

participants actually did improve concurrently with the improvement of their fatigue curve. Edgar Jones, a great athlete in high school, college, and later in the Army, consistently ran good application curves with some at 100% in this series.

Condition in Costs and Recovery from Measured Efforts

The fatigue curve has been established as a medium to measure efforts and Application. The Costs of those efforts and the time and degree of recovery can be evaluated by heartbeats as determined by pulse rates.

A series of fatigue curves for measured Production and Application and the accompanying Costs was run in different age groups over varying periods of time. There was a continuity of progressive Production in each of the series. The results of each day and the effects upon successive days may be noted in the various occasions of operation.

1. Junior High School Series—Training and Conditioning

A series of fatigue curves produced by Munhall, Pennsylvania, Junior High School under Robert Baierl. Fifteen students each produced a fatigue curve daily for five successive days. Their pulse rates were recorded before and after each curve to evaluate condition.

The fatigue curves followed the usual pattern of less returns with increasing fatigue. Below are the figures of the first and fifth days which are plotted into a typical graph in Figure 3. The averages of all participants are listed by innings to record Production and Application.

Innings	1	2	3	4	5	6	7	8	9	10	Production	Application
First Day	33	29	28	27	28	28	27	26	25	24	278	70%
Fifth Day	35	34	33	32	31	30	29	27	26	25	301	100%

The first day's average Production was 278 with Application of the group at 70%. After four days of training, conditioning, and practice, there was a greater average Production of 301 and better Application to 100%.

The pulse rates, indicative of heart and circulatory action, were taken before the production of the fatigue curve, immediately