W. Thornton
15 July 1960

NOTES TO MYSELF

THINGS I DID TODAY (14 July 1960)

Called Dr. A. L. Settimi, Chairman, Kidney Team, Evangelical Deaconess Hospital, Milwaukee, Wis., about malfunction of the MK I Flow Meter - not in.

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Called Dr. Bowman of N. I. H., Ph # about the paramagnetic flow meter. Apparently he had not had significant developments in his work much beyond that published. He felt however, that there is no reason that the work could not be extended into clinical applications. Also felt that Dr. Singer was making somewhat unjustified claims for work in this area. Various methods used - the saturation method yields a low signal to noise ratio in that the total number of protons is high under static conditions and circulation contributes relatively few "fresh" protons. A tracer technique he felt might yield higher signal to noise ratios. He is reporting on the work to a convention sometime next month. This convention concerns new developments in medical instrumentation. He invited us to come up and go over his work in detail.

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Called Dr. J. R. Singer, University of California at Berkeley, Ph # TH 5-6000, ext 3792. He also welcomed inquiries into his work. He pointed out that he had made patent applications for clinical utilization of these techniques. He felt that an injection or tracer technique would probably be the most promising and according to him this could be made reasonably linear. This would involve a coil separation of approximately one inch. He is going to England to report on this work at the end of the work. He will be gone for several weeks. He invited us up to look over the

work next week. He felt that only engineering time was required to make this a usable clinical instrument. He estimated that 2 man-years of engineering time would be required.

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Called the local Federal Communications Commission office. Talked with a Mr. Quaintence, RIchmond 9-4711 about frequency altercations. He suggested that we contact the Washington office. A Mr. Edwin Chapin, Secretary of the FCC Washington 25, D.C.

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Rumor from a number of DEL sources had it that high power, low pulse width components were in stock at the local Raytheon office. Through numerous calls, it was found that Raytheon does only custom work.

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Called Mr. Bob Wolf - Bomac Labs, Salem Rd., Beverly, Mass, Ph# WA 2-6000, (direct dial by 617), about their small magnetron. He suggested that we use a BLM-02 tube which is a C-band magnetron to see what we could get out of it. Had we been able to get an order into the Sales Manager - Mr. Byard Robb, they could have supplied it immediately before going on vacation. It was too much trouble to push the requisition for $1500.00 through the myraids of vice-presidents around this place. Mr. Robb did not know how short a pulse could be obtained from this unit.

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Contacted the local General Electric representative onthe 6440 tube. It was suggested we place an immediate order for more of these tubes and make every attempt to expedite it. He sent drawings of G.E. designed cavity for 3-1/2 kmc pulse modulation applications. He gave us the name of an individual on vacation who was familiar with this work. Mr. John Pohl, Skenectady, N.Y. Ph. # FRanklin 4-2211, ext 53556 (office) FRanklin 7-5438 (Home) This man was apparently fishing.

Attempted to obtain cores for a high power blocking power modulator. Nothing has been done on the modulator by the Lab. They are doodleing along on the flow meter and cavity oscillator for the 6440 tube. Upon placing the oscillator in operation using the layout on the proposed Eglin scorer, doppler modulation was easily obtained. We will not build the rest of the components to see how poor a scorer the Eglin unit is and at the same time attempt to use it as a doppler MDI by adding a slope computer to the unit. We will also attempt to use the tube as a pulsed microwave generator.

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Wrote up a blurb on the work of the heart in an attempt to push along the application for an N.I.H. grant to Avionics. This apparently mystified the doctors but they at least realized that the problem is of now some magnitude, i.e., it cannot be done simply with a Sphygmomanometer and flow meter.