4/8/74

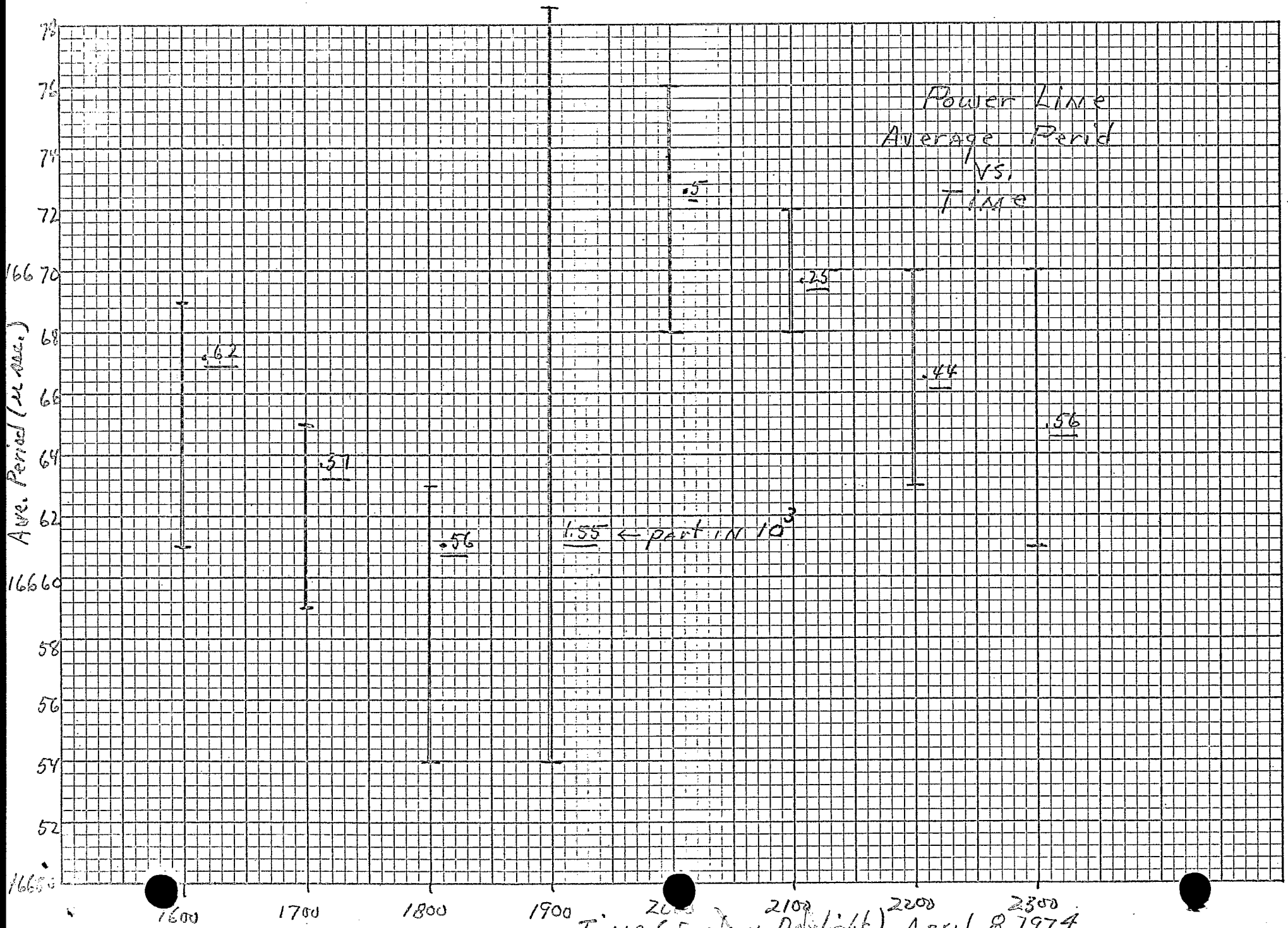
Blumberg
No. 60

J. G. Cottingham
Robert Gottschalk

Study Report - Arnold Feltman, Power Line Freq.

The main AGS magnet P.S. is "sync"-ed to the power line not like a scope is sync-ed but by a circuit that matches rotating frequency of the rotating machinery to that of the power line. Phase differences act to increase or decrease speed and thereby act to preserve a given phase position. However, due to the large inertia involved correction can be only made slowly. The system cannot rapidly respond to a change in power line frequency. Therefore such changes will result in "sync" drift

Attached is plot of power line average period (10 cycle average) vs time which shows large variation at some times.

This is one reason that the "sync" is good at some time and not so good at others. This type of error is fundamental and cannot be overcome. If the A.G.S. is sensitive to "sync" error induced by line freq. variation, it must be corrected at the source, better sync is not possible

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