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MEMORANDUM

DATE: 10-28-68
A-830-BB01-WPW-12

TO: R. M. Wood, A-830

FROM: W. P. Wilson, Jr., A-833

SUBJECT: EXPERIMENTAL RESEARCH AND FIELD DATA ACQUISITION - PROJECT VEHICLE

COPIES TO: J. M. Brown, D. B. Harmon, C. P. Thomas, A-833; File

REFERENCE: 1) Prior Related Memoranda and Communications - Appendix 1
2) Current Notes on Project Objective Approach - Appendix 2

INTRODUCTION

During the project review and planning meeting of October 24 and 25, 1968 certain approaches to the objectives were discussed. To further project objectives and as a corollary to recent theoretical work in the area of basic particles and radiation, it appears quite advisable to implement and expedite the means to:

- 1) Conduct certain basic laboratory experiments.
- 2) Provide for related field observations and data acquisition.

Experimental objectives are to:

- 1) Attempt to discover and examine any possible, previously unobserved interaction, between particles of mass or matter in steady state and time variant electric and magnetic fields.
- 2) Emphasize simplicity, utility and effectiveness - with adequate documentation for theoretical analysis and considerations for practical applications.

Field observations and data acquisition: Can be accomplished by portable "self-sustaining" installations and mobile "on-the-spot" instrumentation and observational capabilities. The primary objectives are:

- 1) Observe and record physical events coincidental to anomalous atmospheric occurrences.
- 2) Re-examine other natural physical events such as high energy lightning discharges for possible previously unobserved side effects - (gravity gradient aberrations, etc.).
- 3) Correlate data to serve as guides for laboratory research and endpoint applications.

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A brief review of the referenced memoranda indicates that certain of the suggested experiments may be related generically and as to basic hardware and instrumentation requirements. A comprehensive review of the material is underway and a categorical listing as to type and/or similarity will follow. Experimental design philosophy criteria as discussed at the last meeting is briefly tabulated:

<u>Pros</u>	<u>Cons</u>
1. Low Cost	1. Expensive
2. Gain Knowledge Independent of Success or Failure	2. Often Done Inadvertently
3. Uniqueness	3. Risky
4. Safety Considerations	4. Poorly Planned
5. Logical Reason to Expect Results	5. Long Delays
6. Pertinent	6. High Visibility
7. Importance	7. Low Payoff
	8. Difficult to Justify or Explain

Additional considerations as to feasibility and priority should be discussed; from this a general plan of procedures can be formulated.

Field Data Acquisition

The two-method approach of "portable self-sustaining" and "mobile" could be complimentary to the specific project objectives in addition to supporting the research of the Space Sciences Department. To this end preliminary discussion with the concerned people have been conducted and a "first level" survey of possibly available "in-house" hardware is underway.

As a result of a 28 October meeting, Dr. William Hildreth will submit a listing of preferred objectives and instrumentational requirements as related to the proposed lightning research. A coupling of this information with the specific needs of the "vehicle" project will produce a basic outline as to the type, quantity and approximate cost of the overall requirements.

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OTHER EXPERIMENTS

More recently certain other possibly complimentary and supplemental experiments have been discussed. If they are not redundant to other items, they will be integrated into the "items to be considered" listing.

- A. Atmospheric simulation of electron model.
- B. Rotating charge (capacitor) voltage amplification.
- C. Magnetic properties of moving current carrying conductor.
- D. Magnetic field generation, rotating particles;
Measure, charge density - lifetime - gravitational effects - Influence on other particles, etc.
- E. Particle - Radiation Interaction;
Bombard electrons with high energy photons under various conditions and measure for possible gravitational effects.

ITEMS FOR FURTHER CONSIDERATION

Note: The following material is abstracted from various memoranda and discussions of related experimental research. It is presented as an aid to provide an orderly framework for additional consideration. Tabulation is in the order of its appearance or origin and may be redundant in some cases.

SOURCE

Reference (1) - 8-14-67 - Memorandum Brown - Wood, "Space Propulsion Concepts".

Page 5 - "Try experiments to test conjectures".

Item 1 - Test matter - magnetic field stability mechanism.

Page 6 - "Run experiments on the configuration".

Item 2 - Photon stability - drag simulation (accelerate compressed air to sonic speed).

Reference (2) - 12-20-67 - Memorandum Brown/Harmon - Wood, "Proposal For Electrostatic/Magnetic Experiment".

Pages 7 and 8 -

Item 3 - Electron and magnet interaction (three part experiment using same basic hardware).

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Reference (3) - January 1968 - Research Report - K. M. Evenson and A. D. Goedeke, "Ball Lightning Research".

Reporting ball lightning and phenomena observations, instrumentation and suggestions for future experiments (see following Reference II, "Unsolicited Proposal To Investigate Ball Lightning").

Item 4 - Mobile field data acquisition capabilities.

Reference (4) - 2-14-68 - Memorandum Brown/Harmon - Wood, "Currently Preferred Propulsion Concept".

Page 3 - Future Efforts

Item 5 - Discusses methods and emphasis on need for performing experiments.

Reference (5) - 3-1-68 - Memorandum Wood - File, "UFO Experiments".

Items 6 to 19 inclusive. A tabulation of 14 suggested experiments some of which are related generically and may be accomplished with similar hardware.

Reference (6) - 6-21-68 - Memorandum Brown - Wood, "Advanced Concepts Briefing".

Item 20 - Presents "Big Picture", discusses broad scope of program and need for theoretical and experimental research in specific areas.

Reference (7) - 6-27-68 - Memorandum Brown - Wood, "Proposed Vehicle R&D Program".

Page 10 - Discusses vehicle development, philosophy and methods of approach and various means for experimental research.

Item 21 - Experiments to simulate elementary particles (atmospheric model, electron simulation).

Pages 12 and 13 -

Item 22 - "Magnetic field effect on light velocity".

Page 14 -

Item 23 - "Generation of high magnet fields".
- "Search for interactions (Grav./EM not previously sought)".

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Reference (8) - 8-22-68 - Memorandum Thomas - Wood, "The New Vehicle".

Pages 3 and 4 -

Item 24 - Discusses potential dangers of experimentation.

Reference (9) - 8-22-68 - Memorandum Thomas - Wood, "Magnetic Experiments".

Item 25 - Velocity of propagation of magnetic field.

Reference (10) - 8-22-68 - Memorandum Brown/Harmon/Wilson - Wood, "GA Propulsion System".

Item 26 - Test for possible gravity amplification effects in interaction of electron beam, magnetic field and photon radiation configurations.

Reference (11) - 8-23-68 - Research Proposal - Space Sciences Department, "Proposal To Investigate Ball Lightning".

Item - (Refer to Item 3, Field Data Acquisition Facilities).

Reference (12) - 8-26-68 - Memorandum Thomas - Wood, "Recommended Experiment".

Item 27 - Bennett Sturmertron G-Field Experiment.

Reference (13) - 8-27-68 - Memorandum Brown - Wood, "Concerning The Absence Of Formal Contact".

Discusses rationale and philosophy of a formal contact with intelligent beings of extraterrestrial origin.

Item 28 - Field research and data acquisition might provide further relevant information.

Reference (14) - 9-16-68 - Memorandum Brown - Wood, "Current Recommended Tasks for 3-6 Man Effort".

Experimental Approach - Pages 6, 7 and 9.

Item 29 - Atmospheric model of electron.

Item 30 - Electromagnetic type of experiments.

Item 31 - Velocity of light/magnetic field experiments.

Item 32 - Ancillary investigations of psi phenomena, etc.

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Reference (15) - 10-28-68 - Page 3 this memorandum, "Other Experiments".
Items 33 - 38 (Reference Experiments A, B, C, D, E).

SUMMARY

It is hoped that a review of these items and a further consideration of potentially fruitful experimental research will produce paths to the end product objectives. As a budgetary consideration experimental thinking has been oriented to relate as much of the research to the same hardware as might be practical. Specific experiment design and required engineering could follow a program analysis and definition.



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1. Memorandum A-830-BB01-JMB-2, dated 8-14-67, "SPACE PROPULSION CONCEPTS", to R. M. Wood from J. M. Brown.
2. Memorandum dated 12-20-67, "PROPOSAL FOR ELECTROSTATIC/MAGNETIC EXPERIMENTS", to R. M. Wood from J. M. Brown/D. B. Harmon.
3. Research Report DAC-60941, "BALL LIGHTNING RESEARCH AT HIGHLAND LOOKOUT, MONTANA", dated January 1968, by Space Sciences Department.
4. Memorandum A-830-BB01-JMB-1, dated 2-14-68, "CURRENTLY PREFERRED PROPULSION CONCEPT", to R. M. Wood from J. M. Brown/D. B. Harmon.
5. Memorandum A-830-BB01-7, dated 1 March 1968, "UFO EXPERIMENTS", to File from R. M. Wood.
6. Memorandum A-830-BB01-JMB-3, dated 6-21-68 and Attachment "ADVANCED VEHICLE CONCEPTS RESEARCH" briefing charts, dated 2 May 1968, to R. M. Wood from J. M. Brown.
7. Memorandum A-830-BB01-JMB-2, dated 27 June 1968, "PROPOSED VEHICLE R&D PROGRAM (Project BITBR)", to R. M. Wood from J. M. Brown.
8. Memorandum A-830-CPT-4, dated 8-22-68, "THE NEW VEHICLE", to R. M. Wood from C. P. Thomas.
9. Memorandum A-830-BB01-CPT-5, dated 8-22-68, "MAGNETIC EXPERIMENTS", to R. M. Wood from C. P. Thomas.
10. Memorandum A-830-BB01-JMB-6, dated 8-22-68, "GA PROPULSION SYSTEM", to R. M. Wood from J. M. Brown/D. B. Harmon/W. P. Wilson.
11. Research Proposal, Enclosure (1) to DAC Letter A-13P1349-68-508Q, dated 23 August 1968 to ONR, "UNSOLICITED PROPOSAL TO INVESTIGATE BALL LIGHTNING PHENOMENA".

Communication, dated 8-16-68, C. R. Hill to Dr. R. M. Wood, re: "BALL LIGHTNING PROGRAM FOR ONR".
12. Memorandum A-830-BB01-CPT-7, dated 8-26-68, "RECOMMENDED EXPERIMENT", to R. M. Wood from C. P. Thomas.
13. Memorandum A-830-BB01-JMB-8, dated 8-27-68, "CONCERNING THE ABSENCE OF FORMAL CONTACT", to R. M. Wood from J. M. Brown.
14. Memorandum A-830-BB01-JMB-10, dated 9-16-68, "CURRENT RECOMMENDED TASKS FOR 3-6 MAN EFFORT", to R. M. Wood from J. M. Brown.

APPENDIX 2