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Cognitive Readiness in Times of Crises: Preparing Military Personnel for Disaster Crisis Management Response

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Abstract

Preparing military personnel cognitive readiness (CR) using Scenario-Based Training (SBT) integrated with the Joint Military Appreciation Process (JMAP). The Complex Operating Environment (COE) military operations need the Malaysian Armed Forces (MAF) to prepare personnel CR for disaster crisis management response. Recognizing the importance of disaster management knowledge, skills, and abilities (KSA) personnel leads Malaysian Armed Forces Staf College (MAFC) to develop a military module, specifically to react and act during a crisis. The Joint Military Appreciation Process (JMAP) is a tool that provides a comprehensive list of steps and planning used for the joint operations planning process. SBT involving Military Operation Other Than War (MOOTW) has been developed by MAFC to prepare personnel for planning and deployment at the operational level. Results indicates a combination of SBT and JMAP in preparing military personnel for crisis management become the potential solution to enhance the CR.

Keywords: Cognitive Readiness, Military Personnel, Malaysian Armed Forces, Military Operation Other Than War (MOOTW)

Introduction

In the dynamic landscape of contemporary security challenges, it is essential for the military personnel is to be cognitively ready in managing and response to disaster. Realizing the importance of force development as a part of military readiness demands military personnel possess not only technical expertise but also a heightened state of cognitive readiness in the deployment of Military Operations Other Than War (MOOTW). Acknowledging the multifaceted nature of disaster response, this article emphasized the need for critical thinking, problem-solving, and decision-making as pivotal components of Cognitive Readiness (CR) in addressing the diverse challenges.

Assessing the past incident, such as the disappearance of Malaysia Airlines Flight MH 370 and the downing of MH 17 incidents need an approach to crisis management. Thus, it is crucial to prepare the Malaysian Armed Forces (MAF) personnel in handling crisis not only domestic but including the international crises. These incidents provide a poignant example of the critical importance of cognitive readiness in crisis response. The lack of clear information and the evolving nature of the incident demanded a high level of cognitive readiness among personnels to adapt with the challenge. During the crises, the ability to process information, assess risks, and make timely decisions is crucial. Effective crisis response involves not only technical skills and knowledge but also the capacity to manage stress, maintain focus, and collaborate seamlessly with others in high-pressure environments.

CR enables responders to adapt in a unpredictable scenarios, understand the gravity of the situation, and execute well-informed strategies. Therefore, the Malaysian Armed Forces (MAF) need to enhance forces development especially military officers at the operational level in supporting the Malaysian Government during crisis management. Recognizing the importance of disaster management knowledge, skills, and abilities personnel leads the Malaysian Armed Forces Staf College (MAFC) to develop a military module, especially to train military personnel on how to react and act during crisis management. Critical thinking, problem-solving, and decision-making in crises are elements of cognitive readiness that need to be established within military personnel at operational levels who are involved in planning and deploying soldiers in disaster response. This article identifies the integration of Scenario-Based Training (SBT) and the application Joint Military Appreciation Process (JMAP) as an innovative and comprehensive approach to enhance the cognitive readiness of military personnel at the operational level for disaster management crisis response.

Disaster Crisis Management Response

Disaster Crisis Management (DCM) is a dynamic process requiring rapid decision-making under critical conditions. Quarantelli (1988), explained that if there has been disaster planning there will be a successful crisis or emergency time management. Planning provides a structured approach to organizing thoughts, resources, and actions. The ultimate purpose of planning is to enhance preparedness in a dynamic and unpredictable complex environment. Disasters can be caused by natural, technological, political, economic, or human-made causes. Unlu et al (2010), mentioned that DCM has gained importance in the policy agendas of many countries around the world due to the increase in the number of natural disasters and terrorist attacks.

Paraskevas (2006), states that the word crisis originates from the Greek word “krisis”, which means judgment, choice or decision. In today's dynamic environment, crisis response itself can be viewed as a complex system involving several different parts of organizations related to specialized on how to manage crisis effectively. The disaster lifecycle consists of four primary stages; preparedness, mitigation, response, and recovery. Effective crisis planning involves identifying early warning signals, but if a crisis progresses to the acute stages of action, damage occurs, leading to a chronic crisis that needs an appropriate response to mitigate the crisis management plan. Gabrielli et al. (2020), mentioned that military organization has the most appropriate organizational dimensions to prevent and manage crises. According to Shinga (2016), in the military context, the spectrum of peace in

military operations clearly states disaster crisis management response becomes part of military organizations' responsibilities. For this reason, military organizations, being defined as “High-Reliability Organizations,” have organizational characteristics that allow them to manage crises more effectively. Gabrielli et al (2020), also suggested that to obtain reliable performance, civil organizations must refer to military organizations for how they process organizational change which allows them to manage crises more effectively. Military organizations' emphasis on comprehensive training heightened attention to the human factors with specific risk management tailored individual roles in DCM response.

What academic knowledge and disaster management response need to be established for is preparedness. Disasters are complex phenomena in their nature and the level of complexity is increasing due to modern life settings and circumstances. Preparedness is the primary cornerstone in the disaster management cycle. Hence, we highlighted the need for the concept of CR in crises to prepare military personnel for disaster management response and consider what the science of training has to offer to enhance specific disaster management knowledge, skills, and abilities (KSA).

Predicting Cognitive Readiness in Crisis Management

Predicting the Cognitive Readiness (CR) of military personnel is a multifaceted challenge that involves assessing various cognitive factors crucial for effective performance in disaster management crises. Scenario-based and simulation training serve as invaluable for evaluating and enhancing the cognitive readiness of military personnel. This training immerses individuals in realistic and dynamic situations, replicating the complexities and stressors they might encounter in disaster response. The primary goal is to assess how well individuals can apply their disaster management knowledge, skills, and abilities in the context of disaster response. It’s important to note that predicting cognitive readiness is a complex task that may require a combination of approaches. Additionally, the context-specific nature of crisis management may necessitate tailoring assessments to the unique challenges and demands of the specific environment.

Crisis scenarios demand a unique set of cognitive skills, emotional intelligence, and teamwork capabilities in how individuals can enhance their abilities to manage crises successfully. By combining training, assessment, and technology, military organizations and individuals proactively enhance their CR for crises. The ability of critical thinking, problem-solve, decision-making, and communicate effectively under pressure is pivotal in successfully managing crises. As the landscape of potential crises continues to evolve, investing in predictive strategies for military personnel CR becomes imperative for ensuring effective response and resilience in the face of the Volatility, Uncertainty, Complexity, and Ambiguity (VUCA) environment. Smits & Ezzat Ally (2003), mentioned the challenges leaders face in preparing their organization for effective crisis management, as the substantial investments in creativity, resources, and energy often impede their ability to contemplate and address the unthinkable risks that could undermine competitiveness and organizational existence. Jankelová et al (2021), explained that the global COVID-19 pandemic necessitated urgent and substantial changes for organizations, compelling managers to navigate crisis management decisions to safeguard employee health and maintain operational continuity. This highlighted the intricate relationship between managerial competencies and the demands of an unprecedented crisis in both organizational and healthcare settings.

In the military context, Crameri et al (2021), stated that by adopting the concept of cognitive readiness, military organizations are required to prepare individuals especially military personnel to deal with complex, dynamic, and resource-limited task environments. Military operations are characterized by multiple sources of stress including Military Operation Other Than War (MOOTW). Shinga (2016), mentioned that MOOTW is a spectrum of peace as a part of the responsibilities of military organizations in supporting civil authorities. Despite the doctrinal and tactical differences associated with the spectrum of conflict military operations, the preceding discussions make clear that there are fundamental psychological militaries in every military operation, and all require emotional, cognitive, and behavioral control. Thus, the cognitive readiness of military personnel is important for operational effectiveness during crisis management. Cognitive readiness has been defined in many ways as shown in Table 1: Cognitive Readiness Definition . For this study, we define CR refers to military personnel who are cognitively ready to perform their role in crisis management with disaster management knowledge, critical thinking skills, problem-solving, and decision-making that enable them to think and react.

Table 1
Cognitive Readiness Definition

	Definition of Cognitive Readiness
Etter (2002)	Military personnel must not only be ready physically but must also be cognitively ready.
Morrison & Fletcher (2002)	Cognitive readiness is the mental preparation (including skills, knowledge, abilities, motivations, and personal dispositions) an individual needs to establish and sustain competent performance in the complex and unpredictable environment of modern military operations.
Cosenzo et. (2007)	The optimization and enhancement of human cognitive performance. It is a critical element for effective operational performance, especially for an individual's capability to perform multiple functions and to adapt to diverse and rapidly shifting threats.
Bolstad et. (2008)	Cognitive readiness can be defined as possessing the psychological (mental) and sociological (social) knowledge, skills, and attitudes (KSAs) that individuals and team members need to sustain competent professional performance and mental well-being in the dynamic, complex, and unpredictable environments of military operations.
Grier (2012)	Tactical cognitive readiness - A state of mental acuity for ensuring an acceptable level of performance during assigned missions. Operational cognitive readiness – Grier (2012) refers to Morrison and Fletcher's (2002) definition. Strategic cognitive readiness: An individual's potential to perform assigned cognitive tasks in the complex and unpredictable environment of modern military operations.

The question of how to prepare cognitive readiness military personnel at the operational level for deployment disaster management crisis needs the best method. The foundation of our thinking is the cognitive and behavioral paradigm that emphasizes the

importance of each individual to thinking and reacting. That is, the importance of cognitive readiness in the context of MOOTW, especially in crisis management. These goals can be accomplished by referring to what the science of training has offered for effective learning methodology and training systems to enhance the cognitive readiness especially Knowledge, Skills, and Abilities (KSA) of military personnel. KSA framework components (Bolstad et al., 2008; Bolstad et al., 2014, O'Neil et al., 2014) serve a specific function of cognitive readiness for task success during military operations as described in Table 2: Cognitive Readiness Components.

Table 2
Cognitive Readiness Components

	Cognitive Readiness – How does it work	
KSA	Component	Function
Knowledge	Prerequisite and domain knowledge related to military operations.	Understanding of the nature of military operation based on military doctrine, technique, tactics, and procedure for purpose thinking, information process, and planning monitoring strategies.
Skills	Adaptability, adaptive problem-solving, communication, decision-making, and situation awareness.	To facilitate an individual's approaching a problem and actioning strategies to overcome it within the task environment during military operations. Personality and attitudes (self-confidence) of an individual, influence enhance the performance of their team (how they interact in work and social situations), dealing with stress.
Abilities	Adaptive expertise, creative thinking, metacognition, and teamwork.	To have a deep understanding of the problem domain that allows them to think laterally about novel problems and individuals' abilities to work effectively with teams

Due to the nature of military operations and engaging in often VUCA environments, military organizations across the globe have been asked how to maintain a state of readiness for military personnel to deal with crisis management response since the onset of COVID-19. The consideration of the science of training provides insights into how to prepare military personnel to manage crises successfully by adopting the concept of CR to allow the military to be resilient to the unknown shocks of challenging situations.

The Science of Training

The science of training offers a systematic and evidence-based approach to enhancing knowledge, skills, and abilities across various domains. By understanding the science of training methodologies can be designed to optimize learning and development. Salas and Cannon-Bowers (2000) defined training as the systematic acquisition of knowledge (i.e., K; cognition and what you know), skills (i,e., behavior and what you do), and attitudes (i.e., A; what you feel), with the goal being to develop the competencies necessary for effective performance in the work environment. Effective training revolves around changing cognition, behavior, attitudes, and consequently, the way people do their job. However, in the military context, cognitive and physical readiness depends on how military personnel are trained. It can be said that the systematic approach to the design, implementation, and evaluation of training is necessary for the enhanced readiness of military personnel.

Current military personnel are constantly required to operate in a spectrum of conflict military operations involving the spectrum of combat and a spectrum of peace (Shinga, 2016). The tasks being conducted require military personnel to be ready for any situation. Military personnel need to be prepared with critical thinking, problem-solving, and decision-making in the spectrum of conflict military operations. To acquire military knowledge, skills, and abilities, structure training is required that can enhance military personnel readiness for mission success. Ultimately, it is important to acknowledge that there is the science of training that should guide the design, delivery, and evaluation of training. Therefore, the military organization must continue to invest in effective learning strategies to train and equip military personnel with relevant KSA. One such strategy is scenario-based training (SBT) to enhance CR military personnel in crisis management.

What is Scenario-Based Training (SBT)?

Salas et al (2006), mentioned that Scenario Scenario-Based Training (SBT) is a training strategy that uses several aspects of scientific, theory-based training, incorporating information, demonstration, and practical methods. It is a dynamic and immersive instructional approach designed to prepare individuals for real challenges in various professional settings. SBT aims to create a training environment that mirrors actual conditions, fostering experiential learning and achieving desired learning outcomes. The method incorporates realistic scenarios that closely resemble the situation encountered in specific fields such as emergency response, military operations, aviation, healthcare, and business to elicit specific KSA.

The success of SBT relies on its realistic simulation, involving carefully crafted scenarios that mirror professional roles, fostering active engagement and honing participants' ability to think critically, problem-solve, and decision-making in challenging circumstances. So, careful consideration should focus on the design scenario. SBT uses scenarios that are defined a priori based on the training objectives identified in the training needs analysis with practical application and effectively preparing individuals to navigate complex situations with competence and confidence. When designing SBT, it is important that training does not just involve domain knowledge, but should incorporate both a behavioral and cognitive event.

Military organizations were in a unique position to deal with the uncertainties that came from unpredicted threats. In this context, the environment can be simulated for SBT

which provides the potential to offer a completely autonomous facility for scenario design and test, and potentially a decision support facility, based on a build-up of empirical evidence from real-world and training situations (Bacon et al., 2013). Cannon-Bowers et al. (1998) mentioned that SBT aims to enhance the development of novice decision-makers theoretically by exposing them to diverse task episodes and practically aligning with the real task environment. In crisis management response, achieving success demands collaborative effort from military personnel at all levels (strategic, operational, and tactical) to enhance higher-order thinking skills, enabling problem-solving and rapid strategic judgments. With these benefits in mind, Table 3: Step in Designing Scenario- Based Training (SBT) summarizes the following step suggested by Cannon-Bowers et al (1998), and Salas et al (2006), of how SBT has been successfully implemented within a military setting.

Table 3
Step in Designing Scenario- Based Training (SBT)

Steps in Designing SBT	
Step	**Function**
Step 1: Use performance history and conduct skill inventory	Building on what experts know about past performance and requirements for military operation, instructors use domain-specific knowledge; the set of cognitive skills, psychomotor skills, and process and the use of psychometric properties to evaluate the acquisition of competencies.
Step 2: Determine Tasks and competencies	Determine the tasks and competencies to be targeted during training. Conducted training needs analysis.
Step 3: Develop training objective	Training objectives must be developed that should be based on the competencies needed to operate effectively. KSA provided the foundations for training and objectives.
Step 4: Embed carefully crafted scenarios	The development of the scenario should include events that target each training objective vary in difficulty and occur at different points within a scenario.
Step 5: Develop performance measure	The development of performance measures will be used to diagnose whether the trained competencies are learned and applied in either a simulated or real environment.
Step 6: Provide constructive and timely feedback	Constructive and timely feedback must be provided to trainees so that performance can be improved in the future.
Step 7: Modify future training programs	The modifications of the training program should incorporate lessons learned from mistakes being made by the trainees and the things they are doing right for designers' future training.

To effectively use SBT, the training provides the opportunity to gain expertise, practice KSA, and receive feedback they can apply in management crises. SBT is essential to train military personnel by targeting specific and important KSA to prepare them for ambiguous and stressful environments. However, in the military setting, it is important to reemphasize the value of the Joint Military Appreciation Process (JMAP) in the application for planning considerations that mimic human thinking. Combining the structured approach of SBT with the adaptability of JMAP can potentially create a more versatile planning process to enhance the development of CR military personnel.

The Joint Military Appreciation Process (JMAP)

The Joint Military Appreciation Process (JMAP) is a military planning process that offers decision-making in a systematic approach to address complex problems (Zhang et al., 2000). Real-world problems are often complex and require the best approach to understanding how to solve a complicated problem using the capabilities of human factors, especially the brain. Decision-making is a cognitive process (Simons et al., 2009). Understanding how the brain solves problems could be improved by the better application of training methodologies and strategies. The JMAP employed by the Malaysian Armed Forces (MAF) is a structured decision-making process for operational planning. The MAF believes that "Thinking Soldiers" needs to be developed to enhance the CR of military personnel at the operational and strategic level for complex operational environments of military operations. This is why many military organizations adopt an analytical decision-making model. A good example is the JMAP.

Military personnel are exposed to a wide spectrum of planning and executing situations that require decision-making as a leader's skills to fulfill the tactical, operational, and ultimately the strategic imperatives. Good decision-making is a cornerstone for military operation success. Dobson-Keeffe & Coaker (2015), explained that many military operations throughout history have failed due to poor decisions. Despite various explanations being attributed to such mistakes, a common underlying cause in many of these situations is often a breakdown in human cognitive processes; in simpler terms, poor thinking. That is why in the MAF, the JMAP has been designed to enhance military personnel's thinking based on rational analysis of the situation needs of the joint operational environment. In contrast, Kiker et al. (2005) explained that Multicriteria decision analysis (MCDA) tools can be applied to assess the value judgments of individual decision-makers or multiple stakeholders. These tools provide risk-based decision analysis quantify value judgments, score different project alternatives on the criteria of interest, and facilitate the selection of a preferred course of action. In the military context, the JMAP is a doctrinal approach to decision-making that allows a battlefield situation and a logical decision to be reached.

Decision-making is one of the most critical capabilities of military personnel. The JMAP has served as the primary tool for decision-making across tactical, operational, and strategic levels of military organizations. The JMAP, characterized by clear thought and logical reasoning, can be applied generically. However, the process tends to downplay the significant contributions that institutions can make to critical thinking, problem-solving, and decision-making. Thinking about decisions and the process of making decisions, should be important in military training to suit the circumstances of the problem in the military operational environment. The JMAP is now considered to be a method of learning used by the brain suited

to the rapid planning and decision-making required in modern warfare. This is especially so in a complex military operation environment, where friction and uncertainty are so great. To help commanders and staff in military organizations, it is imperative that useful of JMAP for decision-making processes to enhance the cognitive readiness of military personnel.

The JMAP has evolved through experience and is now being used by leading nations such as the United States America (USA), United Kingdom (UK), Australia, Singapore, and the North Atlantic Treaty Organization (NATO). Its fundamentals are applicable for use by any size planning team whether in a Joint, combined, or Coalition setting. Dobson-Keeffe & Coaker (2015) mentioned that JMAP has been developed over time based on solid decision-making theory and its practical application in the military environment as illustrated in Figure 1: Mapping Joint Military Appreciation Process (JMAP) with a Generic Decision-Making Process. The JMAP is a five-step process: scoping and framing; mission analysis; course of action development; course of action analysis; and decision and concept of operations development. Joint intelligence preparation and monitoring of the battlespace, which continuously provides the information to support planning.

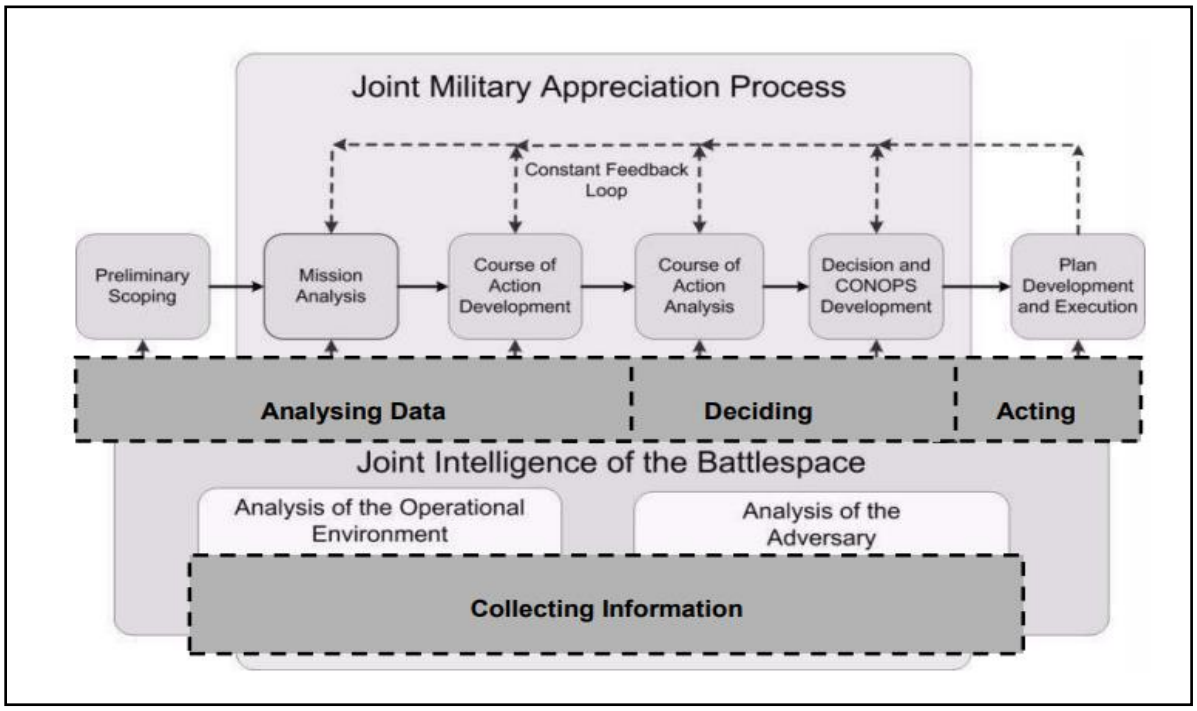


Figure 1 Mapping Joint Military Appreciation Process (JMAP) with a Generic Decision-Making Process

A national or multinational response to a crisis requires an integrated approach with military action being only one part. When a military response is required, it must be rapid, appropriate, and proportional to the situation. Successful military operations depend on commanders making sound decisions that are developed into workable plans and executed by subordinates in a timely and appropriate manner. Military decision-making is both an art and a science. Many aspects of military operations such as movement rates, fuel consumption, and weapons effects can be quantified and, therefore, represent part of the science or design of war and the analytical process involving the complexity of operation and

uncertainty concerning the adversary are the elements of the art of war need to plan accordingly for the best military decision.

The MAF uses the five-step JMAP as a tool to assist in decision-making and planning operations, including military operations other than war (MAFJP 5-01.1). The JMAP is suitable for use at all levels of conflict and focuses on applying the JMAP at the operational level of conflict for operation planning. There are two types of operations planning, Deliberate Planning (planning for the possible and immediate) and Crisis Planning (planning for things that happen without warning). Planning takes time and may slow tempo. When planning, it is vital to ensure that the time taken is appropriate to the activity required to develop the concept of operation (CONOP). The goal is to reduce the time taken for planning and minimize the sequential nature of the planning process to produce an operation plan (OPLAN) or contingency plan based on the course of action (COA) development. The Joint Operations Planning Process (JOPP) is represented in Figure 2: The Joint Operation Planning Process (JOPP)

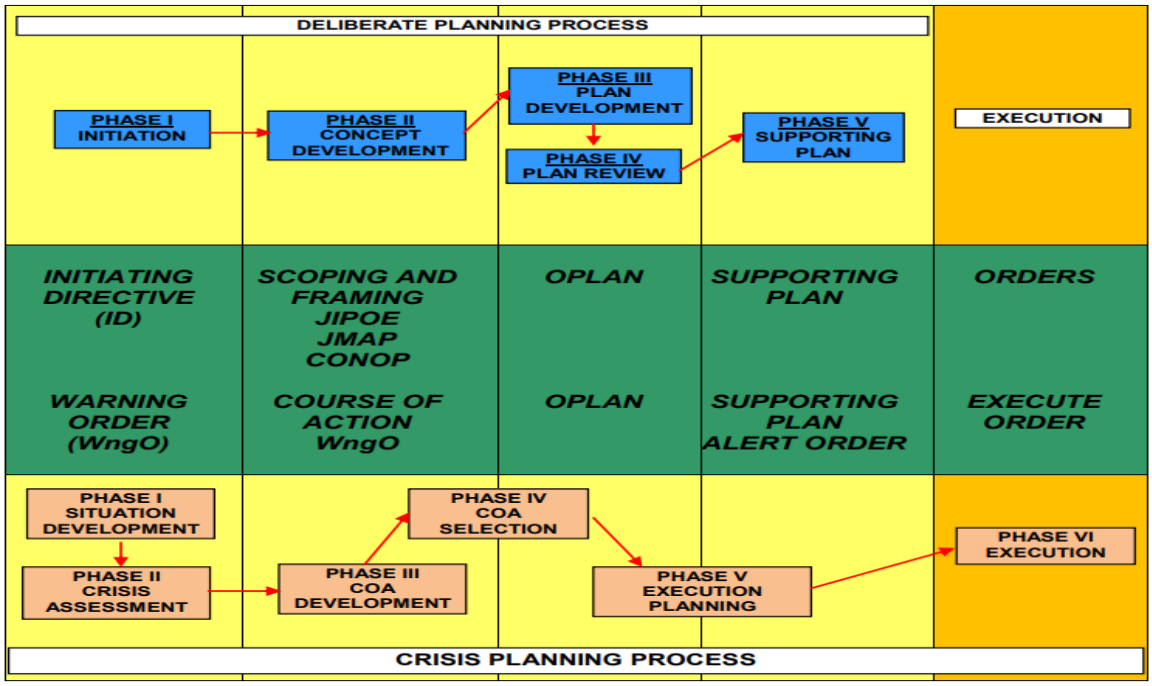


Figure 2 The Joint Operation Planning Process (JOPP)

The conceptual model for the JMAP consists of five consecutive steps supported by the continuous process of Joint intelligence preparation of the Operating Environment (JIPOE). Table 4: The Step in Malaysian Armed Force Joint Military Appreciation Process (JMAP) summarizes the process of MAF's five-step JMAP for the planning process (MAFJP 5-01.1).

Table 4
The Step in Malaysian Armed Force Joint Military Appreciation Process (JMAP)

Step in the JMAP Process	
Step	**Functions**
Step 1: Scoping and Framing	Scoping and framing a prime important with the ultimate aim of confirming or identifying the correct problems to be solved.
Step 2: Mission Analysis	To fulfill the mission are extracted and deduced from a superior commander's directive.
Step 3:Course of Action (COA) Development	COA Development refines the Commander's Guidance. The COA development should provide the commander with a range of workable options that can be analyzed.
Step 4: Course of Action (COA) Analysis	COA analysis tests the advantages and disadvantages of each COA. War gaming validates each own/friendly force COA for workability, strengths, and vulnerability against each adversary COA.
Step 5: Decisions and CONOPS Development	This final JMAP step involves the commander deciding on the optimal COA and the staff developing a CONOP based on the selected COA to pass to the superior commander for approval.

The JMAP may be applied at all levels of conflict (the strategic, operational, and tactical levels) although the focus of the planning activity. However, for the JMAP to be effective requires planning coordination, effective liaison, and concurrent staff activities across all levels of conflict. Significantly, the JMAP provided MAF personnel with the cognitive framework to deal much better with complex planning problems will ultimately contribute to enhancing the MAF personnel's cognitive readiness for planning for disaster crisis management response.

One of the primary purposes of professional military training and education is to develop systems thinking that needs to be established among military personnel for complex operating environment military operations. Concept military operations will succeed based on plans for collectively so that it allows understanding of forethought and stringent preparation. This approach emphasizes the importance of joint planning, coordination, and adaptability in addressing the challenges of dynamic and multifaceted scenarios to enhance their cognitive skills and abilities. In the evolving landscape of complex operating environments military operations in the 21st century needs military personnel at operational levels to think critically and act quickly for operational planning. Several defense professionals suggested that military personnel would not only have to change what to think but also how to think (Beaulieu & Dufort, 2017).

Method

Participants

Military Operation Other Than War (MOOTW) can be more complex than conventional warfare (CW) fighting. Like other military organizations, the MAF strongly emphasizes aggressive action and conveys an image of great competency by empowering military personnel with KSA in disaster management. This led the Malaysian Armed Forces

Staff College (MAFC) to develop a military module to train military personnel, especially MAF officers on how to react and act during a crisis. This module incorporates an academic and military model with collaboration between the National Defense Unversity of Malaysia (NDUM) and MAFC to prepare military officers at the tactical, operational, and strategic levels in military organizations cognitively ready for military operations. In other words, how to prepare military personnel CR in crises?

Exercise BANTU AMAN (Ex BANTU AMAN) is part of the military module designed to test Course Participant (CP) on their KSA of the MOOTW and Joint Operation Planning Process (JOPP) based on SBT to enhance the CR in responding to crisis management. Ex BANTU AMAN is designed to empower military personnel at the operational level to exercise judgment in how they carry out their assigned tasks and it exploits the human element in joint operations emphasized in disaster management. Most importantly, they came to realize that what to think and how to think are integral parts of the making operational planning in crisis management. In so doing, MAFC integrated the potential of SBT with the JMAP solution bringing a holistic approach to preparing officers' KSA when dealing with a spectrum of military conflict. Table 5: Ex BATU AMAN summarizes how SBT has been integrated with JMAP and implemented within a disaster management scenario military setting.

Table 5
Ex BANTU AMAN

SBT- EX BANTU AMAN – MOOTW

Use performance history and conduct skill inventory	Course Participants (CP) are required to plan the MOOTW operation in close alignment with the specific doctrine and principles of the Malaysian Armed Forces. The concept of MOOTW is highly relevant and requires careful consideration to successfully plan and execute such complex operations.
Determine Tasks and competencies	Ex BANTU AMAN aims to enable CP to demonstrate their understanding of MOOTW especially to conduct Human Assistance Disaster Relief (HADR).
Develop training objective	To assess CP in the understanding of the principles and doctrine underpinning the conduct of HADR/MOOTW in the MAF context. For CP able to apply critical thinking, problem-solving, and decision-making in drafting/producing JMAP and CONOP for HADR within a set time frame.
Embed carefully crafted scenarios	Ex BANTU AMAN focuses on a HADR operation based on the given scenario. The scenario is based on nature in the form of a Cyclone. The Cyclone occurred at the end of Oct XX and caused massive damage to SAGA and East Peninsular Malaysia.
Develop performance measure	The overall Ex BANTU AMAN structure has been designed as a combined and joint operation for HADR to encompass multiple environments, tasks, and challenges. CP divided into syndicate groups to prepare JMAP and present all 5 steps of JMAP utilizing MAF doctrine to develop plans and orders to resolve these challenges. CP will work in a syndicate group and a variety of appointed responsibilities act as Chief of Staff (COS) and Joint (J) Staff of Joint Head Quarters (JF HQ) to plan and conduct HADR operation based on the time frame given.
Provide constructive and timely feedback	CP has been assessed by the appointed Directing Staff (DS). CP needs to prepare writing JMAP and presentation to assess DS.
Modify future training programs	An evaluation form will be issued after the ex to gain CP feedback on potential Ex BANTU AMAN improvement.

Scenario Ex BANTU AMAN

On the morning of 3 Nov 20XX, the Typhoon SURI category 4 (cat) made landfall on SAGA. Typhoon SURI battered the east coast of SAGA for several hours. After striking SAGA, Typhoon SURI continued on its path to east-coast Malaysia. On 4 Nov 20XX SURI hit landfall in the Kelantan, and Terengganu region as a category 3 typhoon as shown in Figure 3: Review of Current Situation of Ex BANTU AMAN based on the review of the current situation (SIT) of Ex BANTU AMAN.

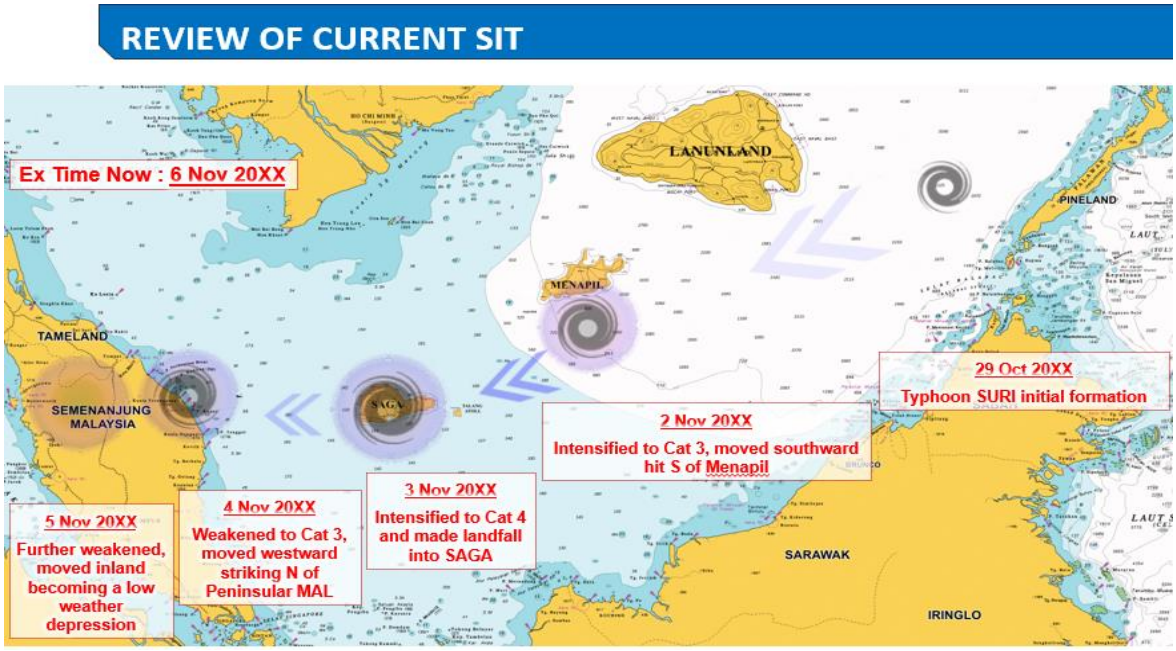


Figure 3 Review of Current Situation of Ex BANTU AMAN

The destruction resulted in massive devastation to the infrastructure, buildings, residential areas, and utility facilities. Due to these damages, the Disaster Management Agency Malaysia (NADMA) immediately activated National Security Council (NSC) Instruction No 20: Standing Order of Operation (SOP) on flood and set up the Emergency Operations Center at the National and State levels. In addition, the NSC has instructed all relevant Other government agencies (OGA) and non-government agencies (NGOs) to assist the government in relief efforts in those affected areas in particular on the EAST Cost of SURI.MAS the East Coast of SURI was badly smashed by the cyclone, immediate human assistance and disaster relief need to be delivered to assist the affected population. It was reported that the majority of the population in the area suffered injuries and some have contracted contagious diseases. The local association of the Red Cross also reported that there are some cases of severe diarrhea among victims. Civilian Agencies and local emergency services such as the Fire Department, Hospital, Public Work Agency, and Civil Defense are heavily stressed attending cases and are unable to respond to all requests. The initial estimate of the crisis East Coast Malaysia Penisualar (East Coast MAL PEN) and SAGA is illustrated in Figure 4: Initial Estimate of Crisis (East Coast: Malaysia Peninsular) and Figure 5: Initial Estimates of Crisis (SAGA).

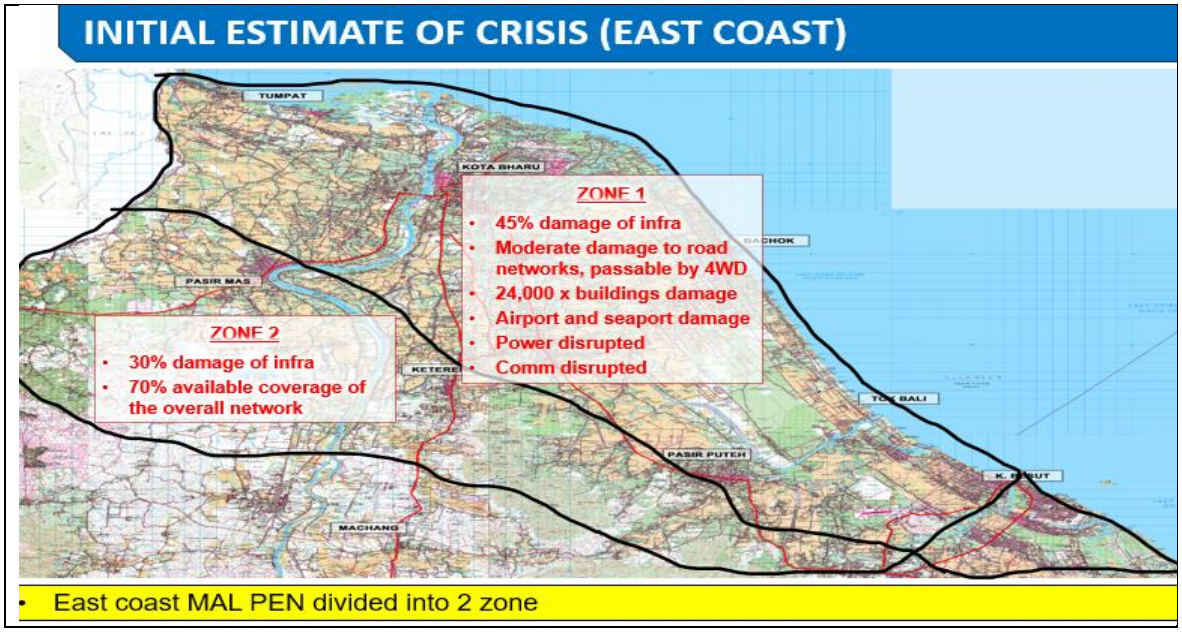


Figure 4 Initial Estimate of Crisis (East Coast: Malaysia Peninsular)

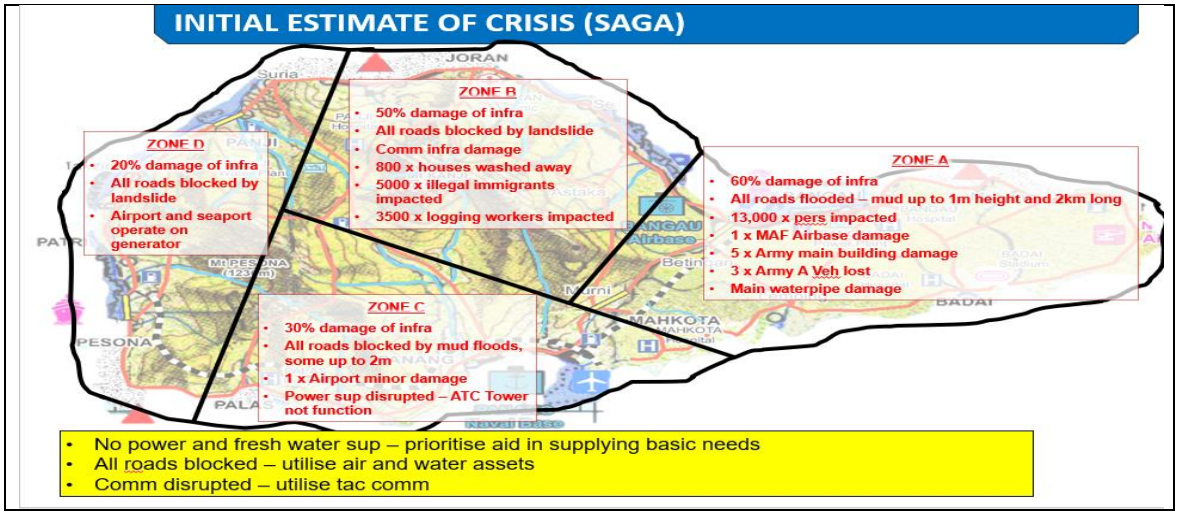


Figure 5 Initial Estimate of Crisis (SAGA)

As a consequence, the NSC has declared a State of Emergency and deployed all available assets to facilitate HADR operations. The Malaysian Armed Forces (MALFOR) is being tasked to take the lead in conducting the operation support by OGA and NGO as depicted in the NSC Directive 20. In response, MAF has activated Operations BANTU AMAN (Op BANTU AMAN) to coordinate assistance for local and international Aid Agencies. Chief Defence Forces (CDF) of MAF ordered that the Joint Force commander (JFC) assist on the East Coast and SAGA Island. The military commander of the HADR op is responsible for planning and deploying all assigned units according to their roles and capabilities in the zones mentioned. Therefore, the Joint Task Force (JTF) Commander must plan the HADR operation with all Joint Staff on how the op can be conducted. Concept Operation (CONOP) needs to be produced and ready so JFC can brief CDF and NSC on the HADR plan. Joint military appreciation process (JMAP) consideration is a tool to assist in decision-making and planning operations for Op BANTU AMAN.

The Joint Military Appreciation Process (JMAP) is designed to provide a logical solution and it can be adapted to different types of situations. The structured approach offered by JMAP facilitates a more coordinated and adaptive response, ensuring that resources are efficiently utilized to mitigate the impact of disaster for Op BANTU AMAN. To make a logical decision or a plan, the planner needs to go through the five steps consisting of Scoping and Framing, Mission Analysis, Course of Action Development, Course of Action Analysis, and Decision and Concept of Operations Development that is suited for Op BANTU AMAN.

Joint Military Appreciation Process Solution

The solution JMAP for Op BANTU AMAN is provided by (MALFOR – Syndicate 3) officers from one of the syndicates been recognized as the best solution for operational planning. The ultimate aim of JMAP is to confirm or identify the correct problem to be solved and requires critical thinking, problem-solving, and decision-making to deconstruct a complex ill-structured summarized in Table 6: Step 1- Scoping and Framing Solution for Ex Bantu Aman, Table 7: Step2- Mission Analysis, Table 8: Step 3- Course of Action (COA) Development, Table 9: Step 4- Course of Action (COA) Analysis and Table 10: Step 5 – Decisions and Concept Operations (CONOPS) Development

Table 6

Step 1- Scoping and Framing Solution for Ex Bantu Aman

<table>
<tr><th colspan="3">Scoping and Framing - Ex BANTU AMAN</th></tr>
<tr><td>To confirm or identify the correct problem to be solved. Defined situation into a structured and understandable problem set.</td><td>MAL is currently in a state of emergency after Typhoon SURI hit SAGA on 3 Nov 20XX, and KELANTAN and TERENGGANU on 4 Nov 20XX.</td><td>In response, NADMA has requested MALFOR to provide immediate assistance.</td></tr>
<tr><td>CDF'S
PLANNING GUIDANCE</td><td colspan="2">- Maintaining security remains the highest priority
-MALFOR is to provide full sp to NADMA in the provision of direct assistance to relief op.
- MALFOR to assist RMP in maintaining & restoring public order and sp the appropriate civ authorities</td></tr>
<tr><td>RESTRICTION</td><td colspan="2">CONSTRAINT</td></tr>
<tr><td>• MALFOR support must be consistent with NSC Directive 20
• All support must be in line with NADMA direction
• Op based on MALFOR standing rules and regulations on HADR management. (ref: MAFJD 3-15)</td><td colspan="2">• Assigned forces must be released for primary roles when required
• Adhere to humanitarian principles of humanity, impartiality, and neutrality</td></tr>
<tr><td colspan="3">DETERMINE DESIRED END STATE</td></tr>
<tr><td>PURPOSE</td><td colspan="2">JTF is to assist NADMA through the provision of military aid to civilian authorities in the districts of SAGA, KELANTAN, and TERENGGANU.</td></tr>
<tr><td>METHOD</td><td colspan="2">• Provide support following National Security Council Directive 20.
• Establish a Joint Task Force (JTF) for Command and Control.
• Assist Royal Military Police in maintaining law and order.
• Support local government in the restoration of essential services.
• Provide emergency medical support.</td></tr>
<tr><td>END-STATE</td><td colspan="2">• Essential services have been restored
• MALFOR successfully handed over respective HADR tasks and roles back to relevant local govt agencies</td></tr>
</table>

Table 7
Step 2- Mission Analysis

Mission Analysis – Ex BANTU AMAN		
To identify the correct mission and determine the essential tasks and broad Line of Operations (LOO) to achieve our desired end state.		
Proposed Mission Statement		
JTF is to conduct HADR Op, upon CDF's orders, to provide military assistance to NADMA at SAGA and affected districts of KELANTAN and TERENGGANU in order to ensure the safety of civ, restore essential services, and return MAL to normalcy.		
Specific Task	**Implied Task**	**Essential Tasks**
1. Provide support following NSC Dir 20 Structure	• Deployment of forces and equipment to affected areas. • Conduct force protection measures (e.g., vaccination, safety measures). • Cond Search and Rescue. • Establish additional temporary accommodation. • Repair damaged airports and seaports. • Provide Logistic Transport of Personnel, Eqpmt, and Supplies.	• Deployment liaison officer and establish coordination with NADMA. • Establish operation communications. • Establish Sea Line of Communication (SLOC) and Air Line Communications (ALOC). • Estb MALFOR Forward Operations Base (FOB). • Conduct Search and Rescue (SAR). • Conduct Medical Evacuation (MEDEVAC) / Casualty Evacuation (CASEVAC). • Conduct Logistic Support. • Increase medical Response Capacity. • Provide Medical Assistance. • Increase Temp Shelter Capacity. • Provide Basic Necessities (e.g. Food, Water). • Restore Electricity / Power. • Restore Public Comms Network • Conduct Security operations.
2. Establish a Proper Command and control structure	• Deploy Laison (LO) with the Federal Disaster Operations Centre (FDOCC), State Operation security command post (OSCP), and District operations security command post (OSCP). • Establish Communications.	
3. Assist the Royal Malaysian Police (RMP) with maintaining law and order	• Deploy LO with RMP • Conduct security patrols. • Conduct road cordon/traffic management operations. • Establish a Situation Reserve for quick response.	
4. Support local government in the restoration of essential services.	• Forward deployment specialist assets and personnel (e.g., divers, Engr). • Deploy Water Purification / Treatment Plants • Deploy Power Generators • Restore Public Comms/Broadcast • Assist in re-construction works	
5. Prov emergency medical sp.	5.1 Conduct MEDEVAC / CASEVAC 5.2 Forward Deployment Medical Personnel and Equipment. 5.3 Establish a Forward Hospital. 5.5 Provide critical medical support. 5.6 Conduct mass immunisation.	

Table 8

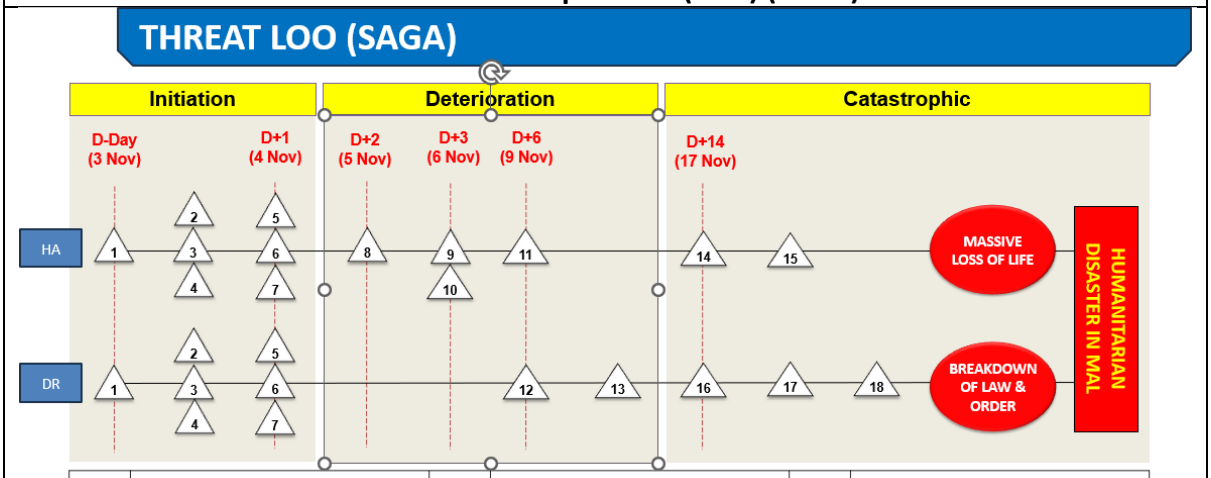
Step 3 – Course of Action (COA) Development

Course of Action (COA) Development

Military Objective

To support NADMA in providing disaster relief in SAGA and affected KELANTAN & TERENGGANU districts

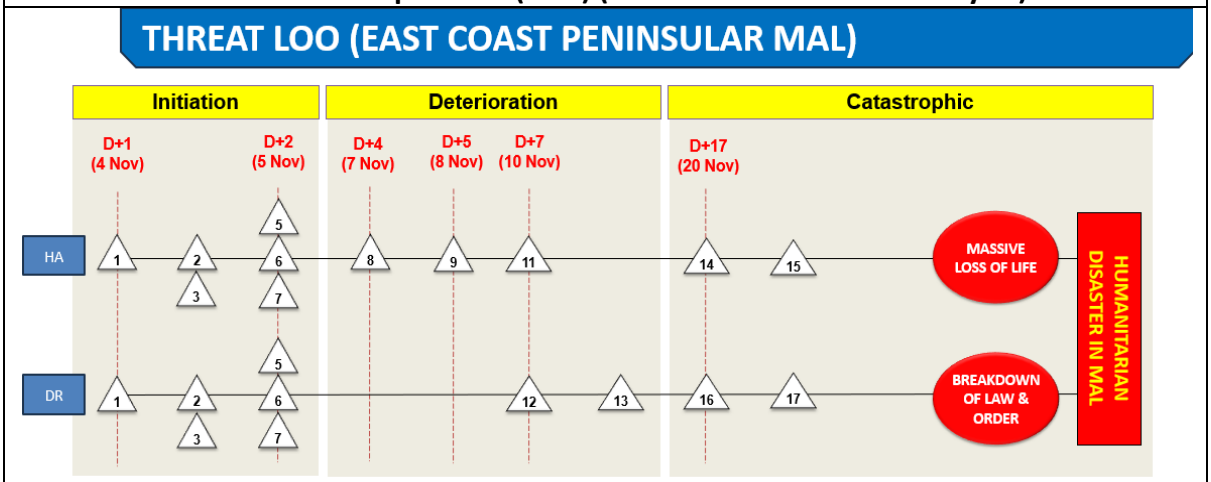
Threat Line of Operation (LOO) (SAGA)



DP 1	Typhoon struck	DP 7	People missing/trapped	DP 13	Basic needs shortage arose
DP 2	Infra damaged	DP 8	Shelter/Evac Centre overcrowded	DP 14	Health crisis arose
DP 3	Caused Mud/Flash Flood	DP 9	Medical Sup/Svc overwhelmed	DP 15	Death toll increased
DP 4	Caused Landslide	DP 10	Hygiene & Sanitization system disrupted	DP 16	Caused humanitarian crisis
DP 5	Power/Water Sup disrupted	DP 11	Infectious disease outbreak occurred	DP 17	Criminal acty & public unrest occurred
DP 6	LoC disrupted	DP 12	Food shortage arose	DP 18	Widespread damage to properties

HA -Humanitarian Assistance DP – Deceive Point DR- Disaster Relief

Threat Line of Operation (LOO) (East Coast Peninsular Malaysia)



DP 1	Typhoon struck	DP 7	People missing/trapped	DP 13	Basic needs shortage arose
DP 2	Infra damaged	DP 8	Shelter/Evac Centre overcrowded	DP 14	Health crisis arose
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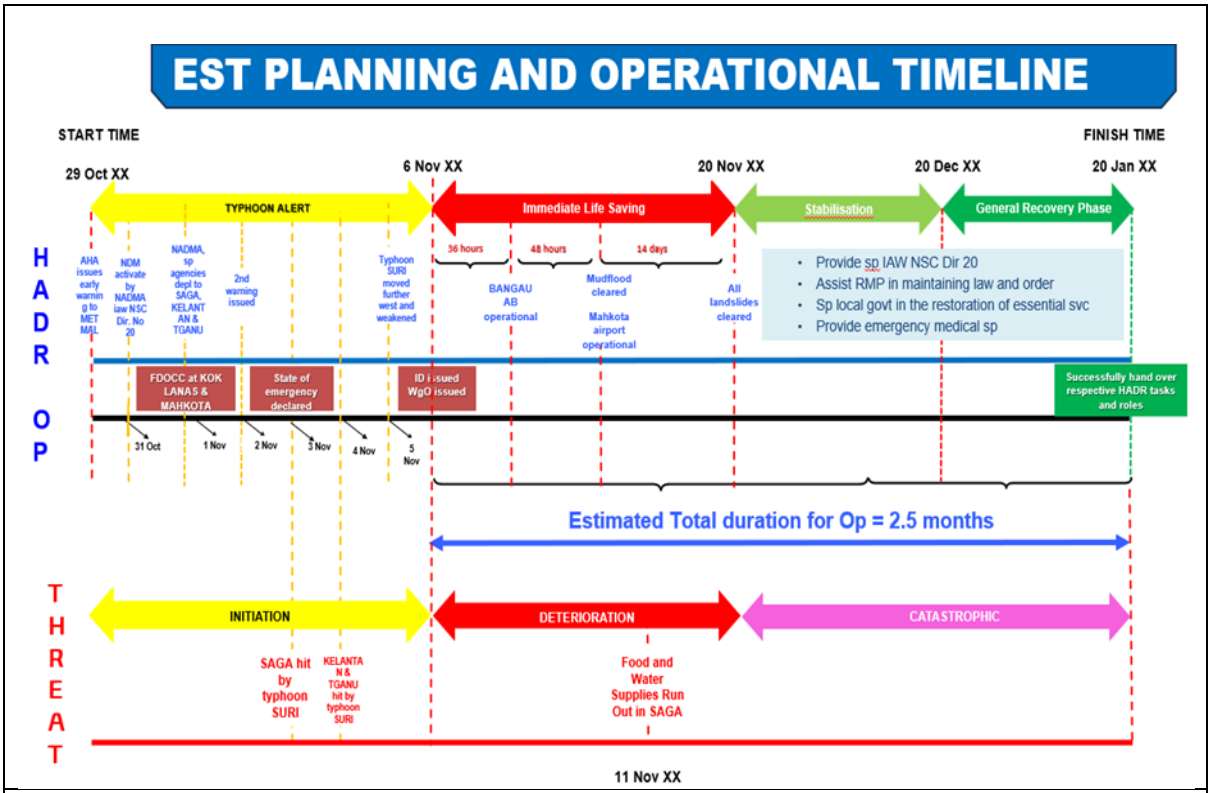


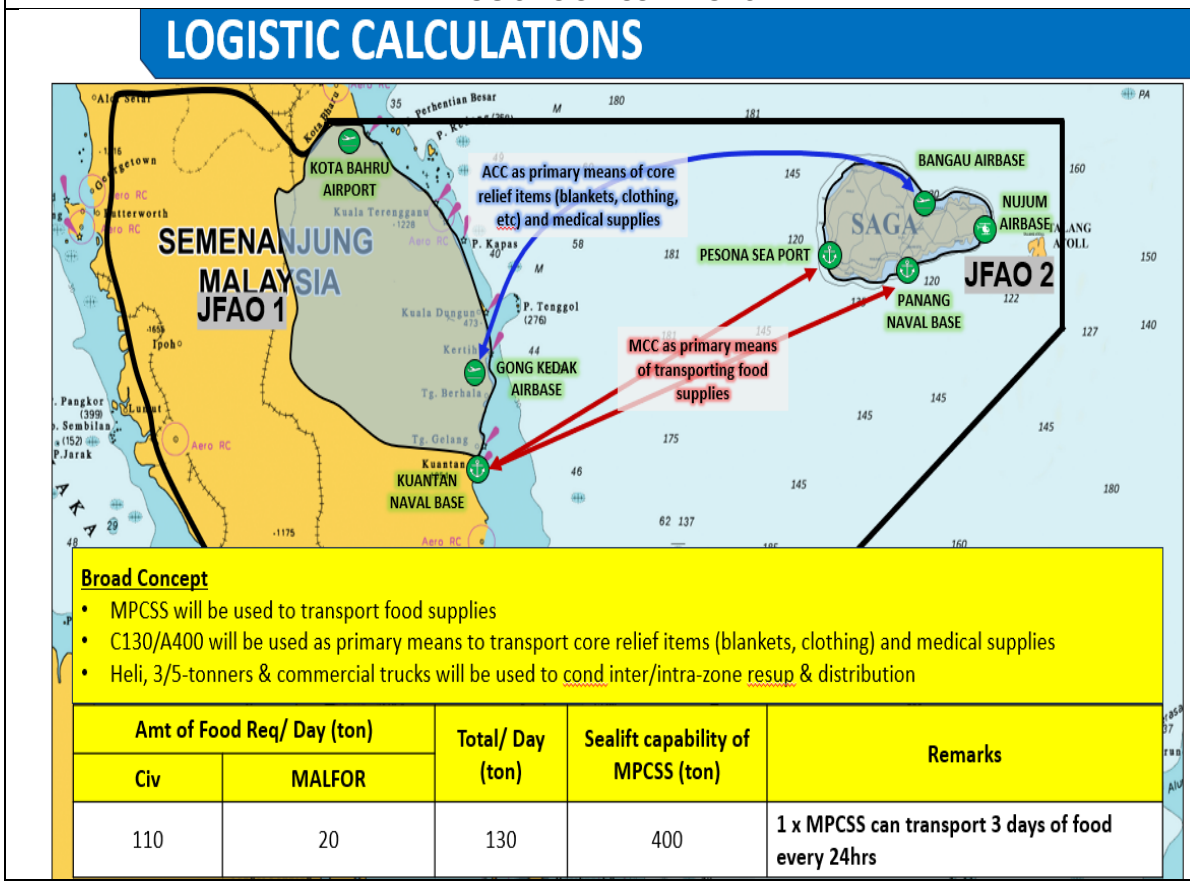
Overview of COA Developed

COA 1 – SURGE SAGA	COA 2 – LEVERAGE EAST COAST
• Conduct SAR & HA in a situation. • Establish SLOC and ALOC for logistic Support. • Create additional medical and evacuation capacity in SAGA.	• Conduct SAR & HA in a situation. • Establish SLOC and ALOC for Logistic Support. • Decant additional rescued or injured civil back to Peninsular to relieve pressure on SAGA.

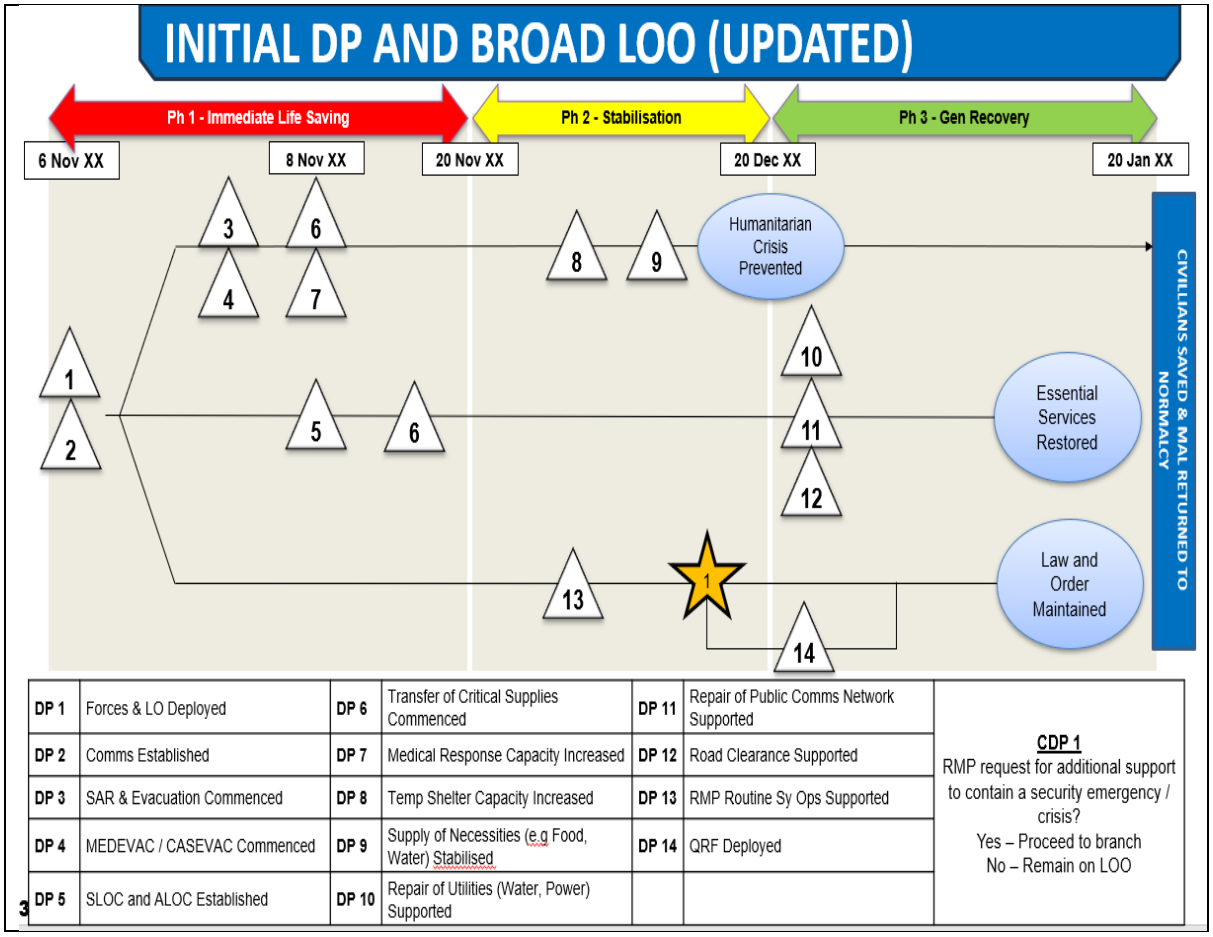
Table 9

Step 4 – Course of Action (COA) Analysis

Course of Action (COA) Analysis	
MISSION: JTF is to cond HADR Op, upon CDF's orders, to provide military assistance to NADMA at SAGA and affected districts of KELANTAN and TERENGGANU in order to ensure the safety of civ, restore essential services before transiting HADR tasks back to NADMA/OGAs.	
COA 1 – SURGE SAGA	**COA 2 -**
• Conduct SAR & HA in a situation. • Establish SLOC and ALOC for logistic Support. • Create additional medical and evacuation capacity in SAGA.	• Conduct SAR & HA in a situation. • Establish SLOC and ALOC for Logistic Support. • Decant additional rescued or injured civil back to Peninsular to relieve pressure on SAGA.
Wargaming	
Wargaming: Simulating the proposed plan to identify potential issues and further refine the plan. During the wargaming process, the Joint Operation Planning Group (JOPG) evaluates the plan's feasibility and identifies vulnerabilities and risks.	
Method Wargaming: Time-Box / Belt and Avenue in Depth	
LOGISTIC CALCULATIONS	

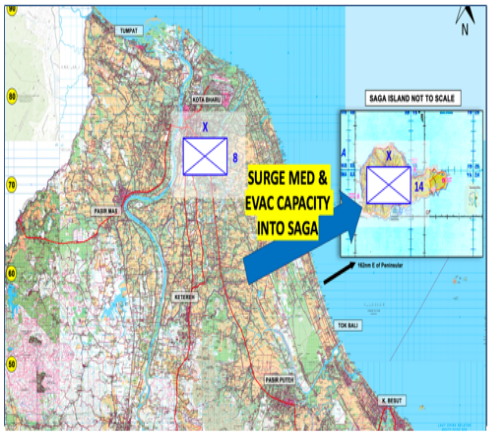


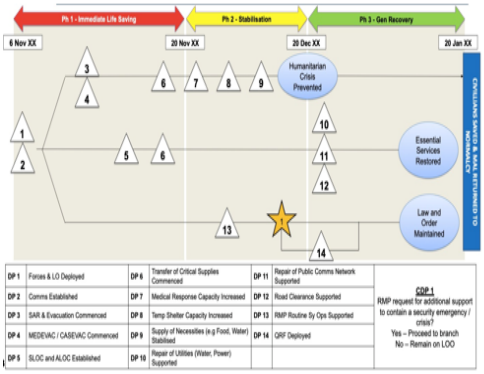
Amt of Food Req/ Day (ton)		Total/ Day (ton)	Sealift capability of MPCSS (ton)	Remarks
Civ	MALFOR			
110	20	130	400	1 x MPCSS can transport 3 days of food every 24hrs



DP 1	Forces & LO Deployed	DP 6	Transfer of Critical Supplies Commenced	DP 11	Repair of Public Comms Network Supported	CDP 1 RMP request for additional support to contain a security emergency / crisis? Yes – Proceed to branch No – Remain on LOO
DP 2	Comms Established	DP 7	Medical Response Capacity Increased	DP 12	Road Clearance Supported	
DP 3	SAR & Evacuation Commenced	DP 8	Temp Shelter Capacity Increased	DP 13	RMP Routine Sy Ops Supported	
DP 4	MEDEVAC / CASEVAC Commenced	DP 9	Supply of Necessities (e.g Food, Water) Stabilised	DP 14	QRF Deployed	
DP 5	SLOC and ALOC Established	DP 10	Repair of Utilities (Water, Power) Supported			

COA 1 – SURGE SAGA





CENTRAL IDEA:
The central idea is to rapidly deploy the JTF in SAGA and East Coast Peninsular MAL to conduct SAR and evacuate civilians out of the disaster zone. JTF will also support NADMA in relieving the strained medical and evacuation center capacity on SAGA by creating more temporary shelters and the deployment of JTF medical assets. JTF assets will also be employed to assist NADMA and other OGAs to transfer critical supplies, repair damaged infra, restore essential services and maintain public law and order.

SOM in 3 phases
The ops will be conducted in 3 phases with 5 key tasks: (i) SAR and Evac; (ii) render HA; (iii) Log SP;, (iv) restore essential services (ES); and (v) maintain law and order (L&O)

PH1 - IMM LIFE SAVING (14 DAYS)
The ME is to cond SAR and evac civilians from the disaster zone. JTF will deploy the LCC to support respective SDOCC in SAGA and East Coast. For SAR and Evac, LCC forces will be deployed resp district and coord with DDOCC to conduct SAR and evacuation of civilians. For HA, LCC will also assist NADMA in the management of Evac Centres, distribution of food, water and other necessities. MCC will also conduct maritime SAR operations. ACC will support with aerial SAR and aerial MEDEVAC/CASEVAC. For Log Sp, the JTF will assist NADMA to establish at least 1 x SLOC and 1 x ALOC and open 1 x MSR. JTF will then cond continuous log ops to transfer crit sup and necessities. For Restoring ES, JTF will task configure Engr assets to sp NADMA in repairing crit infra and public utilities. For maint L&O, the JTF will also deploy forces to sp RMP where reqd.

PH 2 – STABILISATION (1 MONTH):
The ME is the restoration of ES. ES - JTF will task configure engr assets to assist in the repairing of all airports & seaports as well as all remaining crit infra and public utilities. For HA, LCC will task organise assets to surge the medical and evac centre capacity on SAGA by building 1 x Fd Hosp and estb 3 x Evac Centre. LCC will cont to cond SAR and evac of civ where required. For Log Sp, JTF will cont to cond log transfers of crit sup, pers and eqmpt. For maint L&O, the JTF will also deploy forces to sp RMP where reqd.

PH 3 – GEN RECOVERY (1 MONTH)
The ME is the restoration of ES. JTF will assist NADMA to complete the final repairs of all essential infra. With the medical and evac situation stabilised, JTF will transfer its tasks and roles back to NADMA and/or OGA.

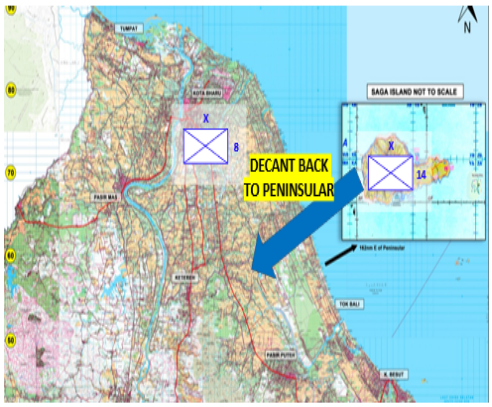
END STATE: Civ life saved and JTF's HADR roles handed back to NADMA/OGA

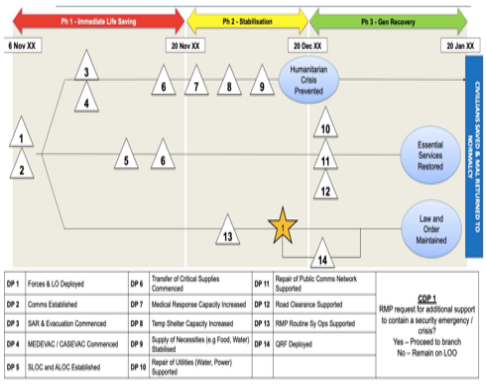
COA 1

Timeline	Blue Action	Red Action	Review
6 - 9 Nov XX **Game Turn 1**	**DP 1-6** • Logistic support: 1st Multi-Purpose Command and support ship (MPCSS) arriving SAGA on 8 Nov. • Distribution by OGAs, MPCSS only delivers packages. (Rolling basis - 12 hours) Engineer: • Bangau operated by 9 Nov xx.	**DP 8-11** • Food supply run out by 9 Nov.	• MPCSS is to be deployed on 6 Nov from PEN in order to ensure food sup reaches SAGA before 8 Nov. • The evacuation center overcrowded remains unresolved in Phase 1.
Timeline	**Blue Action**	**Red Action**	**Review**
20 - 25 Nov XX	**Game Turn 2** **DP 8-9** • All DP commenced.	**Game Turn 2** **DP 9-11** • All DP fixed.	

			• Mitigate medical & shelter capacity issues.
Timeline	**Blue Action**	**Red Action**	**Review**
20 Nov XX Onwards	**Game Turn 3** **DP 1-12** • All DP done by 20 Dec XX in SAGA. • Entry Controller (EC) similar and minor works only focused on the Kelantan area.	**Game Turn 3** **DP 9-11** • All DP fixed.	• Repairment of the communication tower needs to start on 6 Nov by Bde HQ (Land Command Control (LCC).
Wargaming			
COA 2			

COA 2 – LEVERAGE EAST COAST





CENTRAL IDEA:
The central idea is to rapidly deploy the JTF in SAGA and East Coast Peninsular MAL to conduct SAR and evacuate civilians out of the disaster zone. JTF will also support NADMA in relieving the strained medical and evacuation center capacity on SAGA by transporting disaster victims back to evac centres and hospitals in Peninsular MAL. JTF assets will also be employed to assist NADMA and other OGAs to transfer critical supplies, repair damaged infra, restore essential services and maintain public law and order.

SOM in 3 phases
The ops will be conducted in 3 phases with 5 key tasks: (i) SAR and Evac; (ii) render HA; (iii) Log SP;; (iv) restore essential services (ES); and (v) maintain law and order (L&O)

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PH 2 – STABILISATION (1 MONTH):
The ME is the restoration of ES. ES - JTF will task configure engr assets to assist in the repairing of all airports & seaports as well as all remaining crit infra and public utilities. For HA, LCC will coordination with NADMA, to transfer new disaster victims in SAGA to MAL PEN - East Coast via air and ship. MPCSS and tpt ac to be util sp the effort. . LCC will cont to cond SAR and evac of civ where required. For Log Sp, JTF will cont to cond log transfers of crit sup, pers and eqmpt. For maint L&O, the JTF will also deploy forces to sp RMP where reqd.

PH 3 – GEN RECOVERY (1 MONTH)
The ME is the restoration of ES. JTF will assist NADMA to complete the final repairs of all essential infra. With the medical and evac situation stabilised, JTF will transfer its tasks and roles back to NADMA and/or OGA.

END STATE: Civ life saved and JTF's HADR roles handed back to NADMA/OGA

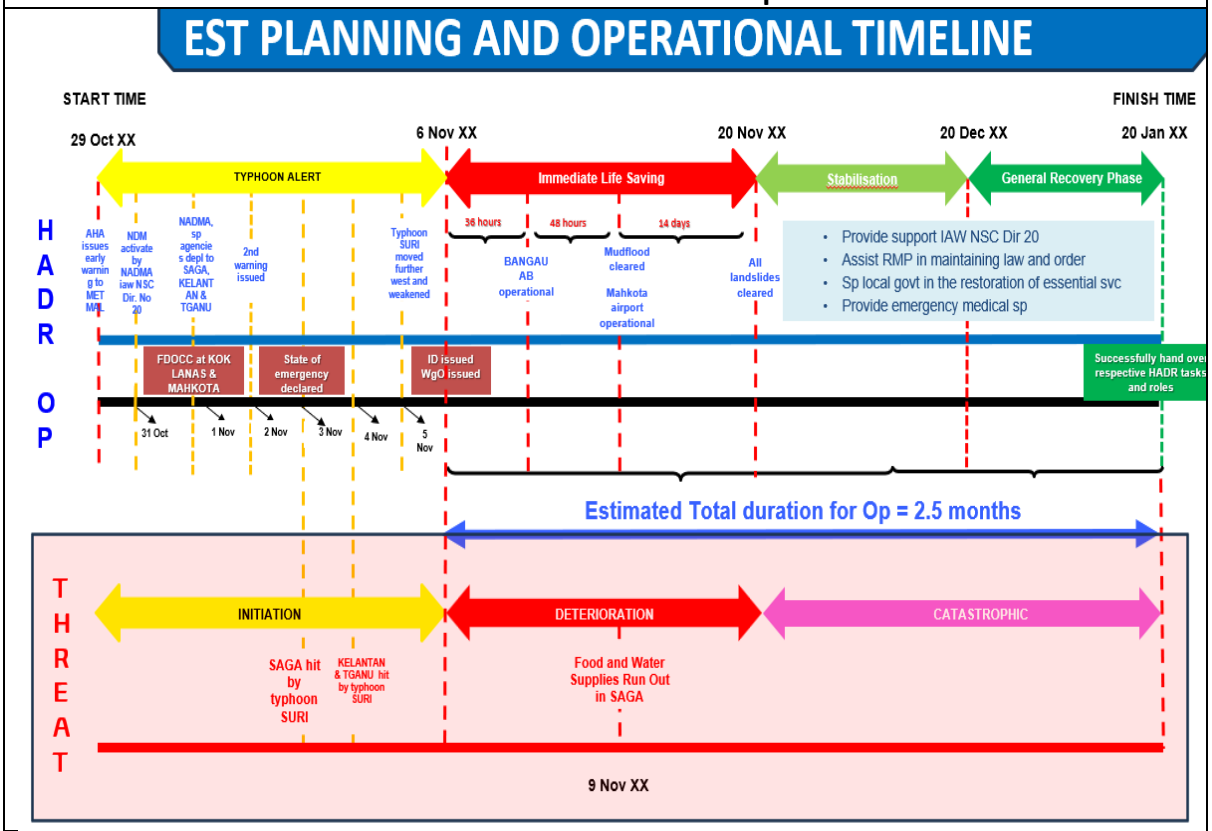
Timeline	**Blue Action**	**Red Action**	**Review**
6 - 9 Nov XX	**Game Turn 1** **DP 1-6** • Airforce Command Control (ACC) - Evacuate by C130 starting at 8 Nov xxx	**Game Turn 1** **DP 8-11** • Only zones A & B were affected amounting to 10,000 victims. • Shelters overcapacity.	• A total of 10,000 victims need to be evacuated (evac). • 4,000 victims to be evacuated to Zone C & D through Land

	• Maritime Command Control (MCC) - Evacuate capacity at 1000 per MPCSS.		Command Control (LCC) support. • 2 x MPCSS will be deployed to double-up the evac process with C130. • By the fourth day, all 6,000 victims safely decanted to EC. • Identify means to tpt 4,000 victims to Zone C & D.
Timeline	**Blue Action**	**Red Action**	**Review**
20 - 25 Nov XX **Game Turn 2**	**DP 8-9** • All DP commenced.	**DP 9-11** • All DP fixed.	• Mitigate medical & shelter capacity issues in Peninsular and SAGA.
Timeline	**Blue Action**	**Red Action**	**Review**
20 Nov XX Onwards	**Game Turn 3** **DP 1-12** • All DP done by 20 Dec XX in SAGA and Peninsular. • Focused on the affected area.	**Game Turn 3** **DP 9-11** All DP fixed.	• Mitigate all issues by command and control responsibilities (LCC, MCC, and ACC coordination by Joint Task Force (JTF) and NADMA)
Findings from wargaming conduct and propose COA for development into Concept operations (CONOPS)			

Table 10

Step 5 – Decisions and Concept Operations (CONOPS) Development

Decisions and CONOPS Development



COMPARISON COA

COMPARISON OF COA – FASSD

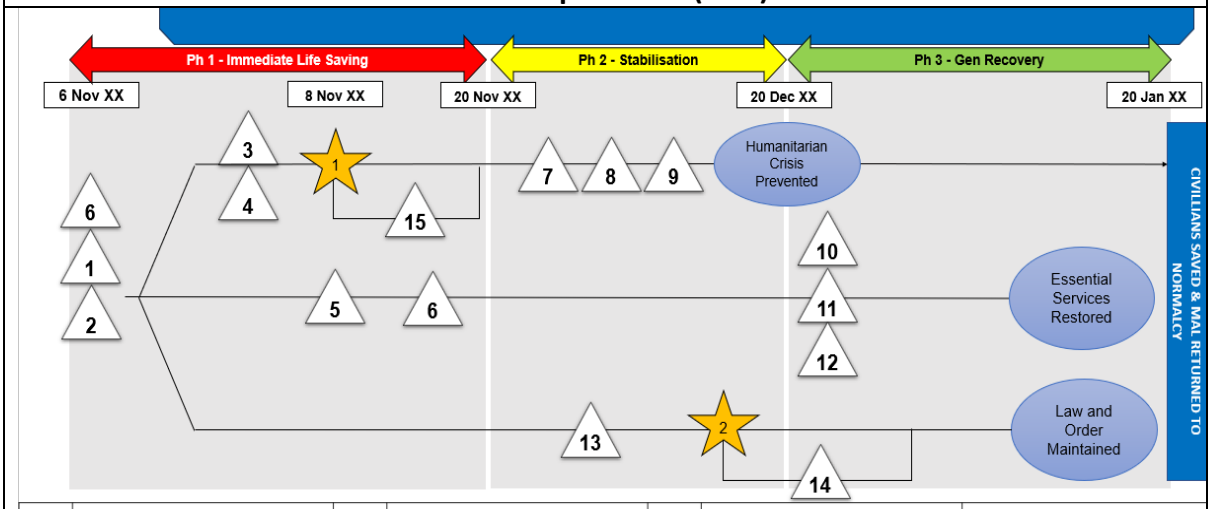
Test Criteria	COA 1: SURGE SAGA (MODIFIED)	COA 2: LEVERAGE EAST COAST
Feasibility	Resources Avail – Sufficient	Resources Avail – Sufficient
	Time Constraint – Sufficient	Time Constraint – Sufficient
	Logistic Sp – Sufficient	Logistic Sp – More Intensive
	Equipment cap – Sufficient	Equipment cap – Sufficient
Acceptability	Legal – Supportable	Legal – Supportable
	Comm Plan - Supportable	Comm Plan - Supportable
Suitability	Risk Analysis – Low	Risk Analysis – Low
	Force Protection – High	**Force Protection – Medium**
	Scalability – Good	Scalability – Good
Sustainability	Infra and Facil – Med	Infra and Facil – Med
	Security – High	Security – High
Distinguishability	Unique Actions – Yes	Unique Actions – Yes
	Flexibility – High	**Flexibility – Medium**

SELECTION OF COA – STAFF RANKING

STAFF RANKING

	COA 1: SURGE SAGA (MODIFIED)	COA 2: LEVERAGE EAST COAST	REMARKS
J1	✓		
J2	✓		
J3	✓		
J4	✓		
J5	✓		
J6	✓	✓	
J7	✓		
J9	✓		
COS	✓		
	RECOMMENDED		

Line of Operations (LOO)



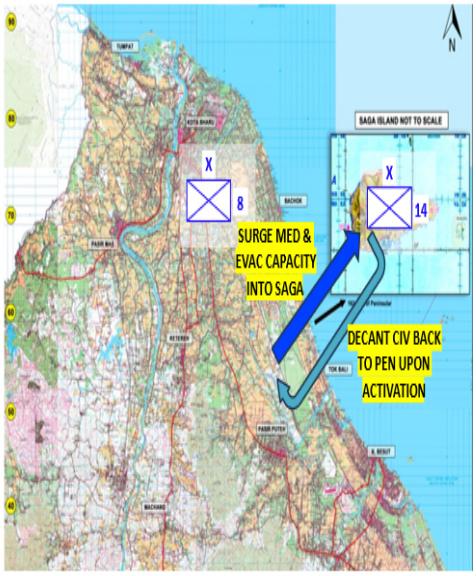
DP 1	Forces & LO Deployed	DP 6	Transfer of Critical Supplies Commenced	DP 11	Repair of Public Communications (Comms) Network Supported	**CDP 1** Does NADMA require (req) transfer o Civilian (Civ) to Peninsular? Yes – Proceed to branch No – Remain on LOO **CDP 2** RMP request for additional support to contain a security emergency / crisis? Yes – Proceed to branch No – Remain on LOO CDP – Commander Decision Point
DP 2	Comms Established	DP 7	Medical Response Capacity Increased	DP 12	Road Clearance Supported	
DP 3	SAR & Evacuation Commenced	DP 8	Temp Shelter Capacity Increased	DP 13	Royal military police (RMP) Routine Security operations (Sy Ops) Supported	
DP 4	MEDEVAC / CASEVAC Commenced	DP 9	Supply of Necessities (e.g. Food, Water) Stabilized	DP 14	Quick Reaction Force (QRF) Deployed	
DP 5	SLOC and ALOC Established	DP 10	Repair of Utilities (Water, Power) Supported	DP 15	Transfer Civilian from SAGA to PEN through KUANTAN Navy Base (NB) and Gong Kedak Air Base (AB)	

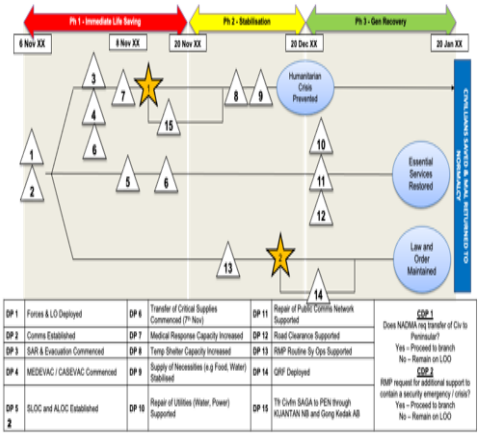
Concept Operations (CONOP)

Military Objective: To support NADMA in providing disaster relief in SAGA and affected KELANTAN & TERENGGANU districts

MISSION: JTF is to cond HADR Op, upon Chief Defence Forces's (CDF's) orders, to provide military assistance to NADMA at SAGA and affected districts of KELANTAN and TERENGGANU in order to ensure the safety of civilians, restore essential services before transiting HADR tasks back to NADMA/OGAs.

CONOP: SURGE & DECANT





DP 1	Forces & LO Deployed	DP 6	Transfer of Critical Supplies Commenced (7th Nov)	DP 11	Repair of Public Comms Network Supported
DP 2	Comms Established	DP 7	Medical Response Capacity Increased	DP 12	Road Clearance Supported
DP 3	SAR & Evacuation Commenced	DP 8	Temp Shelter Capacity Increased	DP 13	RMP Routine Ops Supported
DP 4	MEDEVAC / CASEVAC Commenced	DP 9	Supply of Necessities (e.g Food, Water) Stabilised	DP 14	QRF Deployed
DP 5 2	SLOC and ALOC Established	DP 10	Repair of Utilities (Water, Power) Supported	DP 15	Tb Civln SAGA to PEN through KUANTAN NB and Gong Kedak AB

CDP 1
Does NADMA req transfer of Civ to Peninsular?
Yes – Proceed to branch
No – Remain on LOO

CDP 2
RMP request for additional support to contain a security emergency / crisis?
Yes – Proceed to branch
No – Remain on LOO

CENTRAL IDEA:
The central idea is to rapidly deploy the JTF in SAGA and East Coast Peninsular MAL to conduct SAR and evacuate civilians out of the disaster zone. JTF will provide NADMA options to decant civ back to PENINSULAR if req. JTF will further support NADMA in relieving the strained medical and evacuation center capacity on SAGA by creating more temporary shelters and the deployment of JTF medical assets. JTF assets will also be employed to assist NADMA and other OGAs to transfer critical supplies, repair damaged infra, restore essential services and maintain public law and order.

SOM in 3 phases
The ops will be conducted in 3 phases with 5 key tasks: (i) SAR and Evac; (ii) render HA; (iii) Log SP;; (iv) restore essential services (ES); and (v) maintain law and order (L&O)

PH1 - IMM LIFE SAVING (14 DAYS)
The ME is to cond SAR and evac civilians from the disaster zone. JTF will deploy the LCC to support respective SDOCC in SAGA and East Coast. For SAR and Evac, LCC forces will be deployed resp district and coord with DDOCC to conduct SAR and evacuation of civilians. MCC will also conduct maritime SAR operations. ACC will support with aerial SAR and aerial MEDEVAC/CASEVAC. For HA, LCC will assist NADMA in the management of Evac Centres, distribution of food, water and other necessities. Within SAGA, JTF will help to transfer Civ from Zone A/B EC to Zone C/D EC. JTF will also surge add 1 x MPCSS and 2 x C130 to stand-by for transfer civ from SAGA to PEN as req by NADMA. For Log Sp, the JTF will assist NADMA to establish at least 1 x SLOC and 1 x ALOC and open 1 x MSR. JTF will then cond continuous log ops to transfer crit sup and necessities. For Restoring ES, JTF will task configure Engr assets to sp NADMA in repairing crit infra and public utilities. For maint L&O, the JTF will also deploy forces to sp RMP where reqd.

PH 2 – STABILISATION (1 MONTH):
The ME is the restoration of ES. ES - JTF will task configure engr assets to assist in the repairing of all airports & seaports as well as all remaining crit infra and public utilities. For HA, LCC will task organise assets to surge the medical and evac centre capacity on SAGA by building 1 x Fd Hosp and estb 3 x Evac Centre. LCC will cont to cond SAR and evac of civ where required. For Log Sp, JTF will cont to cond log transfers of crit sup, pers and eqmpt. For maint L&O, the JTF will also deploy forces to sp RMP where reqd.

PH 3 – GEN RECOVERY (1 MONTH)
The ME is the restoration of ES. JTF will assist NADMA to complete the final repairs of all essential infra. With the medical and evac situation stabilised, JTF will transfer its tasks and roles back to NADMA and/or OGA.

END STATE: Civ life saved and JTF's HADR roles handed back to OGA

Military Abbreviation

MAL – Malaysian Assistance	ES- East SAGA	HA- Humanitarian
JTF – Joint Task Force	Maint – Maintain	cond - conduct
SDOCC – State Department Operation Command Center	Engr – Engineer	Evac – Evacuations
	L&O – Laison and Operation	Crit sup – Critical supply
DDOCC – District Department Operation Command Center	RMP – Royal Malaysian Police	Pers – Personal
	estb – establish	Joint Staff - J
SOM – Scheme of Maneuver	infra – Infrastructure	COS – Chief of Staff
PH- Phases	req – require	cap- Capability
ME – Main Effort	Med – Medical	JFAO – Joint Force area operations
Log SP – Logistics Support	Facil – Facilities	
Eqmpt - Equipment	avail - Availability	SIT - Situation
IMM- Immediate	Comm – Communication	EST - Estimate

In conclusion, the development and implementation of a JMAP solution provide military personnel the ability to think critically, problem-solve, and decision-making for planning complex military operations based on steps in JMAP must be followed. This comprehensive solution serves as a cornerstone for enhancing cohesion and collaborative efforts of diverse joint staff to the proposed concept operation (CONOPS) that ensures all critical requirements to achieve Chief Defence Force (CDF) intent on how to plan and execute the mission.

Discussion

Limitations, Contribution and Future Direction

SBT and JMAP have been designed to develop military personnel CR for planning, analysis, problem-solving, and decision-making that is required in the military organization. However, this research is not without limitations and future research should continue to expand the body of knowledge on how to develop and enhance military personnel CR at all levels in military organizations who are cognitively ready for military operations. The constraint of the current study is the limitations within the development of military personnel's cognitive readiness at the operational level of military organizations for joint operations involving MOOTW. Specifically, the results from JMAP indicate the capabilities of military personnel to think and analyze to develop CONOPS. However, future research may involve multiple scenarios that should be developed and implemented related to the multidomain operation in military operations combining MOOTW with asymmetric warfare. Measuring cognitive readiness in military personnel involves a multidimensional approach that often combines both quantitative and qualitative research methods.

First, the integrated training model demonstrates that military organization uses a combination of training designs to train military personnel to enhance KSAs for the development of CR or planning purposes before conducting the assigned mission. Although it is impossible to determine the cognitive readiness of military personnel by only using SBT and JMAP, there is a significant solution for improved understanding, and further research is needed to integrate by implementing Field training exercises (FTXs) to increase the cognitive readiness of military personnel to test concept operations (CONOPS) have been to examine course of action concept been selected from JMAP.

Furthermore, it is important to note that the MOOTW is part of a spectrum of conflict that needs military organizations to enhance the KSAs of military personnel. By expanding the existing research, the concept of cognitive readiness of military personnel should be addressed in terms of theory, model, method, tools, and applications for CR frameworks. A systematic literature review (SLR) needs to be designed to understand existing theories, models, and findings related to cognitive readiness in military contexts especially the role of military leaders and training environment. Develop surveys or questionnaires to collect quantitative data on various factors influencing cognitive readiness including. Transfer of training becomes the gap of research as a mediator variable on how the outcomes of military training affect on cognitive readiness of military personnel.

We propose a framework on how social science methods can be employed to examine factors that influence cognitive readiness as shown in Figure 6: Cognitive Readiness Framework for Social Science Method

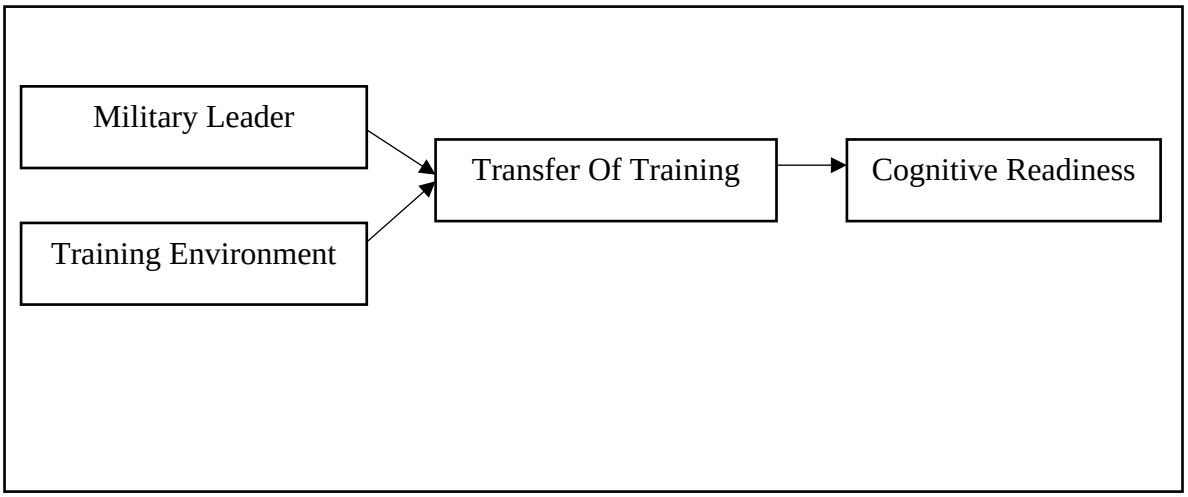


Figure 6 Cognitive Readiness Framework for Social Science Method

Conclusion

CR is an important and useful concept for military personnel as they are required to be cognitively ready for military operations, especially on MOOTW. It is crucial to understand that military training using an applied setting of SBT must be integrated and synchronized with JMAP in developing and enhancing the CR of military personnel who are skilled, critical thinkers, and complex problem solvers. However, more future research of CR is needed to enhance understanding and maximizing improvement of CR of military personnel at all levels (tactical, operational, and strategic) in the military organizations. This are important for planning and execution of military missions. Due to that, the CR of military personnel must be well- prepared on how military personnel think and react to the complex operating environment of military operations.

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