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## APPENDIX D

### STATIONARY BICYCLE TEST

Only stationary bicycles which can be calibrated and which have mechanically adjustable resistances may be used to test profiled soldiers on the 6.2-mile (10-kilometer), alternate APFT event. Therefore, the event supervisor or scorer must be sure that the stationary bicycle can be accurately adjusted to ensure that the soldier pedals against the correct resistance (force) of 2 kiloponds or 20 newtons. If the stationary bicycle cannot be properly calibrated and adjusted, the soldier may end up pedalling against a resistance which is too great or not great enough. In either case, the test would not provide an accurate indication of the soldier's level of cardiorespiratory fitness.

The best type of stationary bicycle for testing has the following features:

- Calibration adjustment.
- Adjustable resistance displayed in kiloponds or newtons.
- Odometer which accurately measures the distance traveled in either miles or tenths of miles or in kilometers and tenths of kilometers.

Examples of stationary bicycles which meet the above criteria are the mechanically braked Bodyguard 990 and Monark 868. Such bicycles can be used to accurately measure a person's rate of work or the total amount of work. They are often called bicycle ergometers.

If the stationary bicycle has an odometer, the soldier must pedal 6.2 miles (10.0 kilometers or 10,000 meters) against a resistance set at 2 kiloponds or 20 newtons. The test is completed when the soldier pedals 6.2 miles (10.0 kilometers). He receives a "Go" if he is below or at the time allotted for his particular age group and gender. Care should be taken to ensure that, when using a stationary bicycle which measures distance in kilometers, the test is ended at 10 kilometers, not 6.2 kilometers.

There are many electrically operated, stationary bicycles (EOSBS) on the market and in gymnasiums on Army installations. Most of them are designed for physical fitness training. Only a limited number of EOSB models are designed to accurately assess a person's energy expenditure during exercise. Such EOSBS are relatively expensive and are generally found in medical and scientific laboratories. Very few, if any, are found in gymnasiums on Army installations.

Because most of the more common training EOSBS were not designed to accurately assess energy expenditure, they should not be used for the alternate, cardiorespiratory APFT event.

For the sake of accuracy and ease of administration, soldiers designated to be tested on either of the two bicycle protocols should be tested using a moving bicycle IAW the guidelines provided elsewhere in this field manual. If the mechanical y-braked Bodyguard 990 or Monark 868 is used, however, the tester must ensure that the equipment has been properly calibrated prior to each test.

<b>TABLE D-1</b>								
<b>MALES</b>								
<b>AGE (YEARS)</b>	<b>17-21</b>	<b>22-26</b>	<b>27-31</b>	<b>32-36</b>	<b>37-41</b>	<b>42-46</b>	<b>47-51</b>	<b>52+</b>
<b>TIME ALLOTTED (MINUTES)</b>	24.0	24.5	25.0	25.5	26.0	27.0	28.0	30.0
<b>CALORIES/MIN.</b>	9.8	9.7	9.5	9.3	9.2	8.9	8.6	8.2
<b>CALORIES/HR.</b>	590	580	570	560	550	535	520	490
<b>N.-METERS/SEC. or WATTS</b>	139	136	133	131	128	124	119	111
<b>TOTAL CALORIES EXPENDED</b>	236	237	238	239	240	241	242	245

<b>TABLE D-2</b>								
<b>FEMALES</b>								
<b>AGE YEARS</b>	<b>17-21</b>	<b>22-26</b>	<b>27-31</b>	<b>32-36</b>	<b>37-41</b>	<b>42-46</b>	<b>47-51</b>	<b>52+</b>
<b>TIME ALLOTTED (MINUTES)</b>	25.0	25.5	26.0	26.5	27.0	28.0	30.0	32.0
<b>CALORIES/MIN.</b>	9.5	9.3	9.2	9.0	8.9	8.6	8.2	7.8
<b>CALORIES/HR.</b>	570	560	550	545	535	520	490	465
<b>N.-METERS/SEC. or WATTS</b>	133	131	128	126	124	120	110	104
<b>TOTAL CALORIES</b>	237.5	238	239	240	240.5	242	245	248