

May 31, 1966

Mr. Gerald Rosenthal
Hamilton Standard
Windsor Locks, Connecticut

Dear Jerry:

It was a pleasure reviewing your extensive data analysis. I returned to St. Louis and Don Shapiro and I have had an opportunity to review your graphs, the strip chart playback, and the results of the period analysis on the same record. The following comments are based on this review.

Examining the power spectrum graphs, it is clear that the major changes observed in the strip chart are recorded in the graph, especially in the thirty-second epochs. However, each of the graphs reflects an extraordinary amount of energy in the very low frequency range (0-2 cps). In the usual power spectral analysis using the Grey Walter resonant filters, frequencies below three cycles per second are disregarded. If we disregard the lower frequencies, then the representation is quite accurate and very similar to what we had been accustomed using the Grey Walter type analyzer. The representations are also similar to what we have observed in the period analysis program. Because the output is in graphic form and not in numeric, we were unable to make any specific comparisons of the percentages in any frequency band for the two methods, although we did so grossly and found that the representations between samples were parallel for your representation and our period analysis.

It is clear that the method which you are utilizing presents a representation of the changes occurring in this pentothal experiment.

It seems to us, therefore, that the applications of this instrument will depend largely on its stability (which you have assured), its expense, ease of handling, and ease of formatting of output. We are concerned about the approximate figure given that each sample requires about four minutes for analysis. While it may be feasible to provide digital output, surely this will be an expensive addition to the instrument. The question is largely an

May 31, 1966

economic one. For us, given the opportunity to utilize a digital computer, we believe that its flexibility and the variety of analyses and applications which it permits would be superior to an analog instrument, even of this class at the present time. However, if one were to require an analog device for power spectral analysis, the representations which you have given us are equivalent to those provided by the Grey Walter and by our own digital computer methods, at least in the grossest outlines within the limits of the methods which we have applied to the comparisons.

I have very much enjoyed the opportunity to discuss your project and to review the data which you have submitted. If there is any additional information or assistance that I can provide, please do not hesitate to call on me. As you know, my transfer to the New York Medical College will be complete about June 13, 1966, and I can be reached at that College thereafter.

Sincerely yours,

Max Fink, M.D.
Professor of Psychiatry

MF:jmh

P.S. I am taking the liberty of attaching a set of criteria which we set up as a result of an inquiry from McDonnell Aircraft. These are the elements of a system in which we would be interested.