

WORKING IN THE ZONE: MAINTAINING OPTIMAL READINESS IN U.S SOLDIERS

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ABSTRACT

Soldier readiness is associated with the pace of military operations. For example, in a study of soldiers deployed to Bosnia-Herzegovina, as deployment length increased well being declined. Building on this finding, we hypothesized that there is an ideal zone of operational tempo that maximizes readiness (e.g., performance) for units and soldiers. In order to identify this zone or band of performance, we have begun a two-year study of 10 U.S. Army companies stationed in Europe, representing combat and support units. Pace of operations was viewed as multidimensional and included several measures such as deployment length, work hours, days on training exercises, sleep, and number of workdays per week. Data were gathered using surveys, interviews, and unit records and included issues related to medical readiness, military readiness, and family readiness. Assessments occurred in three environmental contexts: while the soldiers were in garrison, on training exercises, or on deployment to Kosovo or Saudi Arabia. Initial findings revealed that operational tempo measures such as work hours, working on days off, losing leave time, and predictability were important in determining a band of optimal soldier performance. The environmental context, however, was critical in understanding these relationships. For instance, while both training and deployed environments produced an increase in work hours, soldiers assessed in the training environment reported increased military readiness, whereas deployed soldiers reported a decrease in military readiness. This emerging model highlights the complexity of identifying a set of predictors for maintaining soldiers and units in an optimal zone of readiness.

The operations tempo (OPTEMPO) readiness model predicts that the pace of military operations affects soldier and unit performance (Castro & Adler, 1997, 1999). The nature of these affects, however, may be non-linear when the pace of operations are examined at both of the extremes (see Figure 1). When the pace of operations are either very low or very high, soldier and unit performance suffers. For instance, if soldiers or units never or seldom conduct training, then overall readiness will decline. Conversely, if soldiers or units are required to work extremely long hours, without time off for recovery, then fatigue may occur, thereby affecting performance.

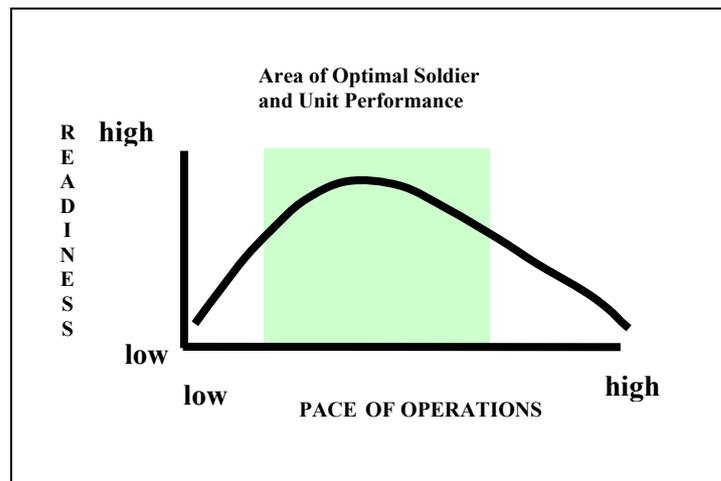


Figure 1. **OPTEMPO Readiness Model**

There are several additional key features about the OPTEMPO Readiness Model that merit comment. First, the area of optimal soldier and unit performance, in general, is relatively wide. That is, soldiers and units maintain a relatively high level of performance across a broad range of OPTEMPO levels. Thus, from a practical perspective, provided that units and soldiers are properly supported, it should be relatively easy to maintain high levels of readiness. Second, the initial slope of the readiness curve is relatively steep and short, indicating that as the pace of military operations increases there is an immediate gain in soldier and unit readiness. For instance, a single training exercise that is well planned and executed can immediately move a unit from the low-end on the readiness curve to a point on the readiness curve that is well within the optimal zone of unit and soldier readiness.

Third, at the peak of the readiness curve, the downward slope of the curve is gradual and longer than the initial increase in the readiness curve. It should be noted that a significant portion of this decline of the readiness curve is within the band or zone of optimal soldier and unit readiness. Thus, a decline in readiness along the readiness curve does not necessarily mean that soldier or unit readiness is significantly reduced. Instead, one should only be concerned when readiness levels move outside the zone of optimal performance.

Finally, and perhaps most importantly, movement can occur in both directions along the readiness curve. As the pace of operations increases, and units and soldiers are not given an opportunity to recover, readiness levels will ultimately move outside the optimal zone of readiness and result in a decline in unit and soldier readiness. Conversely, if soldiers and units are given an opportunity to adequately recover from high periods of operations tempo then they will move towards the low end of the readiness curve, thereby remaining in the optimal zone of soldier and unit readiness.

In order to begin to understand the impact of OPTEMPO on soldier and unit readiness, soldiers and units must be studied in their key work environments. These environments include garrison, deployments, and training (see Figure 2). All three of these environments together define OPTEMPO. Further, it is also important to assess soldier and units as they are transition from one phase to another. Assessing these transitions from one phase to another is particularly important for peace support operations when units often move through all three phases, garrison

to training to deployment. This pre-deployment garrison phase is perhaps the most intense OPTEMPO period for units preparing to deploy on peace support operations.

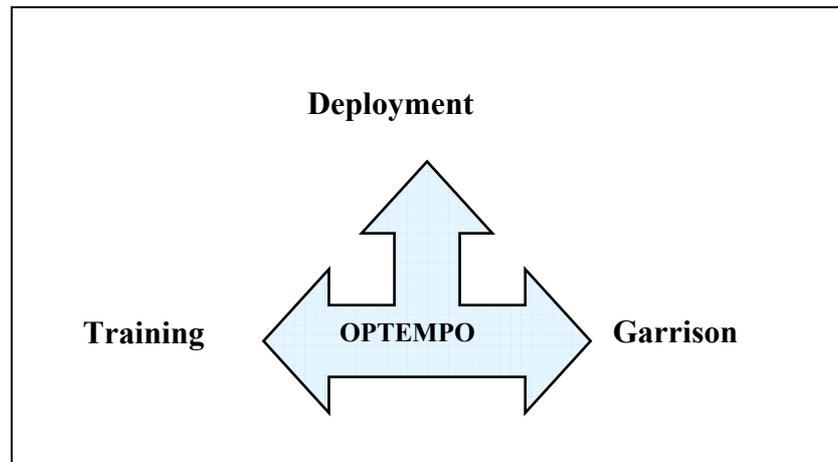


Figure 2. Key environments encountered by soldiers and units.

Castro and Adler (p. 87, 1999) defined operations tempo (OPTEMPO) as “the rate of military actions or missions.” Thus, OPTEMPO pertains to both individual soldiers and units in all three of the key environments discussed above. In the present paper we define soldier readiness as “the state of being prepared mentally or physically for some experience or action.”

An exemplar of the utility of the OPTEMPO readiness model is shown in Figure 3. The soldiers in this sample were from the U.S. Army and were stationed in Europe. This sample comprises a subset of soldiers from a larger research program that we are executing in the U.S. Army, Europe to fully examine the impact of OPTEMPO on soldiers, leaders, units, and families. In this garrison example, the measure of OPTEMPO was the number of hours that soldiers reported working during the past week. The readiness indicator selected was the number of alcoholic drinks that soldiers reported having over the past week. In this example, the consumption of large quantities of alcohol was viewed as a decrement to soldier readiness.

As can be seen in Figure 3, and as predicted by the OPTEMPO Readiness Model, when the pace of operations was either very high or very low, the threat to readiness increased. Specifically, when soldiers reported working 7 hours or less or more than 14 hours a day, alcohol consumption significantly increased. In contrast, when work hours ranged from 8 to 13 hours per day, alcohol consumption was relatively stable, with an average of 13-14 alcoholic drinks per week. Thus, in this case, using number of alcoholic drinks consumed per week as the readiness measure (i.e. outcome), we defined the optimal area of soldier and unit performance as including a garrison work schedule that is 8-13 hours per day.

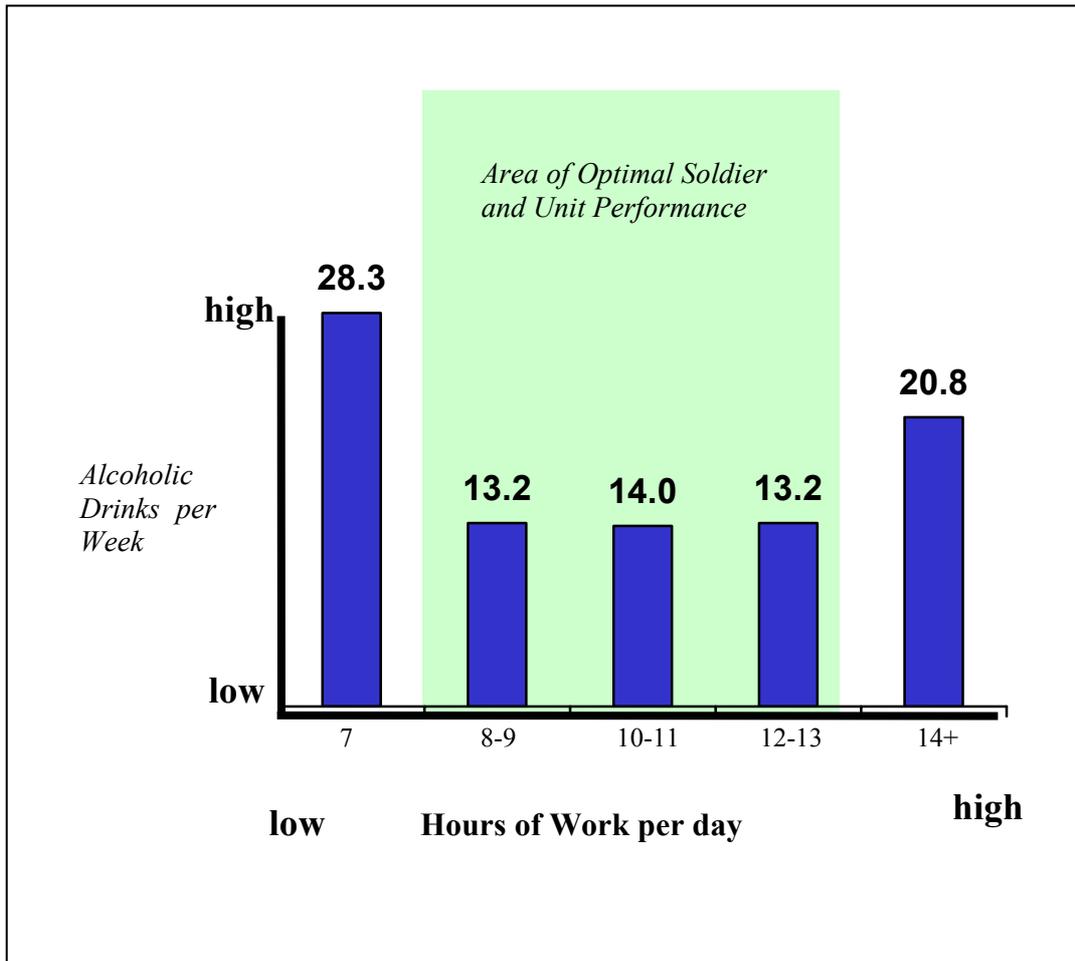


Figure 3. An exemplar of the OPTEMPO Readiness Model showing how alcohol consumption and work hours affect optimal soldier and unit readiness.

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How military deployments, training events, and garrison activity affect soldier and unit readiness is, of course, very complex. The shape of the readiness curve will depend on a number of important factors: the readiness indicator, the OPTEMPO measure, and the sensitivity of the measuring instruments, to name but a few. And while the OPTEMPO Readiness Model may not capture all of the areas of interest and concern, we do believe that it offers a useful starting point for determining the critical dimensions that are important for ensuring the combat readiness of units, leaders, soldiers, and families.

REFERENCES

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