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7 May 1963

MEMORANDUM FOR: Chairman, Research and Development Board

THROUGH : Deputy Director (Support)

SUBJECT : The Development and Application of Bio-electronic
Techniques and Systems to Monitor Human
Physiological Responses

1. In the continuing search for better methods of understanding health and combating disease, the study of medicine is incorporating many of the newer technologies. Among these, the use of electronic principles and procedures has assumed sufficient importance to warrant recognition as a separate subdivision of the basic discipline known as bio-electronics. The emergence and growth of this new biological approach promise significant change and development. Medical Centers throughout the country have been stimulated to devote considerable time and effort to bio-electronic development and application. There is already a considerable corpus of knowledge on the subject.

2. In addition to medicine's thrust and interest, commercial organizations have recognized independently the value of applying electronic techniques to biological phenomena. There have emerged new companies and sub-organizations devoted to bio-electronic development and application. As a result, there are a variety of instruments available today that may be applied in sundry and particular fashions.

3. The growth of bio-electronics has occurred primarily within the past five years although analagous techniques have been in development much longer. Two years ago, the Medical Staff and the Office of Security joined together to test some of these new techniques as they might have application within respective disciplines. As a result of such studies, it is evident that Agency procedures would be advanced by adopting some of these newer techniques and that a project for such purpose is desirable.

4. The advances in these newer techniques permit measurement of physiological responses heretofore not possible, with transmission and recording of data so as to bridge time and space. While these measurements apply to health and disease, other applications are possible

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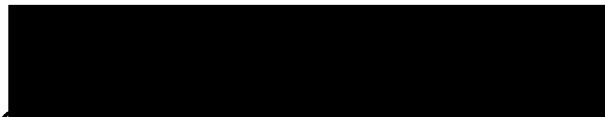
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including the development and use of polygraph systems for detection purposes. Even more sophisticated applications have promise in the field of covert monitoring and surveillance.

5. The promise of the importance of the application of these new developments to Agency procedures warrants serious consideration. In our opinion, the Agency, to remain current in its own technology, eventually must adopt and accept some of these newer techniques. It is considered timely to identify some of these mechanisms and indicate areas of possible application. A project for such purpose has been coordinated by the Medical Staff with the Offices of Security, Communications, and the CIA Automatic Data Processing Staff, and has been forwarded to the Deputy Director (Support). It has also been presented to the Comptroller and the Deputy Director (Plans).

6. It is requested that opportunity be made available for the Medical Staff to present the project on bio-electronics to the Research and Development Board for final consideration.



JOHN R. TIETJEN, M.D.
Chief, Medical Staff

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