8.3.2. **Media.** The media was supportive of every mission if they received information about the mission through official channels. On average, a mission that fit this category was rated as a positive 2.412. Mission where information was obtained through unofficial channels, such as a local reporting it, on average was negative with an average score of -0.692. This finding shows the importance of preplanning messaging and effectively using information operations in conjunction with operations. Most operations were broadcast on a regional level, with the most positive or negative being at the national level. The below graph indicates the level of reporting that the media player would use. Of note, four missions received no media coverage.



8.3.3. **China.** China’s average response on a scale from -5 to 5 was a -1.433. China was specifically concerned about any activities that were conducted in shipping lanes or commercial fishing areas. Only 6 / 30 missions warranted an urgent report being sent to their higher headquarters. The most frequent response was to increase intelligence collection through technical, human, or aerial surveillance. 1 / 30 missions resulted in the most confrontational reaction designed for this game, which was for China to stop and question a host nation / USSOF boat.

8.3.4. **Interagency.**

8.3.4.1. The interagency was most concerned with operations involving civilian craft that used recreational activities as an innocent circumstance. Missions that used military craft or partner force training were rarely questioned.

8.3.4.2. Building relationships with the interagency was important in this game. The interagency asked substantially more questions and provided a lower overall positivity rating at the beginning of the game. Once the interagency was more familiar with the briefers, the missions, and the tactics,

the last 10 turns were scored much higher and often with no questions. This corresponds to the importance of command teams building good rapport with embassy country teams.

## 9. **Future Work.**

9.1. **Plan Entire SSR Mission.** This wargame was designed for quick iteration turns without planning the details of the actual SSR mission. Further analysis could be done if MARSOC CD&I was to provide specific missions for the team to plan. This could vary the results of this report.

9.2. **Specific Platforms.** Using the finding of this wargame, MARSOC CD&I could progress with another iteration using specific platforms, for example, three to four specific types of patrol boats with detailed capabilities.

9.3. **Constrain Number of Personnel.** As a key finding of this wargame was the relatively large size of the mission force, future work could constrain the team to a smaller size to determine if a different platform would be preferred if the average force size was smaller.

10. **AAR.** In addition to the future work described above, this wargame focused on quick repetitions and a high number of missions at the loss of mission detail. The 30 repetitions allowed for a larger quantity of mission data, but forced the players to make assumptions about the mission conditions that would be examined in more detail in real mission planning.

MARSOC

Objective: What maritime mobility tactics, techniques, procedures (TTPs) and platforms should we use to conduct operations in support of SSR?

Linkage from Sponsor Issues to EQ (minus Constraints)

Sponsor's Issues	Sub-issues	Essential Questions (EQ)	Players	Scenario Details [Injects]	Methods, Models, & Tools (MMTs)	Initiate Data	Feedback Data (adjudication of players decision)	Analysis Data (decisions of player during game)
<b>1. What maritime platforms best supports an SSR mission in a littoral environment?</b>							Do. Does rolled and player's boat sunk. Important to give player feedback on their decisions	Player went with a dingy to go 100nm across open sea
	L1 How does the platform perform in inter-island operations?							
		What maritime platform capability was needed for the mission and what platform was chosen?	Maritime Planning Teams	Teams will be given an SSR mission and have to plan how the team would insert. This mission inject will help identify what specific capabilities they needed for an insert platform.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF, the media, the red cell, and the interagency team.	The teams will be provided a list of platforms with capabilities. Each platform will have a capabilities card including: size, speed, capacity (personnel and equipment), range, visibility rating, reliability rating, and crew size. This data will inform the players when they decide to use this platform and will also help the data collectors narrow down which capabilities were preferred. The platforms will include: Cargo Ship (200-300), Yacht (Small / Medium), Fishing Boats (Small / Medium / Large), Speed Boats (Small / Medium / Large), Sailboat (Small / Medium / Large), Military / PNF Boats: Rhib, Patrol Boats, Small Destroyers, Parasite Boats (Boats that can launch from a bigger one): Kayak, Zodiac, Jet ski, Fishing Boat, Rhib.		
		Why did the wargaming MSOT choose that platform?	Maritime Planning Teams	Teams will be given an SSR mission and have to plan how the team would insert. This mission inject will help identify what specific capabilities they needed for an insert platform.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF. Additionally, the team will highlight the (3) top capabilities they were looking for on their platform card, which will help with additional data collection	The teams will be provided a list of platforms with capabilities. Each platform will have a capabilities card including: size, speed, capacity (personnel and equipment), range, visibility rating, reliability rating, and crew size. This data will inform the players when they decide to use this platform and will also help the data collectors narrow down which capabilities were preferred. The platforms will include: Cargo Ship (200-300), Yacht (Small / Medium), Fishing Boats (Small / Medium / Large), Speed Boats (Small / Medium / Large), Sailboat (Small / Medium / Large), Military / PNF Boats: Rhib, Patrol Boats, Small Destroyers, Parasite Boats (Boats that can launch from a bigger one): Kayak, Zodiac, Jet ski, Fishing Boat, Rhib.		
		How did the platform perform on the mission?	Maritime Planning Teams, SOTF	Each platform will have a reliability rating and visibility rating. The reliability will include ease of user or operability and ability handle heavy seas.	After the team briefs their plan, the SOTF players will assign a value for the risk to the force (1-3, Low, Medium, or High). That score will be added to the reliability for operability and heavy seas to give an overall reliability score. A computer number generator will be used to adjudicate the mission result.	In the initial start up data, there will be instructions on how the reliability adjudication will work, and what the consequences of repeated reliability issues are.		
		Was the platform detected by the red players?	Maritime Planning Teams, SOTF, China	Each platform will have a reliability rating and visibility rating. The visibility rating will include the size of the vessel and the ubiquity of the vessel.	After the team briefs their plan, the SOTF players will assign a value for the risk to mission / compromised (1-3, Low, Medium, or High). That score will be added to the size and ubiquity scores to give an overall visibility score. A computer number generator will be used to adjudicate whether the platform was detected or not.	In the initial start up data, there will be instructions on how the visibility rating will be adjudicated and what the consequences are of repeated visibility issues.		
		What was the level of media response to the littoral operations?	Local Media	Based upon the adjudication of the reliability and visibility scores, the media will view the mission in one of four categories: successful and not compromised, successful and compromised, unsuccessful and not compromised, and unsuccessful and compromised.	Seminar Style. Media will brief their results in front of all the other players.	Start up data will include general guidelines for the media on what their likely reaction is. Bilateral U.S. and Partner Nation Force activities are viewed positively. U.S. 'spy' activity is viewed negatively. Seeing U.S. and allied forces aboard PNF or military ships will be viewed neutral or positively. Compromising a potentially nefarious activity on civilian ships with no military markings would be viewed suspiciously.		
	L2 How does the platform perform in island-hopping operations?							
		What maritime platform capability was needed for the mission and what platform was chosen?	Maritime Planning Teams	Teams will be given an SSR mission and have to plan how the team would insert. This mission inject will help identify what specific capabilities they needed for an insert platform.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF, the media, the red cell, and the interagency team.	The teams will be provided a list of platforms with capabilities. Each platform will have a capabilities card including: size, speed, capacity (personnel and equipment), range, visibility rating, reliability rating, and crew size. This data will inform the players when they decide to use this platform and will also help the data collectors narrow down which capabilities were preferred. The platforms will include: Cargo Ship (200-300), Yacht (Small / Medium), Fishing Boats (Small / Medium / Large), Speed Boats (Small / Medium / Large), Sailboat (Small / Medium / Large), Military / PNF Boats: Rhib, Patrol Boats, Small Destroyers, Parasite Boats (Boats that can launch from a bigger one): Kayak, Zodiac, Jet ski, Fishing Boat, Rhib.		
		Why did the wargaming MSOT choose that platform?	Maritime Planning Teams	Teams will be given an SSR mission and have to plan how the team would insert. This mission inject will help identify what specific capabilities they needed for an insert platform.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF. Additionally, the team will highlight the (3) top capabilities they were looking for on their platform card, which will help with additional data collection	The teams will be provided a list of platforms with capabilities. Each platform will have a capabilities card including: size, speed, capacity (personnel and equipment), range, visibility rating, reliability rating, and crew size. This data will inform the players when they decide to use this platform and will also help the data collectors narrow down which capabilities were preferred. The platforms will include: Cargo Ship (200-300), Yacht (Small / Medium), Fishing Boats (Small / Medium / Large), Speed Boats (Small / Medium / Large), Sailboat (Small / Medium / Large), Military / PNF Boats: Rhib, Patrol Boats, Small Destroyers, Parasite Boats (Boats that can launch from a bigger one): Kayak, Zodiac, Jet ski, Fishing Boat, Rhib.		
		How did the platform perform on the mission?	Maritime Planning Teams, SOTF	Each platform will have a reliability rating and visibility rating. The reliability will include ease of user or operability and ability handle heavy seas.	After the team briefs their plan, the SOTF players will assign a value for the risk to the force (1-3, Low, Medium, or High). That score will be added to the reliability for operability and heavy seas to give an overall reliability score. A computer number generator will be used to adjudicate the mission result.	In the initial start up data, there will be instructions on how the reliability adjudication will work, and what the consequences of repeated reliability issues are.		

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		Was the platform detected by the red players?	Maritime Planning Teams, SOTF, China	Each platform will have a reliability rating and visibility rating. The visibility rating will include the size of the vessel and the ubiquity of the vessel.	After the team briefs their plan, the SOTF players will assign a value for the risk to mission / compromise (1-3, Low, Medium, or High). That score will be added to the size and ubiquity scores to give an overall visibility score. A computer number generator will be used to adjudicate whether the platform was detected or not.	In the initial start up data, there will be instructions on how the visibility rating will be adjudicated and what the consequences are of repeated visibility issues.		
		What was the level of media response to the littoral operations?	Local Media	Based upon the adjudication of the reliability and visibility scores, the media will view the mission in one of four categories: successful and not compromised, successful and compromised, unsuccessful and not compromised, and unsuccessful and compromised.	Seminar Style. Media will brief their results in front of all the other players.	Start up data will include general guidelines for the media on what their likely reaction is. Bilateral U.S. and Partner Nation Force activities are viewed positively. U.S. 'spy' activity is viewed negatively. Seeing U.S. and allied forces aboard PNF or military ships will be viewed neutral or positively. Compromising a potentially nefarious activity on civilian ships with no military markings would be viewed suspiciously.		
	1.3. How does the platform perform in brown water operations?							
		What maritime platform capability was needed for the mission and what platform was chosen?	Maritime Planning Teams	Teams will be given an SSR mission and have to plan how the team would insert. This mission inject will help identify what specific capabilities they needed for an insert platform.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF, the media, the red cell, and the interagency team.	The teams will be provided a list of platforms with capabilities. Each platform will have a capabilities card including: size, speed, capacity (personnel and equipment), range, visibility rating, reliability rating, and crew size. This data will inform the players when they decide to use this platform and will also help the data collectors narrow down which capabilities were preferred. The platforms will include: Cargo Ship (200-300'), Yacht (Small / Medium), Fishing Boats (Small / Medium / Large), Speed Boats (Small / Medium / Large), Sailboat (Small / Medium / Large), Military / PNF Boats: Rhb, Patrol Boats, Small Destroyers, Parasite Boats (Boats that can launch from a bigger one): Kayak, Zodiac, Jet ski, Fishing Boat, Rhb.		
		Why did the wargaming MSOT choose that platform?	Maritime Planning Teams	Teams will be given an SSR mission and have to plan how the team would insert. This mission inject will help identify what specific capabilities they needed for an insert platform.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF. Additionally, the team will highlight the (3) top capabilities they were looking for on their platform card, which will help with additional data collection	The teams will be provided a list of platforms with capabilities. Each platform will have a capabilities card including: size, speed, capacity (personnel and equipment), range, visibility rating, reliability rating, and crew size. This data will inform the players when they decide to use this platform and will also help the data collectors narrow down which capabilities were preferred. The platforms will include: Cargo Ship (200-300'), Yacht (Small / Medium), Fishing Boats (Small / Medium / Large), Speed Boats (Small / Medium / Large), Sailboat (Small / Medium / Large), Military / PNF Boats: Rhb, Patrol Boats, Small Destroyers, Parasite Boats (Boats that can launch from a bigger one): Kayak, Zodiac, Jet ski, Fishing Boat, Rhb.		
		How did the platform perform on the mission?	Maritime Planning Teams, SOTF	Each platform will have a reliability rating and visibility rating. The reliability will include ease of use or operability and ability handle heavy seas.	After the team briefs their plan, the SOTF players will assign a value for the risk to the force (1-3, Low, Medium, or High). That score will be added to the reliability for operability and heavy seas to give an overall reliability score. A computer number generator will be used to adjudicate whether the platform was detected or not.	In the initial start up data, there will be instructions on how the reliability adjudication will work, and what the consequences of repeated reliability issues are.		
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<b>2. What TTPs should be used for littoral mobility in support of SSR missions?</b>								
	2.1 What TTPs were used during inter-island operations?							
		What the required size and composition (U.S./ Local / PNF / Allied) of the mission force?	Maritime Planning Teams	The planning teams will be given a mission card that specifies the type of mission and location. The planning teams will use this card to answer this question.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.	The teams will be provided a list of platforms with capabilities. Each platform will have a capabilities card including: size, speed, capacity (personnel and equipment), range, visibility rating, reliability rating, and crew size. This data will inform the players when they decide to use this platform and will also help the data collectors narrow down which capabilities were preferred. The platforms will include: Cargo Ship (200-300'), Yacht (Small / Medium), Fishing Boats (Small / Medium / Large), Speed Boats (Small / Medium / Large), Sailboat (Small / Medium / Large), Military / PNF Boats: Rhb, Patrol Boats, Small Destroyers, Parasite Boats (Boats that can launch from a bigger one): Kayak, Zodiac, Jet ski, Fishing Boat, Rhb.		
		What external support is needed? (MSDC, SOTF, Interagency)	Maritime Planning Teams	The planning teams will be given a mission card that specifies the type of mission and location. External support will be requested and noted by planning team.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.	Start up data will indicate if certain platforms are provided by an external entity.		
		What movement method was preferred? (all together, staggered, mother ship, etc.)	Maritime Planning Teams	Teams will be given an SSR mission and have to plan the method of inserting. Part of the information will include the depth of the water near the objective.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.			
		If troops disembark, do they disembark at the shoreline or in the water?	Maritime Planning Teams	Teams will be given an SSR mission and have to plan the method of inserting and whether or not the mission requires them to disembark.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.			
		If troops disembark, what does the platform do during the mission?	Maritime Planning Teams	Teams will be given an SSR mission and have to plan the method of inserting	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.			

		Does the TTP change based on mission size, location, or duration?	Maritime Planning Teams		Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.	The teams will be provided a list of platforms with capabilities. Each platform will have a capabilities card including: size, speed, capacity (personnel and equipment), range, visibility rating, reliability rating, and crew size. This data will inform the players when they decide to use this platform and will also help the data collectors narrow down which capabilities were preferred. The platforms will include: Cargo Ship (200-300), Yacht (Small / Medium), Fishing Boats (Small / Medium / Large), Speed Boats (Small / Medium / Large), Sailboat (Small / Medium / Large), Military / PNF Boats: Rhib, Patrol Boats, Small Destroyers, Parasite Boats (Boats that can launch from a bigger one): Kayak, Zodiac, Jet ski, Fishing Boat, Rhib.		
	2.2 What TTPs were used during island hopping operations?							
		What the required size and composition (U.S./ Local / PNF / Allied) of the mission force?	Maritime Planning Teams	The planning teams will be given a mission card that specifies the type of mission and location. The planning teams will use this card to answer this question.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.	The teams will be provided a list of platforms with capabilities. Each platform will have a capabilities card including: size, speed, capacity (personnel and equipment), range, visibility rating, reliability rating, and crew size. This data will inform the players when they decide to use this platform and will also help the data collectors narrow down which capabilities were preferred. The platforms will include: Cargo Ship (200-300), Yacht (Small / Medium), Fishing Boats (Small / Medium / Large), Speed Boats (Small / Medium / Large), Sailboat (Small / Medium / Large), Military / PNF Boats: Rhib, Patrol Boats, Small Destroyers, Parasite Boats (Boats that can launch from a bigger one): Kayak, Zodiac, Jet ski, Fishing Boat, Rhib.		
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		Does the TTP change based on mission size, location, or duration?	Maritime Planning Teams		Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.	The teams will be provided a list of platforms with capabilities. Each platform will have a capabilities card including: size, speed, capacity (personnel and equipment), range, visibility rating, reliability rating, and crew size. This data will inform the players when they decide to use this platform and will also help the data collectors narrow down which capabilities were preferred. The platforms will include: Cargo Ship (200-300), Yacht (Small / Medium), Fishing Boats (Small / Medium / Large), Speed Boats (Small / Medium / Large), Sailboat (Small / Medium / Large), Military / PNF Boats: Rhib, Patrol Boats, Small Destroyers, Parasite Boats (Boats that can launch from a bigger one): Kayak, Zodiac, Jet ski, Fishing Boat, Rhib.		
	2.3 What TTPs were used during brown water operations?							
		What the required size and composition (U.S./ Local / PNF / Allied) of the mission force?	Maritime Planning Teams	The planning teams will be given a mission card that specifies the type of mission and location. The planning teams will use this card to answer this question.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.	The teams will be provided a list of platforms with capabilities. Each platform will have a capabilities card including: size, speed, capacity (personnel and equipment), range, visibility rating, reliability rating, and crew size. This data will inform the players when they decide to use this platform and will also help the data collectors narrow down which capabilities were preferred. The platforms will include: Cargo Ship (200-300), Yacht (Small / Medium), Fishing Boats (Small / Medium / Large), Speed Boats (Small / Medium / Large), Sailboat (Small / Medium / Large), Military / PNF Boats: Rhib, Patrol Boats, Small Destroyers, Parasite Boats (Boats that can launch from a bigger one): Kayak, Zodiac, Jet ski, Fishing Boat, Rhib.		
		What external support is needed? (MSOC, SOTF, Interagency)	Maritime Planning Teams	The planning teams will be given a mission card that specifies the type of mission and location. External support will be requested and noted by planning team.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.	Start up data will indicate if certain platforms are provided by an external entity.		
		What movement method was preferred? (All together, staggered, mother ship, etc.)	Maritime Planning Teams	Teams will be given an SSR mission and have to plan the method of inserting. Part of the information will include the depth of the water near the objective.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.			
		If troops disembark, do they disembark at the shoreline or in the water?	Maritime Planning Teams	Teams will be given an SSR mission and have to plan the method of inserting and whether or not the mission requires them to disembark.	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.			
		If troops disembark, what does the platform do during the mission?	Maritime Planning Teams	Teams will be given an SSR mission and have to plan the method of inserting	Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.			
		Does the TTP change based on mission size, location, or duration?	Maritime Planning Teams		Seminar Style. Team will brief their plan in and open forum and then receive feedback from SOTF.	The teams will be provided a list of platforms with capabilities. Each platform will have a capabilities card including: size, speed, capacity (personnel and equipment), range, visibility rating, reliability rating, and crew size. This data will inform the players when they decide to use this platform and will also help the data collectors narrow down which capabilities were preferred. The platforms will include: Cargo Ship (200-300), Yacht (Small / Medium), Fishing Boats (Small / Medium / Large), Speed Boats (Small / Medium / Large), Sailboat (Small / Medium / Large), Military / PNF Boats: Rhib, Patrol Boats, Small Destroyers, Parasite Boats (Boats that can launch from a bigger one): Kayak, Zodiac, Jet ski, Fishing Boat, Rhib.		
	3. What are the external reactions to the SSR missions?							

	3.1 What is the reaction of the adversary government (China)?							
		What response action did the Chinese decide on?	Chinese Red Cell Player	Based upon the adjudication of the reliability and visibility scores, the red cell will view the mission in one of four categories: successful and not compromised, successful and compromised, unsuccessful and not compromised, and unsuccessful and compromised.	Seminar Style. The player will discuss their reaction and their decisions. Player will also utilize a visible sliding scale to show positive and negative reactions.	Player will be provided a script with the types of reactions they are allowed and what the general influence (positive/negative) and severity will be based on certain types of actions from the Maritime Planning Teams		
		Why did the Chinese decide on such action?	Chinese Red Cell Player	Based upon the adjudication of the reliability and visibility scores, the red cell will view the mission in one of four categories: successful and not compromised, successful and compromised, unsuccessful and not compromised, and unsuccessful and compromised.	Seminar Style. The player will discuss their reaction and their decisions. Player will also utilize a visible sliding scale to show positive and negative reactions.	Player will be provided a script with the types of reactions they are allowed and what the general influence (positive/negative) and severity will be based on certain types of actions from the Maritime Planning Teams		
	3.2 What is the US interagency reaction?							
		What response action did the State Department decide on?	US State Department	Injects provided to player to decide on positive or negative (sliding scale) reaction towards events. Chinese and local reaction will influence this player as well.	Seminar Style. The player will discuss their reaction and their decisions. Player will also utilize a visible sliding scale to show positive and negative reactions.	Player will be provided a script with the types of reactions they are allowed and what the general influence (positive/negative) and severity will be based on certain types of actions from the Maritime Planning Teams		
		Why did the State Department decide on such action?	US State Department	Injects provided to player to decide on positive or negative (sliding scale) reaction towards events. Chinese and local reaction will influence this player as well.	Seminar Style. The player will discuss their reaction and their decisions. Player will also utilize a visible sliding scale to show positive and negative reactions.	Player will be provided a script with the types of reactions they are allowed and what the general influence (positive/negative) and severity will be based on certain types of actions from the Maritime Planning Teams		
	3.3 What are the considerations of the SOTF Cmdr. for approving a plan?							
		Does the commander approve the plan?	SOTF Commander	Based on the plan briefed, SOTF Commander will give their input for the two risk categories that factor into the visibility and reliability scores.	Seminar Style. The player will discuss their reaction and their decisions. Player will also utilize a visible sliding scale to show positive and negative reactions.	Player will be provided a script with the types of reactions they are allowed and what the general influence (positive/negative) and severity will be based on certain types of actions from the Maritime Planning Teams. This player will also leverage their prior experience as a Special Operations Commander to influence their decisions.		
		Why did you approve / disapprove?	SOTF Commander	Based on the plan briefed, SOTF Commander will give their input for the two risk categories that factor into the visibility and reliability scores.	Seminar Style. The player will discuss their reaction and their decisions. Player will also utilize a visible sliding scale to show positive and negative reactions.	Player will be provided a script with the types of reactions they are allowed and what the general influence (positive/negative) and severity will be based on certain types of actions from the Maritime Planning Teams. This player will also leverage their prior experience as a Special Operations Commander to influence their decisions.		
	3.4. What is the reaction from the local media?							
		What was the local media response to a successful partnered mission and why?	Local Media	Based upon the adjudication of the reliability and visibility scores. Injects provided to player to decide on positive or negative (sliding scale) reaction towards events	Seminar Style. The player will discuss their reaction and their decisions. Player will also utilize a visible sliding scale to show positive and negative reactions.	Player will be provided a script with the types of reactions they are allowed and what the general influence (positive/negative) and severity will be based on certain types of actions from the Maritime Planning Teams		
		What was the local media response to an unsuccessful partnered mission and why?	Local Media	Based upon the adjudication of the reliability and visibility scores. Injects provided to player to decide on positive or negative (sliding scale) reaction towards events	Seminar Style. The player will discuss their reaction and their decisions. Player will also utilize a visible sliding scale to show positive and negative reactions.	Player will be provided a script with the types of reactions they are allowed and what the general influence (positive/negative) and severity will be based on certain types of actions from the Maritime Planning Teams		
		What was the local media response to an unsuccessful but compromised partnered mission and why?	Local Media	Based upon the adjudication of the reliability and visibility scores. Injects provided to player to decide on positive or negative (sliding scale) reaction towards events	Seminar Style. The player will discuss their reaction and their decisions. Player will also utilize a visible sliding scale to show positive and negative reactions.	Player will be provided a script with the types of reactions they are allowed and what the general influence (positive/negative) and severity will be based on certain types of actions from the Maritime Planning Teams		
		What was the local media response to an successful but compromised partnered mission and why?	Local Media	Based upon the adjudication of the reliability and visibility scores. Injects provided to player to decide on positive or negative (sliding scale) reaction towards events	Seminar Style. The player will discuss their reaction and their decisions. Player will also utilize a visible sliding scale to show positive and negative reactions.	Player will be provided a script with the types of reactions they are allowed and what the general influence (positive/negative) and severity will be based on certain types of actions from the Maritime Planning Teams		

# Appendix II: Maritime Planning Team Brief

## Maritime Planning Team Briefing Template

- Team # \_\_\_\_\_ Mission # \_\_\_\_\_
- State mission and show start / end on map.
- Is your mission: ISLAND TO ISLAND / INTRA-ISLAND / RIVERINE
- Task organization is \_\_\_\_\_ U.S. and \_\_\_\_\_ PNF.
- What platform(s) are you using? (Up to 3, but more than 1 not required)

Platform(s)	Qty	Reasoning

Dingy(s)	Host Vessel	Qty	Reasoning

- If using a military platform, who owns it: U.S. / Host Nation
- Show rough route on map.
- What is the estimated duration of insert (est dist / ship capability)? \_\_\_\_\_
- Time of day? DAY / NIGHT
- If multiple platforms, will they travel together or separately? TOGETHER / SEPERATE
- At your objective, will you use a host / parasite technique? YES / NO
- If not using a host / parasite, did your platform go to the shoreline? YES / NO
- If you disembark troops, what will your main platform do during the operations?

## APPENDIX D: LITTORIAL WARGAME PLAYER READ AHEADS

### MARITIME PLANNING TEAMS

You are a member of a MARSOC Strategic Shaping and Reconnaissance (SSR) Team headquartered in Zaco. Your team is composed of 6 U.S. service members, one team commander (O-3), one team chief (E-8), three enlisted operators (1 x E7, 2 x E6), and one Navy SOF Medic (E-7). You are partnered with a 25-member special operations force host nation element.

Your mission is to train your partner nation force on special reconnaissance skills and conduct partnered operations to collect on suspicious Chinese activity throughout your area of operations. Your AO includes the islands of Mala, Tac, and Ventura and the small island bands surrounding them. Vehicular movement throughout the islands is minimal due to a lack of infrastructure, traffic, and high crime.

Your team conducted extensive training in maritime mobility and SSR tactics prior to deployment. Every member of your team is trained in small craft to include zodiacs, small fishing vessels, military style RHIBs, and jet skis.

The focus of this wargame is on maritime tactics, techniques, and procedures, and maritime platforms. The focus of the wargame is not on specific SSR missions. As such, you will be provided with a generic special reconnaissance mission that is based around JP 3-05 *Joint Doctrine for Special Operations*. For more specific information on special reconnaissance, please refer to pages II-(5-6) in JP 3-05. The generic mission information also supports international SOF and non-MARSOC players who are also members of the planning teams.

#### **Game Play:**

You will be given an SSR mission cards that will provide you with the details needed to plan your mission. Your team will then use 15-20 minutes to plan your maritime insert TTPs and which maritime platform(s) you will use. You will then brief your plan to a SOTF command team and players from the local media, local China intelligence cell, and interagency staff. The SOTF will assess your mission for two variables: risk to mission and risk of compromise. How the SOTF assess your planned mission will help determine the reaction from the media, China, and the interagency. After these elements react, the turn is over.

Each turn is self-contained. While the reaction of the other players is important, you should not plan your missions to facilitate better reaction from the SOTF or anyone else. I.E. you should plan a mission so that the SOTF gives you a low risk rating. Each turn will take approximately 45 minutes. You will then receive a new mission card. The overall game is approximately 10 turns.

The template on the next page should be used to help you plan your mission and help standardize the brief to the SOTF.

**Maritime Planning Team Briefing Template**

- Team # \_\_\_\_\_ Mission # \_\_\_\_\_
- State mission and show start / end on map.
- Is your mission: ISLAND TO ISLAND / INTRA-ISLAND / RIVERINE
- Task organization is \_\_\_\_\_ U.S. and \_\_\_\_\_ PNF.
- What platform(s) are you using? (Up to 3, but more than 1 not required)

Platform(s)	Qty	Reasoning

Dingy(s)	Host Vessel	Qty	Reasoning

- If using a military platform, who owns it: U.S. / Host Nation
- Show rough route on map.
- What is the estimated duration of insert (est dist / ship capability)?  
\_\_\_\_\_
- Time of day? DAY / NIGHT
- If multiple platforms, will they travel together or separately? TOGETHER / SEPERATE
- At your objective, will you use a host / parasite technique? YES / NO
- If not using a host / parasite, did your platform go to the shoreline? YES / NO
- If you disembark troops, what will your main platform do during the operations?

## Special Operations Task Force - Pacific

You are the command team for Special Operations Task Force – Pacific (SOTF-P). Your role in this wargame is to listen to each Maritime Planning Team (MPT) brief and use your expertise to assign the mission two different variables: risk to the mission being compromised and overall mission risk. You will assess each variable as either LOW, MEDIUM, or HIGH. Your assessment will help determine the outcome of the mission and drive how the local media, China red cell, and interagency react to the mission. Please use the following considerations for each variable:

### Risk of Mission Being Compromised:

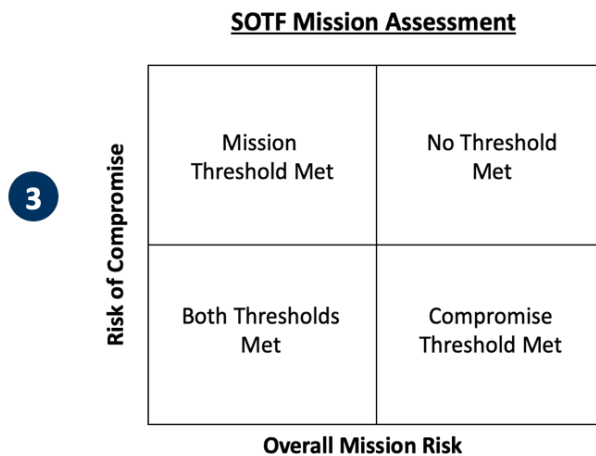
- **Size of platform(s)**
- **Number of platform(s) and personnel**
- **Type of platform(s):** Ubiquity of the platform, do they blend in?
- **Time of Day**
- **Location:** Rural or Urban
- **Duration of Mission:** Short vs Long

### Overall Mission Risk:

- **Platform Ease of Use**
- **Heavy Seas Rating:** Each platform has been given a rating.
- **Type of Platform**
- **Mission Tactics**

### Adjudication:

1. You will rank the overall risk and detection risk as low / med / high.
2. Your scores correlate to odds for dice rolling  
Low = 5 / 20  
Med = 10 / 20  
High = 17 / 20
3. Planning team rolls dice once for overall risk and once for detection risk to determine which mission thresholds have been met



## Local Media Element

You are a local media corporation that is located in Zaco. Your media has a nightly television broadcast, a 24-hour music and radio station, a website with news articles, and social media platforms including Facebook, TikTok, Telegram, and Twitter. You have a small staff and rely on locals notifying you of newsworthy events so that you can dedicate your limited manpower to cover stories.

**Television** – Occurs once every day. Contains high priority local and international breaking news, local investigation pieces, feel good stories.

**Radio** – Mainly local and regional music artists with occasional hourly program of international hits. At the top of every hour you have a 60 second news update with highlights for your radio viewers. Only the most urgent information would cause an interruption to music content.

**Online News** – You share news from other online sites and generate a few new articles a day with your staff. You publish as soon as the article is ready. Articles will normally appear here before being on your television nightly news.

**Social Media** – You post the most frequent on your social media site. You will also share other content that you get from citizens in your news area. This is how you share breaking news before putting in the time to write an article or before your team can physically get to a location to record. You want to be the first to report so this is your platform of choice to quickly push content.

### Game Play:

You will listen to each Maritime Planning Team brief, the reaction from the SOTF, and observe dice roll. The dice roll will determine which light in which you will assess the mission. The adjudicator will provide a readout of the mission after the dice roll so you understand how you view the mission outcome. You will then assess how positive or negative your media messaging would be and which likely platforms you would use to disseminate.

### General Response Guidelines:

1. You support the United States being in your country to train and advise your military elements. Any missions that appear to train, support, or highlight the capability of your own military would be viewed positively.
2. You are wary of anything that appears to be United States 'spy activity' where they are conducting illegitimate military operations. Anything that appears to be this type of activity would be viewed negatively.



## China Red Cell

You are the commander of a local Chinese intelligence element that contains both military and civilian personnel. Your orders have been to keep tabs on all United States and partnered training and operations. You also gather general intelligence in the area to ensure fishing and shipping lanes are maintained. These are the types of forces you have at your command.

**Military Patrol Boats** – You have numerous military and civilian patrol boats. You use them throughout the ports and the main shipping lanes to surveil and understand what types of shipping and fishing is being conducted in the area. These boats are lightly armed and not capable of any significant confrontation. These boats work in conjunction with local government boats to occasionally inspect vessels.

**Unmanned Aviation** – You control a limited number of unmanned aerial assets. They are mainly used to observe fishing and commercial shipping lanes. Occasionally you will fly near or over host nation forces but you do not want to be shot down or cause any negative publicity.

**HUMINT Officers** – You have civilian human intelligence officers with a moderate source network of civilians, government officials, and host nation military. You do not have any sources that work for or with U.S. military members.

**Technical Intelligence** – You have a small staff of cyber experts who are capable of monitoring open source information, conducting open source information searching and analysis, and can conduct limited cyber intrusions to gather information. This team also possesses limited SIGINT and electromagnetic spectrum tools that could be directed on a specific location.

### C. GAME PLAY:

You will listen to each Maritime Planning Team brief, the reaction from the SOTF, and observe dice roll. The dice roll will determine which light in which you will assess the mission. You will then assess how positive or negative your reaction would be and what actions you might take in response.

#### General Response Guidelines:

1. You know the U.S. military is working with the local partner force and that they are training and helping to supply them. You also know they have conducted practice missions with them and have advised them on missions in the past.
2. Your goal is to maintain fishing and shipping lines, anything that might negatively impact these would be viewed negatively.
3. You do not want to escalate things with the U.S. but observe and understand what actions they are taking and why without getting into a confrontation.
4. You send a routine report weekly but can send an urgent report if something happens unexpectedly that should be known by higher levels of command.

The SOTF will assess risk and 2 x dice rolls will be used to determine the outcome of the mission. The outcome can be one of four results:



## Interagency

You are the country team for the Domina Islands. The embassy is located in Zaco, the same location as the Maritime Planning Team home base. You have approved of the team being in country to train local military elements and to conduct special reconnaissance missions that support the overall country team collection plan.

**Chief of Mission (Ambassador)** – The United States lead diplomat to the Domina Islands. The primary duties of ambassadors are to maintain diplomatic relations with the receiving state and promote foreign policy strategies through international organizations. You are concerned with any actions by U.S. personnel who would jeopardize the diplomatic relationships that have been established over many years.

**Chief of Station** - The Chief of Station is the lead intelligence official on the Domina Islands. His duty is to oversee all intelligence operations. This includes military intelligence operations. He is concerned about intelligence activity that is compromised and how it could impact other intelligence operations throughout the country.

### Game Play:

You will listen to each Maritime Planning Team brief, the reaction from the SOTF, and observe dice roll. The dice roll will determine which light in which you will assess the mission. You will then assess how positive or negative you would react and if you would take any consequential actions.

### General Response Guidelines:

1. You understand what the mission of the Maritime Planning Teams is but you may not have been briefed on their day to day activities.
2. Your concern is whether or not an action from the Maritime Planning Teams potentially damages diplomatic ties or highlights intelligence activities that could compromise other things occurring in the country. A failed military mission that does not impact either of these would be viewed negatively but with minor lasting effects.
3. Your reaction will be impacted by both the Chinese and media reactions, as very negative or positive reactions could influence your reaction.



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## **LIST OF REFERENCES**

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