

APFT

CONDITIONING PROGRAM

INTRODUCTION

The purpose of this document is to provide guidelines, which can be used to develop a viable conditioning program for the APFT and IOCT. This document is not a stand alone training aid. The principles and concepts discussed are taken from FM 21-20 and the text used in Personal Conditioning.

APFT

PUSH UPS AND SIT UPS

PROTOCOLS: A warm up and cool down phase are an important part of a conditioning program and should be incorporated into the exercise regimens presented in this document. **TERMS:** The following terms and abbreviations will be used in this document.

FITT - FITT	An acronym for Frequency (F), Intensity (I), Time or Duration (T) , and Type (Tp) of exercise. It may be used as a method of exercise prescription for any type of conditioning regimen.
Exercise Goal (EG)	The maximum number of PUs or SUs to be completed in a 2 minute period. Two methods may be used to calculate the EG for PUs or SUs. Use the method which gives the highest attainable number of repetitions. If your performance on the last APFT was below the Army minimum, use the second method. Method 1 - Past APFT PUs/SUs + 5-10. Method 2 - APFT MINIMUM PUs/SUs + 5-10.
Momentary Muscular Failure	Inability to complete the entire range of motion of a single repetition with good form because of fatigue.
Set	The number of PUs or SUs executed consecutively without a rest. Two methods may be used to calculate the number of repetitions in a set. Use the method which gives the highest attainable number of repetitions

Method 1 - # of repetitions = 70% of the Exercise Goal.

Method 2 - If the number of repetitions in Method 1 is greater than the number of repetitions which can be completed without having to rest, subtract 3-5 PUs from the number of PUs you can complete without resting.

- Workout Volume (WOV) The total number of repetitions of PUs or SUs in a workout. To calculate WOV multiply the Exercise Goal for PUs or SUs by 2.5.
- Number Of Sets (Nos) To calculate the NOS in a workout divide the WORKOUT VOLUME by the NUMBER OF REPETITIONS.
- Timed Set Protocol A progressive muscular endurance conditioning program consisting of working to MMF in multiple sets with a specified work and recovery interval.
- Numbered Set Protocol A progressive muscular endurance conditioning program based on attaining a specified number of repetitions in multiple sets with a specified rest interval.

- **TIMED SET PROTOCOL FOR PUs AND SUs**

FITT PRESCRIPTION - (F) A PU/SU work out should be done three times a week with 48 hours rest between workouts. (I) Strive for MMF with good form in last few sets in a multiple set work out (T) The work and rest intervals listed below are suggested starting points for the protocol. Individual may start with longer or shorter intervals, depending upon their initial level of conditioning. (Tp) For PUs and SUs use a variety of hand positions (wide, narrow, & close) and abdominal exercises to insure balanced muscular development. Progressively increase the intensity of a workout by increasing the length of the work interval, adding sets, or decreasing the length of the rest period. Never change more than one variable at a time. Volume of work should not increase more than 10% per week.

	PUSH UPS	
TYPE	WORK INTERVAL	RELIEF INTERVAL
Feet Elevated		
Wide	30 sec	30-15 sec
Regular	30 sec	30-15 sec

Narrow	30 sec	30-15 sec
Feet on Ground		
Wide	30 sec	30-15 sec
Regular	30 sec	30-15 sec
Narrow	30 sec	30-15 sec
	SIT UPS	
TYPE	WORK INTERVAL	RELIEF INTERVAL
Feet Elevated		
Crunch	45 sec	45 sec
Regular	45 sec	45 sec
Oblique	45 sec	45 sec
Feet on Ground		
Crunch	45 sec	45 sec
Regular	45 sec	45 sec
Oblique	45 sec	45 sec

- **NUMBERED SETS PROTOCOL FOR PUs AND SUs**

FITT PRESCRIPTION - (F) A PU/SU work out should be done three times a week with 48 hours rest between workouts. (I) Strive for MMF with good form in the last few sets in a multiple set work out. (T) The suggested rest interval is one minute for this protocol. Longer or shorter intervals may be used, depending upon the initial level of conditioning. (Tp) For PUs and SUs use a variety of hand positions (wide, narrow, & close) and abdominal exercises to relieve boredom and insure balanced muscular development. Progressively increase the intensity of a workout by increasing the length of the work interval, adding sets, or decreasing the length of the rest period. Never change more than one variable at a time. Volume of work should not increase more than 10% per week.

Step 1 - Establish your Exercise Goal. Add 5-10 reps to your last APFT PU/SU score. If you did not score above the Army Minimum for PUs/SUs, add enough reps to insure that the EG is greater than the Army minimum for PUs/SUs.

PU Example - Cadet Alpha did 38 PUs on last APFT. APFT PU EG = $38 + 5 = 43$.

SU Example - Cadet Alpha did 51 SUs on last APFT. APFT SU EG = $51 + 5 = 56$.

Step 2 - Establish your WORKOUT VOLUME. Multiply your PU/SU EG by 2.5 to establish the WOV.

PU Example - WOV = $43 \text{ PUs} \times 2 \frac{1}{2} = 107$

SU Example - WOV = $56 \text{ PUs} \times 2 \frac{1}{2} = 140$

Step 3 - Calculate the NUMBER OF REPETITIONS in a set. Two methods may be used.

Method 1 NOR = 70% of the number of PUs/SUs in your last APFT

PU Example - NOR = $(.7) \times 38 = 26$

SU Example - NOR = $(.7) \times 56 = 39$

Method 2 If the number of repetitions calculated in Method 1 is greater than the number of repetitions completed without having to rest, subtract 3-5 PUs from the number of PUs completed.

PU & SU Example - Cadet Alpha executed 30 PUs and 45 SUs on the last APFT before needing to rest. Cadet Alpha would do PU sets of 25 and SU sets of 40.

Step 4 - Calculate the NUMBER OF SETS. Divide the WOV by the NOR in Step 3.

PU Example - NOS = $107/25 = 4.28$ or 5 sets

SU Example - NOS = $140/40 = 3.5$ or 4 sets

Step 5 - Establish a REST INTERVAL.

PU and SU Example - Use a 1:00 minute rest interval between sets of PUs and SUs. The rest interval may vary with the initial level of conditioning

TWO MILE RUN PREPARATION

TERMS

Active Recovery The purpose of active recovery is to promote psychological and physiological recovery from stressful bouts of exercise, using primary aerobic activities (e.g. running, cycling, or swimming) at reduced intensity or secondary aerobic activities (e.g. racquetball or basketball).

Preparatory (Base Building) Phase The purpose of this type of phase is to establish the cardiorespiratory base necessary for high intensity training. It should be conducted (F) 3-5 days/week for 6-8 weeks, at (I) 60-70% of HRR, for (T) >20 minutes. (Tp) Any LSD aerobic or combination of primary aerobic activities may be used in this phase to train for general health. Running should be the primary aerobic activity used to train for the 2MR on the APFT.

Conditioning Phase (CP) The purpose of this phase of training is to increase personal fitness levels to meet specific performance criteria or a set goal. Fast Continuous and Interval Training techniques are used in this phase of training. (F) It should be conducted 3-6 days a week for >8 weeks, (I) at 70-85% of HRR, for minimum of 20 minutes. (T) The aerobic activity should be the same as the event to be tested.

Exercise Goal (EG) The projected run time for the 2 Mile Run on the next APFT. Resting Heart Rate (RHR) - Beats/minute during a resting state. RHR is at the lowest point upon waking.

Maximum Heart Rate (MHR) A estimate of the heart's maximal potential in beats per minute. MHR is age dependent and is calculated by subtracting age from 220.

Example: Find the MHR of a 19 year old cadet.

$$\text{MHR} = 220 - \text{AGE}$$

$$= 220 - 19$$

$$= 201 \text{ beats/minute}$$

Heart Rate Reserve (HRR) HRR is the difference between the Maximum Heart Rate and the Resting Heart Rate.

Example: Find Heart Rate Reserve of a 25 year old cadet with a resting heart rate of 55.

$$\begin{aligned} \text{HRR} &= (\text{Max Heart Rate}) - \text{Resting Heart Rate} \\ &= (220 - \text{AGE}) - 55 \end{aligned}$$

$$\begin{aligned}
&= (220-25) - 55 \\
&= 195 - 55 \\
&= 175 \text{ beats/min.}
\end{aligned}$$

Training Heart Rate
(THR)

THR is percent of the HRR used during an exercise bout

(60% = Low Intensity; 70% = Moderate Intensity; 80% = High Intensity) plus RHR

Example: Cadet age 25
RHR = 60
Intensity = 70%.
Max Heart Rate = 220-age
= 220- 25.
= 195 beats/min.

Heart Rate Reserve = MHR-RHR
= 195- 60
= 135 beats/min.

Training Heart Rate = (HRR x %THR) + RHR
= (135 x 70%) + 60
= (94.5) + 60
= 154.5 beats/min.

Long Slow Distances
(LSD)

LSD develops cardiorespiratory endurance referred to as "base mileage". It utilizes fat as primary source of fuel and affects body composition. LSD consists of exercising (F) 3-4 times a week, (I) at 60-70% of HRR, (T) for 40 plus minutes). (Tp) LSD should consist primarily of running during the preparatory phase and the first part of the conditioning phase. In the latter stages of the conditioning phase, biking, Nordic Track, and Stair Master workouts may be substituted for running to alleviate boredom and reduce the risk of overuse injuries.

Fast Continuous Training
(FCT)

FCT at or near race pace conditions an individual to perform at higher intensity levels. It consists of exercising (F) 2-3 times a week at (I) 75-85% of HRR (T) for a minimum of 20 minutes. (Tp) Fast Continuous Run training should be used in the conditioning phase for the APFT.

Interval Training (IT)

IT consists of repeated cycles of Work and Relief Intervals. The purpose of IT is to increase run speed. (F) Interval Training should be conducted once a week. (I) The distance and time of the run in the Work Interval is calculated from the 2MR time. See example below. (T) It should consist of 6-8 work/rest intervals and should be instituted at least 8 weeks prior to the test. The activity in the Relief Interval is conducted at a reduced pace to allow active recovery. (Tp) The type of activity depends on an individual's level of conditioning and goals. IT training principle may be applied to any aerobic activity, but running is the preferred activity for PFT preparation. The relief interval should be twice the length of the work interval.

- **EXAMPLE: INTERVAL TRAINING FOR THE 2MR ON THE APFT**

Step 1 - Calculate 1/4 mile Interval Pace.

APFT 2 Mile Run Time = 16 min.

APFT 1 mile pace = 8 min.

APFT 1/4 mile (400 meter) pace = 2 min.

1/4 mile Work Interval = 2 min. - (5-10 sec.)

= 1:50-1:55 min. pace

Step 2 - Determine the relief interval.

A 1:2 ratio is recommended: Two times 1:50-1:55 = 3:40-3:50 relief interval.

Step 3 - Determine the type of Relief Work. Run, walk, or jog. The recovery work selected for the relief interval depends on level of conditioning.

- **PREPARATORY (BASE BUILDING) PHASE**

Reassess resting Heart and recalculate Target Heart Rate every two weeks to compensate for increases in cardiorespiratory efficiency and to keep heart rate in the appropriate target range. Increase the work time or intensity 5-10% at the end of each two week cycle.

WEEKS 1-8						
MON	TUE	WED	THUR	FRI	SAT	SUN
LSD	ACTIVE	LSD	ACTIVE	LSD	ACTIVE	REST
RECOVERY						

- **CONDITIONING PHASE**

Reassess Resting Heart and recalculate Target Heart Rate every two weeks to compensate for increases in cardiorespiratory efficiency and to keep heart rate in the appropriate target range. Increase the work time or intensity 5-10% at the end of each two week cycle.

WEEKS 9-12						
MON	TUE	WED	THUR	FRI	SAT	SUN
FCT	ACTIVE	INTERVAL	ACTIVE	FCT	ACTIVE	REST
RECOVERY						

WEEKS 13-20						
MON	TUE	WED	THUR	FRI	SAT	SUN
FCT	LSD	INTERVAL	LSD	FCT	ACTIVE	REST
RECOVERY						