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‘JUST IN CASE’ VERSUS ‘JUST IN TIME’: ANSWERING THE QUESTION OF ‘READINESS FOR WHEN’?

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When one hears the terms ‘readiness’ or ‘preparedness,’ there is a good chance they are thinking of operational readiness, typically measured in a snapshot – at this precise moment, does the military have enough people and equipment to roll out the gate just in case something happens? Traditional readiness measures manage these questions well. Unit status reports break these out into P (personnel on-hand), S (equipment on-hand), R (equipment condition), and T (training) ratings, plus a cumulative C-rating. The enterprise expects commanders to maximize these ratings as best as possible given resources and energize the personnel and materiel systems as shortages or problems occur.

But one also hears about “managing” readiness – keeping some capabilities at higher readiness for immediate use while keeping others intentionally kept at lower readiness to preserve resources and flexibility. The idea is that the service would provide those resources, bring units to full capability, and deploy them so they arrive just in time to fight. This is structural readiness. The primary tool for operationalizing structural readiness is known as force generation. Managing structural readiness is the primarily responsibility of the enterprise and includes ensuring adequate and ready capabilities to help mobilize personnel and materiel to fill units, transport them to theater, and hand them over to the combatant commander for employment.

The enterprise must balance operational and structural readiness. Operational readiness consumes money and risks wear and tear on personnel and equipment. Structural readiness carries higher risk of not getting to the fight in time or not having the abilities to establish and protect lines of communication. But given the natural constraints of resources, enterprise leaders must continuously balance what is required just in case versus what would be available just in time.

Referring to the strategic choices framework, Force Structure decisions centered on several questions. What are the roles and missions that the defense enterprise’s services, agencies, and other organizations must perform? What capabilities are required to fulfill those roles and missions, and in what quantity? Where should these capabilities be stationed? The answers to these questions comprise the design of the force that provides enough capabilities that have

overmatch over the adversary, are interoperable with each other, and are sufficiently agile to adapt to the emergent dynamics of the battlefield.

In Readiness decisions, leaders assume that the force design is adequate and correct. The design is operationalized in the form of units and commands documented, accordingly manned and equipped, and finally stationed at one or more locations. The important question at unit

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level is a simple one – “Is the unit ready?” – answered by an assessment of the extent to which the unit as designed has the correct numbers of personnel and equipment available, its personnel appropriately trained, and the equipment is in suitable condition. This is known as *operational readiness* and its measurement is the basis for ordinary unit status reports. Per Betts (1995), operational readiness “pertains to the relation between available time and needed capability.”²

One must also get the unit from its home station to the fight. Forces stationed overseas may be there to confront a specific adversary, rolling out the gate straight into battle. But in most cases, units must move or be moved to their designated battlefields, counting on capabilities that mobilize, prepare, and transport them from home station to the fight. The same question therefore applies to these capabilities, “Are they ready, too?” Betts (1995) defined the ability to close an operational readiness gap in time for the fight as *structural readiness*, and that being structurally ready meant that “the time needed to convert potential capability to actual capability is not longer than the time between the decision to convert.”³

But the force’s design is rarely, if ever, perfect. Demands for capabilities often exceed their supply. The force’s posture may be based on real property and facilities that were available or were militarized in the past, not what would make the most sense today. This means that it is often not possible to have all units always ready, nor capable of becoming ready on time. This means that enterprise leaders must be thoughtful about managing resources to optimize readiness levels of units, so the time and resources required to generate the required force for operations are enough.

This paper looks at the management of readiness as the continuous need to address a tension between having forces fully on-hand and ready ‘just in case’ a crisis occurs and having

them less ready but able to become ready ‘just in time’ to respond to a crisis. Managing readiness is essential to satisfying the requirements of a defense strategy under resource constraints while mitigating risk. It will first describe operational and structural readiness separately, focusing on the enterprise rather than unit level. The paper concludes with a look at the strategic decisions surrounding the management of readiness through readiness reporting systems and force generation models.

OPERATIONAL READINESS AT THE ENTERPRISE LEVEL

The purposes of measuring operational readiness are to gather information about the condition of the force and to take corrective actions as appropriate. It is often a bottom-driven process of commanders identifying problems and redressing them within the unit or alerting higher headquarters. Problems occurring service-wide should then be aggregated and addressed at enterprise level – such as service-wide shortages of personnel within a specialty or by grade. The measures also imply a sense of urgency to the problem, especially if it impacts a service’s ability to perform a critical mission.

Measures and Their Usage

The meanings of operational readiness measures depend on the capabilities in the unit or service. Using the Army as an example, the aim is to calculate an overall capability readiness measure, known as a unit *C-rating*. These ratings are categorical,⁴ constituting four possible values “C-1” through “C-4” that represent four levels of readiness from 1 = *high* to 4 = *low*.⁵

The Army calculates C-ratings as the sum of four subordinate ratings. Personnel are measured according to quantities on-hand compared to authorized strength (called “P-rating”) and levels of their training (“T-rating”). Equipment is measured in terms of amount on-hand (“S-rating”) and how much of it is available for

² Richard K. Betts, *Military Readiness: Concepts, Choices, Consequences* (Washington, DC: Brookings Institution, 1995), 27.

³ Betts, *Military Readiness*, 28.

⁴ A *categorical* variable is one where the range of possible values is limited and typically fixed. An example would be the variable of rank, ranging from Private to General.

⁵ Department of the Army, *Army Unit Status Reporting and Force Registration – Consolidated Policies*, Army Regulation 220-1

(Washington, DC: Department of the Army, 2010), paragraphs 4-6 and 4-8. Hereafter *AR 220-1*. The Army also maintains two extra categories that represent *not applicable*. “C-5” is for units undergoing a transformation or other-directed action that requires relief of their core mission temporarily. “C-6” constitutes an unmeasurable value as determined by the Army.

employment ("R-rating"), e.g., not under repair or servicing. These ratings can have values of 1 through 4 (e.g., P-1, R-3, S-4, T-2) commensurate with the C-rating.⁶

Rules govern how the four ratings are aggregated into the overall C-rating for the unit, and how higher echelon units aggregate the C-ratings of subordinates. Usually, this is by identifying the lowest rating of the four categories (excluding those deemed not calculable). However, applicable regulations also provide opportunities for commanders to subjectively upgrade or downgrade their C-rating.⁷ An example is when there is an unusual circumstance that artificially raises or lowers the overall C-rating such that it does not represent the unit's true readiness.

Aggregation to the enterprise level (e.g., service, major command) conceptually follows suit although decision makers often require additional information to make proper readiness-informed decisions. For example, the Army has separate processes involved in unit and "strategic readiness."⁸ At Army level, staff proponents for service-level Title 10 functions of Manning, Equipping, Training, Sustaining, etc. assess key indicators and trends across the service, feeding into a "strategic-level" assessment known as the Army Strategic Readiness Assessment (ASRA). This is a "narrative" assessment that identifies specific resourcing requirements and potential strategic levers – agencies, processes and systems providing potential ways and means for mitigating such risk. The ASRA also serves as input into the Joint Force Readiness Review and other defense-wide assessments.

Choices in Readiness Measures

Designers of readiness management systems try to establish measures for the efficient and reliable input and output of information useful

for decision makers.⁹ Accuracy and verifiability are important. However, as the Army example shows above, readiness assessments generally aggregate to decreasing levels of quantification and increased levels of narrative or qualitative expression. Because of the potential inconsistencies arising with narrative assessments, DoD has generally moved toward greater use of quantifiable metrics and reduced authorities for subordinate commanders to make subjective upgrades or downgrades.¹⁰

Regardless, designing effective and useful measures is a significant challenge. There are decisions regarding how best to translate massive amounts of raw data into a useful and informative summary of a unit or service's readiness status. Sadly, there is no magic formula or metric that works perfectly well for all situations. Studies of readiness metrics have identified the following unavoidable tensions that system designers must consider.

Subjectivity versus Objectivity

The tendency in DoD is to favor objectivity and constrain subjectivity, as this is perceived to reduce bias in reporting even though this increases the data required and complexity of analyses.¹¹ Certainly at lower echelons, one may expect metrics to be easier to define and apply, but at upper echelons this can be more challenging as the range of potential data inputs increases.¹² Thus, subjectivity is difficult to eliminate entirely. Military leaders recognize that "commanders at all levels have experience and professional judgment that a readiness reporting system would be foolish to ignore."¹³ Readiness management systems should consider what "intangibles" warrant the inclusion of a commander's professional judgment without risking the introduction of bias or undue manipulation of the ratings.¹⁴

⁶ AR 220-1, paragraph 4-6 and Chapter 9.

⁷ AR 220-1, paragraph 4-5.

⁸ AR 525-30, chapters 2, 4, and 5.

⁹ John R. Brinkerhoff and Lawrence B. Morton, "Origin and Evolution of Readiness Reporting," in John C. F. Tillson (Project Leader), *Independent Review of the DoD's Reporting System*, IDA Paper P-3569 (Alexandria, VA: Institute for Defense Analyses, 2000), Appendix G, <http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA406574>.

¹⁰ R. Derek Trunkey, "Implications of the Department of Defense Readiness Reporting System," CBO Working Paper #2013-03

(Washington, DC: Congressional Budget Office, 2013),

https://www.cbo.gov/sites/default/files/cbofiles/attachments/44127_DefenseReadiness.pdf.

¹¹ Brinkerhoff and Morton, "Origin and Evolution," G-63.

¹² Harrison, "Rethinking Readiness."

¹³ Lawrence B. Morton, Mark R. Lewis, and John R. Brinkerhoff, "The Global Status of Resources and Training System (GSORTS)," in John C. F. Tillson (Project Leader), *Independent Review of the DoD's Reporting System*, IDA Paper P-3569 (Alexandria, VA: Institute for Defense Analyses, 2000), Appendix C, C-56. Hereafter "GSORTS."

¹⁴ Morton et al., "GSORTS," C-56 and 57.

Aggregation and Summarization

The quantity of raw data, whether subjective or objective, is too great to be useful, hence the management system must provide means to reduce it to useful summary information tailored to support decision making. The complexity of the data makes this harder than it sounds. The nesting of readiness levels from individual to joint force appears logical, but bias and misrepresentations can creep in based on the methods used to aggregate data from lower echelons to higher ones. For example, Betts (1995) questioned how both 90% and 100% of personnel fill represented “C-1,” the highest rating, but a drop of only one percentage point to 89% changed the rating category and disproportionately altered the scope of the unit response.¹⁵ The same report also questioned the validity of division ratings when the same number of battalions below C-1 could produce a division rating of C-1 or C-2 depending solely on how the C-2 battalions were distributed among the brigades.¹⁶

There is also a question of sensitivity -- to what degree is the system sensitive to specific data outliers? An old historical example shows how this presents a problem. Consider a unit with two platforms, one that is more combat critical but lower in quantity and one that is less combat critical in nature but much higher in quantity. One would ordinarily presume that the state of the former might outweigh the state of the latter, but that depends on how the system aggregates different capabilities together into a single rating.¹⁷ Sensitivity becomes especially challenging when changes in the missions’ priorities change what capabilities are more critical. For example, one commentator on defense readiness noted that “some of the capabilities in highest demand [in the 2000s] are truck drivers and civil engineers.”¹⁸

The choice of summary ratings and their interpretation is another factor. As an example, the Defense Readiness Reporting System (DRRS) uses three rating levels (green, amber, and red which mean “yes,” “qualified yes,” and “no”)¹⁹ while the Chairman’s Readiness System²⁰ employs a four-level scale (RA-1 through RA-4). In the latter case, RA-2 and RA-3 essentially subdivide the “qualified yes” from DRRS.²¹ Although the Chairman’s Guide documents the relationship between the two systems, the interface between different rating profiles has the potential to introduce bias.

Comprehensiveness

This addresses what is reportable versus not reportable. The clear trend in DoD is to report as comprehensively as possible, including all entities affecting the readiness of the joint force and all types of missions expressed in national security documents.²² Pressures toward comprehensiveness can come internally, such as DoD wanting to gain greater real-time understanding of its readiness, and externally, such as through Congressional mandates.²³

The challenge for designing the system to be comprehensive is two-fold. First, are there entities whose role in readiness is negligible such that energy to collect the data outweighs the benefits? The DoD may exempt entities with only a limited role in readiness (e.g., ROTC detachments²⁴). Higher headquarters (e.g., Office of the Secretary of Defense, joint and service staffs, etc.) present more complex challenges, including determining the suitable readiness metrics that are internally valid (that is, actually measure what they purport to measure) and resourcing the needed data collection and analysis functions, especially at a time when the impetus is to reduce the sizes of headquarters.

¹⁵ Betts, *Military Readiness*, 90-91.

¹⁶ Betts, *Military Readiness*, 90.

¹⁷ Betts, *Military Readiness*, 90.

¹⁸ L. J. Junor, “The Defense Readiness Reporting System: A New Tool for Force Management,” *Joint Force Quarterly* 39 (4th Quarter 2005): 30-33, <http://www.dtic.mil/dtic/tr/fulltext/u2/a479857.pdf>, 31.

¹⁹ Trunkey, “Implications.”

²⁰ Chairman of the Joint Chiefs of Staff, *CJCS Guide to the Chairman’s Readiness System*, CJCS Guide 3401D (Washington, DC: U.S. Joint Chiefs of Staff, 2000), 17. Hereafter *CJCSG 3401D*.

²¹ The author thanks Dr. Richard Meinhart, DCLM, for this insight.

²² Matthew N. Diascro, “Congress and the Readiness Reporting System,” in John C. F. Tillson (Project Leader), *Independent Review of the DoD’s Reporting System*, IDA Paper P-3569 (Alexandria, VA: Institute for Defense Analyses, 2000), Appendix A, Annex-1.

²³ Morton, et al., “GSORTS,” C-34.

²⁴ Morton et al., “GSORTS,” note 51 includes a longer list.

Finally, there is the general burden of reporting, which can by itself become a readiness detractor. The number of reports and the extent of the data required can overwhelm commanders and staffs and take time away from their ordinary training and sustainment duties.²⁵ Worse, a "zero defects" culture can encourage leaders to lie or misrepresent their readiness data, with disastrous consequences.²⁶

Operational Readiness Decisions

Harrison (2014) described the outputs of readiness management systems to be an assessment of the capabilities of the force to meet mission requirements.²⁷ This is also an input into decisions regarding what strategic actions to take, which include the provision of professional military advice back to Congress on funding. This section addresses several tensions and choices facing decision makers:

Investment versus Consumption

This gets to a natural tension within the question of readiness -- for *What* versus for *When*. Betts (1995) asked, "Is full efficiency for combat two days from now closer to genuine readiness than having a larger military mass that could be fully efficient with two months of fleshing out?"²⁸

Consider a decision to either fund the operational readiness of existing structure versus modernizing it. Assume the Army had to provide ten Brigade Combat Teams to satisfy existing warplans and had a total of fifteen in the inventory. The options are: (a) to fund ten so they would be 100% ready and could deploy in the required period and leave the other five at lower states of readiness, or (b) to invest the funds in modernizing the other five with new equipment and capabilities but have the ten at 80% readiness and deployability in 30 days. Which would be the better choice?

The answer is 'it depends.' Prioritizing operational readiness makes more sense when

the likelihood of employment is higher given the security environment, but as Betts explains this approach tends to become wasteful because of the need to sustain and consume higher volumes of spare parts or fuel to stay 100% ready for 96 hour deployability at all times.²⁹ It also assures that the quantity of capability remains unchanged, whereas the investment option provides greater potential in the quantity so long as the risk is acceptable of having existing units requiring longer lead times. Typically, the Army manages readiness so that different portions of the force are at distinct levels of readiness to balance operational readiness with investment in modernization. But the decisions must consider the reliability in gauging the amount of capability needed where and when. Lead times for achieving full readiness are difficult, if not impossible, to compress when crises occur.

Mass versus Efficiency

Betts (1995) offers the following description of this dichotomy, which can be either a trade-off or complementarity:

*"[Consider] expensive advanced systems that must be retained long after their basic efficiency begins to decline and must be replaced by new systems in which it takes a long time to get rid of the bugs."*³⁰

As a trade-off, one might decide to defer modernization and put more resources into keeping current systems at higher readiness. However, this could lead to "bloc obsolescence"³¹ as funding operational readiness for outdated systems becomes a cost-multiplier as parts and maintenance demands increase. Older systems maintained beyond expected service life could lead to significantly lowered structural readiness. On the other hand, modernization is not automatically a panacea as the higher costs and complexities of new systems can lead to lowered force structure and investments in readiness.³²

²⁵ Thomas S. Tollefson, "Reports or Readiness: A Dilemma," *Naval War College Review* 26 (May-June 1974): 74-81, cited in Betts, *Military Readiness*, 100.

²⁶ Mark A. Kirchoff, "The Army's Ethical Dilemma in Unit Reporting," *NCO Journal*, August 19, 2020, <https://www.armypress.army.mil/Portals/7/nco-journal/images/2020/August/Ethical-Reporting/Ethics.pdf>.

Leonard Wong and Stephen J. Gerras, *Lying to Ourselves: Dishonesty in the Army Profession* (Carlisle, PA: Strategic Studies Institute, 2015).

²⁷ Harrison, "Rethinking Readiness."

²⁸ Betts, *Military Readiness*, 45.

²⁹ Betts, *Military Readiness*, 46.

³⁰ Betts, *Military Readiness*, 67.

³¹ Betts, *Military Readiness*, 69.

³² Betts, *Military Readiness*, 68-69.

Readiness vs. Itself in Operations and Training

Betts said that:

*During peacetime military operations, units go into the field to practice their functions in the closest possible approximation of combat. ... The price of achieving peak readiness through such operations is its evanescence and self-destruction. ... Operations overheat the system.*³³

How much training is sufficient before it drains human energy, causes unacceptable increases in broken equipment, or induces safety risks? That has always been a tricky question to answer. Particularly in times of peace, one should seek appropriate balances between realistic training and preservation of manpower, equipment, and sustainment so to minimize the reconstitution required to return to a state of desired readiness.

In a situation where the global security environment demands routine crisis response, this dichotomy is problematic. The demands of crisis response typically differ from conventional warfare needs, and actions to bring units to readiness for crisis may see other skills atrophy. Transitioning from a crisis to conventional warfare³⁴ is every bit as complex as the inverse, which the U.S. Army experienced in Iraq and Afghanistan. Additionally, joint shaping activities such as partner security capacity building also competes for readiness time, and these activities normally constitute a distinct third set of military readiness requirements.³⁵

Readiness versus Itself in Standby Posture

How long can a unit stay at a posture for immediate no-notice or short-notice deployment? How much of the force needs to be at that posture? In the past, the military conferred special respect to those units who were ‘first in, last out’ such as rotational ready brigades or airborne infantry. Under the total force commitments and high operations tempo in Iraq and Afghanistan, the distinction blurred between

these quick reaction forces and the remainder of the general-purpose force. Returning to relative peacetime, however, may cause the re-emergence of distinct responsiveness levels among various parts of the force.

“Alert fatigue and readiness decay” are key considerations in any readiness model.³⁶ Units on a high state of alert readiness tire out manpower and wear out equipment, with reconstitution becoming a necessity. This is not only a concern for units on alert during peacetime, but also for units called forward to staging bases in the advent of a potential crisis. The episodic responses across the Iraqi Disarmament Crisis in the 1990s (resulting in Operations VIGILANT WARRIOR, DESERT THUNDERS I & II, and DESERT FOX) along with the long-standing Operations NORTHERN WATCH and SOUTHERN WATCH arguably generated alert fatigue, affecting readiness levels of units.

Limitations of Operational Readiness Metrics

Operational readiness metrics and decision processes work better for certain types of forces than others. They are obviously well-suited for combat or combat support units with discrete weapons systems whereby the percentage of available systems is meaningful. A tank platoon with its four tanks ready to go is ready. The same platoon with two tanks deadlined is not – and 50% serves as a measure to indicate the level of unreadiness and drive corrective actions.

The same approach does not work as well with network-based or other weapons systems where the sum of the parts is substantially different than the whole. An example is cybersecurity, where even a *single* unready system (out of millions of computers in DoD) puts the mission at risk due to exploitation. From an operational readiness standpoint, one could certainly quantify the numbers of computers properly configured for access to the enterprise network and use metrics to determine priorities for computer life-cycle replacements. But while these numbers indicate the computing capacity available to the unit, they present an incomplete

³³ Betts, *Military Readiness*, 70.

³⁴ Betts, *Military Readiness*, 71.

³⁵ Joint Chiefs of Staff, *Joint Operations*, Joint Publication 3-0 with Change 1 (Washington, DC: Joint Chiefs of Staff, 2018) – V-12 &

VI-3; Joint Chiefs of Staff, *Security Cooperation*, Joint Publication 3-20 (Washington, DC: Joint Chiefs of Staff, 2017).

³⁶ Betts, *Military Readiness*, 73.

description of the cybersecurity posture and instill a false sense of confidence (or false sense of dread) regarding the execution of cybersecurity during war.³⁷

There are also capabilities where the percentage of lost systems could be meaningless. Consider a swarming technology where thousands of drones deploy at once and the quantity of drones in each swarm can be variable. Of course, a unit table of equipment could mandate a quantity on-hand and operational readiness metrics can report on that quantity. But for such a technology, to what extent would it matter whether one hundred or ten thousand were on-hand, or if a unit had 60% or 80% of its quantity? In other words, how many drones does it really take to produce an effective swarm?

There are similar limits to quantifying the operational readiness of personnel. It is easy to build metrics for common military skills and training for the unit's particular mission. The principles of overmatch and sufficiency apply in a straightforward manner. But what of interoperability? Collective training can provide indicators when applied to a parent unit and their subordinates, but it is more difficult to develop metrics for a unit's ability to plug and play in a force in a truly unfamiliar environment and adapt their mission essential tasks in ways previously unknown.

These limitations highlight the differences between operational and *structural readiness*, discussed in the next section.

Vignette: DRRS

Because operational readiness measures are the simplest to define and quantify, readiness management systems will gravitate toward capturing operational readiness metrics in detail. It is important to recognize both the benefits and limitations of such systems, especially if they ignore the other readiness dimensions. The early phases of implementation of the Defense Reading Reporting System (DRRS) serves as useful

illustration of the inherent challenges of designing and implementing such systems.

DoD established DRRS as the result of direction from the 1999 National Defense Authorization Act, Section 117 to establish a "comprehensive readiness reporting system" uniformly applied across the department. It also required that DoD provide information on twenty-six specific readiness measures on a quarterly basis.³⁸ Around the time of DRRS' launch, Junor (2005) said that the system was "designed to track detailed information on what forces, and even individuals, can do on a near-real-time basis. [It will provide] force managers at all levels the tools and information to respond to emerging crises and the ability to assess the risks of conducting such operations."³⁹ The literature on DRRS shows how the above considerations manifested themselves in the design and use of the system. Because DRRS, like any defense management process, is continuously evolving, the important question for senior leaders is less about how the process is now, but what it needs to be. Thus, the below discussion critically evaluates readiness management systems for the purposes of changing them.

Quantitative-Qualitative Balance

Junor (2005) lays out shifts in design considerations from DRRS' predecessor, the Global Status of Resources and Training System, or GSORTS. In moving from "resources" to "capabilities," DRRS represents a shift in favor of qualitative measures over GSORTS' more heavily quantitative focus.⁴⁰ Consider the following quote:

The most common way to answer the question of whether an organization is ready for a collective mission is to ask how many resources the organization has in relation to what it should have. Directly assessing the collective capability requires the synthesis of complex, sometimes intangible factors that a canned algorithm cannot replicate.⁴¹ Taking the simpler approach allows

³⁷ Kevin E. Lunday, "Cybersecurity Is Operational Readiness," *SIGNAL Magazine*, October 17, 2017, <https://www.afcea.org/content/cybersecurity-operational-readiness> says it well -- "Each service member is either the strongest link or weakest link."

³⁸ Find NDAA 1999, Section 117.

³⁹ Junor, "DRRS," 31.

⁴⁰ Junor, "DRRS," 32.

⁴¹ Junor, "DRRS," 32-33.

for quicker assessment but assumes that the enterprise has designed the capabilities correctly in the first place.

However, qualitative assessments have their disadvantages, as inconsistency and ambiguity can appear when aggregating results. Trunkey (2013) reported that DRRS lacked “standardization across services because the services define missions and resource areas differently and selectively report against potential missions (although the data formats are all the same).”⁴² Standardization can be attractive as it allows better consistency in reporting, but it assumes that establishing common standards applicable across all capabilities is possible. Subjective judgment of senior leaders may introduce inconsistencies. Thus, DRRS’ development has highlighted the continuous persistent tension between qualitative and quantitative data. Which induces too much risk? To what extent are the outputs of “canned algorithms” better or worse than having more humans in the loop?

Emphasis on Operational Readiness, Questions on Other Levels of Readiness

Junor emphasized gathering readiness information on units and individuals so DRRS can accurately report on their abilities to conduct tasks and missions to prescribed standards.⁴³ Additionally, she centers responsibility for reporting on commanders, who “must judge whether they can perform a particular task today – *yes or no*.”⁴⁴

A challenge for DRRS is to measure how well the force can establish and sustain lines of communication.⁴⁵ DRRS does not emphasize measuring sustainability readiness as defined in Moore et al., according to Trunkey:

Every year, DoD and the Congress make decisions about how much money to appropriate for the operation and maintenance accounts that pay for fuel, maintenance, and spare parts to support

*operational and training activities, and the military personnel accounts that pay the personnel costs of those activities. However, it has been difficult – if not impossible – to track how funding levels in those accounts affect [readiness] scores, either in general or for specific units. DRRS has the potential to establish stronger analytical relationships between funding levels and readiness, but that potential has yet to be realized. Additional changes to DRRS, such as adding linkages to budgetary accounts or creating new types of reports, could help establish those relationships.*⁴⁶

Questions on Comprehensiveness

Congressional Research Service (2020) would later highlight another limitation of DRRS, that of lacking comprehensiveness. The following are two factors precluding comprehensive reports.

The first is embedded in the 1999 NDAA itself. Harrison (2014) criticized the mandate as emphasizing data on inputs to readiness—the resources needed to conduct training, etc.—over the outputs. Harrison’s analysis showed that in general readiness inputs are not correlated to readiness outputs but are often treated as such.⁴⁷ This produces a circular logic that the DRRS reports justify the funds required for readiness activities rather than serving as proper assessments of the readiness of the force.⁴⁸ A proper comprehensive reporting system would focus more on the outputs.

A second comprehensive question surrounds what types of units or capabilities the system systematically excludes. Although DRRS reports all types of DoD units, the infeasibility of defining useful measurements of readiness has led to the creation of two categories of unit – *registered units* and *measured units*.⁴⁹ Measured units are subject to DRRS capability assessments and comprise ordinary combat, combat support, and combat service support units. Registered

⁴² Trunkey, *Implications*, 12.

⁴³ Junor, “DRRS,” 32.

⁴⁴ Junor, “DRRS,” 32-33 (emphasis original).

⁴⁵ Trunkey, *Implications*, 12.

⁴⁶ Trunkey, *Implications*, 12.

⁴⁷ Harrison, “Rethinking Readiness,” 41-47.

⁴⁸ Harrison, “Rethinking Readiness,” 47.

⁴⁹ G. James Herrera, “The Fundamentals of Military Readiness,” Report #R46559 (Washington, DC: Congressional Research Service, 2020), 19,

<https://crsreports.congress.gov/product/pdf/R/R46559/9>.

units are not. They comprise units and organizations that could be employed to support operational plans, contingencies, homeland security operations, or defense support to civil authorities (DSCA) operations but may not count as "ordinary combat, combat support, or combat service support" elements.⁵⁰ Critics argue that this produces reports that are inherently incomplete. Carson and Plummer (2016) argued that many enterprise units left out of DRRS reporting play significant roles in answering basic questions about the state of the force. Their omission potentially leads to misleading connections between the readiness of the units and the state of the enablers and enterprise capabilities required to employ them.⁵¹

How reliable might such assessments be, and what is the risk of making bad decisions based on such assessments?

STRUCTURAL READINESS

Operational readiness constitutes the most current and verifiable state where the potential capability is known, and full capability is reachable in a short amount of time. This is because the unit is already fully structured. There is a document that designates who and what the unit should have. The readiness rating reflects a decrement from those levels. So, a unit at C-3 is missing personnel, equipment, or training that it is supposed to have. If that unit is identified for mission, the role of the enterprise is to get the unit the personnel, equipment, and training it is

Implications

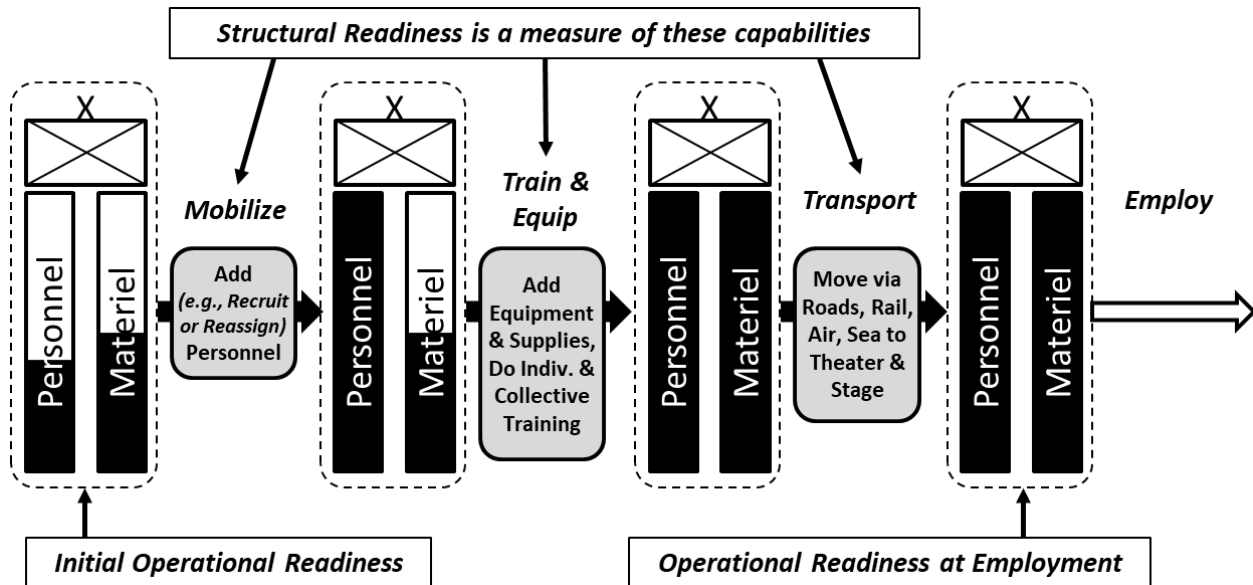


Figure 1. Structure Readiness

The question for decision makers in the design of readiness management systems goes beyond how to add new measurements to the portfolio. Do the costs involved in additional tracking inputs to satisfy such measures exceed the benefits of responding to these types of queries? Can existing qualitative measures by the functional combatant commanders, for example, be expanded or extended to provide targeted assessment useful by such external stakeholders?

already supposed to have before employment.

Structural readiness is different. The enterprise has intentionally not fully structured the unit, has disbanded portions of it in the documentation, or otherwise designed the unit not to always be operationally ready. However, a unit is structurally ready if it can be employed where and when needed given a specific operation. Thus, structural readiness takes a broader view,

⁵⁰ CJCSG 3401D, 12.

⁵¹ Brad Carson and Morgan Plummer, "The Chickens are Ready to Eat: The Fatal Ambiguity of Readiness," *War on the Rocks* (blog),

November 7, 2016, <https://warontherocks.com/2016/11/the-chickens-are-ready-to-eat-the-fatal-ambiguity-of-readiness/>.

measuring the ability of the joint force to get to the theater and conduct the mission.⁵²

Refer to Figure 1. Assume that a brigade in the continental U.S. is not operationally ready due to shortages of personnel and material (e.g., equipment and/or supplies). However, the enterprise has in place capabilities and facilities to bring it to full readiness and deploy it. The generating capabilities may include personnel acquisition and replacement, individual and collective training, equipping, and transportation. *If these capabilities would assure the availability of the brigade for employment by the combatant commander in theater by the designated time according to the warplan, the brigade is structurally ready.*

Where this can be confusing is that operational and structural readiness also apply to the generating force. For the brigade to be structurally ready, their associated generating units (which may change depending on the warplan) must be operationally ready to perform the supporting missions. The personnel command must have the capacity to perform the necessary accessions and assignment functions. The sustainment command must have the capacity to address equipment shortages and accelerate the maintenance of broken equipment. The transportation command must have the needed road, rail, airport, and seaport capacity to push the brigade out.⁵³

Moreover, the support units also must be structurally ready. This is important if the support units maintain lowered readiness in peacetime.⁵⁴ For example, many U.S. generating force capabilities reside in the reserve component and/or involve contracted services from the private sector. They must mobilize, assemble, and deploy to their designated facilities or bases in sufficient time to support the deploying brigade.

The line between operational and structural readiness can also become blurred for those elements with some capacity to transport themselves, such as Air Force crews and Navy

ships. However, these platforms are still dependent on some degree of external support or service-level activities. No capability is fully operationally and structurally ready on its own accord.

Structural readiness must be part of the force design. For each capability not fully operationally ready, enterprise leaders must ensure the support capabilities are available to maintain structural readiness, lest the risk to mission become unacceptably high. The following are various common force design options with readiness implications.

Placing Capabilities in the Reserve Components

An ever-present choice for enterprise leaders concerns what goes in the active component and what goes into the reserves. The active component may ordinarily enjoy greater operational readiness because it has its organic personnel and equipment continuously available and has regular access to training facilities. Reserve component units might not ordinarily be at the same levels of operational readiness because they have less training time overall and might lack the same access to facilities. However, it may not be feasible or affordable to have all capabilities in an active status, and therefore the enterprise may place them in the reserves.

Improving structural readiness often seeks to reduce the time required to mobilize and integrate reserve units with the force. For example, a major effort from the 1980s was the Roundout Brigade Program in the late Cold War period that manned some active-duty divisions with only two brigades, with the third brigade coming from the reserves. Unfortunately, this effort failed due to factors beyond the Army's control. For example, in 1989 the Fort Stewart-based 24th Infantry Division had as its roundout brigade, the 48th Infantry Brigade of the Georgia National Guard. But when the 24th ID was tasked to deploy, legal and political issues with reserve mobilization precluded the use of the 48th, so Fort Benning's 197th Infantry Brigade deployed in its

⁵² Daniel Sukman, "#Reviewing Military Readiness: Thinking About the Three Big Questions," *Strategy Bridge* (blog), July 3, 2019, <https://thestrategybridge.org/the-bridge/2019/7/3/reviewing-military-readiness-thinking-about-the-three-big-questions-of-readiness>

⁵³ Betts, *Military Readiness*, 41-42.

⁵⁴ Sukman, "#Reviewing Military Readiness."

place. This demonstrated how structural readiness was improperly assumed in the creation of the program.⁵⁵

Structural readiness is also an important part of the on-going discourse about the extent to which the reserve component acts as an operational or strategic reserve. For those favoring an operational configuration, this translates to increasing operational readiness to ensure near-immediate augmentation with active units and as a "pressure release" for active forces maintaining a global presence.⁵⁶ However, this has the paradoxical effect of reducing operational readiness in those reserve units over time due to turnover caused by civilian job pressures.⁵⁷ exemplifying Betts' contention that when it comes to readiness, "more is less."⁵⁸

Force Generation Models

In peacetime, it is generally not necessary to always keep the force at highest operational readiness. The question becomes how to decide which forces to be at higher readiness and which forces to be at lower readiness. Higher readiness units would be potentially on shorter notice for employment or would deploy on operations. Lower readiness units would still need to be structurally ready.

There are two general approaches with a wide range of hybrids in between – *tiered readiness* and *cyclic* (also *cyclical*) *readiness*. The differences (and the spectrum of options in between) reflect the extent to which the division of high versus low readiness units are fixed vice rotating.

Tiered Readiness

Tiered readiness represents the fixed variant in which the designation of high readiness units is permanent (or at worst long-lasting). Such units may be resourced to sustain a C-1 whereas other units maintain only C-2 or C-3.

In the Cold War, tiered readiness ensured peak operational readiness for forward stationed, "front line" units and lowered required readiness levels for those based in the continental United States (CONUS) and reserve component.⁵⁹ Forward units received priority for personnel and equipment fills, repair parts, supplies, and so on. The enterprise closely scrutinized forward units' readiness rates. CONUS units sustained gaps in their structure which would be filled at the onset of war, preserving structural readiness.

Owing to the Cold War experience, military leaders tend to disfavor tiered readiness and sometimes refer to it disparagingly. Critics claim that this readiness model creates a culture of "haves" and "have nots" from which lower readiness units become wholly dysfunctional and require far greater resources and effort to return to satisfactory levels of readiness.⁶⁰ This affected not only the comparative operational readiness of units⁶¹ but also limits the potential use of some units for valid peacetime missions such as building partner capacity.⁶² However, other writers insist that these problems were caused by other factors,⁶³ and that tiered readiness more closely approximates the natural division between a small standing force ready for immediate crises and a reliance on reserve capabilities.⁶⁴

⁵⁵ Frank N. Schubert and Theresa L. Kraus (eds.) *The Whirlwind War: The United States Army in Operations DESERT SHIELD and DESERT STORM* (Washington, DC: Center for Military History, 2000), 71-72, <https://history.army.mil/books/www/www4.htm>

⁵⁶ Jacquelin Schneider, "Moving Beyond Total Force: Building a True Strategic Reserve," *War on the Rocks*, November 2, 2020, <https://warontherocks.com/2020/11/moving-beyond-total-force-building-a-true-strategic-reserve/>

⁵⁷ Schneider, "Moving Beyond."

⁵⁸ Betts, *Military Readiness*, 69.

⁵⁹ Tiered readiness also differentiated rapid-response forces from other units.

⁶⁰ Mackenzie Eaglen, "Newsflash to the New Congress: Tiered Readiness is Here Now," *Real Clear Defense* (blog), November 5, 2014, <https://www.realcleardefense.com/articles/2014/11/06/newsflash-to-the-new-congress-tiered-readiness-is-here-now-107530.html>.

⁶¹ Mark Thompson, "Tiers of Sorrow: Path to a 'Hollow Force'?" *TIME*, December 9, 2013,

<https://swampland.time.com/2013/12/09/tiers-of-sorrow-path-to-a-hollow-force/>.

⁶² Names redacted, *Military Readiness: Background to Congressional Debate over Tiered Readiness*, CRS Report #97-866F Updated (Washington, DC: Congressional Research Service, August 1998), 5-6.

⁶³ Travis Sharp, "Gambling with Ground Forces: The 2015 Defense Budget and the 2014 Quadrennial Defense Review" (policy brief, Washington, DC: Center for a New American Security, March 2014), <https://www.cnas.org/publications/reports/gambling-with-ground-forces-the-2015-defense-budget-and-the-2014-quadrennial-defense-review>.

⁶⁴ James L. George, "Is Readiness Overrated? Implications for a Tiered Readiness Force Structure," Policy Analysis #342 (Washington, DC: Cato Institute, April 29, 1999), <https://www.cato.org/sites/cato.org/files/pubs/pdf/pa342.pdf>.

Cyclic Readiness

In contrast, cyclic readiness models place units into a rotation of pre-designated periods of high and low readiness. The aim is the same – providing sufficient trained and ready forces while managing costs – but the methods are different. Cyclic readiness models assume that units at high readiness will develop problems with personnel tiring out or equipment wearing out. Thus, cyclic readiness allows the unit to drop to lowered readiness for a time to recapitalize equipment and take care of people. The presumed advantages were that no unit is ignored and left to degrade. All units would get the latest equipment, and there would be opportunities for personnel to attend necessary training and schools.

The downside of cyclic readiness is the sensitivity of such models to disruption. Perhaps the best example is in the Navy, where ships must rotate through tightly-scheduled maintenance facilities, placing the crew in a lowered readiness status. However, should the deployment of a ship go long or the maintenance facility be unable to accept the ship at the designated time, there is a significant ripple effect on future maintenance cycles and available ships for deployment.⁶⁵ Likewise, Army units might be designated to rotate from high- to low-readiness cycles every so often, but how low is the readiness in the ‘low-readiness’ phase? If too much of the force is at low readiness such that the force is not structurally ready to reconstitute for mission on time, then the cyclic readiness model will fail.⁶⁶

Since dispensing with tiered readiness in the 1990s, the Army has adopted a series of cyclic models. First was the Army Forces Generation model (ARFORGEN) in which like units (e.g., brigade combat teams) would undergo three cycles: (1) *available* (i.e. the “green” cycle) when units were either deployed or at high-readiness ready to deploy, followed by (2) *reset* (“red”

cycle) when units returned from deployment and went into states of low readiness, and (3) *train/ready* (“amber” cycle) when they would refill manning and equipment, and conduct collective training and mission rehearsal exercises in preparation for going back to *available* status.

The duration of these cycles depended on component. The *dwell ratio* reflected the relative amount of time in the available cycle versus the other cycles. The durations of each cycle also differed by component. Active combat forces would be available for 12 months and be in the other cycles for 24 months, constituting a dwell ratio of 1:2. Reserve components would be available for 12 months but in the other cycles for five years, a dwell ratio of 1:5.⁶⁷

Owing to changes in strategic priorities and the security environments, the Army would replace ARFORGEN with the Sustainable Readiness Model (SRM) in 2016⁶⁸ and then move to the Regionally Aligned Readiness & Modernization Model (ReARMM) in 2019. Both aimed to reduce the readiness delta between phases of high and low readiness and added specificity to enterprise requirements to support the transitions between cycles.⁶⁹ While ARFORGEN, SRM, and ReARMM differ in character and implementation, the underlying architecture remains one of cyclic readiness.

High-Readiness Subunits

Readiness levels need not be uniform within an element. For example, a larger unit may designate some subunits as the first employed in case of a contingency, and therefore placed at higher operational and structural readiness. In the 1990s, some Army divisions and brigades recognized the need for a company or platoon - sized element to be on a continuous alert status. The requirement was to have the unit recalled and assembled in a brief period, or even maintain the unit in an isolated camp near the airfield to

⁶⁵ Diana Maurer (lead), *NAVY MAINTENANCE: Navy Report Did Not Fully Address Causes of Delays or Results Oriented Elements*, GAO Report #GAO-21-66 (Washington, DC: Government Accountability Office, 2020).

⁶⁶ For example, David Vergun, “Soldiers need to be ready 100 percent of time, says FORSCOM commander,” *Army.mil*, June 3, 2016, https://www.army.mil/article/169082/Soldiers_need_to_be_ready_100_percent_of_time_says_FORSCOM_commander/.

⁶⁷ Department of the Army, *Force Generation – Sustainable Readiness*, Army Regulation 525-29 (Washington, DC: Department of the Army, 2019). Hereafter AR 525-29.

⁶⁸ AR 525-29.

⁶⁹ Army G-3/5/7, “Regionally Aligned Readiness & Modernization Model,” Stand To!, *Army.mil*, October 16, 2020, <https://www.army.mil/standto/archive/2020/10/16/>.

guarantee immediate employment. The remainder of the unit might time-phase their employment, establishing different internal levels of structural readiness that allowed the full unit to be employed within the designated times. Maintaining high structural readiness also meant that the supporting units, especially the transportation capabilities, were similarly on short-notice to deploy.

Another approach from the Cold War is the construct of a *forward unit*, an element postured in a location that the organization might need to conduct operations. During the Cold War, some infantry and armored divisions established *forward units* composed of a segment of the organization employed in a separate location with the mission of conducting initial operations that permitted the remainder of the organization to mobilize and move forward in the event of an emergency. One type was the Cold War construct of the "division headquarters forward" which comprised part of a CONUS-based division located in an overseas theater. For example, in the late 1970s, the 2nd Armored Division from Fort Hood established a Forward element in northwest Germany composed of a reinforced brigade. In the event of a Warsaw Pact invasion, the 2nd AD (Fwd) would secure ports and airfields or deploy forward to the inter-German border and establish a blocking position.⁷⁰ Forward units can also support security cooperation and interoperability while providing forward presence, exemplified by the 2019 US-Polish defense co-operation agreement whereby the U.S. Army establishes a division forward element in the Poznan region.⁷¹

Incomplete Units

One can also preserve structural readiness by creating units with little to no operational readiness at all. Instead, the structure of a unit is intentionally left incomplete with only a minimal structure until mobilized. One form of this is the

cadre unit, established as a full organization but only manned and equipped at significantly reduced capabilities during peacetime.⁷² Cadre units tend to be unique, possibly no more than a headquarters or perhaps a headquarters and only one subordinate command. The documented structure of the organization (e.g., for the Army, its Table of Organization and Equipment) will include the full structure – all subordinate units and capabilities – while flagging its non-cadre components as unfulfilled, again under the presumption that the units will fill out as needed in the event of war.

Occasionally, cadre units provide a way of fostering the establishment of new combat units. During the World War II build-up, the Army used the cadre unit approach to construct its new divisions. A cadre of ~170 officers and over a thousand enlisted, comprising less than ten percent of a division's authorizing manning, would form and train as a unit while the enterprise mobilized additional manpower to fill the division. Fully-formed divisions might then provide parts of the cadre for the building of subsequent divisions.⁷³

Other militaries have also used cadres successfully. During the Cold War, a percentage of German armored and infantry brigades saw one or more infantry battalions as a cadre unit with only a commander and handful of troops caring for the unit's full complement of equipment until a mobilization occurs.⁷⁴ The Swiss Army also operates a cadre unit system whereby professional soldiers are largely focused on training the reservists who would fill the formation in war.⁷⁵

Another form of incomplete unit is what I will call a *collateral unit*. This is when a unit structure embeds a capability for activation during war, but effectively the unit maintains that capability in peacetime as a collateral duty. An example of this was a previous joint force

⁷⁰ John B. Wilson, *The Evolution of Divisions and Separate Brigades*, Lineage Series, CMH Publication #60-14-1 (Washington, DC: Center for Military History, 1998), 366-367, https://history.army.mil/html/books/060/60-14-1/cmhPub_60-14-1.pdf.

⁷¹ "US 1st Cavalry Division Establishes Forward Headquarters in Poland," *Janes.com*, June 10, 2020, <https://www.janes.com/defence-news/news-detail/430cb6c9-388c-4694-aa38-9d3754ea0675>.

⁷² Christopher Ordowich, *Considering a Cadre Augmented Army* (dissertation, RAND Pardee Graduate School, 2008), https://www.rand.org/content/dam/rand/pubs/rgs_dissertations/2008/RAND_RGSD225.pdf.

⁷³ Henry G. Holcomb, "The Cadre Army" (research project, Carlisle, PA: U.S. Army War College, 1992), <https://apps.dtic.mil/dtic/tr/fulltext/u2/a250990.pdf>.

⁷⁴ Holcomb, "The Cadre Army."

⁷⁵ Ordowich, *Considering a Cadre Augmented Army*.

headquarters concept (JFHQ) in which joint commands, such as the combatant commands, would have staff officers designated with the collateral duty of manning the JFHQ for operations. The JFHQ would detach from the command and deploy, leaving gaps in the command's headquarters structure, requiring augmentation for operations. Outside of exercises and other JFHQ activities, its members would perform their regular peacetime duties.⁷⁶

BALANCING OPERATIONAL AND STRUCTURAL READINESS

Given that it is too expensive to maintain excessive on-hand capabilities, structural readiness is about balancing efficiency against risk. What capability gaps pose acceptable levels of risk, and which do not? Are there ways of configuring structural readiness to manage that risk – for example, instead of shorting the brigade by a battalion, could the brigade be adequately ready if instead the headquarters and three battalion staffs were filled but the junior enlisted were shorted by thirty percent, under the promise that the enterprise would provide the soldiers in time for collective training and employment? There are wide ranges of choices and configurations available, each carrying its own opportunities and risks.

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⁷⁶ This was the case in USEUCOM in the mid-2000s, where some by position dual-hatted as members of the JFHQ. In the event of employment, JFHQ designees would detach from the organization

and deploy as a headquarters. Otherwise, they performed their 'peacetime' duties while occasionally conducting JFHQ training.