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January 14, 1964

STAT re: Measuring Techniques.

Bob, when I was in your office last December, we discussed briefly some measuring techniques. You mentioned you had received a proposal to use some mechanical property of quartz for submicron measurement of distance, I think it was. We didn't really have a chance to finish our conversation and I can't recall the details. As I remember, it sounded as though it might have some problems associated with obtaining glass of sufficient uniformity, but the idea was perhaps promising enough to look into.

While your thinking about that, you might consider another possibility. [redacted] has proposed a device to, I think, [redacted] to develop a device to make submicron measurements. They plan to use a light beam of a Laser and since it is coherent they can count light waves. They didn't go into details, but they think they can get a least count of 0.15 microns. I'm sure [redacted] would give you the details if you asked him, and I think you should consider it.

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On the other hand, since [redacted] is already well into a program to measure with a least count of 0.25 microns, is it worth while investing in other investigative work? [redacted] also has an advantage of many ~~experience~~ years of experience in measuring and they have highly developed electronics which are stable and dependable. The electronics are probably 70% of the battle. Perhaps other work should ~~only~~ be under taken only if it shows promise of being considerably cheaper in its application to production machines and also retains the two significant features of the [redacted] system: ∓ i.e. non-ambiguity of count and no limitation of the traverse velocity.

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These are some thoughts I had on the subject. I can't answer the question I posed above, but I would be glad to discuss it with you next time we get together.

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[redacted]

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DDR-Dupe