



By Tyler Inman

The Army will officially replace its current physical assessment, the Army Physical Fitness Test (APFT), with the Army Combat Fitness Test (ACFT) in October 2020. Soldiers that currently earn 300 points on the APFT by focusing on aerobic and muscular endurance training (high volumes of running, push-ups, and sit-ups) are left with a choice: languish in mediocrity by scoring well in only one or two ACFT events, or drastically shift their approach to physical training by incorporating current strength and conditioning principles. This is not another opinion regarding the Army's new fitness test. Instead, this is an Army leader's attempt to distill the basic principles of exercise science into a palatable guide for planning Physical Readiness Training (PRT) that is effective, sustainable, and ultimately contributes to increased readiness for combat.

A New, More Demanding Test

The ACFT is a six event, 600-point, comprehensive physical assessment. It is comprehensive because unlike its predecessor, the ACFT measures each major component of fitness: aerobic and anaerobic endurance, muscular strength and endurance, and power. Scoring very well on the ACFT will also require coordination, balance, and stability. The six events, in order of execution are the 3-Repetition Maximum Deadlift, Standing Power Throw, Hand-Release Push-Up, Sprint-Drag-Carry, Leg Tuck, and 2-Mile Run. Each event is scored on a 100-point scale, for a total of 600 available points. Unlike the APFT, even very physically fit Soldiers will fall short of "maxing out" this new test and the ACFT is age and gender neutral. One test, one scale, one challenging standard.

Soldiers and leaders from the platoon level to the Pentagon have debated the merits, feasibility, and need for a new test. Among the chief complaints, those opposed to the ACFT argue that the test takes too long, requires too much equipment, and is unsafe. The arguments against the test range from legitimate concerns that must be addressed - Soldiers in austere environments and extreme weather conditions may have difficulty training and testing to standard - to ill-informed and poorly considered - the Army should not require Soldiers to pick up heavy items from the ground because it poses too much risk!

One of the most legitimate concerns of both critics and supporters is *closing the knowledge gap*. "How do we *train* the Army to train for the ACFT?" Soldiers generally know how to get better at push-ups, sit-ups, and running 2 miles; the average Soldier likely does not know how to best train for power or speed. Many Soldiers have never picked up a barbell. So how do we close the knowledge gap? Do all platoon leaders need a weight training certification? Should all Soldiers attend an ACFT training course? These are important questions, and it is unclear whether or not the Army will offer a comprehensive solution prior to the official APFT "wear-out" date. **In the meantime, junior leaders must do what is always expected of junior leaders: anticipate problems, mitigate risk, and develop innovative solutions.** Without a doctrinal solution, where should leaders begin?

Blocking and Tackling

The Army uses fundamental ideas, principles, and foundational skills as the building blocks for everything it does. Conducting a breach? Suppress, Obscure, Secure, Reduce, Assault (SOSRA). Planning a Raid? Task organize subordinate units for security, support-by-fire, and assault. Conducting enemy analysis during the Military Decision Making Process (MDMP)? Do so by warfighting function.

These fundamental principles help us quickly solve problems and think about the mission in

a logical manner. Just as Army doctrine usually provides us with a planning framework (and an acronym), so too does the field of exercise science. What follows is the exercise science equivalent of Military Science 101.

Underlying Theory 1: GAS - General Adaptation Syndrome

The General Adaptation Syndrome (GAS) is to strength and conditioning coaches what the Troop Leading Procedures (TLPs) are to squad leaders. Junior leaders must understand this basic concept in order to integrate everything that follows.

Background

In 1956, Dr. Hans Selye characterized the body's specific response to stress with a three-step model: Alarm, Resistance, Exhaustion. The field of exercise science has adopted Dr. Selye's work to describe the body's specific response to exercise and offer a theoretical means to explain how the body reacts to a novel stimulus.

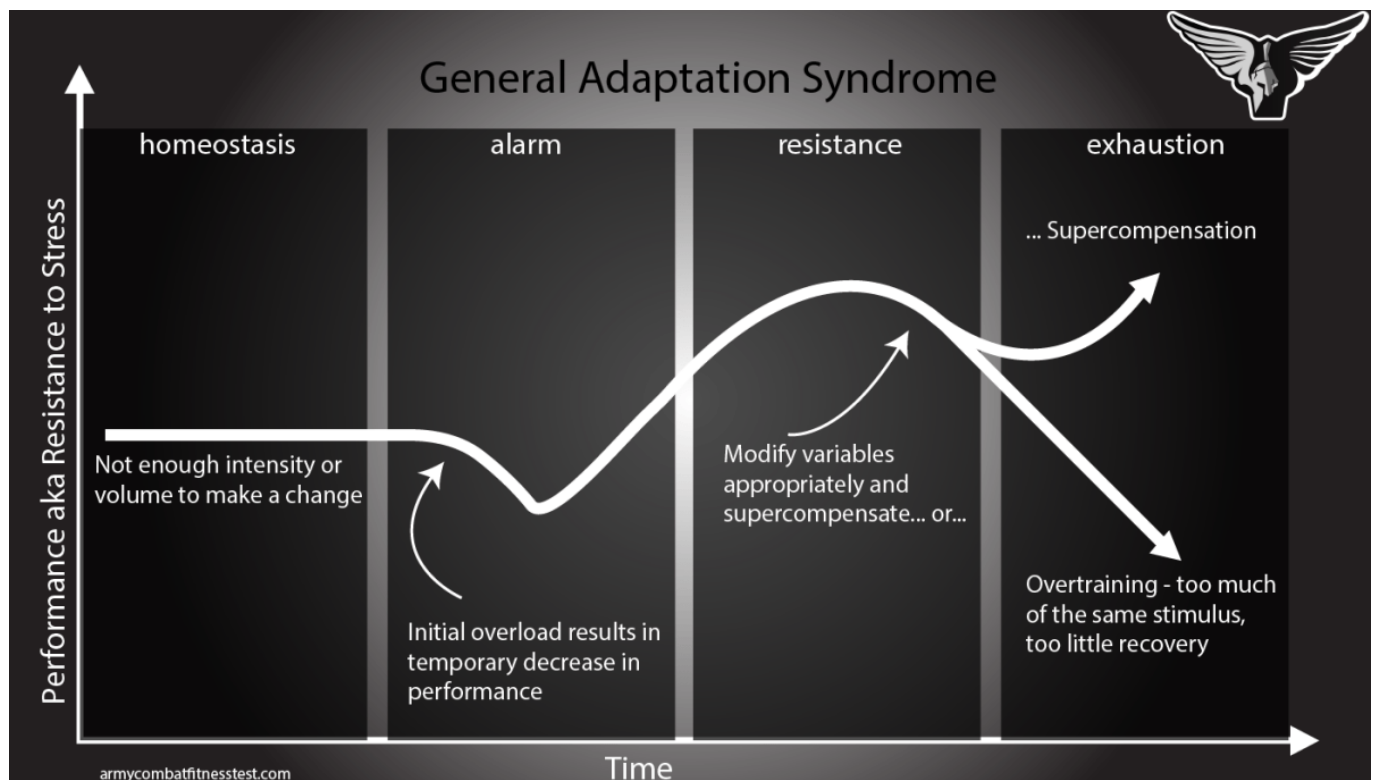


Figure 1- General Adaptation Syndrome – adapted from the NSCA's Guide to Program Design

How does the GAS help us understand training?

Initial Stress: A Soldier lifts a heavier training load or a greater volume-load than he or she has in the past.

Alarm Phase: The Soldier is sore, stiff, and has depleted his or her available energy stores. Dependent on the magnitude of the stress, the alarm phase could last for hours, days, or weeks.



Figure 2 - Realizing Supercompensation

Resistance Phase: The Soldier's body returns to normal function by adapting to the initial stressor. When training has the right balance of intensity, volume, and recovery, the Soldier will have a new baseline for resistance to stress (this is seen as an elevated performance capacity or supercompensation).

Exhaustion Phase: Soldiers should try to avoid this phase of the GAS through proper management of training variables. Well-structured training programs provide just enough stress to require an adaptation, but allow the trainee time to adapt. Too much stress of any form (lack of sleep, lifting excessive loads excessively, and poor nutrition) will prevent supercompensation.

Application 1: Progressive Overload

Progressive Overload is the functional application of the GAS. Some training variable,

typically the duration, intensity, or rest time, must change to progress the training. In other words, if the stress induced is always the same, the body will cease to respond to the stress because the baseline level of preparedness is commensurate with that level of stress.

Practical Exercise

Conduct 25 push-ups and rest for 1 minute. Repeat this cycle for 3 identical sets. This may be challenging the first time you do it, but repeat this same workout twice per week for several weeks and you will cease to respond to the workout. The General Adaptation Syndrome provides an explanation; you’ve elevated your baseline, and sets of 25 push-ups no longer provide enough overload to sufficiently stress the system.

It’s time to program a change: Change a training variable to make the workout more difficult. If workout 1 was sufficiently challenging, progress to 30 push-ups per set during week 2. Progress to 35 push-ups during week 3. During week 3, it may become apparent that one can’t go on like this forever! So in week 4, go back to 25 push-ups, but decrease the rest time between sets to 30 seconds. Maintain the 30 second rest time during weeks 5 and 6 but increase the number of repetitions again each week.

Week	Sessions/Week	Sets	Repetitions	Rest Time
1	2	3	25	60 seconds
2	2	3	30	60 seconds
3	2	3	35	60 seconds
4	2	3	25	30 seconds
5	2	3	30	30 seconds
6	2	3	35	30 seconds

Figure 3 – Progression Example

This is an example of a slow, but steady progression (slow is smooth, smooth is fast) to not only increase the volume or duration of push-up sets, but also decrease the rest time between sets. Over the course of 6 weeks, you have progressed from 75 push-ups in about 3 minutes to 105 push-ups in about 2 minutes. The resulting adaptation is an increase in muscular endurance. This same concept can be applied to drive favorable adaptations when training for each of the components of fitness.

The General Adaptation Syndrome (G.A.S.) is the first theory of three key exercise science concepts you must know to train most effectively for the ACFT.

Check back tomorrow for Part 2. I will discuss how to apply the G.A.S. to the six specific events assessed during the ACFT.

CPT Tyler Inman is an Army Infantry officer and current instructor in the West Point Department of Physical Education. He has a Masters in Kinesiology and is a Certified Strength and Conditioning Specialist (CSCS) and Tactical Strength and Conditioning Facilitator (TSAC-F) through the NSCA. He's passionate about physical readiness training, leader development, and getting better everyday. His website, [Training For 600](#), is dedicated to providing Army leaders with actionable tools, techniques, and strategies for improving performance. You can connect with Tyler on Facebook: @TF600acft, Twitter: @TrainingFor600

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