

DEATH CAN WAIT

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fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE
Wargame Design

by

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ABSTRACT

DEATH CAN WAIT, by Caitlin J. Ebbets, 99 pages.

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ACRONYMS

AE	Aeromedical Evacuation
CSH	Combat Support Hospital (out-going terminology and unit structure)
FOC	Fully Operational Capable
FRST	Forward Resuscitative and Surgical Team
ICU	Intensive Care Unit (Glossary and Appendix?)
MASCAL	Mass Casualty Situation
PROFIS	Professional Filler System

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CHAPTER 1

INTRODUCTION

Death Can Wait is a wargame designed to answer the question: How can we model an Army Field Hospital conducting preparation, deployment, operation, and a sequel mission, in a competitive board game? This game provides an opportunity for players to learn about the Field Hospital and to gain experience with common events that occur during operations; it also provides a framework for specialized unit training, and a tool for building teamwork and leaders. The following secondary questions were used to build the game: 1) what are the key dynamics that must be modeled for the game to accurately represent the Field Hospital, 2) how can the key aspects be modeled in a competitive board game, and 3) how to make the game approachable and playable?

This thesis is organized into four chapters. The first chapter provides a brief introduction to the topics of both wargaming and Army medical operations. The second chapter provides a review of key literature used to develop this wargame. Chapter three provides both the aspects of the Field Hospital that were identified to be represented in the wargame design and a description of how they were modeled in the game. The fourth chapter is a summary and conclusion of the thesis and includes recommendations for design, elements that could be developed in future versions of this game. Appendices A-C contain the game components for *Death Can Wait*. Appendix A is the rules, Appendix B is the game board, and Appendix C is all printable game pieces for the game. Additional game pieces that are not printable (e.g. number and type of dice) are listed in the rules.

The mission for Army medicine is to “conserve the fighting strength”.¹ Army medical care is categorized into four roles, referred to sequentially from one to four. A role is defined by the capabilities available, type of medical care received, and location on the battlefield. The roles are arrayed and designed to provide progressive treatment to maximize stabilization and survivability of casualties. Roles 1 and 2 are fully deployable units whose primary purpose is to provide initial triage and lifesaving medical care.² A Role 2 facility may be augmented by a Forward Resuscitative and Surgical Team (FRST) to provide resuscitative and damage control care to casualties that are not stable enough to be evacuated to a higher level of care.³ If a FRST is not deployed forward with a Role 2, a Role 3 is the first role of care where casualties receive surgical services, including pre- and post- operative care.

A Role 3 medical facility is the highest level of deployable medical care; a Role 4 is a fixed-facility medical hospital outside the combat zone.⁴ The Role 3 provides emergency medicine with board certified emergency medicine doctors and nurses, surgical capabilities with general, orthopedic, maxillofacial, and OB/GYN surgeons; and post-operative care in the Intensive Care Unit (ICU) and Intermediate Care Ward (ICW). Ancillary medical support for hospital operations include x-ray, pharmacy, laboratory,

¹ Office of the Surgeon General, U.S. Army Medical Command, “Mission,” U.S. Army, February 9, 2016, accessed March 10, 2018, <https://www.army.mil/armymedicine#org-about>.

² Department of the Army, Field Manual (FM) 4-02, *Army Health Systems*, (Washington, DC: Government Printing Office, August 2013), 1-7–8.

³ Department of the Army, FM 4-02, 1-9.

⁴ Department of the Army, FM 4-02, 1-9 – 10.

patient administration, and nutrition care. Support services organic within a Role 3 include laundry and bath, unit ministry team (UMT), medical maintenance and supply, ground maintenance, all other non-medical supplies, and the headquarters element to manage operations.⁵

The Army is currently transitioning Role 3 units from Combat Support Hospitals (CSH) to Field Hospitals.⁶ The current fielding concept is for each Role 3 Field Hospital to have the following organic detachments: Hospital Center, 32 bed Field Hospital, 24 bed Surgical Augmentation Detachment; 32 bed Medical Augmentation Detachment; and 60 bed ICW Augmentation Detachment.⁷ Additionally, there are eight specialized detachments that are not permanently existing units but can be activated and attached to a Field Hospital to augment the medical capabilities for a specific mission. For example, the Head and Neck Hospital augmentation team deploys equipment and personnel specialized to “provide ear, nose, and throat surgery; neurosurgery; and eye surgery augmentation” beyond what is organic to the Field Hospital.⁸ Such capabilities provide greater flexibility and the far forward medical care that planners can use to deploy medical capabilities tailored to the mission.

⁵ Department of the Army, Special Text (ST) 4-02.10, *Field Hospital Operations*, (Washington, DC: Government Printing Office, January 2017), 1-6-7.

⁶ For the purposes of this game, unless otherwise specified, a Role 3 refers to the Field Hospital organization.

⁷ US Army Command and General Staff Officer Course, “AMEDD Refresher Brown Bag” (PowerPoint presentation, Ft. Leavenworth, KS, October 16, 2017), 27.

⁸ Department of the Army, Special Text (ST) 4-02.10, *Field Hospital Operations*, (Washington, DC: Government Printing Office, January 2017), 1-3, 2-3.

The modularity of a Field Hospital means role 3 capabilities can be tailored to conform to the mission. Together, the Hospital Center and 32 bed Field Hospital represent the most basic structure with clinical, ancillary, and support elements to provide Role 3 capabilities.⁹ A Hospital Center can manage up to two 32 bed Field Hospitals, and any combination of detachments not to exceed 240 beds. The detachments can be either co-located with the Hospital Center or geographically separated.¹⁰ For situations that need a single robust capability in a single location, multiple modules can be deployed to maximize care. Likewise, the Field Hospital could deploy groups of detachments to multiple locations throughout the theater of operations to support the forces.

An Army Role 3 is a critical enabler for any combat force. A poorly managed hospital could result in ill or injured soldiers not receiving proper care or not being evacuated in time. Training a Role 3, however, is challenging and resource intensive. It takes more than six acres of land to establish the hospital, thousands of gallons of fuel and water to maintain operations, over three hundred assigned personnel including over seventy clinical specialists, and approximately five days to establish and disestablish.¹¹ *Death Can Wait*, as a competitive board game, aims to serve as a constructive training aid for Role 3 personnel.

The inspiration for *Death Can Wait* came from multiple sources. One source was HOSPEX, a British product used to train British Field Hospitals, a Role 3 equivalent

⁹ Department of the Army, ST 4-02.10, 1-1.

¹⁰ Department of the Army, ST 4-02.10, 1-3, 2-7.

¹¹ Department of the Army, ST 4-02.10, A-1–2, A-6.

medical capability. The design facilitated training using levels of complexity ranging from a table top to fully established hospital receiving casualties (live or medical simulation mannequins). HOSPEX provided a framework that could be tailored, depending on a unit's mission, to train the specific tasks or situations the unit could experience. An important aspect of HOSPEX that inspired *Death Can Wait* was events the hospital staff had to respond to that were non-clinical.

Another source of inspiration for *Death Can Wait* was the idea to create a constructive training aid for units. The game be used as part of a professional development program to expose medical or non-medical personnel to the complexities of a role 3, the design of a Field Hospital, and events that units historically experienced. The design could also be used to augment unit training when deploying personnel and equipment is not possible. A role 3 is resource intensive and depends on non-organic personnel.

CHAPTER 2

LITERATURE REVIEW

In 2017 the Army began transforming the Combat Support Hospitals (CSH) into Field Hospitals. The new Field Hospitals were designed based on feedback from the past fifteen years of conflict that demanded a more flexible and tailorable Role 3 capability. The main differences between a CSH and a Field Hospital is the modularity that allows small detachments to deploy where they are needed. As of the Spring of 2018, only 10 CSH based in Ft. Carson, Colorado, had transformed and was reflagged as 627 Hospital Center.¹² Special Text (ST) 4-02.10 is the only published doctrine that covers the new Field Hospital design. Based on the limited history of the Field Hospital, some elements of the game design may not align directly with the new Field Hospital capabilities and structures. However, it is assumed that the macro-level approach to training the Field Hospital will mitigate details that may otherwise not match. Additionally, data from older versions of the Army Role 3, including the Mobile Area Support Hospital (MASH) and CSH, was used, where relevant, when addressing expeditionary deployments and operations in an austere environment.

Examples of events a Role 3 may experience during an expeditionary deployment were primarily drawn from personal accounts written by students of the United States Army Sergeants Major Academy (USASMA). These personal accounts provided real experience from soldiers who trained well but still faced unexpected events.¹³ Utilizing

¹² Ellen Crown, *Army Field Hospital Put to Test at Fort Carson*, (U.S. Army Medical Materiel Agency Public Affairs, September 8, 2017).

¹³ Danny M. Hassan, *Deployment of the 67th CSH: Operation Iraqi Freedom II*,

these examples provides credibility to the random events in the game. Additionally, uncensored accounts of less common operations and events not addressed in other sources such as Army Doctrine from personnel who experienced them first hand provides unbiased influences to incorporate into the game..¹⁴

The scenario for *Death Can Wait* is a fictional environment where one to four Field Hospitals (depending on the number of players) deploy in support of combat operations. The scenario was influenced by the RAND Study “*Reinforcing Deterrence on NATO’s Eastern Flank: Wargaming the Defense of the Baltics*”, which describes a combat scenario where hundreds or thousands of casualties could occur from combat operations between peer competitors.¹⁵ The scenario for *Death Can Wait* does not address patient evacuation from point of injury to the hospital, Role 1 or 2 care, nor specify between combat and non-combat related injuries. The intent of the scenario is to produce a large volume of casualties for the player to manage.

Tikrit, Iraq (Jan 17, 2004-Jan 20, 2005) (Ft. Bliss: USASMA, 2006); Roosevelt J. Mitchell, *The Deployment of Bravo Company 21st Combat Support Hospital: Operation Iraqi Freedom I 03/18/03-03/11/04* (Ft. Bliss: USASMA, 2006); Jose A. Natal, *Task Force Falcon, Camp Bondsteel, Kosovo 03/20/00 – 09/30/00* (Ft Bliss: USASMA, 2006).

¹⁴ Raph Koster describes unpredictability as a tool for games that enable people to be better prepared if something unexpected happens in real life. Part of the intent with using non-clinical events, and events drawn from personal experiences, is to expose players to realistic unpredicted events. Medical training too often only includes unexpected events centered on the type of casualty, or when the mob arrives at the gate. These unexpected events are predictable so using uncommon events gets after unpredictability better. Raph Koster, *A Theory of Fun for Game Design* (Sebastopol, CA: O’Reilly Media, Inc., 2013), 118.

¹⁵ David A. Shlapak, and Michael W. Johnson, *Reinforcing Deterrence on NATO’s Eastern Flank* (Santa Monica, CA: Rand Corporation, 2016).

Over the course of the MMAS program, many games were reviewed to learn game mechanics and ways for players to make decisions. Although many wargames exist to address various elements of combat and supporting combat units, no game currently exists that directly addresses medical operations in combat. The most influential games for this program were *Dominion*, *High Treason: The Trial of Louis Riel*, *Next Year is Now*, and *Aftershock*.¹⁶

Dominion is a hand management game. Players draw cards and must manage the number of cards in their hand to earn the highest number of points.¹⁷ Several versions of *Death Can Wait* began with hand management, primarily Phase I. The number of cards and actual mechanic of hand management proved to be less efficient than the game mechanics finally chosen. The overall concept of managing resources to achieve the greatest effect, however, is still a primary mechanic for the game overall.

High Treason: The Trial of Louis Riel is a game where players complete a variety of tasks at various stages of the trial. At the end of the trial the players adjudicate the decisions and data for the game and arrive at a number that determines the winner. The overall scoring concept for this game influenced the overall scoring for *Death Can Wait*; players win by having fewer deaths than *Death*. *High Treason* is played in sections, like

¹⁶ *Dominion*, created by Donald X. Vaccarino, board game (Rio Grande Games, 2008); *High Treason: The Trial of Louis Riel*, created by Alex Berry, board game (Victory Point Games, 2016); *Next Year is Now*, created by Jose Dominguez, board game (U.S. Army Command and General Staff College, 2018); *Aftershock: A Humanitarian Crisis Game*, created by Rex Brynen and Thomas Fisher, board game (The Game Crafter LLC, 2015).

¹⁷ *Dominion*, created by Donald X. Vaccarino, board game (Rio Grande Games, 2008).

the phases in *Death Can Wait*, and decisions made during each section influences decisions and outcomes in later sections. Additionally, the game mechanics during each section differ slightly and allow the sections to have different decisions and outcomes.¹⁸ Each phase of *Death Can Wait* uses a different game mechanic for many of the same reasons.

Next Year is Now is a game designed to teach company grade officers about Objective T training. The game illustrates the challenges commanders face when putting together a unit training plan (UTP) as well as impacts of not conducting adequate planning to develop the UTP.¹⁹ Prior to Jose Dominguez's briefing of his concept for *Next Year is Now*, *Death Can Wait* started with the unit receiving a notification for deployment and executing an N-Hour sequence. After Jose's brief, it became apparent that tasks associated with preparation could be consequential for deployment and operational challenges, successes, and failures.

Aftershock is a game designed to expose players to various agencies that respond to natural disasters.²⁰ The game influenced the physical design of *Death Can Wait* by using different components to represent different functions and sections of the hospital. The tabletop version of *HOSPEX* is played using a diagram of the hospital to allow players to move casualties and resources throughout the hospital as they would in the

¹⁸ *High Treason: The Trial of Louis Riel*, created by Alex Berry, board game (Victory Point Games, 2016).

¹⁹ *Next Year is Now*, created by Jose Dominguez, board game (U.S. Army Command and General Staff College, 2018).

²⁰ *Aftershock: A Humanitarian Crisis Game*, created by Rex Brynen and Thomas Fisher, board game (The Game Crafter LLC, 2015).

physical setup of the facility. *Death Can Wait* is in the middle of the two games, in that individual components of the hospital are displayed on a single board, but not arranged as the Field Hospital would be in actual practice. Figure 1 shows a set-up of *Aftershock* on the left and a tabletop view of *HOSPEX* on the right.



Figure 1. *Aftershock* and *HOSPEX*

Source: Created by author.

CHAPTER 3
IMPORTANT ASPECTS OF THE FIELD HOSPITAL
AND HOW THEY ARE MODELED

Death Can Wait, a competitive board game, models a mix of administrative and clinical decisions associated with a Field Hospital assigned a mission to support combat operations in an austere environment. Given the mission, three major aspects were identified to model: 1) preparation, 2) deployment and relocation, and 3) operations. The game is divided into five phases that align with each aspect in sequence: 1) preparation, 2) deployment, 3) operations, 4) relocation, and 5) operations. While phase II and IV are similar, Phase II illustrates decisions associated with deploying a unit from home station, while Phase IV exposes players to aspects of relocating a hospital while continuing to provide Role 3 care. Phases III and V represent similar concepts and decisions but they occur sequentially after deployment and relocation respectively. Each of the three aspects has sub-aspects that support the decisions a player will make to understand the requirements of the phase.

This chapter is organized to address each aspect sequentially through the game. Starting with Phase I, Preparation, the aspects and sub-aspects and how they were modeled in the game are described. There are elements of each aspect and sub-aspect that are not represented in the game, but these elements could be developed for future versions of the game and are discussed in Chapter 4 as part of the conclusion and recommendations for future development. Elements of the game that are simplified, but could be expanded in future versions, are also discussed in Chapter 4. Aspects that apply throughout all phases of the game are fatigue and morale. These two aspects expose

players to human elements that impact operations. Fatigue and morale are used as variables of hospital operations to increase deaths and determine the outcome of the game.

Death Can Wait is designed to be playable by anyone. Exceptions to this will be evident in Chapter 4 when elements that could be developed for future use specifically for training Field Hospital personnel are discussed. For the purposes of game development and identifying what aspects would be used and how to model them, the target audience was anyone wanting to learn more about how a Field Hospital operates. The player, therefore, does not need to be familiar with the details of Army operations or medical operations to play.

Preparation

A Role 3 is unique compared to other deployable units in that nearly 30 percent of the personnel are not assigned. The table of organization and equipment (TOE) for deployable units differentiates between personnel a unit is ‘authorized,’ or has assigned at all times, and personnel who are ‘required,’ meaning only assigned to the unit if deployed on a mission. The TOE for a Role 3 lists nearly 70 personnel who are in the Army Professional Filler System (PROFIS).²¹ The PROFIS personnel are medical providers who are assigned as ‘authorized’ personnel to a Table of Distribution and Allowance (TDA), at a role 4 such as Walter Reed Medical Center, and deployed temporarily to fill a ‘required’ position of a TOE. Because these medical professionals’ primary duty is in a

²¹ US Army Command and General Staff Officer Course, “AMEDD Refresher Brown Bag” (PowerPoint presentation, Ft. Leavenworth, KS, October 16, 2017), 23.

TDA organization, often times geographically separate from the unit they support as a PROFIS provider, a TOE Role 3 must prepare for their wartime mission without key personnel.

Military units that are not deployed in support of a mission spend their days training. Units conduct training at different levels to gain proficiency, starting at individuals and teams and working up to the entire organization. The 2017 publication of FM 7-0, in conjunction with Training and Evaluation Outlines (T&EO), provides greater detail on how to assess training objectively to determine the unit's training status.²² The T&EOs provide a matrix for units to identify the highest level of training achieved for a given training event (Figure 2). Two categories on the matrix are the number of personnel and number of key leaders present for training. Both numbers are represented as a percentage of personnel present for training as compared to the modified table and organization of equipment (MTOE) authorization. Units that do not have enough personnel and/or key leaders cannot achieve a trained (or T) status. Because medical professionals are considered key personnel, a Field Hospital must develop the long-range training calendar to maximize training opportunities with PROFIS personnel who are generally limited in the time and duration they can spend training with a unit prior to deployment.

²² Department of the Army, Field Manual 7-0, *Train to Win in a Complex World*, (Washington, DC: Government Printing Office, October 2016), 1-3, 3-10–11., ATN

Plan and Prepare				Execute					Assess	
Operational Environment			Training Environment (L/M/C)	% Leaders present at training/authorized	% Present at training/authorized	External evaluation	Performance measures	Critical performance measures	Leader performance measures	Task assessment
SQD and PLT	CO and BN	BDE and above								
Dynamic (single threat)	Dynamic and complex (4 + OE variables and hybrid threat)	Dynamic and complex (all OE variables and hybrid threat)	Proponent establishes training environment standards	≥85%	≥80%	Yes	≥90% GO	All	≥90%	T
				75-84%			80-90% GO			80-89%
Static (single threat)	Dynamic (single threat)	Dynamic and complex (all OE variables and single threat)		65-74%	75-79%	No	65-79% GO	<All	<80%	P
				60-64%			60-74%			51-64% GO
				Static (single threat)	Dynamic & complex (< all OE variables and single threat)		Day			<60%
BDE	brigade	OE		operational environment	T	fully trained				
BN	battalion	P	practiced	T-	trained					
C	constructive	P-	marginally practiced	U	untrained					
CO	company	PLT	platoon	V	virtual					
L	live	SQD	squad							

Note: The percentages used in this figure are for illustration only. See the collective task's published training and evaluation outline for the applicable percentages.

Figure 2. Objective task evaluation criteria from a training and evaluation outline

Source: Department of the Army, FM 7-0, *Train to Win in a Complex World*, (Washington, DC: Government Printing Office, October 2016), 3-11.

Units develop a Unit Training Plan (UTP) to identify when various training events will occur. The UTP is intended to ensure units align adequate time and resources to training to achieve the desired training level. This becomes critical when subsequent training depends on previous training in order to be effective. For example, a Field

Hospital will not be able to train on clinical or support tasks until establishment tasks are trained. The UTP is critical for a Field Hospital whose key leaders are PROFIS.

Equipping a Field Hospital is a multifaceted process requiring a multitude of services and supplies. Supplies refer to both medical and non-medical equipment and components that the unit consumes. Non-medical supplies include maintenance parts, force protection materials, food, water, and fuel. For this discussion, services refer to external support provided to the hospital including resupply of water and fuel and back-haul of gray water and trash. There are supplies and services provided to a Field Hospital that are mathematically easier to forecast than others. The amount of food the unit consumes daily, for example, is more predictable than the number and type of other supplies consumed in a given amount of time, such as medical supplies. Many supplies and services are forecasted using experience and historical data. Units gain experience by training as a unit and from using other unit consumption data, in a similar environment, conducting similar operations.

The intent of Phase I is to expose players to the decisions associated with preparing the hospital for deployment and operations. During each turn in this phase, the player receives a situation card that provides an external influence then makes a decision to improve the status of up to three of the four tasks. The decisions replicate the unit committing time, money, and/or personnel to improve the tasks. A player cannot increase all four, which means the hospital cannot be equally prepared in all four categories. During subsequent phases, the players will have negative or positive consequences based on their preparations in this phase.

Players have the most control over the outcome of their decisions in Phase I as compared to Phases II through V. This was intentional so as to replicate the level of control units have over training as compared to receiving casualties in combat. The situation cards represent an external influence that prevents the player from having absolute control. The situation cards, however, influence the decision a player can make rather than impact the decisions made. The cards, therefore, represent the ‘commander’s intent’ for the coming training.

Deployment and Relocation

To provide role 3 care in an austere environment, a Field Hospital must deploy a large amount of supplies, equipment, and personnel to the operating area. Specialized medical equipment, such as a containerized x-ray machine, computed tomography (CT) scanner, and surgical suites, allow medical providers to perform medical tasks in a field environment. The basic fielding organization for a Field Hospital, and the five detachments used in *Death Can Wait*, consist of 51 twenty-foot containers and 16 vehicles with trailers capable of moving a container, making the hospital 31 percent self-mobile. This means that once the hospital equipment is in a location where it can be driven to the final destination, the hospital needs sufficient time to make four complete trips to move all the equipment, or coordination for external assets to mitigate the shortfall. Additionally, the total fleet of vehicles provides seats for roughly 80 personnel per movement.²³ The difference must be moved by a military transportation unit and/or commercial vehicles.

²³ US Army Command and General Staff Officer Course, “AMEDD Refresher

The deployment and relocation timelines for Phases II and IV force the player to account for the delay in receiving and establishing equipment and personnel as they move from a starting point to the operating area. In *Death Can Wait*, movement and establishment both last one day each in order to keep the number of turns small.²⁴ Establishment refers to setting up the tents or operational structure and internalization of the given capability. Each section has different requirements to be considered fully operational capable (FOC); however, for *Death Can Wait*, FOC is defined by a given capability having all equipment and personnel on ground. This allows players to move critical equipment and personnel in as transportation assets become available and illustrates how prioritizing capabilities can impact the ability to provide casualty care. For this discussion, a capability refers to a specific element of the role 3, not a complete detachment or collection of all like capabilities. For example, a capability may refer to an intensive care unit (ICU). There are four ICU wards organic to three different detachments (Field Hospital, Surgical Augmentation Detachment, and Medical Augmentation Detachment). One ICU, therefore, is a capability. The timeline illustrates the ripple effect when the required equipment or personnel are not on hand and the hospital cannot treat or hold casualties.

Brown Bag” (PowerPoint presentation, Ft. Leavenworth, KS, October 16, 2017), 17.

²⁴ Fully operational capable (FOC) can be unit and/or mission specific to identify when a given capability is fully prepared to execute its given mission. For *Death Can Wait*, FOC refers to the doctrinal capabilities associated with a given section of the hospital or the hospital as a Role 3, depending on the context. Future developments for the game could include hybrid or tailored capabilities that would require the player(s) to determine what FOC means for a given capability and the Role 3.

Prioritizing assets can be challenging for a hospital when everything is considered critical to the mission. A unit may not have reliable predictability of when they will receive transportation assets when entering an immature theater. Using a Time Phased Force Deployment Data (TPFDD) example, such as the example used at the Ft. Leavenworth Command and General Staff College (CGSC) for the Georgia, Armenia, Azerbaijan, Turkey (GAAT) scenario, the game uses the assumption that medical assets will not be a high priority for inflow.²⁵ That does not mean that medical assets will not receive transportation, but it is an indication that by the time medical units arrive, coupled with the quantity of transportation assets required to move the hospital, the hospital equipment and personnel may not all arrive at the same time. Flowing equipment and personnel in during Phase II may be less realistic and represent worse predictability than an actual deployment. The game mechanic is intended to allow players time to see the impact of their prioritization on operations.

The relocation during Phase IV follows generally the same processes as Phase II. During Phase IV the hospital relocates to a secondary operating location to maintain proximity to the combat forces. Players must replicate the dis-establishment before a capability can move. First, players must clear wards of casualties before it can be dis-established. Players again prioritize capabilities that will move using organic assets, however they may be more restricted depending on the casualties still receiving treatment in the facility. The benefit of using two phases to replicate deployment of the hospital is

²⁵ US Army Command and General Staff Officer Course, “C500_DeploymentTables_AY18_WARCON” (Excel spreadsheet, Ft. Leavenworth, KS, October 12, 2017).

that it serves as a self-learning process. Players can refine the plan they used during Phase II and potentially have a more effective outcome during Phase V. For that reason, the casualty cards for Phases II and IV are reshuffled after Phase II, unlike the casualty cards for Phases III and V that are not reshuffled, so players do not see the exact same event twice.

Deployment and relocation are modeled in *Death Can Wait* by using an equipment and personnel roster (Figure 3. Deployment Tracker). The game mechanics provide players with control over prioritizing the capabilities, but not the time they will be available for casualty care. Players prioritize movement on the tracker, then follow movement of the equipment and personnel until the FOC day during subsequent turns. Equipment is not distinguished in the game between containers and non-containerized equipment that is not self-mobile. The assumption in the game is that each piece of equipment requires a transportation asset. Personnel are identified by detachment in groups of 10 for mathematical simplicity when assigning assets. Players can move 16 pieces of equipment and 70 personnel using organic assets, then roll a 1d6 and use the Movement Table (Figure 4.) to identify the number of external transportation assets that are available. Once capabilities are established on site and FOC the player places a 1-centimeter cube on the associated ward bed tracker to identify that the ward can receive casualties.

Phase II	Phase IV
# FOC	# FOC
Field Hospital	
1. OR 1	
Equipment	
Equipment	
Equipment	
Equipment	
10 Personnel	
10 Personnel	
2. OR 2	
Equipment	
Equipment	
Equipment	
Equipment	
10 Personnel	
10 Personnel	
3. ICU	
Equipment	
10 Personnel	
4. ICW	
Equipment	
10 Personnel	
Surgical Augmentation	
5. OR 1	
Equipment	
Equipment	
Equipment	
Equipment	
10 Personnel	
10 Personnel	
6. OR 2	
Equipment	
Equipment	
Equipment	
Equipment	
10 Personnel	
10 Personnel	
7. ICU 1	
Equipment	
10 Personnel	
8. ICU 2	
Equipment	
10 Personnel	
Medical Augmentation	
9. ICU	
Equipment	
10 Personnel	
10. ICW	
Equipment	
10 Personnel	
ICW Augmentation Detachment	
11. ICW 1	
Equipment	
10 Personnel	
12. ICW 2	
Equipment	
10 Personnel	
13. ICW 3	
Equipment	
10 Personnel	
Phase II	Phase IV
# FOC	# FOC
Ancillary and Support	
14. TOC / UMT / PAD	
Equipment	
Equipment	
Equipment	
Equipment	
10 Personnel	
15. Nutrition Care Division (NCD)	
Equipment	
Equipment	
Equipment	
Equipment	
10 Personnel	
10 Personnel	
16. Laundry and Bath (L&B)	
Equipment	
Equipment	
Equipment	
Equipment	
10 Personnel	
10 Personnel	
17. Pharmacy / Lab / X-ray (PLX)	
Equipment	
Equipment	
Equipment	
Equipment	
10 Personnel	
10 Personnel	
18. Ground & Medical Maintenance; Medical Supply	
Equipment	
Equipment	
Equipment	
Equipment	
10 Personnel	
19. Living Support Area (LSA)	
Equipment	
Equipment	
Equipment	
Equipment	

Figure 3. Deployment Tracker

Source: Created by author.

Phase II Movement Table

1d6	Personnel	Equipment
1	40x	5 pieces
2	40x	6 pieces
3	40x	7 pieces
4	50x	8 pieces
5	50x	9 pieces
6	60x	10 pieces

Figure 4. Movement Table

Source: Created by author.

Operations

Operations, and specifically bed management, was an important aspect to model from the very beginning and replicate the majority of the decisions made during Phases III and V. Once deployed, the role 3's primary purpose is "provides essential care within the theater evacuation policy to either return the patient to duty or stabilize the patient for evacuation to a definitive care facility outside the AO."²⁶ During operations, decisions

²⁶ Department of the Army, Special Text 4-02.10, *Field Hospital Operations*,

about hospital operations all relate back to effective patient care, from the prioritization and timing of maintenance, to supply status, to opportunities to impact morale. Receiving casualties is typically a well-trained process that the Field Hospital personnel train on in order to minimize delays to treatment. The type and number of casualties a hospital will receive is often not known until the casualties arrive on site. Even when medical evacuation reports are provided to the command post, the casualties may be diverted, degrade, or improve before arrival on site.

There are three major aspects of operations that are incorporated in *Death Can Wait*: casualty processing, aeromedical evacuation (AE), and mass casualty (MASCAL) situations. The aspects are played in conjunction with external influence to create decision points for the players and provide opportunities to evaluate the effectiveness of previously made decisions. Casualties arrive at the Field Hospital starting on day three, turn three of Phase II, and continue to the final turn, so while the following discussion focus on Phase III and V Operations, they are also relevant during Phase II and IV.

Because the type and quantity of casualties a hospital will receive is unknown, the game mechanics for casualty processing produce the most random results of the game and give players the least amount of control over the results. To receive casualties, players draw a casualty card specific to Phases II and IV or Phases III and V (Figure 5.). The casualty cards are separated by phase to replicate fewer casualties during deployment operations compared to full combat operations. Casualties are categorized by the care required. The four categories are: 1) casualties requiring surgery in the OR, 2) casualties

(Washington, DC: Government Printing Office, January 2017), 1-1.

requiring care in the ICU, 3) casualties requiring care in the ICW, and 4) expectant casualties. To make the quantity of casualties received random, players roll a 6-, 12-, or 20-sided die (Figure 5.). The type of die is associated with the maximum casualty load for each ward. For example, each ICU ward can hold 12 casualties, therefore players roll a twelve-sided die to determine the number of casualties headed for the ICU.

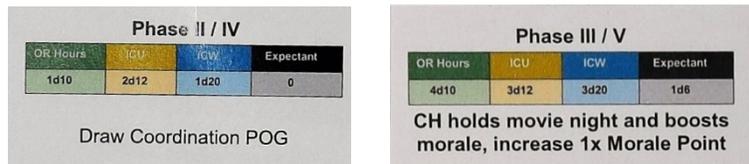


Figure 5. Casualty Cards

Source: Created by author.



Figure 6. Dice

Source: Created by author.

Time constraints with the MMAS program limited detailed statistical analysis of events within the game. Although mathematically there is no current proof to show that the game is ‘unbreakable,’ the amount of randomness in the various tasks a player

completes suggests that the game would not be 'beaten'. The value of playing each turn of *Death Can Wait* will depend on the audience and specific purpose for playing the game. Whether a player plays the game either from start to finish, or a specific phase, the unpredictability of results that could arise with multiple die rolls will help ensure the game is not limited.

Aeromedical Evacuation (AE) is a critical component of hospital operations, but it is managed by Transportation Command (TRANSCOM) and executed by the Air Force. Aeromedical Evacuation is critical for clearing casualties from the Field Hospital to make room for additional casualties. The Field Hospital patient administration department (PAD), with the clinical staff, is responsible for submitting patient movement request (PMR) packets to the Theater Patient Movement Requirements Cell (TPMRC). The TPMRC coordinates with TRANSCOM for an AE mission to clear patients. A Field Hospital may not be able to fill every available berth on an AE flight because of the PMR process, the stability of each casualty and the capabilities of the aircraft and crew, and if the aircraft already has casualties from another location.

To replicate the lack of control the Field Hospital has over AE, each player rolls a set of dice to determine the number of casualties available for evacuation. The combination of dice changes due to phase or event. During Phase II and parts of IV while the unit is only partially established and presumably not the priority for AE, the player rolls 2d20 which roughly equates to half of a C-130 E/H/J.²⁷ During full operations the

²⁷ A C-130 E, H, and J model can carry up to 74 litter patients, therefore a 2d20 could provide a maximum of 40 litter slots or roughly half an aircraft. Air Force Fact Sheet.

assumption used was that each hospital would receive a single C-130 E/H/J daily to clear the hospital, thus players roll 3d20 and 1d12. The die roll ensures players do not have a predictable 74 patients evacuated, replicating the potential inability to transport specific patients due to their clinical status, incomplete PMR, or lack of available space or resources on an aircraft.

A mass casualty (MASCAL) situation is one where the number and/or type of casualties exceeds the capabilities of the treatment facility and/or personnel rendering aid.²⁸ When a facility declares a MASCAL, casualties are diverted to another facility if available and additional transportation assets are provided to clear casualties to further levels of care. In *Death Can Wait*, players may incur a MASCAL by drawing a casualty card that states “MASCAL” and follow the combat resolution table (CRT) to receive the number and type of casualties. A player can also declare a MASCAL if their hospital becomes overwhelmed. By declaring a MASCAL by either method, the player then executes die rolls using a 5d20 to try to clear the facility, replicating the allocation of a portion of a C130 J-30 aircraft that is capable of evacuating 97 litter patients.²⁹

A MASCAL is a significant event for a hospital. Not only does it often deplete resources, such as blood, to a critical level it is emotionally demanding on all personnel within the organization. For MASCALs declared when the number of casualties exceed the capabilities of the hospital, every person in the organization is alerted and mustered to

²⁸ Department of the Army, Field Manual 4-02, *Army Health Systems*, (Washington, DC: Government Printing Office, August 2013), Glossary-5.

²⁹ About Us, Fact Sheet, “C-130 Hercules,” U.S. Air Force, May 2014, accessed March 10, 2018, <http://www.af.mil/About-Us/Fact-Sheets/Display/Article/104517/c-130-hercules/>.

assist with response. Non-clinical services are immediately halted to produce the manpower necessary to process casualties. Personnel may be re-assigned to key positions to guard or monitor to ensure critical capabilities of the hospital remain fully operational during the MASCAL. A generator mechanic, for example, may be posted in the vicinity of the critical generators to ensure uninterrupted power. For the purposes of *Death Can Wait*, the details of additional duties during a MASCAL are not addressed, however, the increased fatigue and potential negative impact to unit morale is replicated in both types of MASCAL.

If a player declares a MASCAL in *Death Can Wait*, the impact to fatigue and morale is more significant than if a MASCAL is drawn on a casualty card. This is to replicate the duration of a MASCAL and the fact that the player declaring a MASCAL indicates the hospital had been operating at high capacity for an extended length of time. Other players' must add a 1d6 roll to their casualty card draw to replicate the diversion of casualties from the hospital in a MASCAL. The intent here is to illustrate the widespread impact of a MASCAL. The other players learn the importance of monitoring the bed status of their own hospital, have situational awareness of other facilities in the area, be aware of the speed at which a hospital can become overwhelmed, and the length of time it takes for AE assets to clear a hospital.

Many of the external factors that are included on the casualty cards are drawn from personal accounts of deploying a hospital during the initial Iraq invasion.³⁰ The

³⁰ Danny M. Hassan, *Deployment of the 67th CSH: Operation Iraqi Freedom II, Tikrit, Iraq (Jan 17, 2004-Jan 20, 2005)*, (Ft. Bliss: USASMA, 2006).; Roosevelt J. Mitchell, *The Deployment of Bravo Company 21st Combat Support Hospital: Operation Iraqi Freedom I 03/18/03-03/11/04*, (Ft. Bliss: USASMA, 2006).; Jose A. Natal, *Task*

intent of this is to provide a realistic event for a player to address and familiarizing players with problems previous hospitals faced while deploying into an immature theater.³¹ Soldiers who are used to deploying to an established area with more permanent resources available may not be familiar with common issues operating in an austere environment. In short training exercises at home station units may also struggle to stress their equipment the same way a long deployment will. The external influence factors expose players to events they may experience and allow them to develop ways to mitigate negative effects before they are faced with them in a real situation.

Fatigue and Morale

The overall objective for a player in *Death Can Wait* is to hold off Death. The game is competitive against Death and cooperative between players. The intent was to build a game that is mutually beneficial for players to learn and gain experience operating a hospital rather than to exploit the poor decisions or ignorance of a fellow player to beat them rather than Death.³² To beat Death, a single player must not exceed 150 deaths.

Force Falcon, Camp Bondsteel, Kosovo 03/20/00 – 09/30/00, (Ft Bliss: USASMA, 2006).

³¹ The ‘enemy’ for a hospital is not a clear role as it is for an infantry unit. The scenario, environment, and clinical vs. administrative aspects a player or team of players is hoping to achieve from playing *Death Can Wait* can determine the ‘enemy’ actions. Important aspects of Red Teaming for a hospital include identifying scenarios that could impact operations due to the environment, personnel, and equipment. An important factor of Red Teaming for a hospital is to identify vulnerabilities or areas to improve operations. Micah Zenko, *Red Team: How to Succeed by Thinking Like the Enemy*, (New York: Basic Books, 2015), 21.

³² Raph Koster, *A Theory of Fun for Game Design*, (Sebastopol, CA: O’Reilly Media, Inc., 2013) 120.

When played with two or more individuals or teams, no player or team can exceed 150 deaths or all players lose; if no player exceeds 150 deaths, the player with the fewest deaths is the overall winner.

The quantity of deaths that occur during the game may be unrealistic, however, it is the mechanism used to measure the effectiveness of a player's decisions. Death can occur in the game from casualties arriving expectant, or if wards are full and casualties do not receive adequate care, or as a result of the hospital staff becoming too fatigued or having low morale. The staff in medical facilities are resourceful and highly motivated to develop creative solutions to provide the best possible care to their casualties and the died of wounds (DOW) approach for full wards and fatigue is not meant to undermine the clinical capabilities of anyone serving in a hospital but to provide a way to identify potentially negative outcomes of decisions made throughout the game.

The aspect of fatigue has been a working component of the game from its early designs. The intent was to illustrate the cumulative effects of daily operations with a high casualty flow and potential negative impacts of non-clinical elements that are not effectively managed. The game itself is only 30 days from the first day of deployment to the end, which does not adequately address the long term fatigue and stress the organization could experience in a deployment. Similar to a mission readiness exercise (MRE) where a unit conducts a 14-day training exercise designed to address events that may occur over the span of a nine-month deployment, *Death Can Wait* accelerates and amplifies various effects to expose players to potential scenarios they will face and an opportunity to identify ways to address them. As a professional development tool, the game can be best used as a tool for dialogue among members of the organization to

mitigate known and likely negative impacts and become more resilient and flexible when developing ways to cope with unexpected events.

Combat resolution tables (CRT) are a means to resolve events and incorporate unknown results with die rolls. The CRTs are organized to achieve a specific result in the game based primarily on projected casualty volume in a role 3. The Phase II DOW adjustment CRT (Figure 7.), for example, is designed to encourage players to deploy ancillary and support services at the same time that clinical capabilities are deployed so as to replicate a few aspects. First, support capabilities that are not FOC can still support clinical operations, such as PLX. Second, there are support capabilities that require more than one day to establish, including Laundry and Bath (L&B) and the Nutrition Care Section. Both capabilities have multiple tents and assets to establish, accounts to open, and external resources to acquire prior to becoming FOC. By flowing those assets in over the deployment time replicates the time needed to achieve FOC. A final objective is to demonstrate that a player must ensure that enough non-clinical personnel flow into the footprint to replicate the pool of manpower available for non-clinical tasks. One task that is unfamiliar to many Soldiers assigned to a hospital is security. If a hospital deploys to an austere environment, similar to the invasion of Iraq, the hospital personnel may be required to provide internal security until adequate security forces arrive in theater.³³ Clinical Soldiers may still be required to execute security details but replicating support

³³ Danny M. Hassan, *Deployment of the 67th CSH: Operation Iraqi Freedom II, Tikrit, Iraq (Jan 17, 2004-Jan 20, 2005)*, (Ft. Bliss: USASMA, 2006).; Roosevelt J. Mitchell, *The Deployment of Bravo Company 21st Combat Support Hospital: Operation Iraqi Freedom I 03/18/03-03/11/04*, (Ft. Bliss: USASMA, 2006).; Jose A. Natal, *Task Force Falcon, Camp Bondsteel, Kosovo 03/20/00 – 09/30/00*, (Ft Bliss: USASMA, 2006).

personnel flowing in provides the hospital manpower to maximize clinical capability while still executing all tasks associated with an expeditionary deployment.

For every	And	Then
1-6 Medical Detachments FOC & 1-2 Ancillary & Support Sections FOC	≤ 1x CP Equipment & 1x Personnel	Sift up 1 Row
6 Medical Detachments FOC	≤ 2x NCD Equipment & 1x Personnel	Shift up 1 Row
2 ICU/ICWs FOC	≤ 1x L&B Equipment & 1x Personnel	Shift up 1 Row
1x OR FOC & / or 4 ICU/ICWs FOC	≤ 1x PLX Equipment & 1x Personnel	Shift up 1 Row
1-6 Medical Detachments FOC & 1-2 Ancillary & Support Sections FOC	≤ 1x Maintenance Equipment & 1x Personnel	Shift up 1 Row
80 Personnel on site	≤ 1x LSA Equipment	Lose 1x Morale and increase 1x Fatigue

DOW Table

1d6	OR	ICU	ICW	Overflow
Roll for	1-4 Hrs	1-6 PXs	1-10 PXs	1-10 PXs
1	2	2	2	3
2	2	1	1	2
3	2	1	1	2
4	1	1	NE	1
5	1	NE	NE	1
6	1	NE	NE	1

Figure 7. Died of Wounds Combat Resolution Table

Source: Created by author.

Morale is an element of the Field Hospital that can have a positive or negative impact on the overall effectiveness. It is expected that clinical personnel will be exposed to trauma and continuous and high volumes of casualties can negatively affect a person's emotional health. During a MASCAL situation, non-clinical personnel are required to support clinical staff to move and treat casualties until space is available in a ward. Non-clinical soldiers may be providing first aid or comforting wounded and dying casualties. The potential negative impact is worth replicating if for no other reason it serves as a reminder to Hospital units to make time for events that are designed to help soldiers deal with the stress of their environment. After Phase I, morale is not improved or degraded by player decisions. The intent behind using an event to increase morale as an external influence was to illustrate to the players how morale impacts hospital effectiveness during operations.

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Death Can Wait is a competitive wargame that models preparation, deployment, operation, and a sequel mission for an Army Field Hospital. The game allows players to gain a better understanding of how the entire hospital operates, make decisions when faced with external factors and events, and provides a framework for training specific objectives or team building. The game models four major aspects of hospital operations: preparation, deployment and relocation, operations, and fatigue and morale.

Recommendations

The current design of *Death Can Wait* provides an overview of Field Hospital organization, key tasks associated with preparing for and deploying in support of a given mission and provides external factors that are valuable as discussion points and future planning considerations. As a professional development tool, the game provides an opportunity for players to gain confidence making decisions, exposes players to the organizational structure of the Field Hospital, and begins to demonstrate how the separate sections within a Role 3 are all interdependent and mutually supportive. Future designs of *Death Can Wait*, however, open the door to allow units and players to use the game as a framework for more detailed analysis of standard operating procedures, as a tool for wargaming a plan, or testing new concepts.

The basic game could be broadened to allow units and/or players to develop their own scenario and external factors to train for a specific mission. A Field Hospital must be prepared to deploy in support of offensive and defensive missions, stability operations, and defense support of civil authorities.³⁴ Different s would place different demands on casualty operations and introduce a variety of external factors for players to address. Personnel who have never supported a specific type of mission could benefit from the exposure *Death Can Wait* provides.

Other aspects of the type of mission could include the types of casualties the hospital will receive. The current design does not specify between combat and non-combat injuries that could result in different decisions for the player. An outbreak of disease, for instance, could rapidly reduce medical supplies that were not forecasted and negatively impact Role 3 operations. Combat casualties could also include scenarios where chemical or biological weapons were used which introduces a wide variety of decisions for a player to make including hospital location and layout, coordination with external units for decontamination support, and staffing considerations if patient decontamination at the hospital is expected.³⁵

Alternate scenarios could include decisions regarding the physical location where the hospital will establish so as to expose players to the type of terrain that best supports role 3 operations. As already discussed, a role 3 requires roughly six acres of space to establish. However, other elements of the terrain and environment other than available

³⁴ Department of the Army, Special Text 4-02.10, *Field Hospital Operations*, (Washington, DC: Government Printing Office, January 2017), 1-1.

³⁵ Department of the Army, ST 4-02.10, 4-8 – 4-9.

space can impact hospital operations. Some aspects of the terrain and environment that could be implemented include the slope of the ground and drainage characteristics, proximity to ground and air means for evacuation and resupply, security, and even climate and weather.³⁶

Coalition or allied assets are not represented in the current version of *Death Can Wait*. A scenario could be created to allow players the opportunity to learn how a coalition response could impact United States role 3 operations. Additionally, the only joint element of the game is the replication of Aeromedical Evacuation (AE) as executed by the Air Force, however sister service medical assets could also be included in future developments to expand the learning capabilities of the game.

HOSPEX was well designed to allow units to respond to situations and evaluate internal processes and leader decisions. If players chose to use the framework of *Death Can Wait* for the same purpose, any aspect of the hospital could be developed in more detail to allow for more focused decisions. This could be done at the hospital level or down to a specific section or team. For example, if the unit wanted to train MASCAL procedures, the casualty cards and external influences could be adjusted to test specific actions. The turns could also be expanded to allow for multiple players representing various roles within the hospital to make decisions and influence the outcome of the event.

A more detailed focus could also be developed for a section or team to evaluate individual or team level execution. An ICU ward, for example, could adjust casualty

³⁶ Department of the Army, ST 4-02.10, 4-5 – 8.

cards and external influences to focus on events and issues that would directly impact the decisions a member of the ward would need to make. This training concept could augment unit training plans so that sections could train complex tasks without having to establish the physical footprint of their section. As mentioned in the introduction, establishing the hospital is a time-consuming processes.

The game identifies the modularity of the Field Hospital but does not allow players to made decisions to change the detachments or react to non-organic attachments being added to the organization. However, these decisions of a Hospital Center could easily be modeled in *Death Can Wait*. The various detachments and augmentation teams could be built as separate game pieces with equipment listings for Phase II and IV. Players could either chose to add detachments to their organization based on a scenario or receive an additional detachment as part of their mission order.

Hospital Centers are the higher headquarters for Forward Resuscitative and Surgical Teams (FRST) but can serve as an augmentation detachment if not deployed forward in direct support of a Role 2.³⁷ The FRST was not developed into the current model of *Death Can Wait* due to time constraints, however, managing one or more FRSTs with a potentially different deployment schedule and/or mission is a valuable aspect to include in future developments. If an FRST is not tasked in support of another unit and mission, but co-located with the hospital, the hospital can choose to use the personnel and/or equipment at the commander's discretion. This presents both an

³⁷ FRST is the new design and nomenclature for a Forward Surgical Team (FST). Department of the Army, Special Text 4-02.10, *Field Hospital Operations*, (Washington, DC: Government Printing Office, January 2017), 2-13-17.

opportunity for the hospital to augment the staff and potentially reduce fatigue and increase morale, but it also presents a challenge to not fatigue the FRST if they are called upon to deploy forward in support of an operation.

Lastly, the game ends on day 30. Instead of ending the game on a day with casualties still in the hospital, the game could be ended in a manner similar to how the unit will complete the mission. For combat operations the hospital would either redeploy with combat forces or complete a relief in place and transfer of authority (RIP/TOA) with a replacing hospital. If a hospital is deployed in support of a humanitarian type mission, the military hospital could transfer responsibility of medical care to local authorities or another agency. Each end to a hospital's mission provides opportunities to expose players to different challenges and planning considerations that could be modeled in the game.

Death Can Wait is a competitive board game that exposes players to decisions and events associated with a Field Hospital deployed in support of combat operations. The game has many elements that could be expanded to teach players different aspects of operating a Field Hospital or gain more fidelity in a specific aspect. The game, in its current version, is playable for anyone interested in learning about a Field Hospital regardless of military or medical experience. The intent for this game is to provide players with a means to gain more understanding about role 3 capabilities and employment and allow units to augment training when deploying personnel and equipment is not possible.

GLOSSARY

Army Health System (AHS). A complex system of systems that is interdependent and interrelated and requires continual planning, coordination, and synchronization to effectively and efficiently clear the battlefield of casualties and to provide the highest standard of care to our wounded or ill Soldiers.³⁸

Army Medical Department (AMEDD). Encompasses all specialties within Army Medicine and is led by the Surgeon General.

Area of Operation (AO). “An operational area defined by a commander for land and maritime forces that should be large enough to accomplish their mission and protect their forces.”³⁹

Battalion Aid Station (BAS). The BAS is the first location with a physician and physician assistant trained and equipped to provide advanced trauma management to a casualty. The BAS also provides routine sick call as operations permit.⁴⁰

Chief Surgical Services. Principal consultant and technical advisor for the commander in surgical care.⁴¹

Clinical Operations Section (CLINOPS). Staffed by the DCCS, Chief Surgical Services, DCN, and may be augmented by other medical personnel. Members of CLINOPS execute the following tasks: Manages health care provider credentialing and administration, as well as clinical care quality; assurance, treatment protocol management, and AHS support and training; Establishes patient management policies, and ensures facilities and resources are adequate to treat all types of disease and injury, to include CBRN casualties; Provides staff supervision of clinical activities throughout the hospital to include proper staffing of the subordinate hospital elements; Plans and coordinates health services clinical resources within the hospital; Plans and coordinates clinical medical resources to provide effective and consistent treatment of wounded, injured, or sick personnel so as to return to duty or evacuate from the AO; Monitors clinical policies,

³⁸ Department of the Army, Field Manual 4-02, *Army Health Systems*, (Washington, DC: Government Printing Office, August 2013), 1-1.

³⁹ Department of the Army, Field Manual 3-0, *Operations*, (Washington, DC: Government Printing Office, October 2017), Glossary-5.

⁴⁰ Department of the Army, Field Manual 4-02, *Army Health Systems*, (Washington, DC: Government Printing Office, August 2013), 1-8 – 9.

⁴¹ Department of the Army, Special Text 4-02.10, *Field Hospital Operations*, (Washington, DC: Government Printing Office, January 2017), 1-4.

protocols, and procedures pertaining to the medical and surgical treatment of sick, injured, and wounded personnel; Plans and monitors the provision of combat casualty care within assigned or attached hospital elements; Monitors the management of clinical specialties including professional filler system and rotation policy.⁴²

Combat Life Savor (CLS). A CLS certified soldier is selected by his unit for additional training beyond basic first aid. CLS soldiers carry additional medical supplies appropriate for the level of care they can provide. Unless otherwise specified in unit SOPs, one individual per squad, crew, team, or equivalent-sized element should be trained. The CLS soldier retains his primary duty; CLS, as an additional duty, provides enhanced first aid before the combat medic.⁴³

Combat Medic. A combat medic is the first individual with training to make substantiated decisions about treatment. Combat medics provide far forward care (tactical combat casualty care, or TC3) perform lifesaving steps before a casualty is treated by a physician.⁴⁴ Combat medics are allocated to units based on the type, size, and mission of the unit. Generally, combat maneuver forces (e.g. infantry, armor, and cavalry) will have four combat medics per company to allow platoon size elements to have a dedicated combat medic. Combat medics provide daily medical care (sick call) when geographically separated from the Battalion Aid Station.

Command Post (CP). “A unit headquarters where the commander and staff perform their activities.”⁴⁵

Combat Resolution Table (CRT).

Deputy Commander Clinical Services (DCCS). Principal consultant and technical advisor for the commander in medical care.⁴⁶

⁴² Department of the Army, Special Text 4-02.10, *Field Hospital Operations*, (Washington, DC: Government Printing Office, January 2017), 1-4.

⁴³ Department of the Army, Field Manual 4-02, *Army Health Systems*, (Washington, DC: Government Printing Office, August 2013), 1-8.

⁴⁴ Department of the Army, Field Manual 4-02, *Army Health Systems*, (Washington, DC: Government Printing Office, August 2013), 1-8.

⁴⁵ Department of the Army, Field Manual 3-0, *Operations*, (Washington, DC: Government Printing Office, October 2017), Glossary-7.

⁴⁶ Department of the Army, Special Text 4-02.10, *Field Hospital Operations*, (Washington, DC: Government Printing Office, January 2017), 1-4.

Deputy Commander Nurses (DCN). Principal consultant and technical advisor for the commander in nursing care.⁴⁷

EMEDS. Expeditionary Medical Support – An Air Force Role 3 capability.

Forward Resuscitative and Surgical Team (FRST). “A 20-Soldier team which provides far forward resuscitative surgical intervention to render non-transportable patients sufficiently stable to allow for medical evacuation to a Role 3 field hospital. The FRST provides the capability to perform resuscitative surgery (often referred to as damage control surgery) within the AO. Patients remain at the FRST until they recover from anesthesia, once stabilized they are evacuated as soon as possible. The postoperative intensive care capacity of the FRST is extremely limited and there is no organic holding capability. When collocated with a medical company, the patient holding squad can provide a limited holding capability for the FRST. The FRST is not a self-sustaining unit and must be deployed with or attached to a medical company or hospital for support. Further, the FRST is neither staffed nor equipped to provide routine sick call functions.”⁴⁸

Health Service Support (HSS). All support and services performed, provided, and arranged by the AMEDD to promote, improve, conserve, or restore the behavioral and physical well-being of personnel in the Army, and as directed in other Services, agencies, and organizations. This includes casualty care (encompassing a number of AMEDD functions --- organic and area medical support, hospitalization, the treatment aspects of dental care, behavioral health (BH)/neuropsychiatric treatment, clinical laboratory services, and the treatment of CBRN patients), medical evacuation, and MEDLOG.⁴⁹

Intensive Care Unit (ICU). The ICU wards in a Field Hospital provide 12 beds for critically injured or ill patients who require the most intensive monitoring and care. Specialized nurses staff the ward for preoperative and post-anesthesia recovering patients or casualties with physiological status that requires continuous medical care.⁵⁰

Intermediate Care Ward (ICW). The ICW wards in a Field Hospital provide 20 beds for casualties whose conditions require observation for real or potential life-

⁴⁷ Department of the Army, Special Text 4-02.10, *Field Hospital Operations*, (Washington, DC: Government Printing Office, January 2017), 1-4.

⁴⁸ Department of the Army, ST 4-02.10, 2-13.

⁴⁹ Department of the Army, FM 4-02, 1-3.

⁵⁰ Department of the Army, ST 4-02.10, 1-11.

threatening disease or injury. The acuity of care may range from requiring constant observation to those who are ambulate and able to provide self-care.⁵¹

Mass Casualty (MASCAL) Situation. “Any large number of casualties produced in a relatively short period of time, usually as the result of a single incident such as a military aircraft accident, hurricane, flood, earthquake, or armed attack that exceeds local logistic support capabilities” and/or “available medical support capabilities.”⁵² MASCAL procedures should be described in unit standard operating procedures and coordinated through principal staff, higher, lower, and adjacent units.⁵³

Nutrition Care Section. Provides food service management, meal preparation, modified diet food preparation, and distributes food to patients and staff. The staff is able to provide nutrition therapy to include: dietetic planning; patient education; supervise and control overall nutritional care operations; advise the command on health and nutrition; provides nutrition care for all patients to include members of a coalition, enemy, or local populace while ensuring culturally appropriate foods are provided according to command guidance.⁵⁴

Operating Room (OR).

Patient Evacuation Coordination Cell (PECC). A theater level coordination cell that includes Air Force evacuation liaison personnel and Army patient regulating personnel to coordinate evacuation of casualties from role 1 to role 4.⁵⁵

Patient Movement Request PMR. A report used by a hospital PAD section to request for evacuation from the hospital to a higher level of care. PMR packets are processed by TPMRC and missions are assigned by TRANSCOM to an Air Force plane configured for patient evacuation

Professional Filler System (PROFIS). This system designates qualified Active Army AMEDD personnel in table of distribution and allowances (TDA) units to fill modified table of organization and equipment (MTOE) units ... The objective of the professional filler deployment system (PDS) is to resource MTOE units to

⁵¹ Department of the Army, ST 4-02.10, 1-11.

⁵² Department of the Army, FM 4-02, Glossary-5.; Department of Defense, Joint Publication (JP) 4-02, *Joint Health Services*, (Washington, DC: Government Printing Office, December 2017), GL-11.

⁵³ Department of the Army, ST 4-02.10, 4-9.

⁵⁴ Department of the Army, ST 4-02.10, 1-9.

⁵⁵ Department of the Army, ST 4-02.10, 1-7.

their required level of organization with AMEDD personnel in accordance with Joint Staff validate, Secretary of Defense-approved contingency operations, or for the conduct of mission-essential training.⁵⁶

Proximity. A Principal of Army Health Services to describe how medical care will be provided to “support ... sick, injured, and wounded Soldiers at the right time and the right place and to keep morbidity and mortality to a minimum. Army Health System support assets are placed within supporting distance of the maneuver forces which they are supporting, but not close enough to impede ongoing operations.”⁵⁷

Role 1. A Role 1 provides the first medical care to ill and injured Soldiers. Role 1 includes: immediate lifesaving measures; disease and nonbattle injury prevention; combat and operational stress preventive measures; patient location and collection; medical evacuation from the point of injury (POI) to MTFs; and treatment. Treatment at a Role 1 focuses on measures necessary to return the Soldier to duty (RTD) or stabilize him to allow for further evacuation to a higher role of care. Stabilization measures at a Role 1 include: maintain the airway, stop bleeding; prevent shock; protect wounds; immobilize fractures; and other emergency measures appropriate based on resources and training of available personnel.⁵⁸

Role 2. Patients at a Role 2 MTF are evaluated to determine individual precedence for treatment and evacuation. The Role 2 has the capability to provide packed red blood cells, limited x-ray, clinical laboratory, operational dental support, COSC, preventive medicine, and may have the ability to provide physical therapy and optometry services. A Role 2 also has the ability to hold casualties who will be able to return to duty within 72 hours. If augmented with a FRST (or FST), patients can receive resuscitative surgical care to stabilize them for further evacuation. The evacuation platoon of a Role 2 unit provides evacuation from Role 1 MTFs. The Role 2 provides area support for units without organic Role 1 (or greater) resources.⁵⁹

⁵⁶ Department of the Army, Army Regulation (AR) 601-142, *Army Medical Department Professional Filler System*, (Washington, DC: Government Printing Office, October 2015), 1.

⁵⁷ Department of the Army, FM 4-02, 1-6.

⁵⁸ Department of the Army, FM 4-02, 1-8.

⁵⁹ Department of the Army, FM 4-02, 1-9.

A NATO Role 2 includes a surgical capability. A US Role 2 without a FRST (or FST) does not meet the definition. A US Role 2 with a collocated FRST is referred to as a *light maneuver* Role 2 facility.⁶⁰

Role 3. A Role 3 MTF is staffed and equipped to provide care to all categories of casualties to include: resuscitation; initial wound surgery; damage control surgery; and postoperative treatment.⁶¹

Role 4. Role 4 MTFs are CONUS-based hospitals or fixed-facility hospitals in safe havens (Landstuhl Regional Medical Center in Landstuhl, Germany). Department of Veterans Affairs and civilian hospitals can be used if demands to evacuate patients from theater require additional bed space. Role 4s provide definitive medical care including surgery and rehabilitation.⁶²

Self-Aid and Buddy Aid. Army doctrine requires that every Soldier is trained on a variety of first aid procedures to enable a Soldier or buddy to render first aid to mitigate potential life-threatening situations. Each Soldier is issued an individual first aid kit with supplies appropriate for this level of training.⁶³

Training and Evaluation Outline (T&EO). A T&EO “consists of the major procedures (steps or actions) a unit or individual must accomplish to perform a task to standard. A collective task also describes the performance required of a unit under the conditions of the training environment.” The T&EO provides “resource requirements and evaluation procedures” for units to properly prepare for training.⁶⁴

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² Ibid, 1-10.

⁶³ Ibid, 1-8.

⁶⁴ Department of the Army, FM 7-0, B-1.

APPENDIX A

RULES

1. About the Game.

1.1. *Death Can Wait* provides players an opportunity to learn how a U.S. Army Field Hospital, or Role 3 medical capability, prepares for, deploys to, and operates in support of a combat mission. The game can be played solitaire or up to four individual players or teams. The game is designed to be playable by non-medical and non-military personnel to gain exposure to the Role 3 or as members of a Role 3 to gain greater understanding of the organization and operations of the capability.

1.2. Terms. Below is a list of terms relevant for game play.

1.2.1. Field Hospital. A U.S. Army Role 3 deployable medical capability that provides resuscitative and damage control surgery with pre- and post- operative care to stabilize injured and ill casualties. Casualties are stabilized for evacuation to higher levels of care or treated and returned to duty.⁶⁵

1.2.2. Operating Room (OR). The Operating Room refers to the section of the Role 3 that provides surgical treatment.

1.2.3. Intensive Care Unit (ICU). An ICU ward consists of 12 beds staffed and equipped to provide care for critically injured or ill patients.⁶⁶

⁶⁵ Department of the Army, Field Manual (FM) 4-02, *Army Health Systems*, (Washington, DC: Government Printing Office, August 2013), 1-9.

⁶⁶ Department of the Army, Special Text (ST) 4-02.10, *Field Hospital Operations*, (Washington, DC: Government Printing Office, January 2017), 1-11.

1.2.4. Intermediate Care Ward (ICW). An ICW ward consists of 20 beds for casualties whose care may range from requiring constant observation to those who are ambulate and able to provide self-care.⁶⁷

1.2.5. Professional Filler System (PROFIS). A medical professional who is designated PROFIS is assigned in an ‘authorized’ slot to a non-deployable hospital (designated as TDA) but fills a ‘required’ position in a deployable hospital. The system allows medical professionals to maintain medical skills until deployed with a Role 3.⁶⁸

1.2.6. Command Post (CP). The CP is the location where the Hospital commander and his staff manage non-clinical administrative actions and coordinate for external support to facilitate medical and non-medical missions.

1.2.7. Nutrition Care Section. Provides food services to patients and hospital personnel. Food services for patients is intended to augment patient care to maximize survivability.⁶⁹

1.2.8. Laundry and Bath (L&B). Services are employed to combat disease by laundering hospital linens and providing bath facilities to the staff.

1.2.9. Pharmacy, Laboratory, and X-ray (PLX). These ancillary clinical services provide medical professionals the ability to diagnose and treat diseases and injuries more effectively.

⁶⁷ Department of the Army, ST 4-02.10, 1-11.

⁶⁸ Department of the Army, Army Regulation (AR) 601-142, *Army Medical Department Professional Filler System*, (Washington, DC: Government Printing Office, October 2015), 1.

⁶⁹ Department of the Army, ST 4-02.10, 1-9.

1.2.10. Maintenance. Hospital units maintain two categories of mechanics to service ground and non-medical equipment and medical equipment.

1.2.11. Life Support Area (LSA). The LSA consists of housing facilities for hospital staff. Effective LSAs allow for day and night shift staff to receive adequate rest to help reduce fatigue.

1.3. Field Hospital composition. Each player makes decisions for a Field Hospital consisting of five organic detachments totaling 4 ORs, 148 beds (ICU and ICW), ancillary clinical services, and non-medical support services that include the Main Command Post and non-medical supply and maintenance.

1.3.1. 1x Hospital Center (Hospital Staff)

1.3.2. 1x Field Hospital (32 Bed) with 2x ORs, 1x ICU, 1x ICW; staff and ancillary support.

1.3.3. 1x Surgical Augmentation with 2x ORs and 2x ICUs.

1.3.4. 1x Medical Augmentation Detachment with 1x ICU and 1x ICW.

1.3.5. 1x ICW Augmentation Detachment with 3x ICW.

1.4. The rules are organized as follows:

1.4.1. Paragraph 1.: Overview and background.

1.4.2. Paragraph 2.: List and explanation of the game components.

1.4.3. Paragraph 3.: Instructions for setting up the game.

1.4.4. Paragraph 4.: Instructions on how to play each phase followed by detailed instructions for processing casualties (paragraph 4.6.), MASCAL events (paragraph 4.7.), calculating death (paragraph 4.8.), and finally Aeromedical Evacuation (AE) (paragraph 4.9.).

1.5. Turns. The game is divided into five phases. Each phase uses turns relevant to the tasks associated with the phase.

1.5.1. Phase I, Preparation, covers a 12-month period and each of the 4 turns represents a training quarter (3 months).

1.5.2. Phase II, Deployment and Establishment, covers a seven-day period, each turn equals one turn, where the hospital deploys to the area of operation and establishes its capabilities.

1.5.3. Phase III, Operations, is eight turns, each equal to one day, that represents full operations where players must manage hospital bed capacity.

1.5.4. Phase IV, Relocation, covers an eight-day period, each day equals one turn, during which the hospital relocates to a secondary area of operations.

1.5.5. Phase V, Operations, is seven turns, each equal to one day, that represents full operations at the secondary location where players manage hospital bed capacity. The game ends on day 30 and players calculate final death totals.

1.6. How to win. The primary objective for each player is to manage hospital operations during all phases to maximize the effectiveness, represented by deaths. Deaths are accumulated by the category of casualties received, because of increased hospital volume, and because of hospital staff fatigue. Individual players who have fewer than 150 deaths at the end of day 30 in Phase V have beaten Death.

2. Game Components. The game consists of the following components:

2.1. Placemat. Each player uses one placemat to track progress throughout the game.

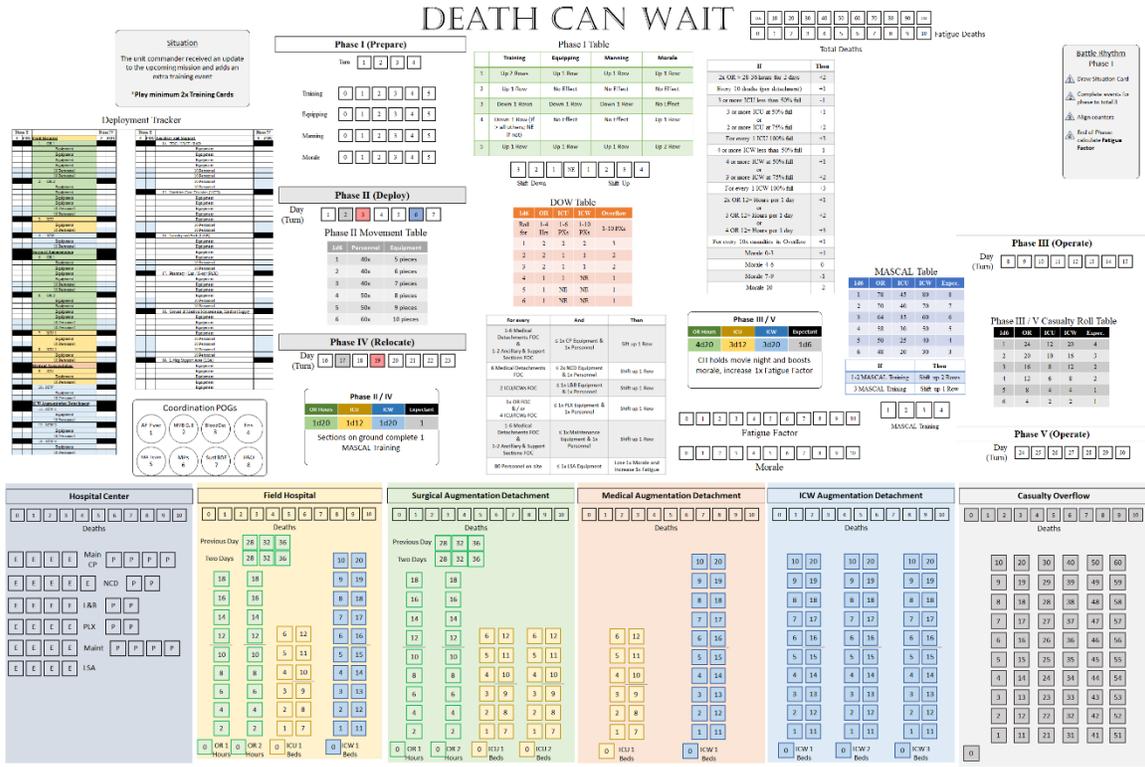


Figure 8. Placemat

Source: Created by author.

2.2. Cards. Each player receives three decks of player cards and one deck of reference cards (Figure 9).

2.2.1. Player Cards. The three decks of player cards are used in the designated phase to provide information to the player and influence the decision.

2.2.1.1. Situation Cards. During Phase I, Situation Cards represent the Commander's Intent. Players use the information to plan training for the upcoming training quarter.

2.2.1.2. Casualty Cards. There are two decks of casualty cards. One deck is used during Phases II and IV and one deck is used during Phases III and V. Both decks have

two portions, the casualty data and additional information. The casualty data provides players the number of die to roll to determine the number of casualties for a given patient category. The additional information section provides players with an external event to respond to or information about capabilities.

2.2.2. Battle Rhythm Cards. Battle Rhythm cards provides players with an abbreviated sequence of play for each phase and casualty processing.

Phase II / IV			
Casualty Cards			

Phase II / IV			
OR Hours	ICU	ICW	Expectant
1d20	2d12	1d20	0
Sections on ground complete 1 MASCAL Training			

Figure 9. Casualty Cards (UPDATE PICTURE – Situation, Casualty x2, Reference)

Source: Created by author.

2.3. Cubes. Each player receives 99 1-centimeter cubes for tracking various events on the placemat. Players use one main cube color during Phase I-III and a second cube color during Phase IV and V to distinguish the established hospital from the relocated hospital.

2.3.1. 1x Cube (player color) – turn tracker

2.3.2. 8x Black Cubes – 7 cubes for each death tracker and 1 cube for player declared MASCALs

2.3.3. 37x Cubes (player first color) – Phase I preparation tracker; Phase II-III coordination relationship, bed status, Hospital Center equipment and personnel tracker, and MASCAL Training, and Phase II-V Fatigue Factor, Morale.

2.3.4. 20x Red Cubes – unavailable beds.

2.3.5. 33x Cubes (player second color) –Phase IV-V coordination relationship, bed status, Hospital Center equipment and personnel tracker, and MASCAL Training.

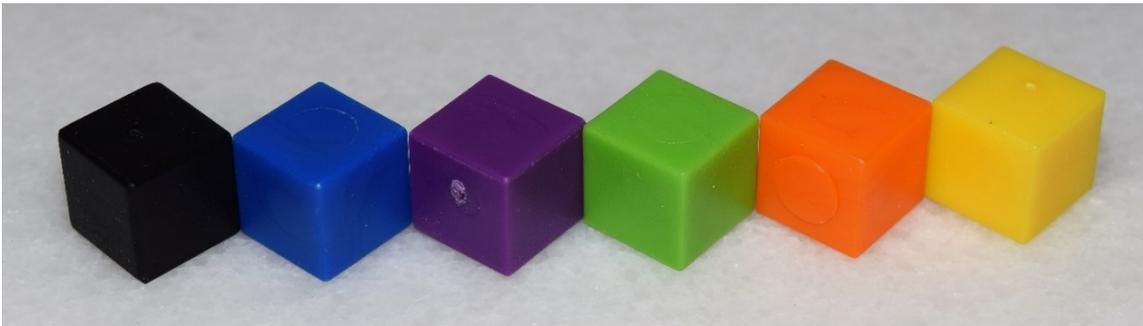


Figure 10. 1-Centimeter Cubes (UPDATE PICTURE)

Source: Created by author.

2.3.6. Dice. During Phases II-V four different size die are used to receive information or determine an effect. Dice are identified below by **x_dn** where **x** refers to the number of die, **d** identifies the piece as a dice, and **n** refers to the number of sides of a die used. For example, a 2d12 means a player will roll two 12-sided die.

2.3.6.1. Xd6 are used for resolving requirements of CRTs, ICU beds during Phases II and IV, and to determine the number of expectant casualties.

2.3.6.2. Xd8 are used during Phase II and IV to determine the coordination relationship established.

2.3.6.3. Xd12 are used during Phases II-V to determine the number of ICU casualties and number of casualties evacuated via AE.

2.3.6.4. Xd20 are used during Phases II-V to determine the number of OR hours, number of ICW casualties, and number of casualties evacuated via AE.



Figure 11. Dice (from left to right - 1d6, 1d8, 1d10, 1d12, 1d20)

Source: Created by author.

3. Setting up the Game.

3.1. Each player receives the following items to start the game:

3.1.1. Placemat

3.1.2. 98 1-centimeter cubes

3.1.3. 4 decks of cards

3.2. Players begin by placing a black cube on the Total Deaths counter, a cube on the turn tracker in Phase I, and one cube (player's first color, paragraph 2.3.3.) each on the Training, Manning, Equipping, and Morale tracks under Phase I. Players place the decks on the designated holding areas on the placemat. Once the players boards are set up players can begin play. Figure 12 illustrates initial setup with a black 1-centimeter cube on the Phase I turn tracker and yellow 1-centimeter cubes on each Phase I event tracker. The decks of cards are placed in their holding areas.

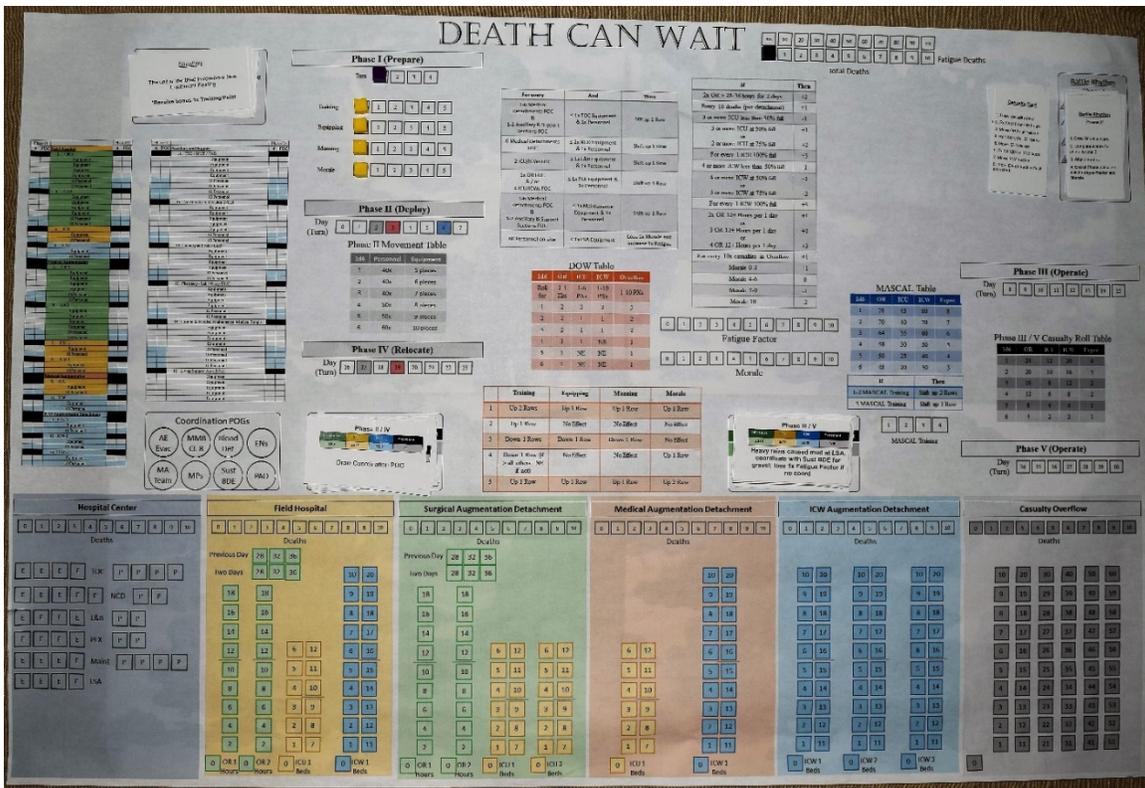


Figure 12. Initial Set-up

Source: Created by author.

4. How to Play. Instructions for how to play follow in sequence by phase. For instructions for receiving and processing casualties, Aeromedical Evacuation (AE), and adjudicating death, follow Phase V instructions and the associating paragraph number is referenced in the Phase instructions. Players each roll a 1d6, the player with the highest number goes first and play continues clockwise.

4.1. Phase I: Preparation. During Preparation, players execute decisions associated with developing a Unit Training Plan (UTP) for a 12-month period prior to deployment. Each turn represents one quarter (3 months) for a total of 4 turns. The player can make

decisions related to training, manning, equipping, and improving morale. Players use Situation Cards to receive Commander's guidance on developing the UTP. Including the Commander's guidance, players make a total of three decisions each turn to improve the four categories.

4.1.1. Training: units must train to be proficient at their tasks, however other factors may prevent or reduce the ability of a unit to train. In subsequent phases, training influences the DOW rate.

4.1.2. Equipping: equipping refers to receiving new or repaired equipment, spending time on services for medical and non-medical equipment, building historical consumption rates for resupply activities. In subsequent phases, training influences the DOW rate and may cause capabilities to be unavailable for a turn(s) due to external influences.

4.1.3. Manning: the unit must maintain organic and PROFIS manning to have all necessary personnel to deploy. In subsequent phases, training influences the DOW rate.

4.1.4. Morale: increased morale helps the unit maintain resiliency, but too much morale detracts from other necessary actions such as training.

4.1.5. Situation Cards: Each player has ten (10) situation cards that represent the commander's guidance for the upcoming quarter and external factors that will influence unit readiness. Players draw one (1) at random prior to each turn and discard after playing their turn.

4.1.5.1. Lose Point: Cards that say to "Lose" points, move a cube down one. If Category is already on 0, do not move cube down but still lose category for that quarter.

4.1.5.1.1. *Example: On first play, player draws Situation Card: “Several Soldiers are non-deployable after medical screening. **Lose 1x Manning Point**”. Player leaves manning block on 0 and plays any combination of Training, Equipping, Manning or Morale for a total of 3 events.*

4.1.5.2. **Bonus Event:** Cards that say “*Receive bonus*” allow for a total of four (4) events within a single turn. Players can play any combination of any category (including the bonus event) to total four (4).

4.1.5.2.1. *Example: Player draws Situation Card: “The unit receives a Mobile Training Team to train power generation mechanics. **Receive bonus Equipping Point.**” Player increases Equipping by one and plays an additional point for equipping (total of 2), 1x Training, and 1x Manning for a total of 4 events.*

4.1.6. To play. The following matrix explains the tasks in order for play. Starting with the left column, players execute the instructions written in the “Description” Column in order of the “Task” column for the applicable “Turn”. If there is an illustration for the task, it is listed under the “Figure” column. Additional instructions to explain the task or additional notes are listed under the “Notes” column.

Task	Turn	Description	Figure	Notes
1	1-4	Draw Situation Card and move cube as directed	13	

2	1-4	Move two additional cubes for quarterly training focus	13	
2a	1-4	Play three additional cubes if Situation Card provided bonus	Example 3, Figure 15.	
Move to next turn.				

4.1.6.1.1. *Example Turn 1: Player draws Situation Card: “A review of on-hand supplies requires the unit to focus on re-supply operations. **Play minimum 1x Equipping Point**”. Player increases Equipping by one and selects Training and Morale to increase each by one for a total of 3 tasks (see Figure 7.).*

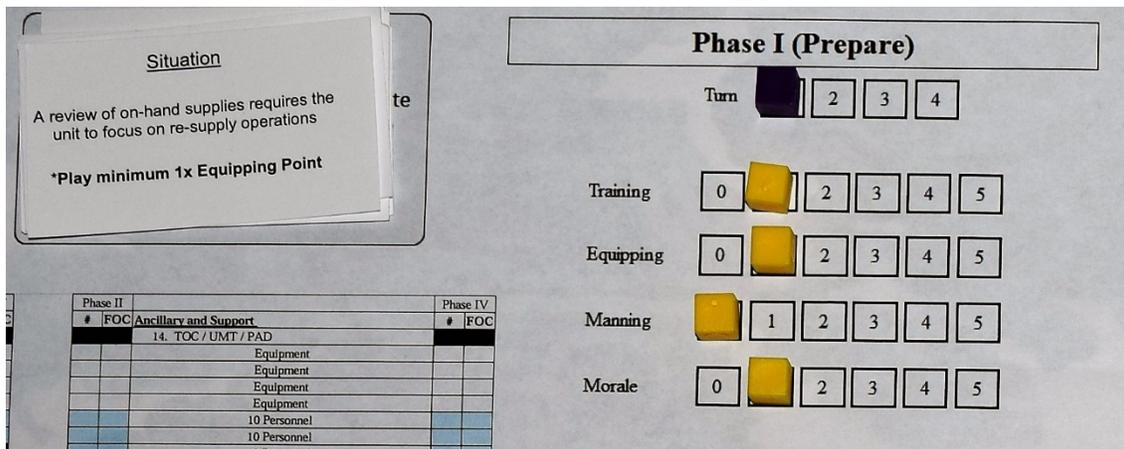


Figure 13. Phase I Turn 1

Source: Created by author.

4.1.6.1.2. *Example Turn 2: Player draws Situation Card: “The unit PROFIS requests require an update due to the unit mission. **Play minimum 1x Manning Point**”.*
Player increases Manning by one and selects Training and Morale to increase by one for a total of 2x Training, 1x Equipping, 1x Manning, and 2x Morale (see Figure 14.).

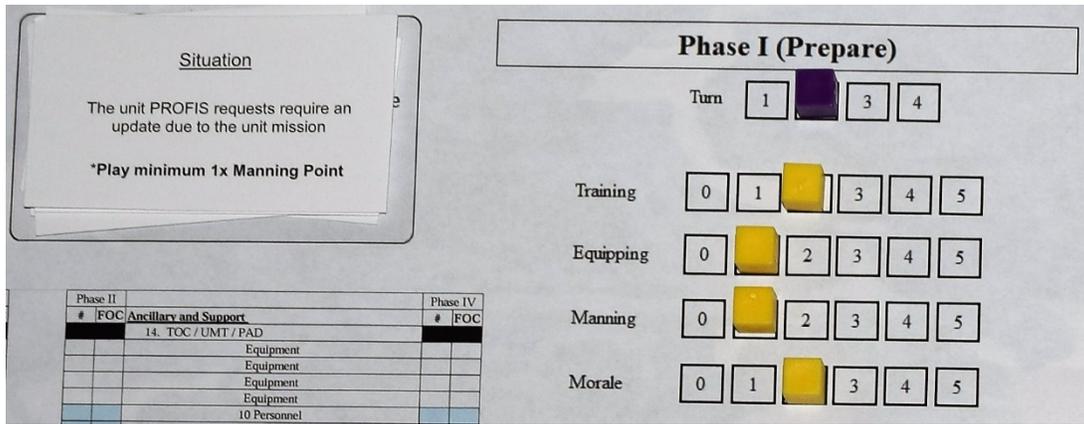


Figure 14. Phase I Turn 2

Source: Created by author.

4.1.6.1.3. *Example Turn 3: Player draws Situation Card: “The unit is identified to receive a New Equipment Fielding. **Receive bonus Training Point**”.* Player increases Training by one and selects 2x Equipping and 1x Manning for a total of 3x Training, 3x Equipping, 2x Manning, and 2x Morale (see Figure 15.).

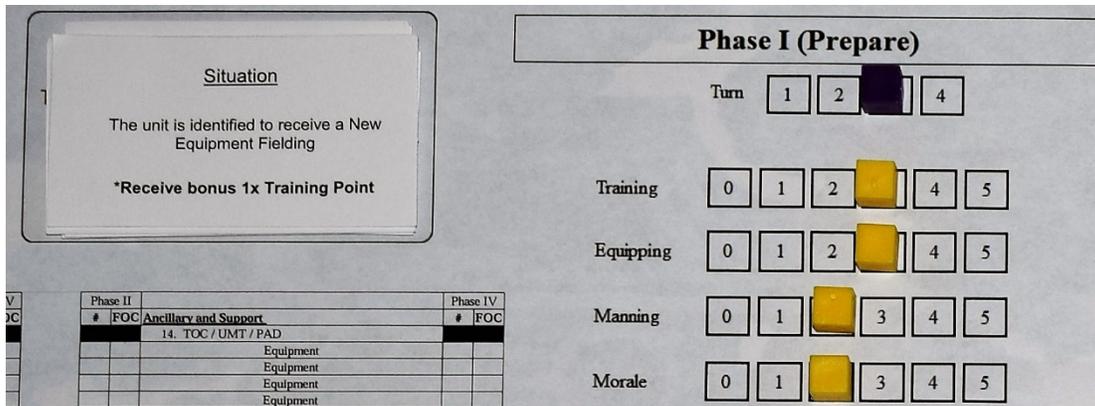


Figure 15. Phase I Turn 3

Source: Created by author.

4.1.6.1.4. *Example Turn 4: Player draws Situation Card: “Several Soldiers are non-deployable after the medical screening. Lose 1x Manning Point”. Player reduces 1x Manning and plays 1x Training and 1x Morale for a total of 4x Training, 3x Equipping, 1x Manning, and 3x Morale (see Figure 16.).*

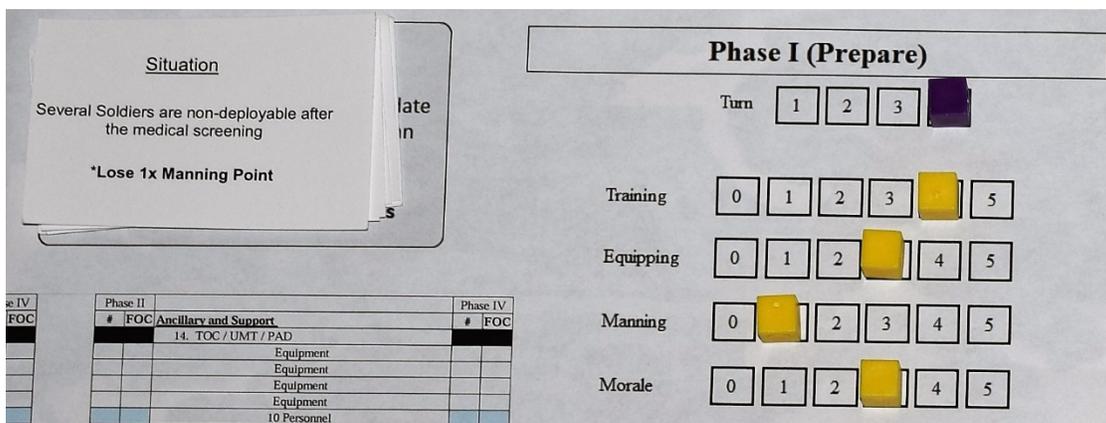


Figure 16. Phase I Turn 4

Source: Created by author.

4.1.6.2. At the end of turn 4, use Phase I DOW Adjustment Table to identify if the results of Phase I will shift the results of Phase II-V DOW table rows up or down..

External events on Phase III and V casualty cards will require players to reference the final training, equipping, manning, and morale number, players maintain a cube on the chart for reference. Figure 17 illustrates how to calculate the Adjustment Table.

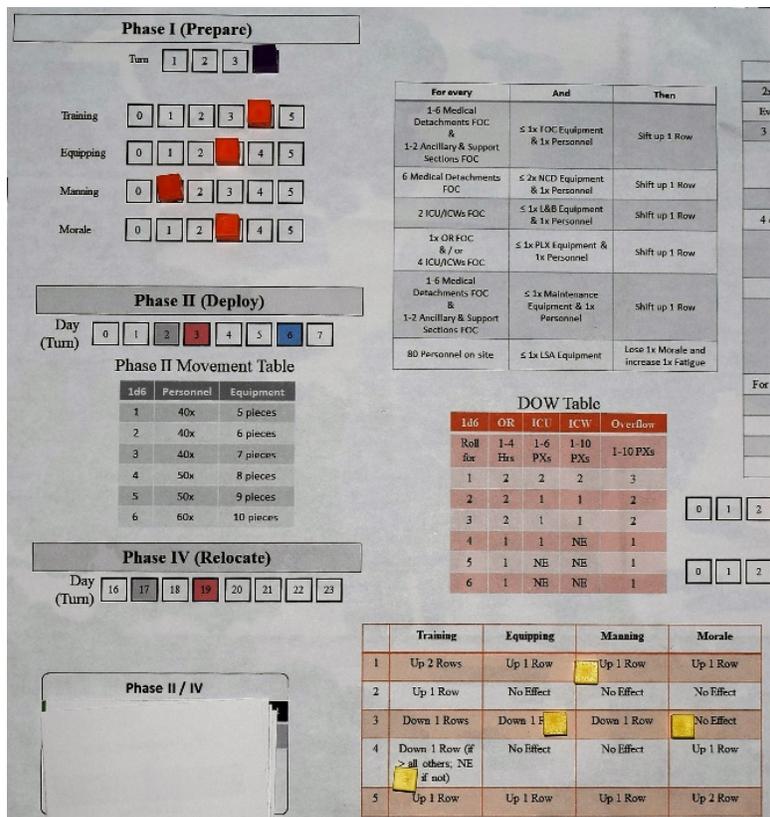


Figure 17. Phase I Adjustment Table (UPDATE TABLE)

Source: Created by author.

4.1.6.3. Transfer final Morale number of Phase I to Phase III Morale tracker.

4.2. Phase II: Phase II is the deployment and establishment phase. Each turn equals one day, and there are a total of 7 days in Phase II. Players make decisions associated with deploying the Field Hospital to achieve the required capability before combat operations begin and casualty numbers increase. The player prioritizes equipment to move using organic assets and commercial transportation assets. During turns 2-7, players roll a 1d6 to determine the amount of commercial transportation assets available on that day and proceeds through deployment until all equipment and personnel are on site and established. Deployment occurs during Days 1-7; however, establishment may extend into Phase III depending on the flow of commercial transportation.

4.2.1. **Mission:** establish surgical (OR) and patient hold (ICU/ICW) capabilities as soon as possible. Casualties needing hospital care are expected to start arriving on Day 3 and increasing as operations continue. Initial casualty estimates estimate 24-32 casualties per day arriving at each role 3. Major offensive operations are expected to start on Day 8 with casualty estimates reaching 150 casualties a day.

4.2.1.1. Each LSA equipment block provides assets to sleep 80 personnel.

4.2.1.2. Refer to Phase II DOW Adjustment Table to identify the type of ancillary and support and the quantity of equipment and personnel that must be on ground for effective operations.

4.2.2. To play. Players follow the following steps:

Task	Turn	Description	Figure	Notes

1	1	Players number up to 16 equipment blocks and up to 70 personnel (7 personnel blocks) to move using organic transportation. The FOC day will be day 3.	18.	Organic transportation can only be used one time.
2	2-7	Roll 1d6 to identify external transportation assets	19.	
3	2-7	Annotate on Deployment Tracker the number of equipment and personnel moving and the FOC day (3 rd day from current turn)	18, 19	FOC is identified once all equipment and personnel for a given capability are on ground.
4	3- until complete	Identify FOC capabilities using 1-centimeter cubes. Annotate number of equipment and personnel of ancillary and support capabilities on Hospital Center board.	20.	Figure 20. illustrates capabilities moved in turn 1 using organic capabilities that became FOC on day 3
5	3-7	Draw Phase II / IV casualty card.	21.	Set card aside, cards will be reshuffled for Phase IV

5a	3-7	Execute external influence instructions of Casualty Card		
5b	3-7	Process for casualties		Paragraph 4.6.
5c	3-7	If players do not have capabilities to manage all casualties, players roll for DOW	21.	Paragraph 4.8.2.1.
6	3-7	Adjust Fatigue Factor		Paragraph 4.10.
7	3-7	Players roll for end of day DOW.		Paragraph 4.8.2.2.
8	6-7	Roll 1d20 for Aeromedical Evacuation (AE).	22.	Paragraph 4.9.
Move to next turn.				

4.2.2.1.1.1. *Example 1. Players identify 16 pieces of equipment and 70 personnel to move day 1 to be FOC day 3 (Figure 12. Written in pink ink).*

Phase II	Phase IV
# FOC	# FOC
	Field Hospital
1 3	1. OR 1
2 3	Equipment
3 3	Equipment
4 3	Equipment
5 3	Equipment
6 3	10 Personnel
7 3	10 Personnel
8 3	2. OR 2
9 3	Equipment
10 3	Equipment
11 3	Equipment
12 3	10 Personnel
13 3	10 Personnel
14 3	3. ICU
15 3	Equipment
16 3	10 Personnel
17 3	4. ICW
18 3	Equipment
19 3	10 Personnel
20 3	Surgical Augmentation
21 3	5. OR 1
22 3	Equipment
23 3	Equipment
24 3	Equipment
25 3	10 Personnel
26 3	10 Personnel
27 3	6. OR 2
28 3	Equipment
29 3	Equipment
30 3	Equipment
31 3	Equipment
32 3	10 Personnel
33 3	10 Personnel
34 3	7. ICU 1
35 3	Equipment
36 3	10 Personnel
37 3	8. ICU 2
38 3	Equipment
39 3	10 Personnel
40 3	Medical Augmentation
41 3	9. ICU
42 3	Equipment
43 3	10 Personnel
44 3	10. ICW
45 3	Equipment
46 3	10 Personnel
47 3	ICW Augmentation Detachment
48 3	11. ICW 1
49 3	Equipment
50 3	10 Personnel
51 3	12. ICW 2
52 3	Equipment
53 3	10 Personnel
54 3	13. ICW 3
55 3	Equipment
56 3	10 Personnel

Phase II	Phase IV
# FOC	# FOC
	Auxiliary and Support
1 3	14. TOC / UMT / PAD
2 3	Equipment
3 3	Equipment
4 3	Equipment
5 3	Equipment
6 3	10 Personnel
7 3	10 Personnel
8 3	10 Personnel
9 3	10 Personnel
10 3	15. Nutrition Care Division (NCD)
11 3	Equipment
12 3	Equipment
13 3	Equipment
14 3	Equipment
15 3	10 Personnel
16 3	10 Personnel
17 3	16. Laundry and Bath (1 & B)
18 3	Equipment
19 3	Equipment
20 3	Equipment
21 3	Equipment
22 3	10 Personnel
23 3	10 Personnel
24 3	17. Pharmacy / Lab / X-ray (PLX)
25 3	Equipment
26 3	Equipment
27 3	Equipment
28 3	10 Personnel
29 3	10 Personnel
30 3	18. Ground & Medical Maintenance: Medical Supply
31 3	Equipment
32 3	Equipment
33 3	Equipment
34 3	Equipment
35 3	10 Personnel
36 3	10 Personnel
37 3	10 Personnel
38 3	10 Personnel
39 3	19. Living Support Area (LSA)
40 3	Equipment
41 3	Equipment
42 3	Equipment
43 3	Equipment

Coordination POGs

AE Evac	MMB CL 8	Blood Det	ENs
MA		Sust	

Figure 18. Phase II Turn 1 (Organic Movement)

Source: Created by author.

4.2.2.1.2. Example Turn 2. Player rolls 1d6 and receives a 4 (Figure 13. Red 1d6). The player identifies 8 pieces of equipment and 50 personnel to move. Equipment and personnel are numbered on the Deployment Tracker with 4 as the FOC day (Figure 13. Written in blue ink).

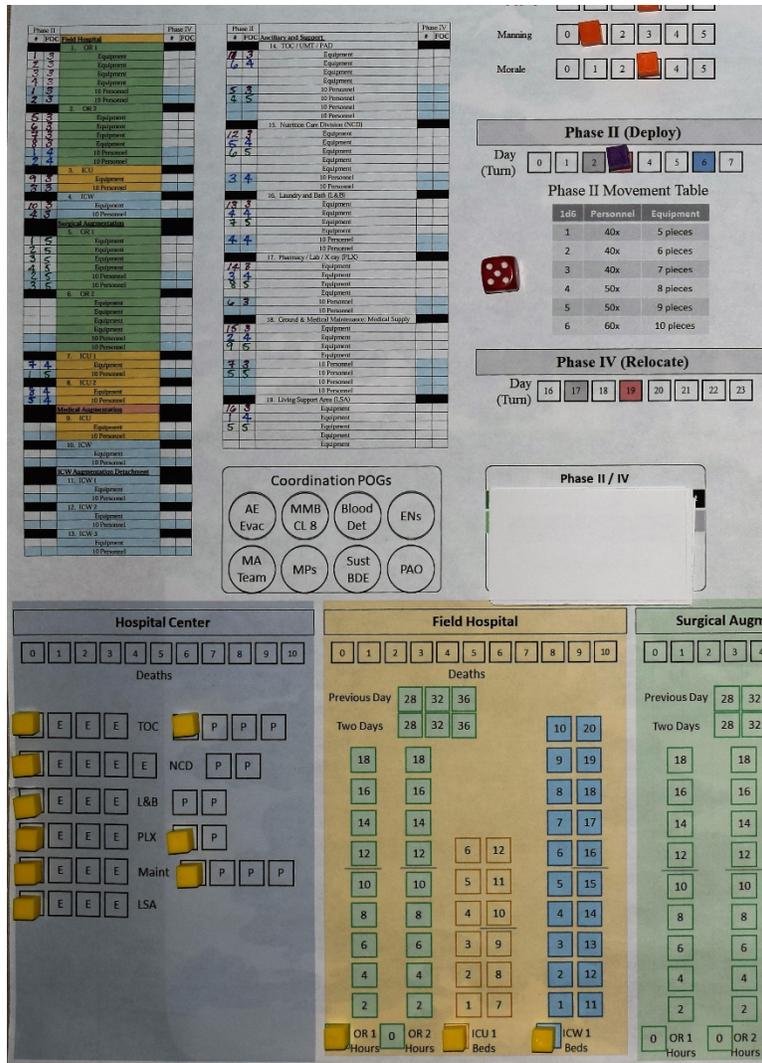


Figure 20. Phase II Turn 3 – Deployment and FOC of Organic Movement (UPDATE PICTURE)

Source: Created by author.

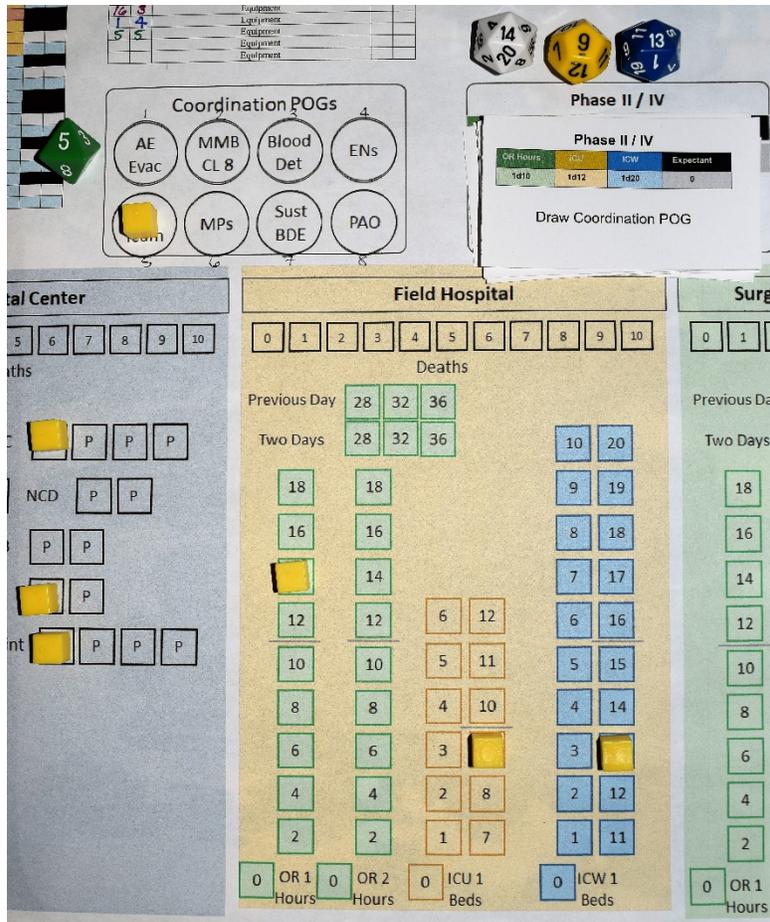


Figure 21. Phase II Turn 3 – Casualty Processing (UPDATE PICTURE)

Source: Created by author.

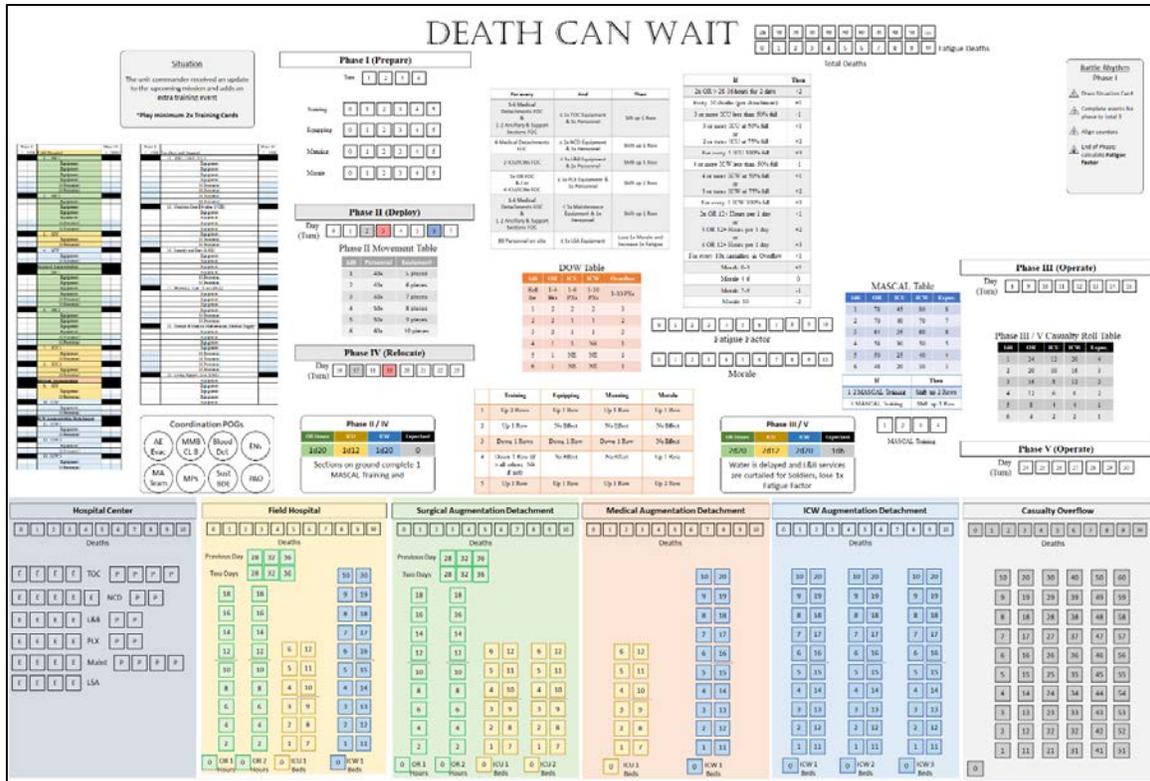


Figure 22. Phase II Turn 6 – Aeromedical Evacuation (UPDATE PICTURE)

Source: Created by author.

4.3. Phase III. Operations. During Phase III full combat operations have commenced and the hospital must manage increased casualty flow. Each turn equals one day.

Task	Turn	Description	Figure	Notes
1	8-9	Players complete establishment by annotating capabilities that become FOC.	20.	If all equipment and personnel arrive by 8 players skip this step.

2	8-15	Draw Phase III / V Casualty Card		Discard card after played
2a	8-15	Execute external influence instructions of Casualty Card		MASCAL cards do not have external influences. MASCAL instructions - Paragraph 4.7.
2b	8-15	Process for casualties	23-26	Paragraph 4.6.
2c	8-15	If players do not have capabilities to manage all casualties, players roll for DOW	21.	Paragraph 4.8.2.1.
3	8-15	Adjust Fatigue Factor		Paragraph 4.10.
4	8-15	Roll for end of day DOW		Paragraph 4.8.2.2.
5	8-15	Roll 3d20 + 1d12 for Aeromedical Evacuation (AE)	22.	Paragraph 4.9.
Move to next turn.				

4.4. Phase IV. Relocation. During Phase IV players sequence the relocation of hospital sections to maintain operations at the main hospital until casualties are evacuated and prepare to receive casualties at the forward Hospital.

Task	Turn	Description	Figure	Notes
0	Before player starts 16	Reshuffle Phase II / IV casualty cards		
1	16- complete	Move casualties to like wards to clear beds of a capability player identifies to move. Remove bed tracking cube from board for cleared capabilities.	XX	Players can move casualties into casualty overflow
2	16-23	Players annotate up to 16 pieces of equipment and up to 70 personnel to move using organic transportation. Players can have organic transportation assets depart on any day.	XX	
3	17-23	Roll 1d6 to identify external transportation assets	XX.	
4	17-23	Annotate on Deployment Tracker the number of equipment and personnel moving and the FOC day	XX	

5	18- complete	Identify FOC capabilities using 1- centimeter cubes.	XX.	If players move equipment and/or personnel on day 16 using organic equipment, the earliest day a fully deployed capability will be FOC is day 18
6a	16-19	Draw Phase II / IV casualty card	XX.	Discard after played.
6b	20-23	Draw Phase II / IV casualty card.	XX.	Discard after played.
7a	16-19	Process casualties through main hospital (yellow cubes).		Paragraph 4.6
7b	20-23	Process casualties through forward hospital (green cubes).		Paragraph 4.6.
8	16-23	If players do not have FOC capabilities to manage all casualties, players roll for DOW		Paragraph 4.8.2.1.
9	16-23	Adjust Fatigue Factor		Paragraph 4.10.
10	16-23	Players roll for end of day DOW at main and/or forward hospital(s)		Paragraph 4.8.2.2.

11a	16-19	Roll 5d20 for Aeromedical Evacuation (AE) to clear main hospital	XX.	Paragraph 4.9.
11b	20-23 (or until complete)	Roll 2d20 for Aeromedical Evacuation (AE) to clear main hospital	XX.	Paragraph 4.9.
11c	19-21	Roll 2d20 for AE to evacuate casualties at forward hospital	XX.	Paragraph 4.9.
11d	22-23	Roll 3d20 +1d12 for AE to evacuate casualties at forward hospital	XX.	Paragraph 4.9.
Move to next turn.				

4.4.1. Example: 1x ICU has 4 casualties and 1x ICU has 6 you can consolidate to have 1x with 10 casualties and 1x with 0)

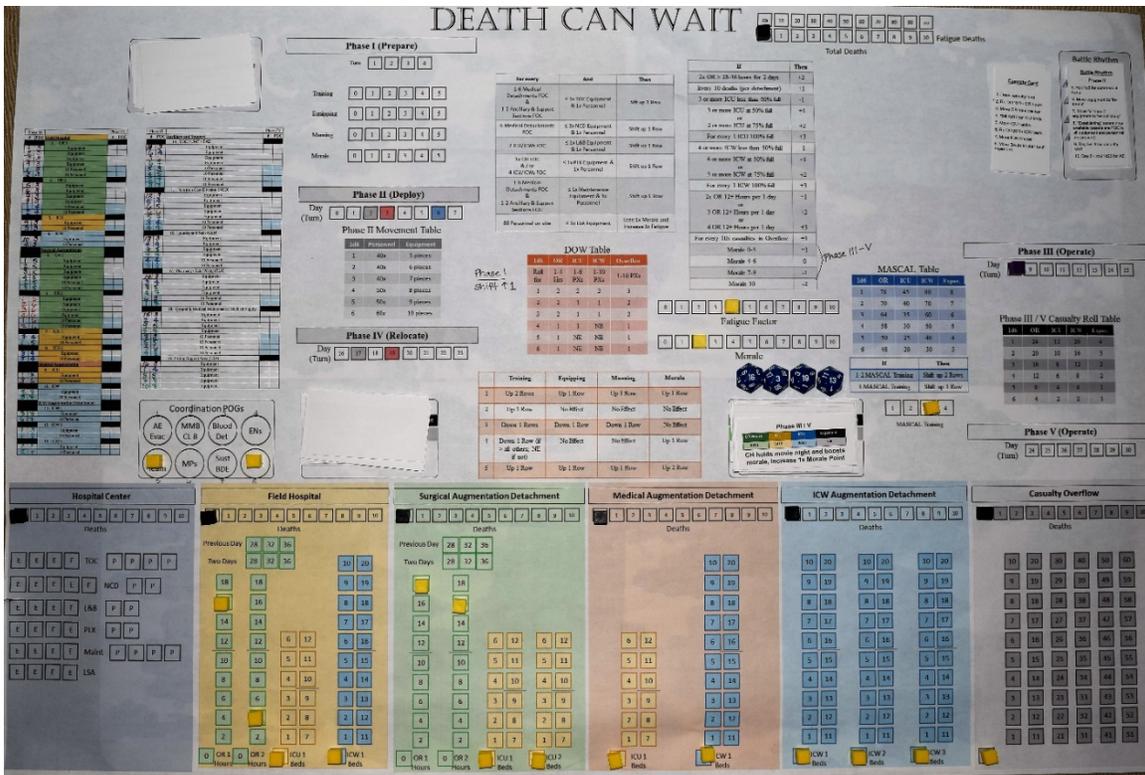


Figure 23. Phase IV Turns (UPDATE PICTURE)

Source: Created by author.

4.5. Phase V. Operations. During Phase V players are once again receiving casualties from full combat operations. Each turn equals one day.

Task	Turn	Description	Figure	Notes
1	24-26	Players complete establishment of forward hospital by annotating capabilities that become FOC.	XX.	If all equipment and personnel arrive by 24 players skip this step.

2	24-30	Draw Phase III / V Casualty Card		Discard card after played.
2a	24-30	Execute external influence instructions of Casualty Card		MASCAL cards do not have external influence instructions.
2b	24-30	Process for casualties	23-26	Paragraph 4.6.
2c	24-30	If players do not have capabilities to manage all casualties, players roll for DOW	XX.	Paragraph 4.8.2.1.
3	24-30	Adjust Fatigue Factor		Paragraph 4.10.
4	24-30	Roll for end of day DOW		Paragraph 4.8.2.2.
5	24-30	Roll 3d20 + 1d12 for Aeromedical Evacuation (AE)	XX.	Paragraph 4.9.
Move to next turn.				

4.6. Casualties

4.6.1.1. Players draw a Casualty Card associated with the phase they are in. To process casualties, players adjudicate additional information, then roll as indicated by the section. The following examples reference the casualty card depicted in Figure 24.

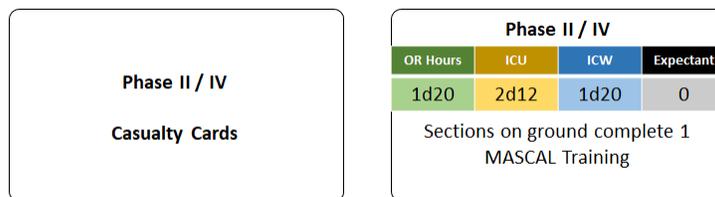


Figure 24. Casualty Cards

Source: Created by author.

4.6.1.2. Example OR Hours: The casualty card says **4d20** and the player rolls a 16, 3, 19, and a 13. The player moves any one or combination of the 4 OR trackers to total 51 hours (see Figure 25.).

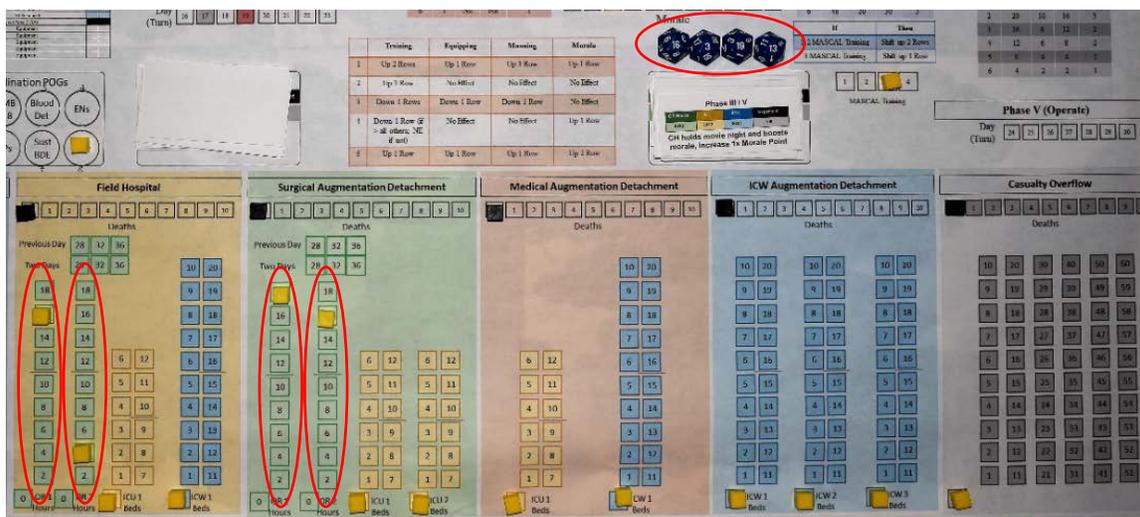


Figure 25. Casualty Processing – OR Hours

Source: Created by author.

4.6.1.3. *Example ICU: The casualty card says 3d12 and the player rolls a 10, 7, and a 6. The player moves any one or combination of the 4 ICU ward trackers to total 23 beds (see Figure 26.).*

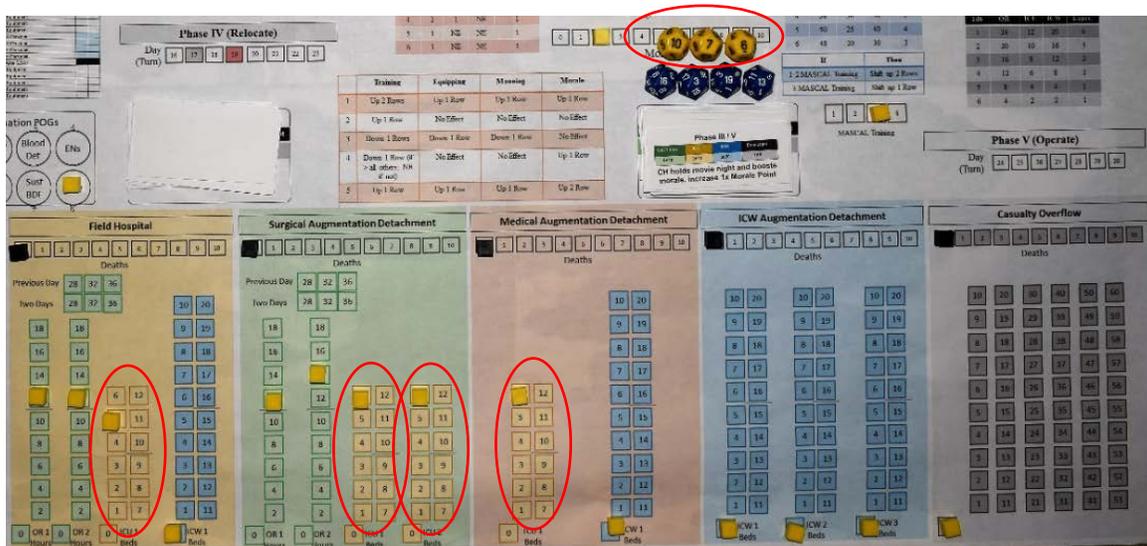


Figure 26. Casualty Processing – ICU Beds

Source: Created by author.

4.6.1.4. *Example: The casualty card says 3d20 and the player rolls a 15, 6, and a 16. The player moves any one or combination of the 5 ICW ward trackers to total 37 beds (see Figure 27.).*

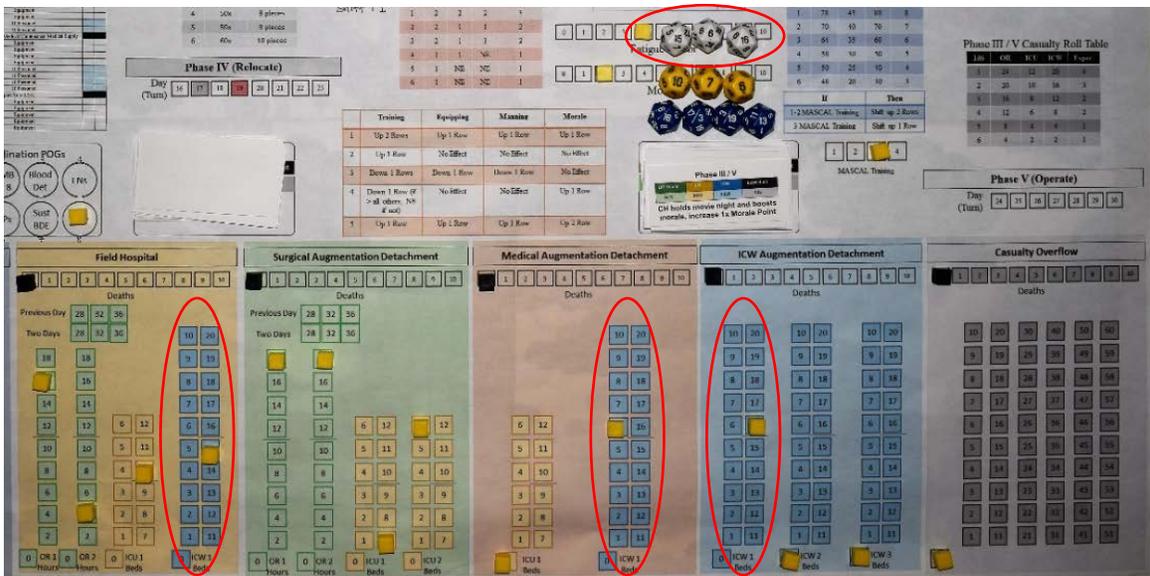


Figure 27. Casualty Processing – ICW Beds

Source: Created by author.

4.6.1.5. *Example: The casualty card says 1d6 expectant casualties and the player rolls a 5. The player moves the Total Death tracker up by 5. If the Hospital Center Death tracker is at 6, 7, 8, 9, or 10, move the 10s tracker up by one and move the 1s tracker to the appropriate number (i.e. if the 1 tracker is at 9 and the 10s tracker is on 10, move the 10s tracker to 20 and the 1s tracker to 4 to total 5 additional deaths.) (see Figure 28.).*

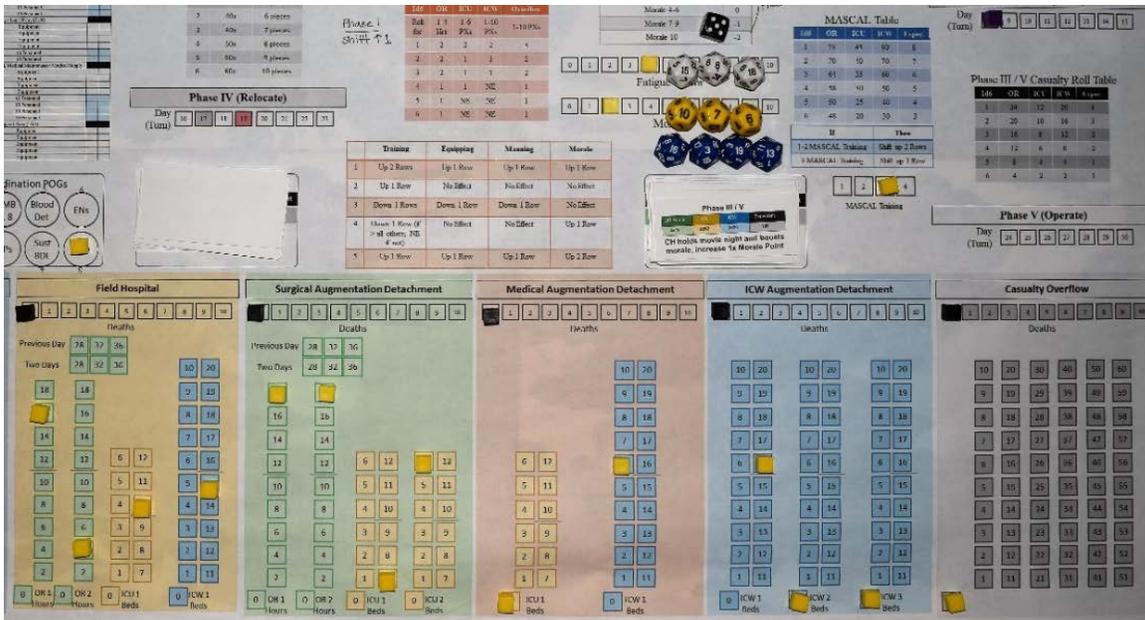


Figure 28. Casualty Processing – Expectant Casualties

Source: Created by author.

4.7. MASCAL. Players can enter a MASCAL situation two ways, by drawing a casualty card that declares a MASCAL or by declaring one for the hospital based on bed status.

4.7.1. When a player draws a MASCAL card (Phase III and V):

Task	Description	Figure	Notes
1	Roll 1d6 to determine the row of the MASCAL CRT to reference		
2	Adjust row of MASCAL CRT based on MASCAL Training	XX	

3	Process casualties based on MASCAL CRT	XX	
3a	Roll for DOW if casualties exceed capability	XX	Paragraph 4.8.2.1.
4	Roll for end of day DOW		Paragraph 4.8.2.2
5	Adjust Fatigue Factor		Paragraph 4.10.
6	Roll 5d20 for Aeromedical Evacuation (AE)		Paragraph 4.9.
7	Repeat tasks 4-6 until all beds are cleared and hospital is no longer in MASCAL status		
Move to next turn.			

4.7.2. Players can declare MASCAL at the beginning of a turn if 75 percent or more of the available ICU and ICW wards are full. Players can only declare MASCAL after Phase II and IV when a minimum 30 Personnel of the Command Post and three pieces of Equipment are on site (establishing or FOC).⁷⁰ Each player can declare a total of four MASCAL from day 5-30. Drawing a MASCAL card does not count towards the four.

⁷⁰ 30 Personnel accounts for adequate Command Post and Patient Administration Division personnel to coordinate for unscheduled AE

Task	Description	Figure	Notes
1	Reduce morale by one and increase Fatigue Factor by one		
2	Roll 5d20 for Aeromedical Evacuation (AE)		Paragraph 4.9.
3	Roll for end of day DOW		Reference DOW rules
4	Adjust Fatigue Factor		Paragraph 4.10.
5	Repeat tasks 2-4 until all beds are cleared and hospital is no longer in MASCAL status. Player must continue until all beds are clear		
Move to next turn.			

4.7.3. All players who do not draw a MASCAL card during that turn or are not in a declared MASCAL roll a 1d6 for every hospital in a MASCAL during that turn to replicate additional casualties that were diverted from the hospital in a MASCAL. If a player draws a casualty card that instructs the player to roll a 1d6 due to increased combat, the player then rolls 2d6. Players follow the Phase II and V casualty table to identify the number of additional casualties that are diverted to the hospital.

4.7.3.1. *Example 1: In a game with 4 players, player 1 declares a MASCAL due to the volume of beds filled. Player 1 follows MASCAL instructions and players 2-4 play their individually drawn casualty cards. Player 2 draws a casualty card that directs him to roll a 1d6 due to increased combat, player 2 rolls 2d6. Players 3 and 4 draw casualty cards that do not direct an additional roll and therefore roll 1d6.*

4.7.3.2. *Example 2: In a game with 4 players, player 2 draws a MASCAL card and player 3 declares a MASCAL due to volume of beds filled. Players 1 and 4 draw casualty cards and player 4 draws a card that directs him to roll a 1d6 due to increased combat. Player 1 rolls 2d6 for players 2 and 3 MASCAL and player 4 rolls 3d6, one for his casualty card and two for MASCAL.*

4.8. Deaths

4.8.1. Each of the five detachments of the Field Hospital have their own death tracker. As casualties die in the given detachment, the player moves the detachment's death tracker up by the appropriate number. When the detachment reaches the 11th casualty, the player increases the Total Death Tracker 10s row by one and returns the detachment death tracker to 1, or appropriate number. Figure 29. Below illustrates the death tracker for Field Hospital increasing to 13 total deaths.

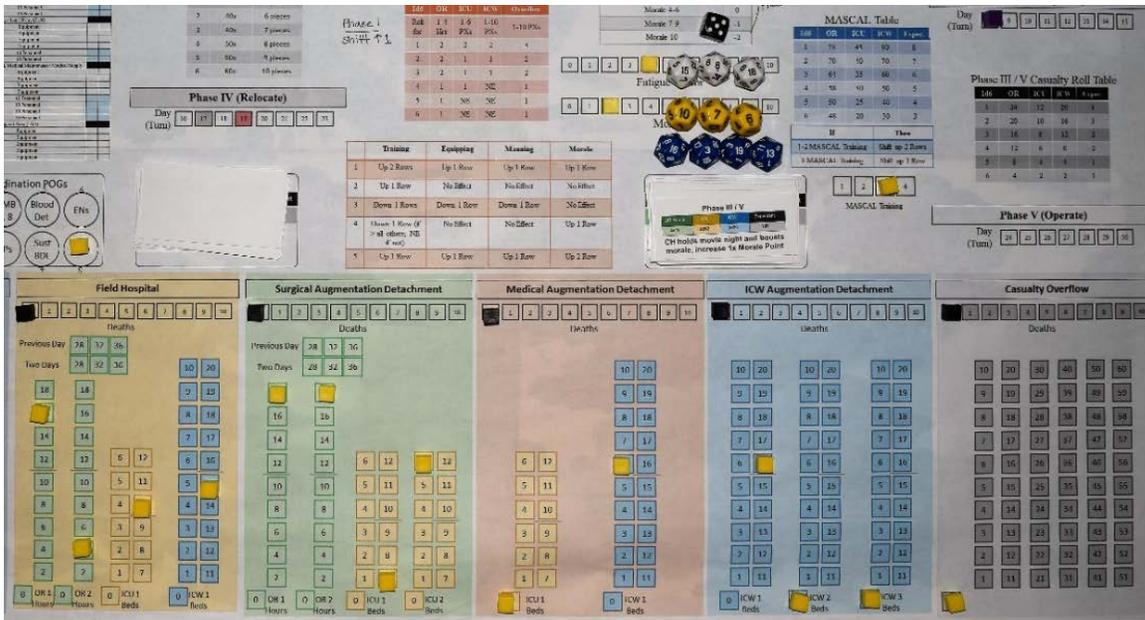


Figure 29. Death Tracking (UPDATE PICTURE)

Source: Created by author.

4.8.2. Each expectant casualty counts for one death tracked on Hospital Center Deaths.

4.8.3. Died of Wounds (DOW). Players use the DOW Table to calculate casualties who die of wounds for two situations: 1) for non-FOC or full capabilities; 2) and end of day during Phase II-V.

4.8.3.1. Non-FOC or full capabilities. Players roll to determine if casualties survive if a capability is not FOC (Phase II and IV) and/or the capability is full during Phases II-V.

4.8.3.1.1. OR. For every hour that exceeds 18; roll 1d6 to identify if the casualty is stabilized. If yes, increase ICU bed count, if not, increase detachment death count.

4.8.3.1.2. ICU. For every set of up to 6 ICU casualties that exceed the bed count, roll 1d6 and follow the DOW table. Increase death count of ward(s) where ICU casualties DOW. Increase ICW bed count for all that survive.

4.8.3.1.3. ICW. For every set of up to 10 ICW casualties roll 1d6 and follow the DOW table. Increase death count for of ward(s) here ICW casualties DOWs. Increase Casualty Overflow bed count for all that survive. If ICUs are not full, casualties can use ICU beds for ICW casualties.

4.8.3.1.4. Casualty Overflow. For every set of up to 10 Casualty(ies) roll 1d6. Increase death count for DOWs and reduce total number of casualties in the Casualty Overflow

4.8.3.1.5. *Example 1 asset not on site: During Phase II the Player draws a casualty card with 1d20 for the ICW patients. No ICW ward is established on that turn. The player rolls for the number of ICW patients (8.2.1.3.) and receives a 12. For casualties 1-10, the player rolls 1d6 and gets a 2. The player uses the “If Then” table to adjust the rows accordingly.*

4.8.3.1.6. *Example 2 assets full: During any phase, Player draws a casualty card with 2d12 for ICU and player rolls a total of 16. Only 4 ICU beds are available throughout the hospital, player increases ICUs so all have 12 beds full and 12 casualties remain. Player roll 1d6 and receives a 1. Player increases death tracker by 2 and increases ICW by 4. Player rolls 1d6 for casualties 7-12 and rolls a 4. Player increases death tracker by 1 and increases ICW by 5. Player increases death for detachment(s) that had ICU beds available (split at players choice) and places surviving 9 casualties in any*

free ICW beds. If the player only has 5 ICW beds available, player rolls 1d6 for remaining 4 casualties. Player rolls a 2 and increases the death tracker for one detachment with ICW beds and places remaining 3 casualties in “Casualty Overflow”.

4.8.3.2. End of day DOW. At the end of each day (turn during Phases II - V), players roll for each ward that meets the following criteria to determine if casualties die of wounds. DOWs are counted against the detachment with the affected ward.

4.8.3.2.1. Each ICU over 50 percent full (7-12 beds full)

4.8.3.2.2. Each ICW over 75 percent full (15-20 beds full)

4.9. Aeromedical Evacuation (AE): Patient Evacuation from Hospital

4.9.1. Players roll to determine the number of available slots on Aeromedical Evacuation (AE) assets. Players roll and must clear Casualty Overflow beds first followed by ICU and/or ICW beds equal to the total rolled.

4.9.1.1. Phase II: $2d20^{71}$ at the end of each day starting Day 6

4.9.1.2. Phase III: $3d20 + 1d12^{72}$ at the end of each day (turn)

4.9.1.3. Phase IV:

4.9.1.3.1. Main Hospital: $5d20$ for days 16-19; $2d20$ for days 20-21;

⁷¹ Replicates up to half of one C-130E/H/J.

⁷² Replicates a single aircraft dedicated to the hospital C-130E/H/J can evacuate 74 Litter casualties

4.9.1.3.2. Forward Hospital: 0 for days 16-18; 2d20 for days 19-21; 3d20 + 1d12 for days 22-23

4.9.1.4. Phase V: 3d20 + 1d12 at the end of each day (turn)

4.9.1.5. *Example: During Phase III a player rolls 3d20 and 1d12 for a total of 40.*

The player has 8 casualties in Field Hospital ICU; 15 in Field Hospital ICW; 2 in Surgical Augmentation ICU 1; 4 in Surgical Augmentation ICU 2; 10 in Medical Augmentation ICU; 15 in Medical Augmentation ICW; 13 in ICW Augmentation ICW 1; 8 in ICW Augmentation ICW 2; 4 in ICW Augmentation ICW 3; for a total of 77 casualties. The player chooses to clear the ICUs first for a total of 24 casualties and casualties from the ICWs so they are all at 9 or less (6 from Field Hospital ICW; 6 from Medical Augmentation ICW; and 4 from ICW Augmentation ICW 1). The Hospital now has 39 casualties and no ward is 50percent fill or more. Figure 21. Illustrates casualty evacuation where orange cubes represent pre-evacuation bed status and yellow cubes represent post-evacuation bed status.

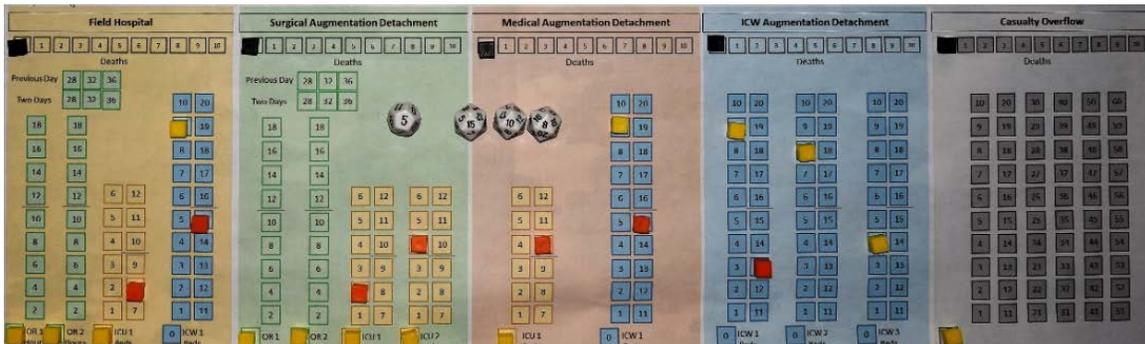


Figure 30. Aeromedical Evacuation

Source: Created by author.

4.10. Fatigue Factor. At the end of each day (turn) adjust Fatigue Factor following the chart and increase a 1-centimeter cube along the tracker. When the Fatigue tracker reaches ten, players increase Total Death tracker by one.

If	Then
2x OR > 28-36 hours for 2 days	+2
Every 10 deaths (per detachment)	+1
3 or more ICU less than 50% full	-1
3 or more ICU at 50% full or 2 or more ICU at 75% full	+1 +2
For every 1 ICU 100% full	+3
4 or more ICW less than 50% full	-1
4 or more ICW at 50% full or 3 or more ICW at 75% full	+1 +2
For every 1 ICW 100% full	+3
2x OR 12+ Hours per 1 day or 3 OR 12+ Hours per 1 day or 4 OR 12+ Hours per 1 day	+1 +2 +3
For every 10x casualties in Overflow	+1
Morale 0-3	+1
Morale 4-6	0
Morale 7-9	-1
Morale 10	-2

Figure 31. Fatigue Factor Table (UPDATE PICTURE – fatigue tracker and death link)

Source: Created by author.

APPENDIX B

PLACEMAT (*Death Can Wait* GAMEBOARD)

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APPENDIX C
GAME PEICES

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