Work to be accomplished on mass pendulum in next ten days:

1. Determine effects of varying spring constants for periods of one to ten seconds.

A. At each period determine the effect of:

(1) Tranverse vs. longitudinal location of subject

(2) Respiration

(3) Contraction of major musculature against points of fixation

B. Prior to each investigation, the apparatus should be:

(1) Checked to insure optimum adjustment of the zero crossing detector.

(2) Random period variation determined at zero load and fixed weights equivalent to subject's weight.

(3) Proper levelling of the table.

a. Points to be checked under B-1 include paralellism of interupter blade and light slit, focus of slit, and zero adjustment of slit. An oscilloscope may be connected to the output of the current to voltage amplifier and the effects of the above adjustments directly observed. Mechanical zero adjustment should be made by stopping the pendulum and setting the mechanical zero of the optic assembly such that the output of the amplifier is approximately 1/2 of maximum illumination. This zero adjustment should be checked without added mass and without a mass roughly equivalent of that being measured. If the pendulum is not level, this zero will shift with added weight.

b. Air pressures should be held to $\pm$ 1 PSI.

2. When 1. has been investigated and an optimum arrangement made, the pendulum should be calibrated with fixed weights and the mass of man on this scale compared to fixed weights. This will require a conventional scale accurate to .1 pound or less.

3. Records should be made or obtained of the relative magnitudes of acceleration caused by cardiac and respiratory action.

4. As soon as possible, the original pendulum should be returned to operation for stability testing.

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