

Armored vehicles train on 24 April 2017 at the Chebarkul training ground in Russia's Chelyabinsk region. Russia flirted with modern concepts of readiness and lethality but quickly reverted to historic Soviet concepts of mobilization on the Ukrainian battlefield, favoring mass over maneuver, quantity over quality, capacity over capability, brutality over precision, and mobilization over readiness. (Photo courtesy of the Ministry of Defence of the Russian Federation via Wikimedia Commons)

Decoding Lethality Measuring What Matters

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he U.S. Army has rigorous assessment protocols to ensure units are always ready to fight and win tonight. This commitment to preparedness is represented in the commander's unit status report, a tool that meticulously tracks and measures various facets of readiness.¹ These reports provide

a granular view into the capabilities, equipment, and personnel status of units, forming the backbone of the Army's readiness assessment framework. Yet, despite this comprehensive approach to measuring readiness, a crucial element remains elusive—the accurate measurement of lethality.



Iron Dome air defense missiles intercept Hamas rockets in a 2021 night attack on Ashdod City in southern Israel. More recently, a 13 April 2024 Iranian attack on Israel of three hundred missiles and drones was intercepted in flight. The attacks failed to deliver the expected scale of destruction, resulting in minor damage to an Israeli base with collateral civilian injuries. (Photo by Oren via Adobe Stock)

Current metrics and reporting systems fall short of assessing this vital aspect. Unlike readiness, lethality encompasses a more abstract and multifaceted array of factors. These include existing readiness reporting requirements along with evaluating the proficiency of soldiers in combat scenarios, the effectiveness of tactics and strategies employed, and the overall capability to adapt and overcome adversaries in dynamic and often unpredictable environments.

As the nature of warfare evolves, so too must the methods by which we assess and ensure the effectiveness of warfighting formations. Developing a robust framework for measuring lethality is not just a matter of improving existing readiness reporting metrics but requires a paradigm shift in how we understand and evaluate combat power. As the service provider for trained and ready units, the U.S. Army Forces Command (FORSCOM) is experimenting with measuring what matters—lethality.

Understanding Lethality

Lethality is often thought of as the capability and capacity to effectively neutralize or destroy an enemy target, a critical component of combat effectiveness.² More importantly, it refers to a unit's ability to defeat adversaries and achieve mission objectives. It encompasses various factors like the capability of weapons, tactics, training, and the overall soldier readiness. Lethality is enabled by formations maneuvering into positions of relative advantage where they can employ weapon systems and mass effects to destroy enemy forces or place them at risk of destruction. According to Field Manual 3-0, *Operations*, "The speed, range, and accuracy of weapon

systems employed by a formation enhance its lethality."³ In simple terms, it's about how well a unit can carry out its mission and neutralize threats during combat.

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DECODING LETHALITY

Traditionally, readiness is quantified by measuring all critical training that builds a unit's ability to shoot, move, and communicate effectively and efficiently to a culminating combined-arms live-fire event, facilitating a "train as you fight" methodology.⁴ These basic metrics only tell part of the story, as evaluating lethality is more complex and requires additional elements to accurately communicate a unit's preparedness to fight and win. These elements are not all-inclusive but encompass holistic health and fitness (H2F), combat accuracy, and tactical and technical proficiency. Each of these elements plays a crucial role in a soldier's ability to perform under pressure and achieve mission objectives.

Traditional Metrics: Strengths and Shortcomings

The traditional metrics for measuring and reporting combat readiness that consist of personnel, equipment on hand, equipment serviceability, and training are relatively straightforward as determined in the unit status report. The common operational language and objective metrics serve as a driver for not only reporting but also resource allocation consistent with Army priorities. The training component provides an excellent example to describe how traditional metrics impact readiness reporting yet fall short of indicating lethality.

The training component incorporates weapon system proficiency standards outlined in the Integrated Weapons Training Strategy (IWTS). The IWTS defines measures of performance from individual marksmanship to force-on-force and live-fire events in a systematic manner to increase and sustain soldier and unit proficiency, effectiveness, and lethality.⁵ For unit status reporting, the Army measures the requirement for commanders to resource and report the culmination of basic marksmanship, qualification, and the requisite level of live-fire proficiency consistent with the IWTS. On the one hand, this ensures every soldier in the Army is zeroed, qualified, and proficient on their assigned weapon system while certifying their ability to engage targets within a realistic live-fire scenario. On the other hand, daytime qualifications are simply a baseline, a far cry from achieving lethality. We must be brilliant at the basics, but the Army must be able to fight an adversary and win at night.⁶

The *IWTS* offers a tangible measure of success in engagements, yet it fails to capture the nuances of



Military Review recommends the Center for Army Lessons Learned Handbook 96-3, *Own the Night! Small Unit Night Fighter Manual*, available online at <u>https://archive.org/details/Own_the_Night_Small_Unit_Night_Fighter_Manual_CALL_96-3/mode/2up</u>.

combat performance. For instance, a soldier's accuracy on a flat range doesn't reflect their ability to operate under duress, adapt to changing situations, or make quick, effective decisions. Accuracy provides insights into a soldier's proficiency with their weapon, but again, it overlooks the broader context of warfighting, whereas combat accuracy accounts for the complexities of real-world scenarios where targets are moving, cover is sparse, and the threat environment is constantly evolving. As a result, traditional metrics, while useful, are insufficient for a comprehensive assessment of lethality without accounting for combat accuracy.

Project Lethality

The combat training centers (CTC) exist to "provide the capstone collective live-training event in the Army Training Strategy," preparing units to thrive in the chaos of combat.⁷ CTC rotations consist of a live force-on-force field training exercise and a combined arms maneuver live-fire exercise (LFX). This environment enables multiechelon brigade-and-below training while ensuring battalion and brigade staffs are proficient in their mission command tasks. The CTCs provide subjective trend analysis through after action reviews for rotational training units and publish lessons learned through professional



Military Review recommends "Senior NCOs at Point of Friction" by Command Sgt. Maj. Nema Mobarakzadeh in the Spring 2022 edition of *Infantry*. Read it online at <u>https://www.moore.army.mil/infantry/</u> magazine/issues/2022/Spring/PDF/INFMAG_Spring22.pdf.

writing programs but, at the end of every iteration, leave valuable rotational data on the cutting room floor.

FORSCOM is experimenting with fight at night and combat accuracy data collection at the CTCs and how to merge that data with H2F metrics into a lethality score. The project, called Project Lethality, is nascent but has shown promise as we learn what is achievable and measurable. One thing is certain, there is declining lethality in the force despite weapon system and fire control improvements. This condition is seen objectively during LFXs at CTCs, which observed a decrease in overall target hits over the past two decades, an increase in the length of time it takes to qualify formations, and low first-run crew qualification rates.⁸ This phenomenon is not isolated in the heavy force, as Stryker and infantry organizations are not immune to these trends.

The Army has an adage, "Train as you fight." The CTC observer/coach-trainers have witnessed this in the inverse; they are observing units "fight as they trained." Success at the CTC starts at home station training (HST); however, our training methodologies at HST have impacted CTC performance in both positive and negative ways. The multiechelon training strategy encourages field training exercises that stress timely and accurate use of organic direct and indirect fires, mission command on the move, the practice of deception in an environment of persistent observation, and predictive sustainment and maintenance. Units that focus on warfighting tasks that support fire and maneuver while wrapping enabling technologies around the close-combat force drive operational tempo and dominate at the point of contact.

Alternately, we've witnessed administrative range practices impact both maneuver and lethality. Crews exposed to canned engagement scenarios on multipurpose range complexes at HST replicate range activities during situational training exercises and LFXs:

- slow-moving platforms—with main gun turrets oriented at home-station maximum elevation as if on dry fire—maneuvering against a free-thinking opposing force in dynamic and unfamiliar target-rich environments;
- tank crew combat accuracy failing to stack up against their previous Gunnery Table VI qualification scores; and
- close-combat forces, charged with closing with the enemy "by means of fire and movement to destroy, capture, or repel an assault by fire, close combat, and counterattack" through violence of action attaining similar poor results.⁹

We are accurate on the range but struggle to achieve combat accuracy when placed under the duress of simulated combat where the speed of decision-making and cognitive load stress soldiers and crews in real-time.

Trend reversal is a CTC point of emphasis. Project Lethality highlights the disparity from HST rangeisms to performance in simulated combat. Leaders are making data-enabled, informed decisions at HST to improve CTC performance. From the onset of this year, the data collected underscored the need for emphasis on lethality, and we've seen improvements across FORSCOM brigade combat teams to this point. Since starting Project Lethality in February, the seven-month lethality mean was 55 percent. However, we've witnessed an exponential jump in lethality in the last two National Training Center rotations. FORSCOM is aggressively reversing trends by impacting how we train during HST and, through our partnership with TRADOC, ensuring our doctrine is updated and relevant with how we fight. As a result, the second 1st Armored Division rotation under Project Lethality showed an overall lethality increase

from 52 percent to 76 percent, an improvement of 24 percent.¹⁰ Subsequently, the 3rd Infantry Division achieved an overall 72 percent lethality score after completing an advanced gunnery pilot with the Armor School and warrior skills ranges.¹¹ The warrior skills ranges are complex stress fires that tested elements of H2F consisting of cognition, target identification and acquisition, and complex engagement scenarios to drive crew preparedness.

Holistic Health and Fitness

The human element is difficult to measure but is perhaps the most important component of lethality. Soldiers must possess the determination and courage to face the challenges of combat. Warfighting is a human endeavor, carried out by soldiers whose fieldcraft, skills, and physical readiness are essential to combat operations. H2F is the connection between physical training and warrior mindset that links soldier performance to overall lethality. It establishes the building blocks that enable soldiers to engage with and overmatch the enemy in multidomain operations across the spectrum of conflict.

Measuring all elements of H2F is challenging, and the Army is experimenting with identifying human performance metrics. Physical readiness, a component of H2F, is conventionally measured through the Army Combat Fitness Test (ACFT) and Army Body Composition Program scores.¹² However, the ACFT is not the backstop for combat fitness, it's a ridgeline set along the path toward building lethality, preparing soldiers to thrive during warfare. Measuring holistic health requires a nuanced understanding of human health and the development of metrics that can accurately capture a soldier's physical and mental well-being.¹³

Combat Accuracy

Combat accuracy refers to a soldier's ability to effectively use their weapon during combat operations. This includes not only hitting targets but also doing so under varying conditions while managing stress, obtaining precision through a compromise of speed and accuracy. Combat accuracy is developed through rigorous training, practice, and continuous improvement.

Measuring combat accuracy involves evaluating a soldier's engagement speed, accuracy, and consistency.

This can be done through LFXs, stress events, and competitive shooting events. Like holistic health, combat accuracy is difficult to quantify in the context of dynamic combat situations. Yet, Project Lethality is taking on this challenging task, experimenting at the CTCs for the Army.

Tactical and Technical Proficiency— Brilliance at the Basics

Tactical and technical proficiency refers to a soldier's ability to use their equipment effectively and make sound tactical decisions in combat. This includes understanding and anticipating enemy movements, leveraging terrain, and coordinating with team members. Tactical and technical proficiency is developed through rigorous training, experience, and continuous learning.

To measure tactical and technical proficiency, the Army uses tools like training and evaluation outlines. Training and evaluation outlines help leaders evaluate a soldier's ability to plan, communicate, and execute tasks in a coordinated manner. They provide "information on individual or collective task training objectives, resource requirements, and evaluation procedures."¹⁴

Regrettably, like the other components of lethality, the demonstration of tactical and technical proficiency in a combat environment is difficult to *objectively* measure accurately. However, through external evaluations, CTCs *subjectively* measure and report tactical and technical proficiency during the lethality after action review by comparing the rotational score with the historical average through the Decisive Action Big 12. The Decisive Action Big 12 criteria consist of troop leading procedures, assessing risk, precombat checks and inspections, conducting rehearsals, movement and maneuver, boresight weapons, tactical combat casualty care, maintain classes of supply, conduct maintenance, conduct force protection measures, establish security, and communication.

The Challenge of Integration

The biggest challenge in measuring lethality is integrating diverse components into a single, cohesive framework. Traditional metrics contribute to soldier readiness, but lethality metrics are difficult to quantify and compare. Developing a comprehensive measurement system requires a multifaceted approach that combines quantitative and qualitative assessments.



A Georgia Army National Guardsman shoots his M4 carbine 29 August 2024 during the Stress Shoot event of the 10th Andrew Sullens State Marksmanship Competition at Fort Stewart, Georgia. The competition promotes marksmanship skills, lethal readiness, and training camaraderie, and offers service members an opportunity to test their marksmanship skills and weapon systems in a highly competitive and battle-focused environment. To reach weapons proficiency, individuals and units must first learn and demonstrate basic weapons skills. Once they achieve this foundation, units begin to build on it layer by layer, echelon by echelon until lethality is achieved. (Photo by Spc. Perla Gomez, U.S. Army)

One potential solution is the development of a lethality index, a composite score that combines various metrics to provide a holistic assessment of a soldier's effectiveness. This index could include traditional metrics like marksmanship and assessments of H2F, combat accuracy, and technical and tactical proficiency. By integrating these diverse factors, the lethality index would offer a more complete picture of a soldier's capabilities.

Training and Development

Effective training is crucial for enhancing lethality. Training programs must be designed to develop not only physical skills but also psychological resilience, tactical acumen, and situational awareness. This requires a holistic approach that integrates traditional training methods with advanced technologies and support. This is where NCOs excel, training soldiers! "NCOs set the foundation for Army training. They train soldiers, crews, and small teams to be battle ready. They provide crucial input and advice to the commander on what is trained and how it is trained. This ensures the organization trains on its most important tasks down to the individual soldier."¹⁵

One effective training method is to use scenario-based stress events that use realistic simulations to create challenging, dynamic environments. These scenarios test a soldier's ability to adapt, make quick decisions, and perform under pressure. By providing a safe, controlled environment, scenario-based training allows soldiers to develop and refine their skills without the risks associated with real-world combat. Units in FORSCOM are experimenting with warrior skills ranges to assess the physical and cognitive domains hosting performance metrics on an intuitive Power



Soldiers with Company B, 3rd Battalion, 172nd Infantry Regiment, 86th Infantry Brigade Combat Team (Mountain), Maine Army National Guard, establish a support-by-fire position 20 July 2020 during a nighttime live-fire training lane at Ethan Allen Firing Range, Jericho, Vermont. The live-fire range was conducted as part of their annual training and had multiple assault elements in addition to support-by-fire positions and door breaches. There is greater lethality on the modern battlefield than ever before, and survivability is challenging. Home station training must replicate the rigors of combat to achieve and sustain individual and collective unit proficiency that stresses leaders and soldiers at every echelon. (Photo by 2nd Lt. Nathan Rivard, U.S. Army)

BI data visualization tool.¹⁶ The warrior skills ranges are unit specific and mission-essential task list driven. They are designed to metabolically match the demands of combat by leveraging general physical preparedness and functional fitness to strengthen mental acuity, improve ACFT capabilities, and generate a soldier lethality score.¹⁷

Moving Forward with Data

As the nature of warfare continues to evolve, so too must our methods for measuring and enhancing lethality. Traditional metrics are no longer sufficient. We must develop a more comprehensive approach that considers H2F, combat accuracy, and collective task proficiency that contribute to a soldier's warfighting effectiveness. This requires a multifaceted approach that integrates advanced technologies, effective training methods, and a focus on the human element. By doing so, we can develop a more accurate and holistic assessment of lethality, and ultimately, enhance the combat effectiveness of our soldiers.

The Army lacks an application that collects and aggregates lethality data to inform leaders at echelon of performance indicators for soldiers and units. Training and Doctrine Command's Army Training Information System, currently under development, has the potential to evolve into a lethality application.¹⁸ As technology advances, the application must work across the vast number of data silos, programs of record, third-party applications, and evolving requirements to gain actionable insights for human performance and other data-centric uses through artificial intelligence/machine learning models to measure lethality at scale.

Conclusion

Project Lethality's mission is to begin grappling with the complexities and challenges of measuring lethality, a soldier's ability to effectively engage and neutralize threats. Traditional metrics, while useful, fall short of capturing the full spectrum of lethality. Holistic health and fitness, combat accuracy, and tactical and technical proficiency are critical components that must be considered and, as the Army continues to experiment, we must accept innovative ideas to "improve our foxhole."

The integration of these diverse lethality factors into a single framework is challenging but essential.

Advances in technology offer new opportunities to measure and enhance lethality, while effective training and a focus on the human element are crucial for developing the skills and resilience needed for warfighting. This article does not advocate for an additional burden on soldiers and leaders, another colorful Chicklet chart to manage. Instead, it offers an innovative approach to providing immediate "downrange feedback" to ensure our Army is in fact the most lethal force on this planet. Through Project Lethality's comprehensive approach, we can better understand and improve the factors that truly matter in determining lethality.

Notes

1. Requirements for unit status reporting are provided in Army Regulation (AR) 220-1, *Army Unit Status Reporting and Force Registration–Consolidated Policies* (Washington, DC: U.S. Government Publishing Office [GPO], August 2022).

2. Field Manual (FM) 3-0, *Operations* (Washington, DC: U.S. GPO, October 2022), Glossary-9. The Army defines lethality as "the capability and capacity to destroy."

3. Ibid., para. 1-24.

4. FM 7-0, *Training* (Washington, DC: U.S. GPO, June 2021), para. 1-5.

5. Training Circular 3-20.0, Integrated Weapons Training Strateqy (IWTS) (Washington, DC: U.S. GPO, June 2019), para. 1-18.

6. Advanced marksmanship training such as night live-fire qualification is not a readiness reporting requirement. See AR 350-1, *Army Training and Leader Development* (Washington, DC: U.S. GPO, December 2017), para. F-7.

7. AR 350-50, *Combat Training Center Program* (Washington, DC: U.S. GPO, May 2018), para. 3-2(c).

8. Lethality Report on State of the Armored Brigade Combat Team (ABCT) Direct Fire Weapons Systems (M1 Abrams and M2 Bradley Family of Vehicles) (Fort Cavasos, TX: Headquarters III Armored Corps, September 2019), para. 1-1(c).

9. Army Techniques Publication 3-21.8, *Infantry Rifle Platoon and Squad* (Washington DC: U.S. GPO, January 2024), 1-1.

10. Data compiled by the author using the Power Bi application. see "Power BI," Microsoft, accessed 13 September 2024, <u>https:// www.microsoft.com/en-us/power-platform/products/power-bi</u>. 11. Ibid. 12. Center for Army Lessons Learned (CALL) Handbook 18-37, *The Army Combat Fitness Test* (Fort Leavenworth, KS: CALL, September 2018); "Army Body Composition Program," Army Ready and Resilient, accessed 12 September 2024, <u>https://www.armyresilience.</u> <u>army.mil/abcp/index.html</u>.

13. CALL Handbook 23-06, *Holistic Health and Fitness* (Fort Leavenworth, KS: CALL, June 2023).

14. Training Management Directorate, Combined Arms Center-Training, "Training Fact Sheet: Training and Evaluation Outlines = a Starting Point for Assessments," Army.mil, 5 January 2024, <u>https:// www.army.mil/article/272832/training_fact_sheet_training_and_evaluation_outlines_a_starting_point_for_assessments.</u>

15. FM 7-0, Training, para. 1-7.

16. Required warrior skills and standards are identified and detailed by soldier grade and military occupational specialty in various soldier training publications at "Soldier Training Publications," Army Publishing Directorate, accessed 13 September 2024, <u>https://armypubs.army.mil/ProductMaps/PubForm/STP.aspx;</u> see also "Power BI."

17. FM 7-0, *Training*, para. 2-2. "A mission-essential task is a collective task on which an organization trains to be proficient in its designed capabilities or assigned mission. A mission-essential task list is a tailored group of mission-essential tasks."

18. "Product Manager Army Training Information System," Program Executive Office Enterprise Information Systems, accessed 13 September 2024, <u>https://www.eis.army.mil/sites/</u> <u>default/files/2024-05/ATIS%20Fact%20Sheet%20%28May%20</u> 2024%29.pdf.

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