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Elevating Jungle Warfare with Mountain Techniques

By Master Sgt. Daniel Ryan

Sergeants Major Course, Class 75

Introduction: Challenges and Needs

The jungle is an unforgiving environment. Thick vegetation, steep ravines, sweltering heat, and swampy terrain push Soldiers and small unit leaders to their limits.

As first sergeant of a rifle company in the 3rd Brigade, 25th Infantry Division — the Army's only jungle division — I saw firsthand how traditional training struggled to prepare troops for these extreme challenges. I developed Jungle Mobility Training (JMT), an adaptive concept inspired by basic mountaineering techniques, to bridge

this gap. It turns jungle obstacles into tactical advantages, and rethinks how we operate in one of the world's most contested regions — the Indo-Pacific theater.

The Complex Terrain of the Indo-Pacific

Jungles across the Indo-Pacific region are some of the most challenging environments for infantry units. The terrain offers unforgiving high-angle slopes that can make basic movement a struggle. Thick vegetation limits visibility to just a few feet, complicating navigation and increasing the risk of disorientation or accidents. The hot, humid climate adds another layer of difficulty,

quickly exhausting Soldiers and complicating logistics.

Traditional training methods often don't fully prepare troops for these unique conditions, leaving them disadvantaged when operating in dense, rugged environments. Understanding how to move efficiently and safely through this terrain is essential for buying down risk and increasing the likelihood of success.

JMT provides an innovative solution to the challenges of operating in arduous jungle terrain by adapting techniques from mountaineering. Rope installations and specialized equipment allow infantry units to employ a mechanical advantage, enabling them to navigate steep slopes, cross rivers, and haul heavy loads more efficiently.

Mountaineering techniques such as constructing rope bridges, rappelling, using fixed lines, employing pulley systems, and setting anchors transform insurmountable obstacles into manageable tasks. Integrating these proven methods into jungle training ensures that Soldiers can maintain momentum, conserve energy, and operate competently in demanding environments.

Lessons from History and Current Training

Jungle warfare has tested infantry forces for generations. In World War II and Vietnam, the Pacific theater highlighted such operations' immense physical and tactical demands. Historical campaigns emphasized the difficulty of navigating dense and unpredictable terrain while managing the oppressive heat and humidity.

Despite advancements in training, traditional jungle programs often focus on basic survival and tactical skills, leaving significant gaps in preparing Soldiers for the technical challenges posed by high-angle terrain and the need for sustained mobility in complex environments.

The Jungle Operations Training Course (JOTC) at Schofield Barracks, Hawaii, led by the 25th Infantry Division, focuses on jungle survival, squad-sized patrols, and physical fitness.

Soldiers build resilience and learn to adapt to harsh environments. However, the course doesn't equip leaders to maneuver a rifle company and its equipment through the jungle while maintaining combat power. Individual units bear that responsibility.

JOTC's instruction program prepares small, isolated groups to operate independently from higher headquarters, emphasizing jungle survival techniques.

These scenarios align more with reconnaissance missions than the demands of light infantry units or large-scale combat operations (LSCO).

This training gap increases risks to forces and threatens mission success. Future Indo-Pacific conflicts will likely require coordination at the division level or higher, making training in tactical mobility, logistical planning, and company-level leadership essential.

The Jungle Mobility Training Solution

Adapting Mountaineering Principles for the Jungle

During my time as a mountaineering instructor in Ranger school's mountain phase, technical climbing techniques and rope systems proved highly effective for overcoming challenging terrain.

The Basic Military Mountaineering Course demonstrated how rappelling, constructing fixed lines, and employing pulley systems could address mobility challenges in harsh environments. These

methods offer solutions for mountain terrain and improved mobility and safety in jungles across the Indo-Pacific region.

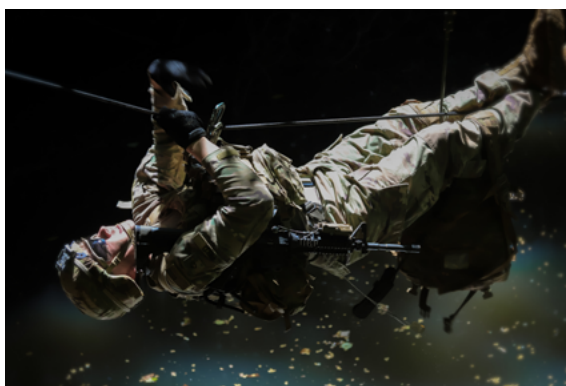
Recognizing the limitations of traditional jungle training and courses like JOTC, I saw an opportunity to adapt an existing instruction program to meet new challenges. JMT isn't a groundbreaking concept, it's repurposing proven mountaineering techniques from one operational context to another.

Mountaineering principles — such as negotiating steep terrain, managing loads efficiently, and overcoming logistical obstacles — directly apply to the unique demands of jungle operations.

Dusting off these time-tested techniques and adapting them to jungle-specific challenges ensures units are better prepared for the realities of LSCO. This training approach equips units with the tools and confidence to succeed in contested environments without reinventing the wheel.

Training Implementation and Execution

Planning and executing JMT required a deliberate and structured approach grounded in the Army's 8-Step Training Model (Department of the Army [DA], 2021, p. 3-9). Company leadership strongly emphasized leader certification and thorough rehearsals to ensure squad leaders were fully prepared to train and lead their teams.



Rope installations and specialized equipment allow infantry units to employ a mechanical advantage in jungle environments, enabling them to navigate steep slopes, cross rivers, and haul heavy loads more efficiently. (U.S. Army photo by Spc. Jessica Scott)

For weeks leading to execution, I trained them using the same programs of instruction I taught at the 5th Ranger Training Battalion. Rehearsals validated their ability to take the instruction and immediately apply it during practical exercises with their squads. Soldiers saw their squad leaders as competent and confident, building trust and reinforcing the chain of command.

The training spanned three days, progressing from basic to complex and culminating in advanced techniques. Foundational skills took center stage on the first day, beginning with knot-tying as the building block for all subsequent tasks. Anchor construction followed, allowing Soldiers to apply knot-tying skills to create secure systems.

Squad leaders taught belay techniques next, starting with simple body belays and advancing to more complex methods using mountaineering hardware. Rigging the Skedco (field-rescue equipment) in multiple configurations for dismounted movement, vertical hoists, or helicopter extractions introduced the versatility required in operational settings.

Fixed rope techniques, incorporating mechanical advantage, assisted Soldiers in ascending steep terrain, ensuring everyone mastered the basics before advancing. Doctrine, specifically *Military Mountaineering* (TC

3-97.61) (DA, 2012), standardizes and guides these tasks for training and execution.

The second day introduced more challenging tasks, starting with rappelling techniques. Soldiers progressed through hasty, basic, and advanced rappels, culminating in scenarios where an attendant rappelled with a casualty on a single friction device. Hauling systems demonstrated increasing levels of complexity, beginning with a 1:1 setup and progressing to 2:1 and 3:1 systems that offer a greater mechanical advantage.

Fixed rope installations became more intricate, isolating multiple sections on a single line to enable several Soldiers to negotiate the system simultaneously. We designed each task to prepare leaders and Soldiers for real-world jungle scenarios while emphasizing technical precision and teamwork.

The final day shifted focus to advanced tasks and leadership preparation. Rope bridge construction and patrolling techniques in high-angle terrain challenged leaders to think critically about applying jungle mobility skills in operational contexts. A leader discussion brought the entire training into perspective, emphasizing the realities of LSCO in the Indo-Pacific.

Leaders examined how to integrate jungle mobility



Mountaineering principles — such as negotiating steep terrain, managing loads efficiently, and overcoming logistical obstacles — directly apply to the unique demands of jungle operations. (U.S. Army Reserve photo by Sgt. 1st Class Austin Berner)



Adapting mountaineering techniques to jungle-specific challenges ensures units are better prepared for the realities of LSCO. This training approach equips units with the tools and confidence to succeed in contested environments without reinventing the wheel. (U.S. Army photo by Spc. Jessica Scott)

techniques into company-level maneuvers, accounting for the complexity of coordinating movements across steep gulches and dense terrain. Discussions also addressed logistical considerations, such as managing heavy equipment, casualty movement, and resupply.

We challenged leaders to consider high-angle terrain's physical demands and tactical implications, ensuring they understood how to preserve their team's energy and efficacy during extended operations.

Validation at Bronco Rumble

JMT was validated during Operation Bronco Rumble, the 3rd Brigade's premier annual training event designed to prepare units for LSCO in the Indo-Pacific theater.

The exercise began with a company Combined Arms Live Fire Exercise (CALFEX) that integrated and synchronized direct and indirect fires with maneuver to sharpen our tactics and prepare Soldiers for the complexities of contemporary battlefields.

Immediately following the CALFEX, our company executed an air assault deep into the jungle to participate in a force-on-force, peer-to-peer situational training exercise. The mission required navigating three massive gulches en route to an urban objective while under pressure of enemy contact and the unforgiving jungle environment.

Skills learned during JMT proved decisive. Soldiers employed mechanical advantage, fixed rope installations, and rappel techniques to traverse the challenging terrain in one-third of the predicted time.

Despite the oppressive heat and rugged conditions, the company arrived at the objective with the energy to communicate effectively and execute an aggressive assault. Soldiers moved equipment — including mortar tubes, anti-tank weapons, crew-served machine guns, and communications gear — efficiently and without incident.

Our speed and mobility competencies astonished the Observer Coach/Trainers (OC/Ts) and the opposing force (OPFOR). They anticipated sluggish movement and numerous heat casualties but instead witnessed mobility proficiencies that exceeded expectation.

Our performance validated JMT as a game-changing capability. Integrating mountaineering-inspired techniques into jungle operations delivers a critical advantage in contested environments. Units dominate the terrain and preserve combat power for decisive action by transforming natural obstacles into tactical opportunities.

Conclusion: Transforming Jungle Mobility

JMT demonstrates how innovative thinking and adapting proven techniques address critical gaps

in preparing Soldiers and leaders for the unique challenges of jungle warfare in LSCO. Operating in unforgiving terrain and extreme conditions demands more than basic survival skills — it requires a sharp focus on unit mobility, leadership development, and terrain-focused problem-solving.

Success during Bronco Rumble showcased the program's value as a training tool and a combat multiplier. Repurposing mountaineering principles for jungle operations equips units to traverse high-angle terrain, overcome dense vegetation, and achieve objectives while preserving energy and combat power. Such capabilities are essential for outmaneuvering adversaries in the contested environments of the Indo-Pacific, where strategic importance and operational challenges converge.

Jungle warfare has historically tested the limits of Soldiers and leaders, yet it also provides a platform to refine approaches to maneuvering and mobility. JMT builds on established techniques, adapts them to new environments, and ensures infantry units are prepared for the realities of LSCO.

As the Army evolves its training to address emerging



Jungle Mobility Training (JMT) is an adaptive concept inspired by basic mountaineering techniques. It turns jungle obstacles into tactical advantages, and rethinks how teams operate in one of the world's most challenging and unforgiving terrains. (U.S. Army photo by Spc. Jessica Scott).

threats, concepts like JMT are essential to maintaining our forces' agility and flexibility. ■

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Master Sgt. Daniel Ryan, a student at the U.S. Army Sergeants Major Academy (SGM-A), Class 75, is an infantry leader and mountaineering enthusiast. During his tenure as a mountaineering instructor and senior instructor with the 5th Ranger Training Battalion, he developed a passion for applying technical climbing techniques to various challenging environments. Ryan served the 25th Infantry Division from January 2023 through June 2024. As a rifle company first sergeant with the 25th Infantry Division, he leveraged his expertise to create Jungle Mobility Training (JMT). This adaptive training program converges mountaineering principles into jungle warfare. Ryan has completed the Army's Basic and Advanced Military Mountaineering Courses and the Jungle Operations Trainer Course. He continually seeks to bring innovative solutions to the Indo-Pacific fight.

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