



Physical fitness is a cornerstone of readiness and operational success in the U.S. Army. Soldiers' ability to perform under demanding physical conditions directly impacts mission effectiveness and personnel safety. (U.S. Army photo by Spc. Stephany Becerra)

Enhancing Individual Physical Training in the U.S. Army: Addressing Gaps in FM 7-22 and Implementing Tech Solutions

By Command Sgt. Maj. John P. Rivera Jr.

743rd Military Intelligence Battalion

Physical fitness is a cornerstone of readiness and operational success in the U.S. Army. Soldiers' ability to perform under demanding physical conditions directly impacts mission effectiveness and personnel safety. To this end, the Army has established the Army Combat Fitness Test (ACFT) and outlined training guidelines in FM 7-22, emphasizing the

importance of consistent physical readiness.

Not all Soldiers have equal access to organized physical readiness training (PRT), however, due to organizational constraints, competing responsibilities, and limited resources. For these Soldiers, individualized training becomes essential but also introduces unique challenges. FM 7-22, while comprehensive in its

foundation, needs to provide more detailed guidance for Soldiers conducting independent workouts. Specifically, it lacks instructions on weight progression, sets and repetitions, and synchronizing running schedules with strength training to meet ACFT standards. This matters because when doctrine explains standards, metrics, and desired outcomes explicitly and in an accessible language, Soldiers can dependably reach for doctrine with confidence in the absence of immediate guidance or resources.

Further compounding the issue, Master Fitness Trainers (MFTs), the designated fitness experts within units, often have neither the time nor the specialized expertise to develop tailored programs for every Soldier.



FM 7-22 should include evidence-based resistance and cardiovascular training guidelines to address these gaps. Alternatively, the Army could consider adopting third-party tools such as fitness apps or partnering with organizations like Nike Run Club to provide Soldiers with tailored and progressive fitness plans. (U.S. Army photo by Capt. Sara Berner)

As a result, many Soldiers are left to design their own fitness routines that may fail to align with best practices and lead to suboptimal performance or injury. Modernization efforts in physical training, physical education, and holistic efforts in body strengthening would alleviate missed opportunities for Soldiers to make educated decisions about their physical well-being.

The Army must modernize its approach to physical fitness, and one of the most effective ways is by incorporating technological solutions. Applications (apps) like Gymverse and Nike Run Club offer personalized, data-driven training plans that address these gaps. By leveraging such tools, the Army can provide Soldiers with accessible, effective, and individualized training programs that improve ACFT performance and enhance overall mission readiness.

Challenges of Individual Physical Training

FM 7-22, Holistic Health and Fitness, is the primary guide for physical training in the U.S. Army. The manual establishes foundational principles such as progressive overload and functional fitness but primarily focuses on unit-level PRT. This approach leaves Soldiers conducting individual physical training with insufficient guidance to meet the specific demands of their roles and the ACFT.

One significant shortcoming of FM 7-22 is its lack of detailed instructions for resistance training. The manual introduces general concepts but needs to provide clear parameters on essential factors such as sets, repetitions, or weight progression. Research highlights the importance of progressive overload,

which involves gradually increasing resistance or intensity, as critical for developing strength and endurance (Schoenfeld, 2016). Without explicit recommendations on adjusting these variables, Soldiers often make uninformed decisions that hinder progress or result in overtraining and injuries. For example, a structured resistance program might specify three to five sets of six to 12 repetitions at 65-85% of one's maximum weight for strength development. However, FM 7-22 offers no specific guidance, creating inconsistent unit training practices.

Cardiovascular training, an equally vital component of Soldier readiness, is similarly underdeveloped in FM 7-22. The manual emphasizes aerobic conditioning but needs to include a structured running schedule that complements resistance training. Structured programs, such as those offered by Nike Run Club, provide progressive running schedules tailored to individual fitness levels, minimizing the risk of overuse injuries and enhancing overall performance (Haskell et al., 2007). With such guidance, Soldiers can avoid overtraining or underperforming in these critical areas.

The lack of detailed education and resources in FM 7-22 creates significant challenges for Soldiers. Many are left to design their own fitness programs, often with ineffective or unsafe outcomes. Inconsistent or poorly structured routines can hinder progress toward fitness goals, while insufficient knowledge about proper form,

progression, and recovery increases the likelihood of injury (Behm et al., 2023). Furthermore, inadequate training plans may lead to missed ACFT standards, affecting individual morale and unit readiness.

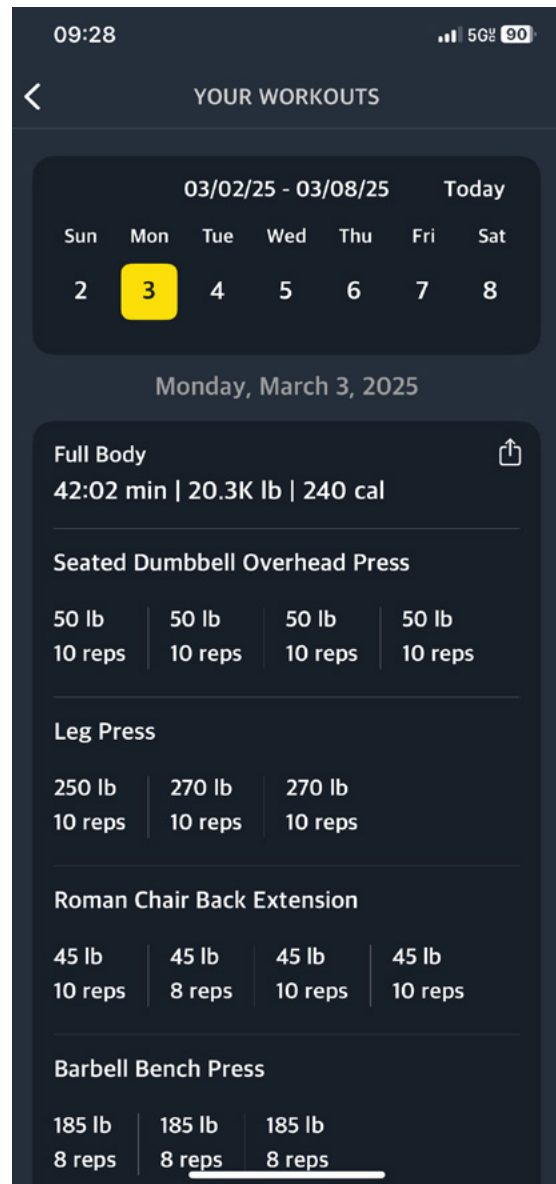
FM 7-22 should include evidence-based resistance and cardiovascular training guidelines to address these gaps. Alternatively, the Army could consider adopting third-party tools such as fitness apps or partnering with organizations like Nike Run Club to provide Soldiers with tailored and progressive fitness plans. These solutions would ensure that Soldiers conducting individual training have access to the same level of guidance and support as those taking part in unit-level PRT.

Time Constraints for Soldiers

The competing demands of military service often result in Soldiers having insufficient time to dedicate to structured physical training. Beyond their physical readiness responsibilities, Soldiers must manage a variety of duties, including operational tasks, administrative work, and professional development. These competing priorities make allocating the time necessary for consistent and effective training difficult. This challenge becomes especially acute for Soldiers in high-tempo units, 24-hour operational environments, or those serving in remote locations without access to Holistic Health and Fitness (H2F) programs.

Time constraints not only reduce the amount of time available for training but also complicate the planning and execution of effective workout routines. Research shows that well-structured training programs incorporating progressive resistance exercises, cardiovascular conditioning, and recovery strategies are essential for optimizing physical performance and reducing injury risk (Behm et al., 2023). However, the practical realities of Soldiers' schedules often force them to choose between longer, comprehensive workouts and shorter, less effective routines. This dilemma underscores the need for programs that balance efficiency with effectiveness, enabling Soldiers to achieve their fitness goals within limited timeframes.

Individualized fitness programs must account for these time constraints by emphasizing high-impact, time-efficient workouts. For example, evidence-based approaches such as high-intensity interval training (HIIT) can provide significant cardiovascular and metabolic benefits in shorter durations than traditional steady-state cardio (Gillen & Gibala, 2014). Similarly, compound resistance exercises, such as squats, deadlifts, and presses, engage multiple muscle groups simultaneously, maximizing strength and endurance gains in less time. Despite their efficacy, these strategies are rarely addressed in detail in FM 7-22 or other Army resources, leaving Soldiers without proper guidance to implement them effectively.



Fitness apps allow Soldiers to log their progress and adjust their training based on real-time feedback, ensuring that every workout contributes meaningfully to their fitness goals. By integrating such technologies, the Army can help Soldiers maximize the effectiveness of their training within the constraints of their daily responsibilities. (Courtesy photo by Command Sgt. Maj. John P. Rivera Jr.)

Fitness apps offer a valuable solution to this issue by providing Soldiers with tailored, time-efficient workout plans that align with their schedules. Apps like Gymverse, for example, can design programs that prioritize high-impact exercises while incorporating progressive overload principles and recovery protocols. These apps also allow Soldiers to log their progress and adjust their training based on real-time feedback, ensuring that every workout contributes meaningfully to their fitness goals. By integrating such technologies, the Army can help Soldiers

maximize the effectiveness of their training within the constraints of their daily responsibilities.

In addition to leveraging technology, the Army should consider updating FM 7-22 to include specific recommendations for time-efficient training strategies, such as HIIT or circuit-based routines, tailored to Soldiers with limited availability. These updates would provide practical solutions to the unique challenges faced by modern Soldiers, enabling them to maintain physical readiness despite the demands of their operational and personal schedules.



Currently, the NBA utilizes AI tools to monitor player fatigue and training loads and create personalized workout plans tailored to the athletes' needs. For example, wearable devices track and record heart rate and movement patterns, allowing teams to adjust training intensity in real time to avoid overexertion and minimize injury risks. (U.S. Army Photo by T. T. Parish)

Artificial Intelligence in Sports

General Mark Milley, the former Army Chief of Staff and Chairman of the Joint Chiefs of Staff, often referred to Soldiers as Soldier-Athletes. General Milley knew the importance of physical fitness and mental toughness in modern Soldiers, likening them to professional athletes. Professional sports teams have begun to adopt artificial intelligence (AI) to improve athletic performance, reduce injuries, and optimize training programs. By utilizing data analytics and wearable technology, organizations have implemented evidence-based solutions to meet the physical demands of their athletes while enhancing strategies and individual readiness.

Currently, the NBA utilizes AI tools to monitor player fatigue and training loads and create personalized workout plans tailored to the athletes' needs. For example, wearable devices track and record heart rate and movement patterns, allowing teams to adjust training intensity in real time to avoid overexertion

and minimize injury risks. Similarly, the NFL's Dallas Cowboys have used AI-driven simulations to assess game strategies, helping players prepare for complex scenarios while supporting coaches in decision-making (AppVerticals, 2025).

Soccer teams like FC Barcelona and Manchester City are also at the forefront of AI integration. FC Barcelona uses AI to analyze player positioning and movement during games, providing insights that improve players' awareness of where their teammates are on the field. Meanwhile, Manchester City utilizes machine learning to

assess global player data, enabling more informed recruitment decisions based on performance metrics and potential fit within their system (AppVerticals, 2025; Folio3, 2025).

Benefits and Outcomes

AI has delivered tangible results to professional sports teams, including lower injury rates that prolong a player's career. If the U.S. Army were to leverage AI, it could also identify Soldiers' overtraining patterns through predictive analytics. Commanders could implement preventive strategies, such as tailored recovery protocols and optimized schedules. Soldiers would benefit from precise, data-driven plans that balance intensity and rest, improving performance while reducing physical strain. These outcomes

demonstrate the value of AI in creating efficient, individualized training systems that adapt to athletes' (and Soldiers') evolving needs (Folio3, 2025).

The Need for a Methodical and Individualized Approach

Research consistently emphasizes the importance of structured and personalized fitness programs for optimizing physical performance and minimizing the risk of injury. Generalized workout routines, while useful for group-based training, do not meet the specific needs of individuals, particularly in a military setting where physical demands and fitness levels can vary significantly among Soldiers. Applying fundamental principles of exercise science, including progressive overload, periodization, and complementary training, promotes strength, endurance, and overall readiness. These principles help ensure that training is effective but also safe and sustainable over time.

One of the cornerstones of practical physical training is progressive overload, which involves gradually increasing the intensity, volume, or resistance of exercises to stimulate adaptation and strength gains (Schoenfeld, 2016). This principle is critical for Soldiers looking to improve their ACFT performance or enhance their overall physical fitness. Without systematic progression, training can lead to stagnation, insufficient gains, or even injury due to the body being exposed to the same stimulus without adequate challenge. By incorporating progressive overload into individualized programs, Soldiers can ensure consistent improvement and reduce the likelihood of plateauing.

Periodization is another vital principle in training design which involves balancing intensity and volume over time to avoid overtraining and reduce injury risk (Issurin, 2015). Periodized training plans typically consist of cycles that adjust the intensity and volume of training, alternating between phases of higher volume (to build endurance) and higher intensity (to build strength and power). For Soldiers with varying fitness levels or training goals, such as improving ACFT scores or preparing for specific mission requirements, periodization ensures that they are not overtaxing their bodies and allows for optimal recovery. Without an individualized approach to periodization, Soldiers may be at greater risk for burnout or injury, particularly in high-tempo environments.

Finally, complementary training that integrates strength and cardiovascular conditioning is necessary for well-rounded fitness. Although many Soldiers focus primarily on strength training for ACFT preparation, neglecting cardiovascular fitness can hinder overall performance. For instance, a Soldier's ability to perform in the two-mile run or the sprint-drag-carry event is closely tied to aerobic endurance, and failure to include running or aerobic exercises in a fitness regimen can impede progress (Haskell et al., 2007). Therefore, a methodical training approach must consist of both resistance and cardiovascular components to ensure that Soldiers are prepared for all aspects of the ACFT and can maintain their performance under varying physical demands.

Incorporating these principles into individualized fitness plans is crucial for Soldier readiness. Fitness apps

like Gymverse can automate and individualize training by offering personalized plans based on each Soldier's current fitness level, goals, and progress. These apps can track progressive overload and provide periodized routines while addressing strength and cardiovascular fitness. Using such tools, the Army can better support Soldiers in achieving their physical readiness goals methodically, efficiently, and sustainably.



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Limitations

Integrating fitness apps into the Army's training programs offers significant benefits. However, Soldier access to technology presents a challenge. Not all Soldiers have personal smartphones, wearable devices, or reliable internet access, particularly in remote or austere environments. Furthermore, technology literacy levels among Soldiers may vary, potentially hindering consistent use. These barriers could limit the effectiveness of fitness apps, especially in units where operational demands already strain resources.

The Army can take measures to address these concerns, such as providing shared devices preloaded with fitness apps for units lacking individual access. Ensuring offline functionality in fitness apps would allow Soldiers to utilize training programs regardless of connectivity. Additionally, implementing mandatory training sessions for Soldiers and leaders on using these tools would enhance technology literacy and adoption rates. Collaboration with technology developers to create military-specific solutions addressing connectivity

and device constraints would ensure these tools meet operational needs (Folio3, 2025). By addressing these limitations head-on, the Army can ensure that fitness technology achieves its goal of enhancing readiness and inclusivity across all units.



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Implementation Plan

To address the challenges Soldiers face in maintaining effective PRT, the Army should implement a targeted approach focusing on units unable to conduct traditionally organized PRT and those without access to robust H2F programs. This selective implementation strategy allows the Army to prioritize resources where they are most needed while evaluating the effectiveness of fitness Apps in addressing identified gaps.

Pilot Program in Identified Units

The first phase involves launching a pilot program within units that face specific challenges, such as 24-hour operations, remote locations, or operational environments without dedicated H2F resources. These units often need more infrastructure and certified civilian staff to implement traditional fitness programs. By introducing fitness apps like Gymverse in these units, Soldiers can receive individualized training programs tailored to their needs. This approach allows the Army to evaluate the app's impact on Soldiers' fitness levels and its ability to provide commanders with real-time data on participation and progress. The pilot program would last six months to ensure sufficient data collection and analysis time.

Feedback Loop and Refinement

Throughout the pilot program, Soldiers and commanders in the identified units would provide

feedback on the fitness app's usability, effectiveness, and impact on physical readiness. Surveys, focus groups, and performance metrics will be used to gather this information. The feedback would help refine the app's features and integration processes, ensuring they meet

the unique requirements of Soldiers operating in nontraditional PRT environments.

Additionally, this phase would assess how well the app supports commanders in monitoring and evaluating Soldiers' participation in training programs.

Focused Rollout to Additional Units

After the pilot program demonstrates positive results, the next step would involve a focused rollout to other units with similar operational constraints. The rollout would prioritize units that lack access to traditional PRT or robust H2F resources, ensuring that these Soldiers have the tools they need to maintain fitness standards. By limiting the program to these identified units, the Army can effectively allocate resources and address the most pressing fitness challenges without overextending its capabilities.

Updated FM 7-22 Guidance

To support the targeted rollout, the Army should update FM 7-22 to incorporate app-based training as an officially recognized option for units unable to conduct traditional PRT. The updated guidance would provide clear instructions on integrating fitness apps into unit training plans, ensuring consistency across the force. Additionally, the guidance should emphasize the importance of individualized and progressive training, reinforcing the use of technology to meet these goals.

Long-Term Evaluation and Cost-Benefit Analysis

The implementation plan would include a long-term evaluation phase to measure the program's effectiveness in improving Soldier readiness and reducing injuries. Metrics such as ACFT pass rates, injury rates, and Soldier satisfaction would be tracked over time. Additionally, a cost-benefit analysis would assess the program's financial impact, comparing the cost of app subscriptions to potential savings from reduced health care expenses and improved operational readiness.

By focusing on units with the greatest need, the Army can strategically implement app-based fitness training, ensuring that Soldiers in challenging environments receive the individualized support they require. This targeted approach aligns with the Army's commitment to readiness and adaptability, providing a sustainable solution to modern fitness challenges.

Conclusion

The Army faces significant challenges in maintaining Soldier readiness, mainly due to gaps in the current PRT system outlined in FM 7-22. Soldiers often struggle to meet fitness standards due to the lack of individualized guidance, limited access to MFTs, and time constraints imposed by competing operational demands. These challenges are even more pronounced in units that cannot conduct traditional PRT or lack access to robust H2F programs with certified staff. Addressing these gaps is critical to ensuring Soldiers are physically prepared for their missions while reducing injury risks and long-term health care costs.

Integrating fitness technology offers a modern, scalable solution to these issues. Apps like Gymverse provide personalized training plans, monitor progress, and generate real-time data that commanders can use to evaluate participation and readiness. By leveraging tools such as Nike Run Club, the Army can provide progressive cardiovascular training tailored to meet ACFT standards. These technologies empower Soldiers with individualized, science-backed training while enabling leaders to intervene proactively when fitness deficiencies arise.

A phased implementation plan would maximize the impact of this modernization effort. By prioritizing units lacking traditional PRT capabilities or H2F support, the Army can strategically allocate resources to address the greatest needs. Pilot programs, followed by refinements based on feedback, will facilitate an effective rollout. Incorporating these app-based training

options into FM 7-22 will formalize this approach and provide clear, accessible guidance for Soldiers across all operational environments.

Investing in fitness technology also offers long term financial benefits. Fitness app subscriptions typically cost between \$60 and \$120 per user annually, a modest investment compared to the substantial medical costs associated with musculoskeletal injuries. Musculoskeletal injuries among U.S. Army trainees alone have been shown to generate more than \$14.8 million in medical costs in a single year (Military Times, 2023). Across the broader active duty population, treatment of musculoskeletal injuries routinely incurs tens of millions of dollars annually—for example, in Fiscal Year 2021, the Military Health System spent more than \$132 million on lower extremity injuries and over \$98 million on spine injuries in the private sector care system (Pav et al., 2024). These figures make the financial justification for investing in preventative fitness technology overwhelmingly clear.

Modernizing the Army's approach to physical readiness is no longer optional but necessary. By embracing technology and focusing on units with the greatest need, Army leadership can ensure that all Soldiers, regardless of their operational environment, are equipped to meet fitness standards. This individualized and methodical approach will enhance overall Soldier readiness, reduce injury rates, and ultimately strengthen the Army's ability to accomplish its mission. The time to act is now, and adopting these solutions is a critical step toward building a more capable and resilient force. ■



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Command Sgt. Maj. John P. Rivera Jr. is the command sergeant major for the 201st Expeditionary Military Intelligence Brigade. He previously served as the senior intelligence sergeant major at the Joint Multinational Readiness Center, Hohenfels, Germany; as the Deputy Commandant at the Noncommissioned Officer Academy, U.S. Army Intelligence Center of Excellence in Fort Huachuca, Arizona; and as a recruiter for the Evergreen Park Recruiting Station, Chicago Recruiting Battalion, Chicago, Illinois.



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