C O P Y

DPD 1851-59

Recent Technical Proposals or Ideas

Technical Services Staff

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2. Novel Approaches to Electronic Circuitry - Two (2) distinctly different attacks are being made by several different companies on the further miniaturization of electronic circuitry. In the one type the component elements (transistor, capacitor, resistor, inductor) are made almost vanishingly small but still retain their separate identities on very small sub-assembly modules. Provisionally, this technique may loosely be called "microminiaturization" and is part of the identifiable programs of DOFL (Diamond Ordnance Fuze Laboratory), RCA and, it is believed, Texas Instruments. In the second type the emphasis is on performing a function by a small block, prepared in accordance with the principles of solid state physics, by evaporation, crystallization or combination of techniques, in which there has been no attempt to preserve discrete elements as such. This concept is called "molecular engineering" by Westinghouse and "microcircuitry" by Varo Manufacturing Company, each of whom is pursuing a somewhat different course of investigation.

The direct benefits to us are, of course, an immediate several-fold reduction in size, weight and power with further possibilities opened by novel circuitry. Multi-million dollar support by the military is stated as imminent; TSS/APD personnel are monitoring the know entries.

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Photographic Intelligence Center

1. Emulsions - Significant information has been obtained through contacts at the University of Minnesota and elsewhere on advanced work in the field of emulsions. This information with names and addresses of scientists (home and abroad) provides possible clues to improved emulsions.

2. Film Processing and Emulsions - Contact at the Minnesota Mining and Manufacturing Company revealed that Dr. Luvalle is making a complete survey of the "State of the Art" for the U. S. Government. Dr. Luvalle is from Technical Operations Company in Massachusetts. Also, significant information was obtained on MMM Company's Electro Conductive Process. In vapor coating MMM Company's displayed the capability to surface "just about anything with anything"; - information was obtained on improved front-surfaced mirrors.

MMM Company will run complete tests on the radiation effects on the MMM Company Zine Oxide Electro Conductive Process and will make a report available to the government. MMM Company (Dr. Miller - Head, R&D) asked guidance and said laboratory would carry on research at no expense to government. Information was obtained on experts (and fakes) in field of electro static photography. (One of the interesting properties of Electro Conductive Process using zine oxide is that light does not spoil the paper - in absolute darkness the paper regains its image forming properties.)

3. Balloons - Otto C. Winzen of Winzen Research Incorporated has a proposal (coming through OO/C to CIA) suggesting non-reflecting free balloons at 120,000 feet carrying 10,000 pounds, at $15,000 each. Ideas include supposedly new suggestions for payload collection equipment plus "cover" payload.

4. Testing Aerial Photo System - Dr. Kapany at Armour Research, while discussing his field of fiber optics, presented a proposal for testing a complete aerial photo system while still in design stage.

5. Infrared Electrophotography - A proposal was made by Armour Research on infrared electrophotography and on conductivity mechanisms in amorphous semi-conductors. Armour is working with American Photocopy and RCA.

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6. Electrophotographic Technique - Another Armour proposal was made for a new electrophotographic technique.

7. Stereo Projector - A new proposal for a stereo projector which works on the principle of synchronous shutter which are before the projector lenses working in opposition to each other - is enroute to PIC.

Office of Scientific Intelligence (Collection Staff)

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