Assessing Mars:
A Holistic Framework for Land Forces Analysis

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Soldiers from the 1st Cavalry Division and 11th Armored Cavalry Regiment plan an air assault training exercise supported by the 7th Squadron, 17th Cavalry Regiment, 28 February 2017, near the city of Dezashah during National Training Center rotation 17-04 at Fort Irwin, CA. Effective intelligence preparation of the battlefield is an essential component of the military decision-making process. (U.S. Army photo by PVT Austin Anyzeski)

Introduction

U.S. Army practices for assessing the capabilities of adversarial land forces need a major update. Namely, such practices place an insufficient emphasis on the critical human dimensions of a land force, such as leadership or morale. As the United States experience in Afghanistan shows, the human dimensions can play a decisive role in determining the outcomes of battles and even wars. Additionally, Army intelligence practices tend to examine adversarial forces in isolation from friendly or allied units, which reduces opportunities to identify qualitative or quantitative imbalances. To address these shortfalls, this article describes how analysts can use methods that military historians and strategic intelligence organizations employ to create more holistic assessments of an adversarial land force. Such assessments, moreover, can enrich the intelligence preparation of the battlefield (IPB) process to inform plans and operations.

What Is a Framework?

The primary value of a framework is that it lays out the key variables—something that changes in response to internal or external stimuli—of a particular system, event, or phenomenon under examination. This, in turn, helps guide the research and analysis of a topic by ensuring analysts properly account for each constituent part of a subject and the relationships between those parts. For example, an analysis of land forces must consider some basic variables, including equipment, personnel, planning processes, and doctrine. It must also account for how those variables interact by showing, for instance, how an army's doctrine helps determine what equipment it acquires, how it trains, and more.

Ultimately, the value of an analytic framework is that it provides a sense of clarity and common language.[1] That is, it clarifies what is important and why. For organizations like the U.S. Army, it helps everyone speak the same language in how they approach the research, analysis, and presentation of their findings and assessments. This helps mitigate the tendency of some analysts to make judgments on the capabilities of a particular adversary on intuition alone or on incomplete analysis.

Despite their value, frameworks, as one historian rightly cautioned, are simplifications of reality and, therefore, "inexact and incomplete."[2] In other words, having the framework does not guarantee an accurate interpretation of a topic and it most certainly does not guarantee accurate predictions of how those topics will evolve over time or respond under certain circumstances. This is especially true of land forces analysis—and military analysis in general—in which analysts are operating with incomplete and at times contradictory evidence. Also, the wars and operations in which those land forces fight are inherently unpredictable. As Carl von Clausewitz observed in his analysis of war: "No other human activity is so continuously or universally bound up with chance."[3] Chance—or unpredictability—reflects the fact that war is a social and political phenomenon determined largely by the actions, judgments, and misjudgments of people who, by nature, are unpredictable, especially as a collective and when under stressful conditions like war.[4]

The Limits of U.S. Army Intelligence Doctrine

Even though Clausewitz is widely taught in U.S. military educational institutes, U.S. Army intelligence doctrine overlooks the human factors of war. The Army's current set of analytic tools, as detailed in ATP 2-01.3, *Intelligence Preparation of the Battlefield*, and ATP 2-33.4, *Intelligence Analysis*, largely examines material and conceptual factors, such as enemy equipment, doctrine, and order of battle.[5] For those variables, this doctrine does provide detailed guidance and useful tools, such as order of battle charts and threat templates that illustrate the means and methods an opposing force likely will employ in combat.[6]

Buried within the example templates in ATP 2-01.3 are important assessments regarding human factors, such as "force x lacks the will for prolonged engagements."[7] However, ATP 2-01.3 and ATP 2-33.4 provide incomplete guidance for how to make judgments regarding the human and material conditions that would cause a force to lack the will for prolonged engagements. Rather, they essentially assume analysts know how to obtain that information or that their higher echelons will provide it to them. Such assumptions are highly tenuous, given the varied skills, experience, motivation levels, enterprise endurance, and connectivity of formations across the Army. In other words, doctrine must be more specific on how to acquire and employ that information using examples and more direct guidance.

Finally, ATP 2-01.3 and ATP 2-33.4 do not clearly break down their constituent variables, like composition and disposition, into their individual parts. Instead, they largely leave that information up to analysts to discover on their own, assuming they have the time and ability to do so. Fortunately, another framework is available within the Department of Defense that can help fill some of these gaps.

The goal of this framework is to determine the ability of an armed force to achieve a specific mission within a defined environment against a force within a certain timeframe.

Driving Factors: Roles/Missions & Environment

Sustainment: budgetary, military infrastructure, defense industry, logistics

Training: individual, unit, realism

Employment: strategic, operational, and tactical

Equipment

Personnel: demographics, active/reserve

Intangibles: leadership, culture, adaptation, and innovation

Structure and C2

Defense Intelligence Agency Military Capabilities Framework[8]

Alternative Frameworks

The Defense Intelligence Agency (DIA) uses a more comprehensive set of variables in its military capabilities framework than the U.S. Army. As shown in the figure above, DIA's framework breaks down the capabilities of a military into nine key variables, two of which—roles/missions and environment—are considered driver variables.[9] Such variables are considered more important because they play a greater role in shaping the character of others. An army's mission, for instance, and the terrain it fights on will play an important role in shaping its structure, training, and equipment. Unlike the U.S. Army, DIA breaks down some of its variables further by showing how personnel matters also must account for Soldier demographics and whether they are active Soldiers (full time) or reservists (part time).

DIA's framework, however, is still incomplete and does not focus on land forces, given its purpose to help inform military capabilities analysis in general. Its use of driver variables is important in that it shows how variables relate, but it gives the impression those variables (roles/missions and environment) are the only ones that shape the character of others. Additionally, the relationship also appears to be one way, not accounting for how factors like personnel and budgets can play extremely important roles in shaping an army's roles and missions.

The field of military history offers a more robust framework for land forces capabilities analysis. For example, in their multivolume study on military effectiveness, historians Allan Millett and Williamson Murray present a framework to assess and compare the effectiveness of multiple armies during the major wars of the 20th century. They do so by looking at armies at all levels of command. To measure effectiveness, the volumes provide a list of general attributes, as shown in Table 1, on the next page, which account for human and material factors.[10] The authors also acknowledge those attributes

reflect a host of different constraints, whether natural like geography, or political or cultural in nature, such as a society's willingness to serve in the military.[11] Ultimately, understanding these attributes and constraints will enable researchers to conduct more in-depth comparative studies of a particular armed force against its adversaries under certain historical circumstances.[12]

The problem for military intelligence professionals, however, is that this framework focuses on informing the fields of strategic studies and military history. Thus, it provides no guidance on how to employ its methods within existing U.S. Army staff processes.

In short, these frameworks all have their own strengths and shortcomings, but unfortunately, the U.S. Army framework is the most incomplete, especially regarding human factors and matters above the tactical level. The proposed framework that follows aims to address these shortfalls.

A Holistic Land Forces Framework

The following framework for land forces analysis is built on three core propositions. First, it must fit into the U.S. Army's existing analytical tasks and processes to ensure it speaks the same language as the Army professionals employing it. Second, it must be multivariable and account for the human factors that existing doctrine mostly overlooks. Third, it must be comparative to identify relative strengths and weaknesses between friendly and adversarial forces. Ultimately, this framework should produce two key outputs:

✦ A land forces category statement

✦ A land forces capabilities statement.

If incorporated in the Army's first analytical task, generate intelligence knowledge, these outputs can provide critical context for IPB step 3 (evaluate the threat) by helping define the characteristics of an opposing force and determining the ways that force operates.

Political	Strategic	Operational	Tactical
Obtaining resources for the war effort/military, which includes— 1. Reliable access to financial support. 2. Sufficient military-industrial base. 3. Sufficient quantity and quality of manpower. 4. Control over the conversion of resources into military capabilities. 5. Political elite attitudes regarding the military. 6. Officership as a distinct profession.	Employment of armed forces to achieve national goals, which includes— 1. Planning, analysis, and selection of objectives and linking those objectives to campaign or contingency plans. 2. Ability to communicate plans and assessments to national leaders to seek logical goals. 3. Consistency of force size and structure with strategic goals and courses of action. 4. Alignment of strategic objectives with logistical, technological, and industrial bases. 5. Integration of objectives with those of allies or ability to convince allies to align their objectives. 6. Plans that place the strengths of a military organization against the critical weaknesses of an adversary.	Analysis, selection, and development of institutional concepts or doctrines for employing forces to achieve objectives in a theater of war, which include— 1. Ethos to deal with operational problems in a realistic ways. 2. Ability to combine capabilities to cover weaknesses and take full advantage of strengths. 3. Ability to adapt psychologically and physically and to move rapidly in unanticipated directions. 4. Consistency between concepts and operational concepts and available technologies. 5. Ability to support concepts with required intelligence, supply, communications, medical, and transportation systems. 6. Consistency of operational concepts to strategic objectives. 7. Degree to which doctrine and organizations place their strengths against an adversary's weaknesses.	Techniques to fight engagements to meet operational objectives, which include— 1. Tactical approaches consistent with strategic objectives. 2. Concepts consistent with operational capabilities. 3. Emphasis on all arms integration. 4. Emphasis on surprise and rapid exploitation of opportunities. 5. Consistency with morale, cohesion, and relations between noncommissioned officers, officers, and enlisted personnel. 6. Alignment of training to tactical systems. 7. Alignment of training to support capabilities. 8. Extent to which tactical systems place strengths against an adversary's weaknesses.

Land Forces Category Statement. Table 2, on the next page, provides an overview of the key variables for determining the nature of a particular land force.[14] Namely, what are the force's purpose, structure, and ways of war? Answering those questions enables analysts to produce a baseline assessment of the nature of a particular land force and its general strengths and weaknesses. This statement, in turn, can frame more detailed discussions regarding an adversary's capabilities by warfighting functions (fires, maneuver, protection, etc.).[15]

Land Forces Capabilities Statement. Once the nature of a land force is established, deeper analysis can occur regarding its ability to achieve a specific purpose. To do so, analysts can use Table 3 and Table 4, on page 7, which list broad attributes that can help determine the effectiveness of a land force at the strategic, operational, and tactical levels of command. Table 3 lists general attributes of an effective land force, regardless of its intended purpose.[16] Table 4 focuses on conventional operations against a state adversary (attributes for effective counterterrorism/counterinsurgency operations are outside of the scope of this article).[17]

There are two ways to use these frameworks. First, analysts can simply use them to guide their assessments regarding whether the land force under examination can perform a particular mission. Second, analysts can make a quantitative assessment based on these attributes. Now, such an assessment can be problematic because wars and the land forces that fight in them are highly dynamic and generally defy quantitative analysis. That said, using the frameworks to produce quantifiable assessments can help enable the staff to compare an adversarial force with friendly or allied forces.

To make such quantitative assessments, analysts should use a combination of several sources—intelligence reporting, finished intelligence from organizations like the National Ground Intelligence Center and DIA, academic studies, and press reports—to complete the following steps:

✦ Finalize attributes, using or modifying the ones in Tables 1 through 4 or adding others based on the situation.

✦ Add a single point for each attribute that a land force meets in the general category (if the attribute is not applicable, then do not add a point). Make sure to organize the final count by strategic, operational, and tactical categories, meaning the top score for strategy would be a 19, while a top operational score would be a 19 and a tactical score would top out at 15.

✦ Repeat the same process for the conventional land forces framework.

✦ Add the scores for the general and conventional frameworks to produce total scores for the strategic, operational, and tactical attributes (staffs could also weigh some attributes higher than others, depending on the situations).

✦ Redo the entire assessment process for the opposing force. (Note: Intelligence personnel should consult with other staff sections, especially when comparing adversarial forces to friendly forces.)

✦ Use the score to compare capabilities with opposing forces/allies, as depicted with a historical example in Table 5, on page 8.[18]

Table 2. Land Forces Category Statement[19]

Variables		Examples	General Strength	General Weakness
Primary Focus	Internal defense	Present-day Iraqi Security Forces	May be more prepared for conducting counterterrorism/counterinsurgency operations	Are less prepared for conventional military operations against states
	Conventional defensive operations	Present-day Japanese Armed Forces	May be more prepared to defend against an attack from a state adversary	Are less prepared for offensive operations against a state or counterinsurgency/counterterrorism scenario
	Conventional offensive operations	Present-day U.S. Army	May be more prepared for offensive operations against a state	Are less prepared for defensive operations against a state or counterinsurgency/counterterrorism scenarios
Active Structure	Short-service conscript (mandatory service for 1 to 4 years)	Israel Defense Forces	Are likely capable of generating a large army relative to its population	Generally, are less well trained than a longer-service volunteer
	Long-service conscript (mandatory serve for more than 4 years)	19th Century Russian and British Armies	May be able to field a large and highly experienced army	Long-service conscript may lead to the growth of a large and expensive army
	Volunteer (service is voluntary and may extend beyond the typical 1 to 4 years of a conscript)	Present-day U.S. Army	Are likely able to develop higher skills and more experience than conscripts	Are generally smaller than a conscript army; soldiers are more expensive to recruit and retain
	Cadre (an army with a small professional cadre that prepares to oversee an expanded wartime army composed of volunteers/conscripts)	United States Army and German Army during the interwar years (1920s and 30s)	Maintain highly skilled cadre of leaders; reduce financial costs of peacetime army	Are unlikely to be ready for an unexpected conflict (need time to recruit and train new soldiers)
	Dual structure (an army composed of a mixture of volunteers and conscripts)	Present-day Russian Armed Forces	Can create elite units within an army for offensive operations while the conscript units focus on easier tasks	Creates a dual structure in which some units are less ready for combat than others
Reserve Structure	Individual replacements/augmentees (reservists do not serve in complete deployable units, rather they are used to fill gaps in the ranks of active units)	Present-day U.K. Army Regular Reserve (separate from Army Reserve)	Allow reservists to fall under command of full-time personnel	Have no reserve units to replace exhausted/degraded active units
	Units (reserve units deploy as full units)	U.S. Army National Guard	Have a trained reserve capable of replacing exhausted/degraded active units	Quality of reserve units are likely not on par with active-duty units, especially in armies that train reservists infrequently
	Militia/territorial defense (a reserve that does not deploy outside of its national borders and performs purely defensive functions)	Territorial defense forces of the present-day Baltic states	Relieve active-duty units of burden of routine tasks such as border security	Reserve is unlikely to be deployable for missions abroad; quality is likely much lower than active-duty formations
	Hybrid (a reserve that consists of individual replacements and full, deployable units)	Present-day U.S. Army Reserve	Have flexible reserve structure to fill immediate personnel needs in active army while providing reserve units to backfill/replace active-duty ones	Reduces number of reserve units available to replace/augment active ones, given large percentage of reservists serving as individual replacements or augmentees
Strategic Way of War	Attritional (seeks to defeat enemy by slowly degrading its ability and will to fight over time)	French Army in the interwar years (1920s and 30s)	Can deter adversaries by raising the prospects of a long and potentially costly war	Likely will struggle to conduct offensive operations and maneuver outside of prepared defenses
	Maneuver – short war (seeks to defeat enemy through rapid offensive operations aimed at quickly destroying their will or ability to fight)	Present-day U.S. Army	Reduce likelihood of long, costly wars	Force may be ill-suited for withstanding heavy attrition or for waging a defensive war
	Indirect (seeks to avoid direct conflict and relies on proxies or standoff capabilities, like UAVs and rockets, to degrade enemy's ability or will to fight)	Present-day Iranian military	Can reduce exposure to attack by relying on proxies or standoff attack capabilities	Are likely to struggle in a force-on-force ground conflict

Table 2. Land Forces Category Statement (*continued*)

Variables		Examples	General Strength	General Weakness
Tactical Way of War	Multidomain (integration of air, maritime, cyber-electromagnetic warfare, and space capabilities)	Present-day United States Army and Russian Army	Can converge an entire array of attack and defense capabilities to degrade opposing forces	Units may struggle to execute this high-skilled, high-tech form of war (especially if they are composed of short-service conscripts or under-trained reservists)
	Combined Arms (integration of armor, artillery, infantry, and combat engineering)	Present-day Israel Defense Forces	Can maximize the full combat potential of land force	Units may struggle to execute this high-skilled, high-tech form of war (especially if they are composed of short-service conscripts or untrained or undertrained reservists)
	Single Arm (formations composed primarily of a single arm)	Israel Defense Forces pre-1970s	May simplify planning, operations, and logistics	Are likely at a disadvantage against a combined arms force; tanks (if present) will be more vulnerable to enemy infantry and antitank weapons; infantry may lack sufficient mobility and firepower to combat enemy tanks
C2 Arrangement	Centralized to Strategic-Level Commanders	Egyptian Army 1967, 1973	Help ensure unity of effort	Reduce chances to rapidly exploit opportunities; vulnerable to decapitation strikes
	Centralized to Operational-Level Commanders and Above	Cold War Soviet Army		
	Flexible Mission Command Type Arrangement	Present-day U.S. Army	Help enable more flexible operations to respond to threats and opportunities	Can reduce unity of effort
Tactical Formations	Corps and above	Present-day U.S. Army		
	Division and below	Present-day U.S. Army		
	Brigade and below	Present-day Estonian Defense Forces		

Example Category Statement: The U.S. Army, which is an all-volunteer force backed by a fully deployable army reserve of units and individual replacements, focuses primarily on offensive operations against state adversaries. Its primary way of war is to end conflicts quickly through offensive maneuvers by brigade to army-sized units employing a flexible command arrangement overseeing combined arms and multidomain capabilities. A key strength of the U.S. Army is its high-tech and high-skilled formations. A key weakness is its limited preparedness for counterinsurgency/counterterrorism operations and the high costs of its personnel and equipment, which reduces its ability to recover quickly from high battlefield attrition.

✦ Incorporate findings into IPB step 3 to help determine threat characteristics, build threat models, and identify high-value targets. Then, transition to an examination of the adversary's likely courses of action as part of IPB step 4.

Use by Echelon

The land force framework presented in this article is most suitable for employment by a theater army or corps. Intelligence staffs at the division level and below likely lack the time or resources to conduct an in-depth study of an adversarial land force, especially during combat operations. Thus, these higher-level staffs can use the framework to paint a broad picture of the land forces under examination, providing context for divisions, brigades, and battalions to develop more nuanced, tactically focused products.

The framework also has value in a competition environment by helping intelligence sections to develop in-depth studies of the land forces within a particular area. Such studies can help inform contingency planning and training plans to build partner capacity to compensate for any quantitative or qualitative imbalances with adversarial forces.

Table 3. General Land Forces Framework[20]

Strategic/National	Operational	Tactical
1.1 Strategic plans place strengths against an adversary's weaknesses	2.1 Military has experience conducting the types of operations it is undertaking	3.1 Tactics are consistent with operational plans
1.2 Military leaders willing and able to communicate honestly and effectively with national leaders	2.2 Operational plans are consistent with strategic plans/priorities	3.2 Have defined tactical doctrine that is understood throughout the force and taught in school/training systems
1.3 State and society believe the mission at hand is critical to their security and is willing to devote time and resources to achieve the mission	2.3 Has a professional military education and training program for all ranks to build and enhance technical and leadership skills	3.3 Corps, division, and brigade-level units have combined arms capabilities
1.4 State has a history/national ethos that inspires/motivates soldiers	2.4 Has an organizational culture that values honest feedback and has mechanism for addressing such feedback	3.4 Corps, division, and brigade-level units have—or have access to—tactical electromagnetic warfare and cyber capabilities
1.5 Society respects and values military service	2.5 Conducts dynamic training with an opposing force	3.5 Tactical units can request and receive air support from fixed-wing, rotary, and unmanned aircraft
1.6 Military is loyal to the state and is fully responsive to the orders of its national leaders	2.6 Trains in type of terrain they will operate in (urban, mountain, desert, etc.)	3.6 Tactical units have joint terminal attack coordinators to speed process of providing close air support to land forces
1.7 Military is willing and able to recruit high-skilled and educated personnel	2.7 Trains above the battalion level	3.7 Corps, division, and brigade-level units have tactical signals intelligence, geospatial intelligence, and mapping capabilities for enhancing situational awareness and targeting
1.8 Able to generate sufficient numbers of soldiers to meet mission requirements	2.8 Reserve units conduct individual and collective training in peacetime (at least 14 to 30 days a year)	3.8 Tactical-level units have—or have access to—unmanned aircraft for intelligence, surveillance, and reconnaissance
1.9 Has defined and practiced plans for mobilizing/integrating reserve units/individual replacements	2.9 Has a culture that demands full accountability and maintenance of equipment	3.9 Able to field ad hoc task forces at the company to division level
1.10 Land forces have access to strategic-level intelligence sensors that look deep into enemy's support areas for targeting, battle damage assessments (BDAs), and warning of troop/equipment movements	2.10 Has a multidomain capability that can integrate land forces with air, cyber-electromagnetic warfare, space, and maritime capabilities	3.10 Has a short-range air defense capability in tactical units for dealing with unmanned aerial vehicle, rotary, and fixed-wing aircraft threats.
1.11 Has a professional officer corps built around a defined education/training program and a promotion system based on merit	2.11 Employs a planning process that is used/understood throughout the force	3.11 Has a tactical engineering capability for identifying, breaching, removing obstacles and for creating obstacles
1.12 Has a professional noncommissioned officer corps; officers trust and empower noncommissioned officers	2.12 Has a flexible planning process that can adapt rapidly to changing circumstances	3.12 Has ability to provide timely re-supply to tactical units engaged in combat
1.13 Land forces are somewhat or fully interoperable with main allies	2.13 Empowers mid- and junior-level leaders to take the initiative	3.13 Has an airborne and air assault (helicopter) infantry capability
1.14 Military does not segregate units by ethnicity/language	2.14 Has an integrated air defense network for defending land forces from air and missile threats	3.14 Has a culture and supporting programs for building and maintaining physical and mental fitness
1.15 Units composed of soldiers who speak the same language	2.15 Has an information operations capability capable of producing timely and effective messages that resonate with targeted populations	3.15 Tactical command, fires, and intelligence systems are able to communicate to provide a common operational picture and to inform targeting
1.16 Military has effective processes to identify and punish individuals for crimes, corruption, and other undisciplined behavior	2.16 Has operational-level intelligence capabilities for identifying and tracking targets outside of tactical engagement areas/battle zones	
1.17 Not dependent on foreign suppliers for mission essential military equipment	2.17 Has unified command to ensure unity of effort	
1.18 Is fighting on a single front/theater of operations (not confronted by attacks on multiple fronts)	2.18 Has an organizational culture that is willing and able to experiment and innovate	
1.19 Key economic and population centers are protected from enemy attacks	2.19 Has a quantitative advantage in forces over adversary	

Table 4. Conventional Land Forces Framework[21]

Strategic/National	Operational	Tactical
1.1 State has the willingness and ability to withstand heavy combat losses	2.1 Has a long-range precision strike capability to destroy high-value targets in enemy support areas	3.1 Fires integrated with intelligence sensors to enable rapid identification, destruction, and assessment of targets
1.2 If conducting expeditionary operations, has international transportation and logistics networks to project and sustain sufficient numbers of combat forces to achieve desired tasks	2.2 Has a doctrine for engaging and defeating opposing forces in depth	3.2 Fires systems have the same range or outrange the fires systems of opposing forces
1.3 If operating on the defensive, has the territorial depth to absorb attack and recover	2.3 Has specialized units and doctrine for defending support areas from opposing special operations and insurgent/militant forces	3.3 Main battle tanks have the same range or outrange the systems of opposing forces
1.4 If operating on the offensive, has the element of surprise to catch defenders not fully prepared for attack	2.4 Strategic and operational-level intelligence organizations networked to tactical units to enhance situational awareness	3.4 Has mechanized and/or motorized infantry capability
		3.5 Infantry has antitank capabilities capable of defeating opposing main battle tanks
		3.6 Has tactical human intelligence capability for conventional military operations (enemy prisoner of war debriefings)

Conclusion

This framework, if incorporated into the generate intelligence knowledge task, can provide critical context for IPB step 3 (evaluate the threat), likely helping an intelligence staff to form more holistic judgments on the nature, capabilities, and relative strengths and weaknesses of an adversarial land force. Like all frameworks, however, the one presented in this article is incomplete and cannot fully account for all the dimensions of a land force in every situation. However, it can get the conversation started on how to conduct a holistic assessment of an adversarial force, which can enable more informed plans and decisions. ✴

Table 5. Israel versus Egypt, 1973[22]

Level of War	Total Score of Israel	Total Score of Egypt	Advantage
Strategic	13	16	Egypt
Operational	14	10	Israel
Tactical	10	10	Neutral

Summary: During the 1973 Yom Kippur War, Egypt had the strategic and tactical advantage over Israel because its attack across the Suez caught the Israelis by surprise and forced them to fight outnumbered on multiple fronts (Syrians attacked simultaneously in the Golan Heights). Egypt also neutralized Israel's main tactical advantages—its armored corps and air force—through the use of new anti-tank guided missiles and mobile surface-to-air systems (SAMs). Egypt also crafted its war plan around its main strength: its ability to fight defense battles using well-rehearsed tactics. However, Israel was able to reverse the tide of the war when the Egyptians sacrificed these advantages and advanced beyond their protective SAM umbrella along the Suez Canal into the open deserts of the Sinai. This enabled Israel to take advantage of its superior tank gunnery and flexible operational and tactical culture to outgun and outmaneuver Egypt and bring the war to a close and prevent a deeper attack into Israeli territory. Despite the Israeli tactical and operational successes, Egypt still accomplished its primary strategic objective: compel Israel to re-engage in diplomatic negotiations and return the Sinai to Egyptian control.

Endnotes

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6. Department of the Army, ATP 2-01.3, *Intelligence Preparation of the Battlefield*, 5-10.

7. Ibid.

8. Figure adapted from Defense Intelligence Agency (DIA), *Tradecraft Note 02-15: Assessing Military Capability* (Washington, DC: Office of the Research Director, DIA, 3 December 2015).

9. DIA, *Tradecraft Note 02-15*.

10. Allan R. Millett and Williamson Murray, *Military Effectiveness: Volume 1, The First World War* (New York: Cambridge University Press, 2010), 4–26.

11. Ibid., 3.

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13. Table by author; adapted from Millet and Murray, *Military Effectiveness*, 3.

14. Assessment derived from Abraham Rabinovich, *The Yom Kippur War: The Epic Encounter That Transformed the Middle East* (New York: Schocken, 2007); Central Intelligence Agency (CIA), *The World Factbook*, CIA website, accessed 19 February 2022, https://www.cia.gov/the-world-factbook/; "Who We Are: The Army Reserve," UK Army website, accessed 19 February 2022, https://www.army.mod.uk/who-we-are/the-army-reserve/; Eugenia C. Kiesling, *Arming Against Hitler: France and the Limits of Military Planning* (Lawrence, KS: University Press of Kansas, 1996); and John Gooch, *Armies in Europe* (London: Routledge, 1980).

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16. Millett and Murray, *Military Effectiveness*, 4–26.

17. Ibid.

18. Assessment derived from Rabinovich, *The Yom Kippur War*.

19. Table by author.

20. Ibid.

21. Ibid.

22. Ibid.

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