

PHYSICAL FITNESS ASSESSMENT IN THE GERMAN FORCES: BASIS-FITNESS-TEST AND COMPACT-MOVING-TRAIL AS INTEGRATED CONCEPT FOR TRAINING AND MISSION PREPARATION

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Despite technical progress and new mission goals and -requirements in modern armed forces, physical performance is still a key factor for soldiering and mission success. Thus, monitoring of health and performance are prerequisites for maintenance and enhancement of military fitness. The directive "Individual Basic Skills and Physical Ability" by the Chief of Staff of the Bundeswehr defines military fitness as a four-level, integrated concept and stipulates the implementation of regular assessment and valid testing methods¹.

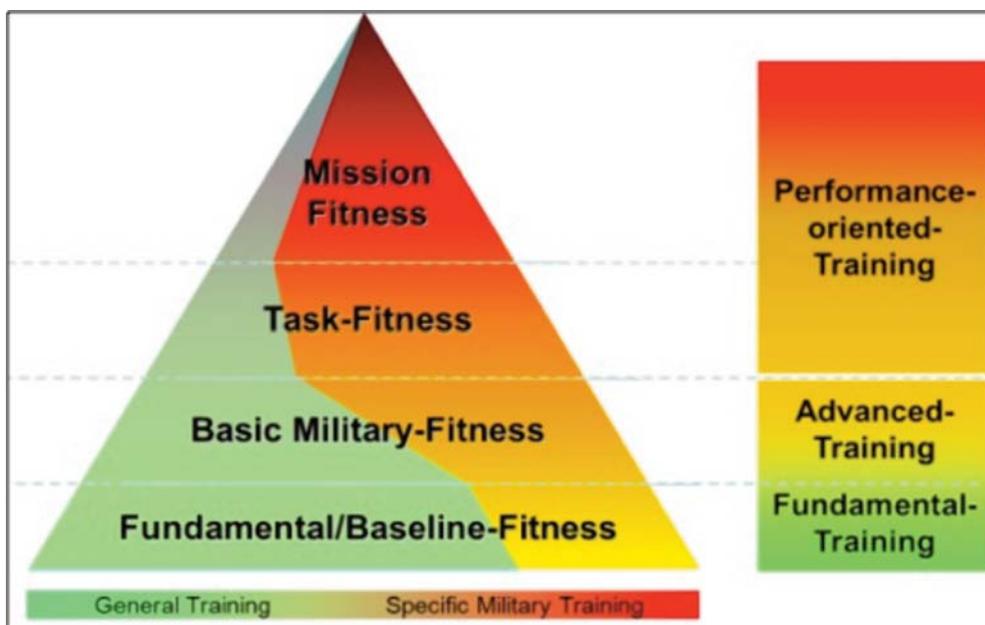


Figure: Four level concept of Military Fitness in the German Bundeswehr¹.

Suitable methods must capture relevant physiological components, map military demands, require minimal infrastructure, be easily deployable and executable, and deliver valid, reproducible results. They must also map individual basic skills and complex task-related abilities. In this context, the Basis-Fitness-Test (BFT) and Compact-Moving-Trail (CMT) have been developed to assess "Baseline Fitness" and "Basic Military Fitness" as components of military fitness in all branches of service, ranks and occupations.

The BFT was introduced force-wide in 2010 to test Baseline Fitness in three dimensions. It consists of (i) a 1000 m run (endurance capacity), (ii) a flexed arm hang in the chin-up position (upper body strength) and (iii) a 110 m (11x10 m) shuttle run (speed and coordination). Events are timed and must be completed within 90 minutes wearing gym clothes. Analyses of 200.000+ datasets for 2010-2012 have shown the BFT to be a valid tool for cross-sectional and longitudinal evaluation of physical performance and Baseline Fitness. Moreover, results provide important feedback for education, general training and counseling^{2,4}. Additional discriminatory power may be added by the inclusion of body dimensions (height and weight)^{2,4}.

The CMT testing is done wearing field uniform (5 kg), ballistic armor (13.4 kg) and helmet (1.6 kg). It combines four crucial military demands³ into one single, timed test run: (i) 125 m obstacle course with changes in direction, velocity and body position (quick relocation under fire), (ii) 40 m of dragging a 50 kg

load (casualty recovery), (iii) 100 m carrying of two 18 kg jerry cans (load carrying) and (iv) repeated lifting of a boxed 24 kg load to a height of 1.25 m (handling of heavy loads). CMT components were derived from realistic training situations, pre-deployment training and Lessons Learned. Ongoing research to obtain baseline data (deployment of the CMT in selected units and cross reference with physiological parameters) has shown that the CMT yields valid results.

CONCLUSION: To ensure adequate performance, regular assessment of physical fitness is necessary in all military personnel. Due to complex military-specific demands, a multi-level, integrative approach is needed. BFT and CMT are tests designed for regular assessment of individual Baseline Fitness and Basic Military Fitness on a force-wide scale. They form the basis of a four-level, integrated concept of military fitness, meet the required criteria of being scientifically verified, easily and ubiquitously deployable, and yielding valid and reproducible results.

LITERATURE:

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