
Project Kelvin

by
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*“If you can measure that of which you speak...you know something of your subject.
If you cannot measure it, you cannot improve it.”*

— Lord Kelvin 1824 – 1907

The Marine Corps needs to measure and track the training readiness of infantry battalions in order to enable improvements to training effectiveness. Current operations have upended deployment practices that have long driven Marine Corps training cycles. Evolving doctrine, increasing joint operations, and expanding training requirements, combined with limited time and resources, require that units train to higher levels in less time. These challenges will only increase in the future. Without the data of a training readiness tracking system, the Marine Corps cannot determine which training policies and activities are most effective.

Equipment readiness and personnel numbers are measured. But the most critical indicator of a unit’s combat capability – its training preparation – is not measured. Excellent training, conducted daily around the world, is not captured or analyzed. Current readiness reporting efforts do not provide enough information to support Marine Corps decision makers.

Training and Readiness Cause and Effect

If a unit cuts ten training days to comply with limits on personnel tempo, how does that affect training readiness? At what point do extended deployments, especially aboard ship, affect training readiness? What benefits to training readiness does the Hawaii deployment cycle generate? How many prime training days are required to meet a targeted training level? What ammunition, infrastructure, and budget enable a unit to reach a targeted training level? What is the cost to training readiness of non-training obligations? What training level raises force protection and reduces fratricide risk? What readiness levels are associated with successful combat operations? How fast can a unit be reconstituted and retrained for immediate redeployment?

The answer to all these questions is, “We have no idea.” As an institution, the Marine Corps cannot

determine which training policies or practices produce the greatest training benefit, for the most units, for the least cost in time and resources. The Marine Corps does not measure the results of its unit training efforts with enough precision to establish cause and effect relationships or decide what resource tradeoffs to make. Without feedback, there can be no targeted readiness goals, no comparative training experiments, and no informed discussion of training or deployment policies.

Commanders prepare units for combat, evaluate, and vouch for their readiness. Each has his own view, but there is no Corps-wide data, broader than the span of observation and experience of any one leader.

Training Readiness Today

Infantry is a team skill. A unit’s collective combat capability is not a simple summation of individual skills. The Marine Corps’ focus is on school training for individuals, but only *unit* training builds capable teams. Marine leaders train hard. Units plan and execute complex collective training evolutions to constantly improve their combat readiness. Effective unit training occurs every day. It is just not measured or recorded.

Commanders are responsible for the training readiness of their units. Nothing should ever interfere with a commander’s military judgment or his assessment of his unit’s readiness for combat. Higher headquarters trust commanders to train, but this sometimes translates into a lack of concern of how their policies affect unit training. Battalion training plans and goals are briefed to and approved by higher commanders, but outside the unit, these documents receive little interest or support. Battalions report readiness under the Status of Resources and Training System (SORTS). SORTS, however, is focused primarily on resources, and was never intended to serve as a detailed training effectiveness tracking system.

The new infantry Training and Readiness (T&R) manual calculates readiness for Marines and units with a Combat Readiness Percentage (CRP), a running total of completed training. Each task adds value to the CRP for a specified sustainment period. CRP is one tool for quantifying training readiness.

What is to be done?

The Marine Corps needs to measure and track the collective training readiness of infantry battalions in order to gain insights into how policies and practices affect training effectiveness. As an initial effort, monthly data from twelve battalions should be collected for three years. This data should include the dozens of variables that describe training readiness, from personnel status – percent T/O, stability indices, percent of school completions – to resource status, to training accomplishments – collective and individual CRPs, operations tempo, and training assessments.

This collection effort should not be a burden on the units nor should the data be linked to specific units. TECOM should establish a project team with a charter to collect, track and analyze, but not evaluate. All readiness data, valuable for leaders, policy makers, and training and manpower experts, should be available on-line in near real time, with restricted access for security issues. **Figure 1** is a sample display.

As an added benefit, team members would provide battalions with subject-matter expertise on the T&R process. Insights gained from this interaction would allow the TECOM team to update the T&R manual to better reflect the realities of infantry training.

Issues with Measures

Measuring combat capability is not easy. Attempting to measure the ability of an infantry battalion to coordinate the fire and maneuver of dozens of types of organic and supporting units, fielding multiple types of weapons and platforms, against a number of potential enemies in all types of terrain, is nearly overwhelming. But the benefits of even a partial system far exceed these challenges.

Data can be inaccurate. A large data set collected from many units over a long period minimizes this issue. Data can be misused. Open availability of all data mitigates this risk by supporting independent analysis. Results can be fudged. Unit training goals can be corrupted by focusing on CRP scores, not combat readiness. Separating the data from unit identities removes the incentives to fudge data or chase CRP

scores, and permits broad trend analysis focused on Corps-wide policies.

Measuring a unit's compliance with the T&R manual will bring a much-needed focus to unit training. Issues with the current manual – on CRP calculations, sustainment intervals, and task weights – will be keenly discussed by infantry leaders and energize efforts to improve the manual.

Conclusion

Quality collective training is the critical denominator of outstanding infantry units. People are more important than equipment, and quality is more important than quantity. Measuring and tracking the training readiness of infantry battalions is more critical now than ever before. Measurement is the first step and the critical prerequisite to any systemic program to improve training readiness.

Analyzing training readiness will enable the Marine Corps to prioritize training resources, invest in training infrastructure, gauge the effects of training policies, guide personnel and unit manning decisions, define school requirements, modify rotation schedules, and certify units for deployment.

Measuring training readiness will improve infantry training. The relentless increase in training requirements, as both missions expand and technology enables smaller units to act more autonomously, requires significant organizational improvements to unit training. An interest in readiness measures will improve unit training management practices and the T&R manual. Improving infantry unit training will serve as the model for improving the training of other Marine Corps ground combat units.

In the long-term, the Marine Corps will gain a greater appreciation for training readiness, and a better understanding of the relationships between training readiness and a wide range of policies. Better information will generate better decisions on training issues and unit employment.

Through personnel tempo legislation, Congress has pushed the services to seek more efficient ways to train. The Defense Science Board, in *Training Superiority & Training Surprise*, January 2001, and *Training for Future Conflicts*, June 2003, identified training shortfalls across the Department of Defense (DoD), and recommended a new emphasis on training. The DoD has recently initiated a "Training Transformation" (T2) program. Under the new "Department of Defense Readiness Reporting System" (DRRS), a near

real-time Enhanced Status of Resources and Training System (ESORTS) will replace current readiness reporting. The Navy’s new “Fleet Response Plan” (FRP), with its focus on ready units surging when needed, will require the Marine Corps to better prepare, measure, and evaluate “surgeable” units.

informed policies, practices and activities, and supported by the necessary resources and infrastructure. For the Marine Corps to respond rapidly and adapt continuously in a chaotic environment, we need to fully understand the effectiveness of our training efforts.

All of these initiatives require training measurement to grant the Marine Corps visibility on unit readiness. Congressional, Joint, and Navy requirements, however, are ancillary. The true value of a readiness tracking system is better-trained units, enabled by

Measuring and tracking unit training readiness will not by itself improve the combat readiness of Marine Corps infantry battalions. It is, however, the first and critical step.

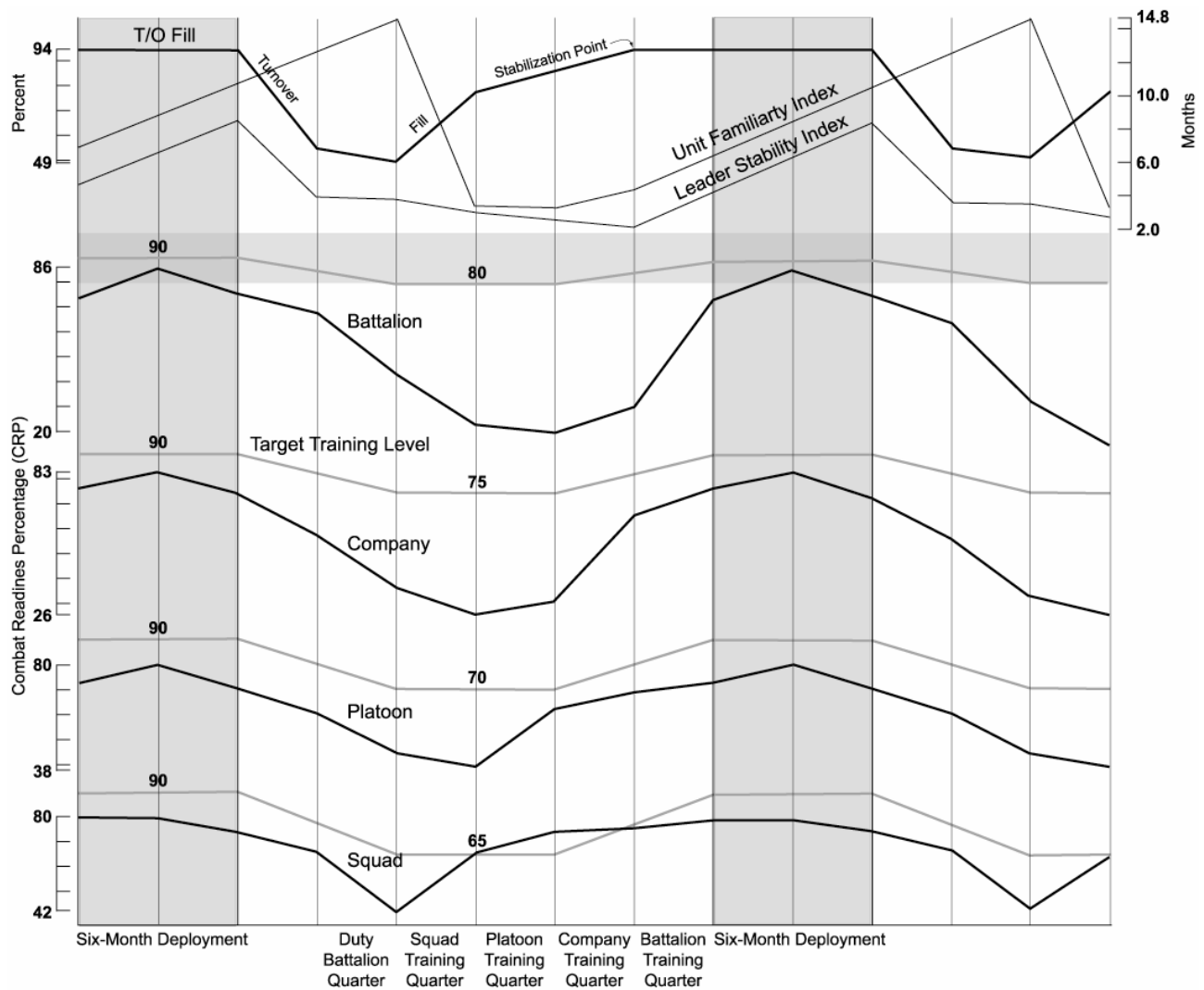


Figure 1. Average Combat Readiness Percentage (CRP) versus Targeted Training Levels
Single regiment of four battalions with three years of anecdotal data.

Data-Enabled Insights on Training Readiness

A graphic display of readiness data permits relationships to be seen and comparisons to be made. These insights help the observer discern causal factors. **Figure 1** generates the following discussions:

- **Artificially low CRPs.** This reflects the current over-ambitious T&R manual. Marine units are better trained than these charts show. Currently, an unrealistically large 92 percent – 151 of 164 – battalion tasks are required to be retrained every six months or less.
- **Larger units have greater CRP variability.** Small units require fewer resources to reach minimum training levels, but receive less emphasis so maximum training levels are never achieved.
- **CRP decline is related to sustainment interval.** Should intervals be tied to training cycle length? What analysis generated current published sustainment intervals?
- **CRP dynamics.** Initially, a CRP rises rapidly. As events expire, constant training is required to maintain a steady CRP. Should training surge during a single quarter to get a unit as highly trained as possible? Does a late personnel fill or delay in filling leadership billets prevent a unit from ever achieving high readiness? How does a low squad CRP affect larger unit CRPs?
- **Other units.** If these plots reflect battalions undergoing near-continuous training, how long do reserve units or artillery units re-roled as infantry need to achieve a targeted training level?
- **What percent of small unit leaders have completed the Infantry Squad Leader Course? The Infantry Platoon Sergeant's Course?** When should courses be scheduled to minimize disruptions to stability and training?
- **How does unit stabilization counter the effects of decreasing training levels?** A high *Unit Familiarity Index* – the average months each member of a unit has shared – extends sustainment intervals, slows CRP decline, and speeds retraining, thus keeping training levels high with less effort and permitting new and more complex skills to be acquired.
- **A high *Leadership Stability Index* – the average months that each leader has served in his billet – has similar benefits.** A rapid influx of new Marines and new leaders brings both indices and readiness ratings rapidly down. What is the T&R guidance for retaining credit for a task after half of the unit has turned over? Does the new team get credit for training that the old team completed?
- **What are the benefits and drawbacks of this regiment's training practices as compared to other regiments?** How would shortening the time between deployments affect training readiness?
- **Deployment issues.** Real-world training increases CRP. Overseas training limitations decrease CRP. Air Force studies have shown squadron training levels decline after ninety days of deployment. This type of data analysis contributes to discussions of deployment policies.

Major McBreen is assigned to HQMC.