STAT [redacted]

July 21, 1964

LINEAR PHASOLVER MEASURING ENGINE

STAT [redacted]

Thank you, John, for the loan of your copy of the booklet on the Analytical Plotter. I obtained a copy of my own and am returning yours herewith. I will suggest to STAT [redacted] that he get a copy. Note on pages 149 and 150 that the measuring engine structure of the AP-1 is made of special aluminum castings, stabilized and tempered. Also, the carriage moves on ball bearings on tubular supports. The comment is made by [redacted] that the STAT structure has remained unchanged through four models and is considered to be stable and accurate. This reinforces my opinion that the mechanical geometrical design of the engine is of equal importance to the stability of the materials used. [redacted] paid particular STAT attention to compensating for thermal expansion of the metals used.

A significant factor to consider is that [redacted] was STAT aiming for ± 2 micron accuracy while the phasolver is aiming for less than 1 micron accuracy. I am sure that to get submicron measuring accuracy, as much attention must be paid to the structure as was paid to the measuring device.

STAT

[redacted]

Enclosure

Declass Review by NGA.