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Authority ND 913021

Report to Pres #1

Mr. Carroll Wilson

December 16, 1944

C. L. Wilson *CLW*
L. Chaikley _____

12-19-44

Dr. Irvin Stewart, Executive Secretary
Office of Scientific Research and Development
1530 P Street, N. W.
Washington 25, D. C.

Dear Dr. Stewart:

I have read your December 11th draft of a letter from Dr. Bush to the President on several occasions, in an effort to formulate different or additional ideas. I find that the only contribution I feel able to suggest is in the form of a mild uncertainty regarding Dr. Bush's own estimate as to the amount and importance of the strictly "scientific" work which has been done in the war laboratories.

I have a vague feeling that the draft may be somewhat too long and perhaps over-emphatic, considering the material under discussion. My knowledge of the over-all situation is too limited to give me the necessary confidence that large amounts of scientific information have been acquired in the course of war researches. This uncertainty is further amplified by the remark on page 3 that "most of it can be published without disclosing its embodiments in actual materiel and devices." Many interesting things have been done, but usually their interest is intrinsically connected with practical devices and applications to war problems. Perhaps I have been associated with relatively arid fields during the war, but I do not have the impression that any large body of new scientific information has been evolved in almost any of the war laboratories with which I am passingly acquainted. I would be inclined, accordingly, to omit the middle paragraph on page 2, because I am not aware that the new things developed since 1940 would greatly affect the training or outlook of returning soldiers.

For similar reasons, I feel that one should not too strongly emphasize the importance of preparing in suitable form for publication (evidently including even textbooks), the results of large scale research financed during the war with Government funds. If this letter reaches the press, for example, the public might be led to expect a much larger sudden addition to basic scientific knowledge than actually exists, since it represents

Done #1

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By RT NARA Date 1-24-06

Dr. Stewart

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December 16, 1944

the expenditure of hundreds of millions of dollars where we normally invest a few million dollars at most. The public would surely be disappointed. Our research money was not spent for the purpose of increasing knowledge, but for the practical purpose of winning the war.

With respect to the underlined remarks in the middle of page 5, and the recommendation No. 2 on page 8, proposing the "release of scientific information as soon as it appears that such information cannot be turned against us in the present war," I would like to raise a small red flag regarding certain activities relating to Manhattan. This latter is not strictly an OSRD problem, but certain types of threats may not disappear with the collapse of the Axis, and decisions regarding the release of that particular information, which may represent a striking increase in our scientific knowledge, should well have special consideration. This, no doubt, will be adequately covered by Dr. Bush in some other way, but misunderstandings should be carefully guarded against.

* * * * *

These remarks have been made with the intention of assisting in minor changes in the draft which you so kindly prepared. I do not feel that a committee meeting is necessary; a small group can make such modifications as they think desirable, using your draft as an excellent basis.

Cordially yours,

ORIGINAL SIGNED
M. A. TUVE

M. A. Tuve, Chairman
Section T, OSRD

MAT/dls

cc: Carroll Wilson

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Authority *UND 913021*
By *R7* NARA Date *12406*

Cpt. to Pres



OFFICE FOR EMERGENCY MANAGEMENT
OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT
1530 P STREET NW.
WASHINGTON 25, D. C.

December 11, 1944

MEMORANDUM

MEMORANDUM

TO: Dr. J. P. Barber, III ✓
Dr. R. H. Compton ✓
Dr. J. B. Conant ✓
Dean K. H. Condit ✓
Dr. A. N. Richards ✓
Dr. R. S. Turner ✓
Dr. H. A. Fave ✓
Mr. C. L. Wilson ✓

FROM: Irvin Stewart, Executive Secretary ✓

There is attached a draft of a proposed reply to the first point in the President's letter of November 17, 1944, to which the Director has requested that we prepare a draft reply.

The enclosed draft was prepared without benefit of consultation with other members of the Committee on the assumption that it is desirable to put a concrete suggestion before the Committee.

I suggest that you consider the following alternatives:

1. A meeting of the Committee to discuss the bases of the report before any draft is considered.
2. Submission of comments ^{on} and improvements of the attached draft.
3. A submission of entirely new drafts for the consideration of the Committee by any member desiring to do so.

If either 2 or 3 meets with favor, the drafts and comments will be turned over to a small subcommittee of readily accessible members for inclusion in a revised text for consideration by the full Committee.

You will note that the enclosed draft does not cover all the points in the Director's note of November 15, 1944, addressed to some members of the Committee. The statement of OSRD demobilization plans, etc., appear to overbalance the report if inserted in the body of the report. I suggest that it be inserted in an appendix if its inclusion is desired.

I trust that you can let me have an expression of your views at an early date.

cc: Dr. F. B. Jewett

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By R/T NARA Date 124-06

DRAFT

OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT
1530 F Street, N. W.
Washington 25, D. C.

The President
The White House
Washington, D. C.

My dear Mr. President:

The following report is submitted in answer to the first point in your letter to me of November 17, 1944. That point was stated as follows:

First: What can be done, consistent with military security, and with the prior approval of the military authorities, to make known to the world as soon as possible the contributions which have been made during our war effort to scientific knowledge?

"The diffusion of such knowledge should help us to stimulate new enterprises, provide jobs for our returning servicemen and other workers, and make possible great strides for the improvement of the national well-being."

1. Need for lifting restrictions

The frontiers of science must be thrown open so that all who have the ability to explore may advance from the farthest position which anyone has attained. The restrictions incident to war have prevented the wide spread of the kind of information upon which American science normally builds. Scientists engaged on war projects have acquired new knowledge in specific fields, but they have not been given access to similar acquisitions by their colleagues in other fields. Thus, while there

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is a fund of new knowledge scattered among a large number of individual scientists, no one of them has access to all of it; and the broad base of scientific knowledge available to all scientists has not been correspondingly extended. This situation should be specifically corrected.

The returning soldier who wants to pick up his interrupted plans for a career as a scientist or engineer deserves access to the very latest developments and techniques. It will be a tragedy for him and for the country if he is trained in the light of the knowledge of 1940 rather than 1945. Because of the war we have lost several classes of scientists and engineers, both undergraduates and graduates. The gap can never be entirely filled, and it can be successfully narrowed only if the classes graduating in the immediate post war years can be trained in advanced developments and techniques. We must overcome, not aggravate, the effects upon science and upon the country as a whole of the wartime loss of several classes of scientists.

These considerations I would emphasize in addition to those mentioned in your letter of November 17.

2. Release from military classification

The first, and most important, step is to obtain the release of scientific material from its military classification as soon as conditions permit. Basically there is no reason to believe that scientists of other countries will not in

Stewart
Richardson

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time re-discover everything we now know. A sounder foundation for our national security rests in a broad dissemination of scientific knowledge upon which further advances can be most readily made than in a policy of restriction which would impede our further advances in the hope that our potential enemies will not catch up with us. I believe that with few exceptions, our national interests require the release of most of our war-acquired scientific information as soon as it is evident that our enemies will not be able to turn that information against us in the present war. I further believe that most of it can be ^{released} ~~(published)~~ without disclosing its embodiments in actual military material and devices.

Ernst
7CPW
(keep in file)
ew

Research has gone forward under many auspices, the Army, the Navy, the NACA, various ^{other} government departments and many industrial establishments and academic institutions, ~~(as well as under the auspices of the OCSA)~~. In many cases there have doubtless been independent discoveries of the same truth in

(spell out)

the Office of Research
and Development

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By R7KAB Date 1-20-72

different places. To permit the release of information from one place and restrict it from another would not only be unfair but would impair the morale and efficiency of scientists who have readily subscribed to the policy of restriction dictated by war needs.

The agency charged with the duty of recommending release of information from military classification should be a continuing one well grounded in science and technology, which can couple advice to the military with an ability to obtain prompt decisions. With that in mind I have recently proposed to you the establishment within the National Academy of Sciences of a Board to Control the Release and Publication of Certain Scientific Information. Its standing at the apex of the scientific world together with its contributions to the present war qualify the Academy in a unique manner to perform this service. The proposed Board with its joint Army, Navy and civilian membership should be able to act promptly and intelligently, with full appreciation of both military and civilian implications of its decisions. It should provide the speed which is essential if delay is not to nullify a large part of the benefit sought by the release of newly discovered scientific information. Obviously the Board should be adequately manned to act promptly.

Promote
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3. Agreement with our allies on release of information

Some of the information which should be released is:

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possessed jointly by our allies and ourselves. Release in this country should be coordinated with release in other countries where the restriction has been jointly imposed in both. A central agency such as the proposed Board should be able to handle this normally time-consuming but important matter with a minimum loss of time and danger of international friction.

4. Stimulation of publication

Though the scientist's natural inclination is to publish the results of his efforts, there has been wholehearted acceptance of war-time restrictions upon publication. Once the restrictions have been lifted, the machinery for the publication and distribution of scientific information will start to operate. Almost immediately much of the new development will be reported in the professional journals consulted by scientists and engineers; and shortly thereafter the textbooks and monographs necessary for educational institutions will appear. The ground work will thus be laid for the wider dissemination of information to the public through the writers of newspaper and magazine articles, books, and radio scripts whose service is to popularize ^{the} latest scientific developments. Government agencies should stand ready to direct them to particular sources of information and, in proper cases, to supplement their work with releases drawing together the threads of developments which spread over several places.

*Abstract
Lester A
Wilson*

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Large areas may not be adequately covered by this spontaneous publication, however. The government has a definite obligation to insure the proper reporting for public use of the results of large scale research financed with government funds. Some of this has been in government laboratories; and adequate provision in money and manpower should be made to insure that the results are adequately reported and distributed in a form which will both enable immediate use to be made of them in post-war civilian applications and permit further research to be built upon them. Any government agency which does not have both the authority and the funds for such publication should seek the necessary action without delay.

More important even than the research carried on in government laboratories has been that conducted by industrial establishments and academic institutions under contract with the government and at government expense. In some cases this was on a broad scale and in others narrowly ^{restricted} distributed to the solution of a particular military problem. Wherever the research has a broader application than to military problems, the government contracting agency should insist upon a report by the contractor which, without revealing military applications, would show the scientific advances in sufficient detail to enable others to make use of the results. In the case of large laboratories brought together specifically for war research, the most effective reporting of the results of

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the group research can be made only while the group is together. Once the nucleus of the group is permitted to dissolve it cannot be reassembled for the purpose of reporting. The group should be required to prepare adequate reports, with the assurance that provision will be made for publication as soon as security conditions permit.

The object is to get the scientific results of war research written by outstanding experts, completely available, especially to young scientists, at as low a cost to them as is consistent with doing the job well.

¶ In many cases reports will be of such importance as to justify immediate publication and distribution on a broad scale. Whether publication should be by a contractor, by the government, or by others will depend upon the facts of the particular case; but it is essential that the reports be called to the attention of groups able to benefit by the information contained therein, and that they remain easily available for an adequate period of time.

Obviously not all reports will merit publication and distribution. Where government financed research is involved, the contracting agency must make the decision. In every case, however, this decision should be made upon the basis of the public interest in the dissemination of the information, not upon the presence ^{or absence} of funds to defray the cost of publication and distribution of the report. ~~Many~~

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hundreds of millions of dollars have been spent on scientific research during the war; it would be poor business to lose the broader public benefit from this expenditure because of an unwillingness to spend the additional thousands of dollars needed to get the results into the hands of those who can use it to advance the national welfare.

The publication plans of the OSRD are being made in accordance with the principles of the preceding paragraphs. The effectiveness of these plans, as well as the publication of other scientific information developed in connection with war research, will depend largely upon the speed with which the proposed Academy Board is established and the effectiveness with which it functions after its establishment. The impetus which has produced remarkable results in the laboratory and in the field will be lost if publication is unduly delayed.

5. Recommendations

In specific answer to your first point, therefore, I recommend the following:

1. The prompt establishment and adequate staffing within the National Academy of Sciences of the proposed Board to Control the Release and ^{Promote} Publication of Certain Scientific Information. This is essential.
2. The adoption by that Board of a liberal policy generally permitting the release of scientific information as soon as it is apparent that such information cannot be turned against us in the present war.
3. The encouragement of scientists to publish the results of their investigation in "open" fields covered by releases by the Board.

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By RFR NARA Date 1-24-06

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4. The insistence by Government contracting agencies upon full reporting in a form suitable for publication of the results of all government conducted or government financed scientific research in "open" fields, where such results are of a broad enough significance to be used either as a basis for further research or as a basis for new or improved techniques or developments having peace time applications.

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 "PM" and other
 "off" comments

5. The provision of adequate financing for the publication and distribution of the reports mentioned in the preceding paragraph.

Respectfully yours,

V. Bush
Director

4. The stimulation and assistance of investigators to prompt publication ~~or~~ by administrative officers of cognate government agencies.

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Office for Emergency Management
 OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT
 1530 P Street NW
 Washington 25, D. C.

Vannevar Bush
 Director

Address reply to:
 Section T, OSRD
 8621 Georgia Ave.
 Silver Spring, Md.

Dr. Irvin Stewart, Executive Secretary
 Office of Scientific Research and Development
 1530 P Street, N. W.
 Washington 25, D. C.

Dear Dr. Stewart:

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- 2 -

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Cordially yours,

/s/ M. A. Tuve

M. A. Tuve, Chairman
Section T, OSRD

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OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT

1530 P STREET, N. W.
WASHINGTON, D. C.MEMORANDUM

TO: DR. IRVIN STEWART

FROM: CARROLL L. WILSON

RE: FIRST REPORT TO THE PRESIDENT

HOWEVER, IN THINKING OVER THIS PROBLEM AND STUDYING CAREFULLY THE QUESTION WHICH IS ASKED IN THE PRESIDENT'S LETTER, I AM DOUBTFUL THAT WE ARE AS WELL PREPARED TO REPLY AS WAS THOUGHT AT THE OUTSET. THE PRESIDENT ASKS "WHAT CAN BE DONE, CONSISTENT WITH MILITARY SECURITY, . . . TO MAKE KNOWN TO THE WORLD AS SOON AS POSSIBLE THE CONTRIBUTIONS WHICH HAVE BEEN MADE DURING THE WAR EFFORT TO SCIENTIFIC KNOWLEDGE?" IT SEEMS TO ME THAT THE PROBLEM MAY BREAK DOWN INTO TWO MAJOR PARTS. FIRST A CONSIDERATION OF THE CONTROLS OF THE GOVERNMENT ITSELF WHICH MUST BE RELAXED OR WAIVED IN ORDER TO PERMIT PUBLICATION, AND SECOND THE STEPS WHICH SHOULD BE TAKEN BY THE GOVERNMENT TO AID ACTIVELY IN SEEING THAT THIS INFORMATION IS MADE KNOWN TO THE WORLD.

ON THE FIRST QUESTION, THE OUTSTANDING GOVERNMENT CONTROL IS THE SECURITY CLASSIFICATION AND ON THIS CERTAINLY THE PROPOSED BOARD WITHIN THE ACADEMY REPRESENTS A SOLUTION WHICH HAS RESULTED FROM STUDY OF THE PROBLEM FOR NEARLY A YEAR AND SEEMS TO ME THE SOUND WAY OF GETTING OVER THIS LARGEST HURDLE. HOWEVER, THERE ARE OTHER GOVERNMENT BARS SUCH AS THE SECRECY ORDERS OF THE COMMISSIONER OF PATENTS AND JURISDICTIONAL QUESTIONS WHICH MAY EXIST IN REGARD TO THE RELEASE OF INFORMATION DEVELOPED UNDER GOVERNMENT SUPPORT. FOR EXAMPLE, I UNDERSTAND THE OFFICE OF WAR INFORMATION FEELS THAT THEY HAVE A CONCERN IN THE RELEASE OF INFORMATION BY THE GOVERNMENT IN REGARD TO RESULTS OF THE WAR EFFORT. THEN THERE ARE THE VARIOUS REGULATIONS ABOUT PUBLICATION BY THE GOVERNMENT PRINTING OFFICE, INVOLVING, PERHAPS, A PROBLEM OF RELEASE OF MANUSCRIPTS PREPARED UNDER GOVERNMENT CONTRACTS FROM THE CLUTCHES OF THE GOVERNMENT PRINTING OFFICE SO THAT THEY COULD BE PUBLISHED PROMPTLY ELSEWHERE. I DO NOT HAVE KNOWLEDGE OF OTHER BARS BUT THERE MAY BE SOME. IN ANY EVENT, THE GOVERNMENT BARRIERS TO PUBLICATION SHOULD PROBABLY BE DEALT WITH EITHER BY RECOMMENDATIONS FOR LIFTING OR WAIVING PRESENT RESTRICTIONS, OR BY THE INTERPRETATION OF PRESENT REGULATIONS TO POINT A WAY WHICH WILL PERMIT PUBLICATION IN SPITE OF SUCH APPARENT DIFFICULTIES.

IN THE REPORT, THE SUBJECT MIGHT BE DIVIDED, AS I HAVE ABOVE, INTO THE TWO MAIN PHASES OF

- 1) ARRANGING FOR PERMISSION TO PUBLISH
- 2) ACTIVELY AIDING PUBLICATION IN A USEFUL FORM, AND DISTRIBUTION, OF OUR TECHNICAL INFORMATION IN SUCH MANNER THAT IT WILL BE READILY AVAILABLE FOR PURPOSES OF INSTRUCTION AND RESEARCH.

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ON THE SECOND PART, THAT IS, WHAT STEPS THE GOVERNMENT SHOULD TAKE IN ORDER TO AID THE PUBLICATION AND DISTRIBUTION OF INFORMATION, WE HAVE A NUMBER OF UNANSWERED QUESTIONS WHICH WERE CONSIDERED AT THE FIRST MEETING OF THE OSRD PUBLICATION COMMITTEE. THE QUESTION OF OWNERSHIP OF MANUSCRIPTS IS IMPORTANT, NOT ONLY FROM THE STANDPOINT OF WHETHER OR NOT THEY MUST BE PUBLISHED BY THE GOVERNMENT PRINTERS, BUT ALSO OF CLEARANCE THROUGH THE JOINT COMMITTEE OF CONGRESS, OF GOVERNMENT AGENCIES' CONTRACTUAL RESPONSIBILITIES FOR SAFEGUARDING GOVERNMENT PROPERTY, AND THE NATURE OF THE ARRANGEMENTS WHICH THE AUTHORS MAY BE PERMITTED TO MAKE WITH PRIVATE PUBLISHERS. THERE ARE ALSO THE SUGGESTIONS FOR FACILITATING PUBLICATION THROUGH SOME COOPERATIVE ARRANGEMENTS WITH THE NATIONAL ACADEMY OF SCIENCES OR WITH PRIVATE ENDOWMENTS.

IN ADDITION TO THESE GENERAL CONSIDERATIONS COVERING ALL TYPES OF PUBLICATION, PERHAPS WE SHOULD POINT OUT THAT THE GOVERNMENT SCIENTIFIC PUBLICATIONS WILL FALL INTO SEVERAL DISTINCT CATEGORIES. THERE ARE THE REPORTS FOR THE SERVICES, AND THEN STRICTLY TECHNICAL PAPERS SUITABLE FOR PUBLICATION IN THE TECHNICAL JOURNALS, AND MONOGRAPHS AND TEXTBOOKS. THERE WILL BE HISTORIES SUCH AS THE OSRD HISTORY FOR GENERAL DISTRIBUTION, AND PROBABLY ALSO MORE GENERAL AND POPULARLY WRITTEN REPORTS OF SCIENTIFIC DEVELOPMENTS AND THE PROGRESS IN THE SCIENCES WHICH HAS BEEN STIMULATED BY THE GOVERNMENT DURING THE WAR. THESE DIFFERENT TYPES OF WRITINGS MAY WELL REQUIRE DIFFERENT TREATMENT IN PUBLICATION, AND THEREFORE SHOULD PROBABLY BE CONSIDERED IN OUR REPORT.

I REALIZE THAT MANY OF THESE SUBJECTS HAVE MERELY BEEN OPENED FOR DISCUSSION AND THAT NO FINAL DECISIONS HAVE AS YET BEEN REACHED. PERHAPS THE ATTEMPT SHOULD BE MADE TO OBTAIN THE ANSWERS THROUGH THE PUBLICATIONS COMMITTEE BEFORE THE REPORT FOR THE PRESIDENT IS FINALLY PREPARED. THEREFORE IN YOUR DRAFT FOR THE MEMBERS OF THE COMMITTEE IT MIGHT BE WELL TO RAISE THESE MATTERS AGAIN EVEN THOUGH YOU CANNOT GIVE A FINAL SET OF RECOMMENDATIONS ON THEM.

PRESUMABLY THE REPORT MADE TO THE PRESIDENT SHOULD BE ADDRESSED TO THE GENERAL QUESTION OF PUBLICATIONS OF GOVERNMENT-HELD SCIENTIFIC INFORMATION AND THEREFORE SHOULD BE DIRECTED TOWARD GENERAL DISCUSSION, RECOMMENDATIONS AND SUGGESTIONS RATHER THAN TO BE WRITTEN FROM THE STANDPOINT OF WHAT THE OSRD HAS BEEN THINKING ABOUT AND DOING. THUS WE RECOMMEND THE ACADEMY BOARD TO RELEASE SCIENTIFIC INFORMATION FROM SECURITY BECAUSE SUCH RELEASE IS IMPORTANT AND THIS SEEMS TO US THE BEST WAY OF AFFECTING A RELEASE, RATHER THAN BECAUSE WE HAVE DELIBERATED A LONG TIME ON SETTING UP THIS BOARD. AN ACCOUNT OF WHAT WE ARE DOING WITHIN THE OSRD ON PUBLICATION, IN SO FAR AS IT IS PRIMARILY AN OSRD REPORT, SHOULD EITHER BE IN A SEPARATE PAPER, OR AT LEAST OMITTED FROM ANY GENERAL REPORT AND RECOMMENDATIONS.

AN ARGUMENT FOR PROMPT ACTION ON THIS RELEASE, WHICH HAS EMERGED FROM DISCUSSION ON THE THIRD REPORT, IS THAT THE REAL LIMIT ON THE RESEARCH EFFORT OF THIS COUNTRY IS THAT OF AN ADEQUATE NUMBER OF TRAINED RESEARCH PEOPLE. IF THIS IS GOING TO BE THE BOTTLENECK ON WHAT MAY BE UNDERTAKEN AND ACCOMPLISHED IN THE FIELD OF SCIENTIFIC RESEARCH IN THE NEXT TEN YEARS, IT IS ESSENTIAL THAT ALL POSSIBLE STEPS BE TAKEN TO INSURE THAT THE EARLY CROPS OF GRADUATES BOTH FROM UNDERGRADUATE AND GRADUATE STUDIES BE INDOCTRINATED IN THE LATEST SCIENTIFIC TECHNIQUES. IT SEEMS PROBABLE FROM THE FEW DISCUSSIONS THAT HAVE OCCURRED IN

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CONNECTION WITH THE THIRD REPORT THAT IT WILL NOT BE DOLLARS BUT MEN WHICH LIMIT WHAT WE CAN DO IN RESEARCH IN THE NEXT DECADE UNTIL WE HAVE OVERCOME THE GREAT DEFICIT IN TRAINED RESEARCH PEOPLE RESULTING FROM CESSATION OF PRODUCTION OF PH.D.'S AND OTHER PERSONS WITH ADVANCED DEGREES DURING THE WAR PERIOD. ANOTHER ARGUMENT FOR THE RELEASE OF THIS INFORMATION WHICH MAY BE WORTH MENTIONING IS THAT, WHEREAS THIS NEW SCIENTIFIC KNOWLEDGE WILL BE MADE KNOWN TO THE WORLD GENERALLY, IT CAN BE MOST READILY APPLIED AND EXTENDED BY THOSE WHO HAVE BEEN RESPONSIBLE FOR DEVELOPING THIS NEW KNOWLEDGE, THAT IS, THE RESEARCH PEOPLE OF THIS COUNTRY WHO WILL DISPERSE AFTER THE WAR TO INDUSTRY, UNIVERSITIES, AND GOVERNMENT LABORATORIES. THUS FROM THE STANDPOINT OF OUR FUTURE MILITARY SECURITY, MORE IS TO BE GAINED BY THE RELEASE OF THIS INFORMATION IN THIS COUNTRY THAN ELSEWHERE, EVEN THOUGH THE KNOWLEDGE BECOMES AVAILABLE TO ALL.

THUS THE FORM OF THIS REPORT TO THE PRESIDENT, WHICH MAY WELL BE A LETTER, MIGHT INCLUDE AS AN INTRODUCTION THE POWERFUL ARGUMENTS FOR THE RELEASE OF THE BASIC SCIENTIFIC KNOWLEDGE WHICH HAS BEEN DEVELOPED DURING THE WAR, THE RELEASE OF WHICH WILL NOT DISCLOSE THE EMBODIMENTS OF THIS KNOWLEDGE IN ACTUAL MILITARY MATERIALS AND DEVICES. FOLLOWING THIS INTRODUCTION, THE FIRST PART OF THE REPORT MIGHT DEAL WITH THE GOVERNMENT CONTROLS WHICH MUST BE RELAXED OR REVISED IN ORDER TO PERMIT PUBLICATION OF THIS INFORMATION, AND THE SECOND PART MIGHT DEAL WITH THE SPECIFIC AIDS WHICH THE GOVERNMENT SHOULD EXTEND IN ORDER TO INSURE THAT THIS KNOWLEDGE IS FORMULATED IN USEABLE SHAPE AND PROMPTLY AND WIDELY DISTRIBUTED FOR USE IN TEACHING AND RESEARCH.

I THINK THAT THE QUESTION OF "WHAT CAN BE DONE . . . TO MAKE KNOWN TO THE WORLD" REQUIRES CONSIDERATION OF BOTH THE PERMISSION TO PUBLISH AND THE MEANS OF PUBLICATION AND DISTRIBUTION.

AS A GENERAL COMMENT, I THINK THAT IF THESE REPORTS ARE TO ATTRACT WIDE PUBLIC ATTENTION WE SHOULD BRING IN SOMEONE AS AN EXPERIENCED WRITER TO CAST OUR MATERIAL FOR THESE REPORTS INTO A FORM WHICH WILL HAVE "PUNCH" AND BE THOROUGHLY READABLE. ONE OF THE ASTUTE MOVES OF THE RUBBER COMMITTEE WAS TO HAVE A NON-TECHNICAL PERSON EXPERIENCED IN WRITING FOR THE PUBLIC TAKE THEIR TECHNICAL REPORT WHICH WAS AS DRY AS DUST AND CAST IT INTO A FORM RETAINING THE SAME GENERAL SUBSTANCE BUT CARRYING A POPULAR APPEAL AND MESSAGE WHICH WOULD AROUSE WIDE PUBLIC SUPPORT. HERBERT BAYARD SWOPE DID THIS FOR THE RUBBER DIRECTOR. JIM KILLIAN AT MIT HAS A GREAT FACILITY FOR THIS KIND OF WRITING, AND DOUBTLESS THERE ARE OTHERS. I BELIEVE THAT ON ALL OF THESE REPORTS WE SHOULD SEE THAT THESE STATEMENTS WHICH POTENTIALLY FORM THE BASIS FOR PUBLIC POLICY ON THESE VITALLY IMPORTANT QUESTIONS BE SO WRITTEN THAT THEY RECEIVE WIDE PUBLIC ATTENTION AND THE SUPPORT OF VARIOUS SECTIONS OF GOVERNMENT, INCLUDING CONGRESS, IN ORDER THAT THE NECESSARY GOVERNMENTAL STEPS MAY MEET WITH A MINIMUM OF OPPOSITION AND A MAXIMUM OF SUPPORT.

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 Authority NND 913091
 By R7 NARA Date 1-24-06



OFFICE FOR EMERGENCY MANAGEMENT
 OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT
 1530 P STREET NW.
 WASHINGTON 25, D. C.

December 11, 1944

RECEIVED: 00:10
 C. L. Wilson
 L. Chalkley RC

MEMORANDUM

TO: Dr. J. P. Baxter, III
 Dr. E. T. Cuyper
 Dr. J. B. Conant
 Dean E. H. Condit
 Dr. A. H. Richards
 Dr. E. B. Turner
 Dr. M. A. Tuve
 Mr. C. L. Wilson ✓

12-12-44

FROM: Irvin Stewart, Executive Secretary

There is attached a draft of a proposed reply to the first point in the President's letter of November 17, 1944, to which the Director has requested that we prepare a draft reply.

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2. Submission of comments ^{or} and improvements of the attached draft.
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cc: Dr. F. B. Jewett

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Authority UND 913021By R/T NARA Date 1-24-06

DRAFT

OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT

1530 P Street, N. W.

Washington 25, D. C.

The President
The White House
Washington, D. C.

My dear Mr. President:

The following report is submitted in answer to the first point in your letter to me of November 17, 1944. That point was stated as follows:

"First: What can be done, consistent with military security, and with the prior approval of the military authorities, to make known to the world as soon as possible the contributions which have been made during our war effort to scientific knowledge?

"The diffusion of such knowledge should help us to stimulate new enterprises, provide jobs for our returning servicemen and other workers, and make possible great strides for the improvement of the national well-being."

1. Need for lifting restrictions

The frontiers of science must be thrown open so that all who have the ability to explore may advance from the farthest position which anyone has attained. The restrictions incident to war have prevented the wide spread of the kind of information upon which American science normally builds. Scientists engaged on war projects have acquired new knowledge in specific fields, but they have not been given access to similar acquisitions by their

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colleagues in other fields. Thus, while there is a fund of new knowledge scattered among a large number of individual scientists, no one of them has access to all of it; and the broad base of scientific knowledge available to all scientists has not been correspondingly extended. This situation should be speedily corrected.

The returning soldier who wants to pick up his interrupted plans for a career as a scientist or engineer deserves access to the very latest developments and techniques. It will be a tragedy for him and for the country if he is trained in the light of the knowledge of 1940 rather than 1945. Because of the war we have lost several classes of scientists and engineers, both undergraduate and graduate. The gap can never be entirely filled, and it can be successfully narrowed only if the classes graduating in the immediate post war years can be trained in advanced developments and techniques. We must overcome, not aggravate, the effects upon science and upon the country as a whole of the wartime loss of several classes of scientists.

These considerations I would emphasize in addition to those mentioned in your letter of November 17.

2. Release from military classification

The first, and most important, step is to obtain the release of scientific material from its military classification as soon as conditions permit. Basically there is no reason to believe that scientists of other countries will not in

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time re-discover everything we now know. A sounder foundation for our national security rests in a broad dissemination of scientific knowledge upon which further advances can be most readily made than in a policy of restriction which would impede our further advances in the hope that our potential enemies will not catch up with us. I believe that with few exceptions, our national interests require the release of most of our war-acquired scientific information as soon as it is evident that our enemies will not be able to turn that information against us in the present war. I further believe that most of it can be published without disclosing its embodiments in actual military material and devices.

Research has gone forward under many auspices, the Army, the Navy, the NACA, various government departments and many industrial establishments and academic institutions as well as under the auspices of the OSRD. In many cases there have doubtless been independent discoveries of the same truth in

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different places. To permit the release of information from one place and restrict it from another would not only be unfair but would impair the morale and efficiency of scientists who have readily subscribed to the policy of restriction dictated by war needs.

The agency charged with the duty of recommending release of information from military classification should be a continuing one well grounded in science and technology, which can couple advice to the military with an ability to obtain prompt decisions. With that in mind I have recently proposed to you the establishment within the National Academy of Sciences of a Board to Control the Release and Publication of Certain Scientific Information. Its standing at the apex of the scientific world together with its contributions to the present war qualify the Academy in a unique manner to perform this service. The proposed Board with its joint Army, Navy and civilian membership should be able to act promptly and intelligently, with full appreciation of both military and civilian implications of its decisions. It should provide the speed which is essential if delay is not to nullify a large part of the benefit sought by the release of newly discovered scientific information. Obviously the Board should be adequately manned to act promptly.

3. Agreement with our allies on release of information

Some of the information which should be released is

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possessed jointly by our allies and ourselves. Release in this country should be coordinated with release in other countries where the restriction has been jointly imposed in both. A central agency such as the proposed Board should be able to handle this normally time-consuming but important matter with a minimum loss of time and danger of international friction.

4. Stimulation of publication

Though the scientist's natural inclination is to publish the results of his efforts, there has been wholehearted acceptance of war-time restrictions upon publication. Once the restrictions have been lifted, the machinery for the publication and distribution of scientific information will start to operate. Almost immediately much of the new development will be reported in the professional journals consulted by scientists and engineers; and shortly thereafter the textbooks and monographs necessary for educational institutions will appear. The ground work will thus be laid for the wider dissemination of information to the public through the writers of newspaper and magazine articles, books, and radio scripts whose service is to popularize latest scientific developments. Government agencies should stand ready to direct them to particular sources of information and, in proper cases, to supplement their work with releases drawing together the threads of developments which spread over several places.

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Large areas may not be adequately covered by this spontaneous publication, however, The government has a definite obligation to insure the proper reporting for public use of the results of large scale research financed with government funds. Some of this has been in government laboratories; and adequate provision in money and manpower should be made to insure that the results are adequately reported and distributed in a form which will both enable immediate use to be made of them in post-war civilian applications and permit further research to be built upon them. Any government agency which does not have both the authority and the funds for such publication should seek the necessary action without delay.

More important even than the research carried on in government laboratories has been that conducted by industrial establishments and academic institutions under contract with the government and at government expense. In some cases this was on a broad scale and in others narrowly ^{restricted} distributed to the solution of a particular military problem. Wherever the research has a broader application than to military problems, the government contracting agency should insist upon a report by the contractor which, without revealing military applications, would show the scientific advances in sufficient detail to enable others to make use of the results. In the case of large laboratories brought together specifically for war research, the most effective reporting of the results of

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the group research can be made only while the group is together. Once the nucleus of the group is permitted to dissolve it cannot be reassembled for the purpose of reporting. The group should be required to prepare adequate reports, with the assurance that provision will be made for publication as soon as security conditions permit.

The object is to get the scientific results of war research written by outstanding experts, completely available, especially to young scientists, at as low a cost to them as is consistent with doing the job well.

¶ In many cases reports will be of such importance as to justify immediate publication and distribution on a broad scale. Whether publication should be by a contractor, by the government, or by others will depend upon the facts of the particular case; but it is essential that the reports be called to the attention of groups able to benefit by the information contained therein, and that they remain easily available for an adequate period of time.

Obviously not all reports will merit publication and distribution. Where government financed research is involved, the contracting agency must make the decision. In every case, however, this decision should be made upon the basis of the public interest in the dissemination of the information, not upon the presence ^{or absence} of funds to defray the cost of publication and distribution of the report. Many

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hundreds of millions of dollars have been spent on scientific research during the war; it would be poor business to lose the broader public benefit from this expenditure because of an unwillingness to spend the additional thousands of dollars needed to get the results into the hands of those who can use it to advance the national welfare.

The publication plans of the OSRD are being made in accordance with the principles of the preceding paragraphs. The effectiveness of these plans, as well as the publications of other scientific information developed in connection with war research, will depend largely upon the speed with which the proposed Academy Board is established and the effectiveness with which it functions after its establishment. The impetus which has produced remarkable results in the laboratory and in the field will be lost if publication is unduly delayed.

5. Recommendations

In specific answer to your first point, therefore, I recommend the following:

1. The prompt establishment and adequate staffing within the National Academy of Sciences of the proposed Board to Control the Release and Publication of Certain Scientific Information. This is essential.
2. The adoption by that Board of a liberal policy generally permitting the release of scientific information as soon as it is apparent that such information cannot be turned against us in the present war.
3. The encouragement of scientists to publish the results of their investigation in "open" fields covered by releases by the Board.

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4. The insistence by Government contracting agencies upon full reporting in a form suitable for publication of the results of all government conducted or government financed scientific research in "open" fields, where such results are of a broad enough significance to be used either as a basis for further research or as a basis for new or improved techniques or developments having peace time applications.

closed as well

5. The provision of adequate financing for the publication and distribution of the reports mentioned in the preceding paragraph.

*recognition
inclusion in
annual report
public & distrib*

Respectfully yours,

V. Bush
Director

*Patent Secretary
auditors*

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Authority *ND 913021*By *RTR* NARA Date *1-24-06*

THE WHITE HOUSE

WASHINGTON

November 17, 1944

Dear Dr. Bush:

The Office of Scientific Research and Development, of which you are the Director, represents a unique experiment of team-work and cooperation in coordinating scientific research and in applying existing scientific knowledge to the solution of the technical problems paramount in war. Its work has been conducted in the utmost secrecy and carried on without public recognition of any kind; but its tangible results can be found in the communique coming in from the battlefronts all over the world. Some day the full story of its achievements can be told.

There is, however, no reason why the lessons to be found in this experiment cannot be profitably employed in times of peace. The information, the techniques, and the research experience developed by the Office of Scientific Research and Development and by the thousands of scientists in the universities and in private industry, should be used in the days of peace ahead for the improvement of the national health, the creation of new enterprises bringing new jobs, and the betterment of the national standard of living.

It is with that objective in mind that I would like to have your recommendations on the following four major points:

First: What can be done, consistent with military security, and with the prior approval of the military authorities, to make known to the world as soon as possible the contributions which have been made during our war effort to scientific knowledge?

The diffusion of such knowledge should help us stimulate new enterprises, provide jobs for our returning servicemen and other workers, and make possible great strides for the improvement of the national well-being.

Second: With particular reference to the war of science against disease, what can be done now to organize a program for continuing in the future the work which has been done in medicine and related sciences?

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The fact that the annual deaths in this country from one or two diseases alone are far in excess of the total number of lives lost by us in battle during this war should make us conscious of the duty we owe future generations.

Third: What can the Government do now and in the future to aid research activities by public and private organizations? The proper roles of public and of private research, and their interrelation, should be carefully considered.

Fourth: Can an effective program be proposed for discovering and developing scientific talent in American youth so that the continuing future of scientific research in this country may be assured on a level comparable to what has been done during the war?

New frontiers of the mind are before us, and if they are pioneered with the same vision, boldness, and drive with which we have waged this war we can create a fuller and more fruitful employment and a fuller and more fruitful life.

I hope that, after such consultation as you may deem advisable with your associates and others, you can let me have your considered judgment on these matters as soon as convenient reporting on each when you are ready, rather than waiting for completion of your studies in all.

Very sincerely yours,

/s/

Franklin D. Roosevelt

Dr. Vannevar Bush,
Office of Scientific Research and Development
Washington, D. C.

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Authority 100-913021By R7 NARA Date 1-24-86*Advisory Council*

OFFICE FOR EMERGENCY MANAGEMENT
OFFICE OF SCIENTIFIC RESEARCH AND DEVELOPMENT

1530 P STREET NW.
WASHINGTON 25, D. C.

November 18, 1944

MEMORANDUM TO THE ADVISORY COUNCIL
Office of Scientific Research and Development

I am enclosing a copy of a letter dated November 17, 1944, which I have just received from the President. You will note that the purpose of the letter is to obtain recommendations, based upon the experience of the OSRD in the last four years, with regard to four major problems bearing upon the utilization of science and research in the post-war world.

The first problem, dealing with the declassification and dissemination of scientific information, is one which the Advisory Council has had occasion to consider several times. In particular, the Council has expressed its views concerning the proposed Executive Order to establish a Publication Board within the National Academy of Sciences, concerning the program for the demobilization of the OSRD and the freeing of scientists for peace-time work, and concerning the broad OSRD program for publishing manuscripts and scientific monographs. These matters are well in hand, and I believe that we are in a position to prepare a report to the President promptly on this item. I have turned the formulation of this report over to the OSRD Committee on Publication.

The second major problem on which the President wishes recommendations deals entirely with medical research. In view of that fact, it is my intention to refer this problem to the Committee on Medical Research for its recommendations as to the method by which the formulation of a report may best be approached.

The third and fourth problems raised by the President in his letter present broad issues of major importance upon which the Advisory Council has not previously expressed itself, and as to which I wish to obtain the advice of the members of the Council.

In view of my immediate absence from the city, and the urgency of promptly formulating a sound program on the last two problems referred to by the President,

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I should appreciate it if the members of the Advisory Council would submit their recommendations in writing as soon as conveniently possible. I wish to obtain the opinion of the members of the Council not only as to methods of approach, but as to the possible persons who might be called upon to implement whatever methods may ultimately be decided upon.



V. Bush, Director

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THE WHITE HOUSE

WASHINGTON

November 17, 1944

Dear Dr. Bush:

The Office of Scientific Research and Development, of which you are the Director, represents a unique experiment of team-work and cooperation in coordinating scientific research and in applying existing scientific knowledge to the solution of the technical problems paramount in war. Its work has been conducted in the utmost secrecy and carried on without public recognition of any kind; but its tangible results can be found in the communiqués coming in from the battlefronts all over the world. Some day the full story of its achievements can be told.

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I hope that, after such consultation as you may deem advisable with your associates and others, you can let me have your considered judgment on these matters as soon as convenient - reporting on each when you are ready, rather than waiting for completion of your studies in all.

Very sincerely yours,

/s/

Franklin D. Roosevelt

Dr. Vannevar Bush,
Office of Scientific Research and Development,
Washington, D. C.

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DECEMBER 4, 1944

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Newsweek

THE MAGAZINE OF NEWS SIGNIFICANCE



Goebbels and the Volkssturm: The Scraps Must Fight

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THE MAGAZINE OF NEWS SIGNIFICANCE

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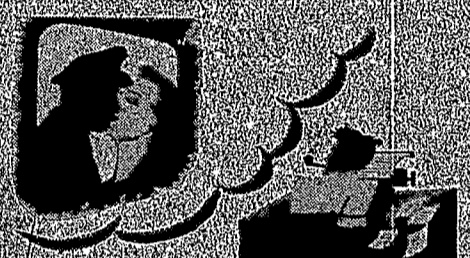
* At the Fighting Fronts
 * Missing in Action



The Cover—Propaganda Minister Goebbels salutes a parade of the Volksturm marching through the Brandenburg Gate in Berlin. In the Nazis' desperate struggle, these scraps of fighting material, organized as a Home Guard, are being sent to the German front lines with little training. See Fighting Fronts, (Associated Press)

many other magazines. He has written vaudeville acts, motion picture originals and motion picture scripts. But mostly he has written dramatic criticism.

Tom Wenning came to Newsweek as Movie Editor eight years ago, and later widened his field to include Theater. The combined stint is a tough one, but Tom holds to it because he has a genuine zeal for both which surpasses even his interest in gardening. Currently, he sees an average of ten movies a week and, during the theatrical season, an additional four plays a week. He spends much of the balance of his time reading all



theatrical and motion picture news, all the new books published on either subject—and trying to find time for his writing on the train home to Connecticut or by sitting up late at night.

Then, of course, Wenning operates a magazine department, solving such headaches as timing his movie reviews to suit the complicated schedules of national release dates. No matter how many bad plays or movies he sees, he must not become soured. His criticism must remain objective—a combination of his own view and that of a hypothetical average Newsweek reading movie fan.

Tom Wenning's stature in the critical fraternity is perhaps best illustrated by his election to membership in the New York Drama Critics Circle—an important distinction.

As a critic he is of the top rank—a judicious adviser to all movie fans, a discerning guide to those of you who are playgoers as well. But if you are one of the many Newsweek readers who do not live in a theatrical center, Tom's dramatic criticism is of even greater importance, for it offers you the opportunity of keeping posted on the progress of the current drama. As a woman in a Southern community wrote to us: "Through Newsweek I am able to remain better informed on the American theater today than I was when living in New York City."

The Editors

For Your Information . . . About Tom Wenning



Wenning
 NEWSWEEK'S Movie and Theater Editor. As we answered by V-mail, we realized that many readers, both here and abroad,

The letters we receive from servicemen abroad, at the fronts and on the high seas, indicate how they have retained their peacetime interests. Recently a sailor aboard the aircraft carrier U.S.S. Shangri-La wrote to ask for information about

must wonder about the personality behind Newsweek's informative motion picture and dramatic reviews.

His name is Thomas H. Wenning—and he started writing dramatic criticism quite a few years ago for the Columbia Jester, while at the university. Since then he has never stopped writing, and he has never been very far from either Broadway or Hollywood. He has written stories and articles for The Saturday Evening Post, The New Yorker, and

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*Rpt. to Pres
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* * * *

*Dr. Kenneth B. Turner
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New York City

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Authority ND 913021By R7 NARA Date 1-24-06

12/23/44

PROPOSALS FOR
MEMBERSHIP OF COMMITTEE TO INVESTIGATE AND ADVISE
ON THE SECOND QUESTION:

"Second: With particular reference to the war of science against disease, what can be done now to organize a program for continuing in the future the work which has been done in medicine and related sciences?"

The fact that the annual deaths in this country from one or two diseases alone are far in excess of the total number of lives lost by us in battle during this war should make us conscious of the duty we owe future generations."

*Prof. W. W. Palmer, Chairman
(M.D.)

*Bard Prof. of Medicine, Columbia University
Director of Presbyterian Hospital
New York City

*Prof. Homer W. Smith, Secretary
(Physiologist)
Prof. of Physiology
Director, Physiology Laboratory
New York University, School of Medicine
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Dr. Emmet B. Bay, Assistant Secretary
(M.D.)
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Dr. W. B. Castle
(M.D.)
Prof. of Medicine
Harvard University, Medical School
Assoc. Director, Thorndike Memorial Laboratory
Boston City Hospital, Boston, Massachusetts

Dr. Edward A. Doisy
(Physiologist & Biochemist)
Director, Dept. of Physiology and Biochemistry
School of Medicine, St. Louis University
St. Louis, Missouri

* * * * *

NOTE - Letters of invitation sent by VB December 19, 1944.

*Accepted

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Dr. Arthur L. Bloomfield
(M.D.)
Professor of Medicine, Stanford University
San Francisco, California

Dr. H. S. Gasser
(Physiologist, M.D.)
Director, Rockefeller Institute
Rockefeller Institute for Medical Research
New York City

Dr. Ernest Goodpasture
(Pathologist, M.D.)
Professor of Pathology
Vanderbilt University, School of Medicine
Nashville, Tennessee

Dr. Alton Ochsner
(Surgeon, M.D.)
Prof. of Surgery and Head of Department
Tulane University, School of Medicine
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New Orleans, La.

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PROPOSALS FOR

MEMBERSHIP OF COMMITTEE TO INVESTIGATE AND ADVISE ON
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Prof. of Physiology
Director - Physiology Laboratory
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New York City

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Director, Dept. of Physiology and Biochemistry
School of Medicine St. Louis University
St. Louis, Missouri

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R.L. & A. Price

~~Dr. Arthur L. Bloomfield
(M.D.)
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San Francisco, California~~

~~Dr. W. S. Gossett
(Physiologist, M.D.)
Director, Rockefeller Institute
Rockefeller Institute for Medical Research, New York City~~

N Dr. Ernest Goodpasture
(Pathologist, M.D.)
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NO Dr. Alton Ochsner
(Surgeon, M.D.)
Prof. of Surgery and Head of Department
Tulane University, School of Medicine
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New Orleans, La.

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6. NARA_CIA_FOIA_UFO_V-Bush.pdf

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Why it belongs in this release

Direct UFO evidence-management record: Robertson Panel, Blue Book, ATIC cover, Special Report 14, CIA FOIA litigation, public-release policy, and explicit Air Force UFO investigation objectives.

Complete release-note text from UAP 4

1. NARA_CIA_FOIA_UFO_V-Bush.pdf

This is the strongest public-release document because it directly concerns UFO policy, information handling, and the intentional shaping of public perception. It records the Robertson Panel's recommendation that national-security agencies strip UFOs of their "special status" and "aura of mystery," the Air Force Office of Information's continuing responsibility for public UFO releases, and the fact that Special Report No. 14 was released under ATIC cover because the contractor wanted to remain anonymous. It also preserves the official Air Force UFO objectives: determine whether UFOs are a security threat, whether they show technological advances useful to U.S. R&D, and identify the stimuli behind reports. Congress and NARA should subpoena or compel production of the complete Robertson Panel files, Blue Book raw case files, Special Report No. 14 contractor identity and work papers, CIA Ground Saucer Watch litigation files, and any CIA/ODP records involving hand-carried UFO documents or customer-controlled UFO databases.

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THE R. A. F. PENROSE, JR., MEMORIAL LECTURE
SCIENTIFIC MOTIVATION

VANNEVAR BUSH

President, Carnegie Institution of Washington
(Read April 22, 1954)

In a general lecture of this sort it is sometimes worth while to attempt to view the current status of scientific effort, to focus upon the crucial points where advance is most rapid, thus to catch a glimmer of where we stand and where we may now be headed, and on this basis to ponder on the motivation which urges us on. This is a difficult thing to do, and no two men will formulate alike even the present status of our understanding. Science is so vast, even when the discussion is confined to the natural sciences, the scene is so diverse in aspect, that such attempts often succeed merely in giving false impressions of simplicity. They are bound to leave out entirely areas from which the most important advances may emerge, they are bound to be colored by personal background, and, in place of a clear summary, they may merely produce more confusion. Yet the attempt may be worth while, if for no other reason, because it is refreshing to back out of the laboratory and the library and gaze out over the landscape. So, with full realization that every man will describe the landscape for himself and emphasize features dearest to him, with recognition that one can only pick and choose, let us take a look.

We need not spend much time with the physicists. They are busy digging into the nucleus of the atom, picking off a new elementary particle every few weeks, speaking a mathematical language which completely bars the unsophisticated from participating in the excitement of their delving. They seem to be having a very good time among themselves, but they have left the rest of us for a time; and we can merely hope they will later come up for air and tell us in a common language what it is all about. From a distance it appears that they may soon quit multiplying particles and tell us more about how one transforms into another, settling down perhaps again to a very few that are truly fundamental. We can sympathize with their difficulty in educating the rest

of us; for, as they attack the forces binding the nucleus, their formulations necessarily take mathematical forms which have nothing to do with familiar things—nor should we expect them to. As they proceed there seems to be less of neo-Pythagoreanism among them, a bit less mysticism. One does not so often hear today that indeterminacy introduces chance into nature, provides a place for free will, denies causality. Rather it appears, more simply, merely to set a limit beyond which experimentation can no longer substantiate theory; and this limitation may provide permanent room for alternative formulations. Yet there seems to be no harm in this, and it does render the job interesting. So we may well leave the theoretical physicists to their own devices for a bit; it will be some time before we can understand them. And, when they toss out results which strongly affect other areas of effort, we shall certainly know about it, as we did when they split the atom into substantial pieces. In the meantime, classic physics is being left largely to the applied physicists and the engineers. It has become difficult to tell these two groups apart, just as it is often hard to tell a Democrat from a Republican. And classic physics is bounding forward, giving us new materials and new instruments, clarifying somewhat the solid state, giving birth to wholly new varieties of electronics, even beginning to make some sense out of the weather.

So, let us turn to a field where trends are much clearer and arguments are easier to grasp, where we look at large things rather than little ones. The cosmologists are having a field day; several road blocks have been removed, and they may be about to give us a consistent picture of the origins of the universe, its present status, and its future up to a point. There now seems to be a rapidly widening area of agreement among cosmologists, which is a phenomenon in itself. The red shift is widely regarded as showing a true expansion,

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as acceptable evidence that the galaxies are rushing away from us into space with velocities roughly proportional to their distances, rather than that light becomes weary in its long journey, or that cosmic dust nips off minute tributes in energy from the passing photons. The receding velocities are now measured up to 60 per cent of the velocity of light, or 180,000 kilometers per second. There is nothing sure about this theory of an expanding universe as yet; Finlay-Freundlich and Born have recently given pause by a theory which links the red shift with radio waves from space and leaves the astronomers merely measuring a temperature instead of a recession. But the reason why true expansion is now so generally accepted is not so much that insuperable difficulties are presented by alternative explanations of the red shift, as perhaps that the expansion hypothesis is so simple and leads so neatly to intriguing speculations on the mode of origin of the universe. There is now in process of refinement a new scale for the universe; for some of the early measurements have been found to be faulty, which is hardly surprising considering their nature; and the new scale brings the astronomers and the geophysicists nearer together on an estimate of about five billion years for the age of the visible universe. We are now told that, five billion years ago, there was nothing except a mass of nuclear fluid of enormous density and temperature. Then there was a tremendous explosion, and in the first thirty minutes following the explosion the elements were formed. What preposterous temerity—to analyze what happened in a half hour five billion years ago! Yet the hypothesis seems to work, and to yield correct figures for the ratios of elements we observe. Then a bit later, mutually receding clouds of gas condensed to form dust, and the galaxies separated and evolved. Stars were formed as the dust and gas condensed, and continue thus to be formed today. The old Kant-Laplace hypothesis comes to life, as Weizsäcker avoids the pitfall which once wrecked it—its failure to account for observed angular velocities—by taking into account turbulent motions and loss of hydrogen from the evolving system, thus obtaining results which correspond to the composition, spacing, angular velocities, and masses of the planets. Billions of stars are conceived to have been born in billions of galaxies, and it appears that planetary systems may have been frequently formed. There may, indeed, be millions of planets with conditions so

nearly similar to those on earth that life such as we know would be possible, although perhaps still improbable. The life history of stars is also falling into line as the atomic energy cycles that maintain their brilliance become sorted out, although we as yet have very little idea why stars occasionally explode.

There are plenty of other mysteries left; for example, how a star can have an enormous, rapidly reversing magnetic field. We do not yet know the distance-speed relations of the galaxies at all well, or the variation of galaxy spacing with distance. It may take some time to find out, for we use the absolute magnitude of a galaxy to measure its distance. The light coming from the most remote galaxies that we can observe left them something like a billion years ago, and so we need to find out more about the variation of total light emission with age before the relations can be pinned down well. Thus we have no present measure of space curvature; neither can we say for sure that the velocities are such as to bar the hypothesis that expansion is a cyclic performance, although it appears as though the galaxies were leaving us, and every other point, irrevocably, and hence as though we were not just repeating over and over an explosion and subsequent collapse. If we do not wish to consider a universe that just bounces occasionally, we can consider, if we will, that space itself began with the primeval explosion, that we have a continually altering curvature of space, that we live in a three-dimensional bubble being blown up in a four-dimensional space. But, since we are three-dimensional beings, with three-dimensional minds, we can hardly expect to proceed at once to go much farther in our speculations. Nevertheless, the cosmologists are now giving us a logical, consistent pattern of the development of the universe. And in doing so they have obligingly allowed us plenty of further time on the earth for our speculations and formulations. We apparently do not need to hurry, except to fend off the disasters which we ourselves may create.

We also have a consistent and logical account of organic evolution on the earth, entirely on a mechanistic basis. Population genetics and its statistical treatment have placed natural selection on its feet so that there is no longer mystery in the gradual shifts or in the origin of new species. The story starts with the beginning of life in the fortuitous appearance of self-duplicating molecules in

the primeval seas—still intangible in the haze of our ignorance of the Pre-Cambrian period—and proceeds from there. More complex forms appear as these special molecules combine into forms capable of seizing materials from their neighbors. There is no longer difficulty with the second law of thermodynamics as evolution thus produces more complex and apparently less probable states, for it is the organism plus its environment that constitutes a system, not the organism alone. Higher species appear, and evolution radiates to fill all available niches in the environment. There is also convergence, widely separated lines heading for the same niche, as when wings appear on pterodactyls, bats, and birds. Overspecialization occurs and species succumb. Intragroup selection sometimes carries characteristics to grotesque and deleterious extremes, and the coupling of genic systems may produce defects at the same time that it produces highly adaptive and favorable characters. When an opening in the environment appears because a group succumbs, it is often strikingly filled from the varied, crowding, evolving life about, and often again left open for a surprising length of time when no adjacent forms are ready to move in. Characteristics which appear to be evolved at random, and actually detrimental, persist in populations, and sometimes prove to be highly adaptive when the species shifts to a new environment, whereupon they become used and perfected. The interaction between environment and the statistical trend of the genetics of a population is by no means entirely worked out, but it appears that we have here the key which opens the door to a valid scheme of natural selection.

Everything I say would be contested in some quarters, for scientists are unanimous on very little. But there is today little tendency to call on vitalist or finalist theories to account for the marvelous variety and intricacy of living things. Thus the process of evolution is conceived to have proceeded mechanically for many hundreds of millions of years, until finally there appeared the primates and man. The evolutionists take the appearance of consciousness during this process in their stride, and the philosophers now seem to concentrate on nuts that are not so tough to crack as this one. So now we have conscious evolution, with man in partial control of his own destiny, with the exercise of a free will, tacitly accepted, appearing out of a wholly mechanistic evolutionary

process, and in the common meaning foreign to its fundamental tenets.

Many of the old arguments concerning evolution have dissolved because of the remarkable progress in genetics. Wearying of sorting the genes of fruit-fly chromosomes, the geneticists turned to lower organisms, to bacteria and viruses, to find there the elementary beginnings of a complex system. And they found the same old complexity, with units of heredity, mutations, and all the rest. Moreover, reaching somewhat farther up the evolutionary scale, they now find the hereditary process to be more and more intricate. Multiple gene control of characteristics, cross influence of neighboring genes, genetic factors beyond the genes which control their action, even cytoplasmic inheritance appear. Mutagens, moreover, acting on bacteria, produce mutations over many generations; but this is not the inheritance of acquired characteristics in the old sense; it is direct action of environment on a genetic system long treated as though utterly immune to environmental influence. Specificity of mutagens does not appear strongly as yet, but it may. Gone is some of the old assurance, the dogmatism which could assert the general negative—that the environment has no influence on the hereditary mechanism—because a theory and a system had been constructed, mathematical in its precision, thought to be capable in full development of explaining everything. A set of genes, self-duplicating chemical compounds, occasionally mutating at random, immortal, passed from generation to generation without change and uninfluenced by the host, producing hormones which in turn controlled all development—this was much too simple and too pat. It is somewhat difficult to envisage the way in which such a mechanism could produce a bird with full individual knowledge of how to build a complex nest or to follow a pathway of migration, or a spider that could build a web. The day has not yet arrived when a student can embark upon examination of possible racial memory in a homing pigeon without encountering raised eyebrows. But geneticists are becoming more humble as their systems lead them deeper into intricacy; and this is well, for the story is only in its first chapter, and much hard work lies ahead before another Mendel can create a system adequate for the problems which confront us, many of which we now merely avoid.

All of life in its origin, growth, and hereditary mechanisms seems to revolve about the self-dupli-

cating molecules, the proteins and the nucleic acids. These extraordinary chemical compounds, which can produce replicas of themselves out of the building blocks of their environment, lie at the heart of the great mysteries of life. A full understanding and a capability for adequate manipulation in this field call for a new type of chemistry which can deal with molecules of an atomic weight of a million, for a new type of special thinking, and for new aids to thinking. Some powerful aids are already available, in tracer techniques, chromatography, electronic instruments. Recently there has been a striking step forward, for Crick and Watson have presented a logical explanation of the mechanism by which a nucleic acid can form duplicates of itself in an appropriate medium. Soon we may begin to understand and imitate the formation of the proteins which are vital to us in such an intimate sense.

Biochemistry is making progress on many fronts. The chemistry of muscle becomes more clear. Hormones have been isolated and synthesized. The vitamins, then the enzymes, lead us toward an understanding of catalysis which reaches far beyond combination on a crystal surface. Photosynthesis yields very slowly to attack, but chloroplasts can now be caused to function *in vitro*; and we may soon be able to isolate chlorophyll itself without altering its form and association in the living cell, surround it with an appropriate set of pigments to interchange the energy of incident photons, and cause it to fix carbon dioxide in a test tube. It is strange that this particular chemical compound, which is central to life on the earth, which appears throughout the plant kingdom in closely allied forms, which evolution provided as the means for seizing and using the sun's energy, resists so long our attempts to watch it work in an artificial environment.

We have long cultivated living tissue in glass bottles; and recently the cultivation of viruses on such tissue has opened up important vistas in the attack on disease. We have proceeded far in the subtle electrochemistry of nerve action. But our distant view of brain action, through encephalography, is very far from providing means for more than a glimmer of understanding of the mechanisms of the brain. Medicine is still largely empirical in spite of scientific progress in biochemistry and physiology; it has new and powerful tools but understands and controls them only vaguely; and its progress toward logical processes, based on sound, far-reaching hypotheses, is slow be-

cause of the appalling complexity of its subject matter. Biochemistry is in its infancy—an exceedingly attractive field for men of courage and fertile minds. This is true also of psychology. And where these meet to attempt an attack upon the brain processes of man, there is a situation comparable to that in evolution before Darwin; many of the essential notions have been or are being excavated; but the critical exciting syntheses all still lie ahead.

These are only a few sample areas. Science is expanding exponentially, limited now by the mental capacity it can attract, but threatened also with limitation in other ways, as indeed is all free thought. The evolution of science has some parallels with organic evolution. It is a radiating evolution, producing new species of science almost daily. There is intense specialization to fill niches in the environment. Certain species have specialized to the point where they have lost contact with the main thread—perhaps have lost their capacity for adaptation. Areas have been occupied in which traditional scientific methods really do not apply, where mutation has not yet produced adequate substitutes, and where natural selection acts but lamely.

Civilization generally, science in particular, proceeds because man can store, transmit, and consult the record; because the experience of one generation is available to the next; because an individual can share the knowledge of his neighbor. There has been great progress in transmission, in communication, with telephone, radio, facsimile transmission, television; but this has thus far touched scholarly affairs only lightly. There is progress too in the storing of the record, with microfilm and new methods of printing. But our methods of consulting the record are archaic and essentially unchanged. The library, as we know it, cannot cope with the task before it. Science may become bogged down in its own product, inhibited like a colony of bacteria by its own exudations. There are thousands of journals in physics alone. One of these publishes five thousand pages a year, mathematical, abstruse, difficult. Who can be familiar with it all, and who can find in the great mass in storage the grain of wheat needed for his next step? The pile is mounting daily, science is becoming polyglot, duplication is rife; synthesis, crossing many fields, becomes increasingly difficult and more and more necessary.

As we look over the whole scene of modern science, the impending difficulty is everywhere ap-

parent. We look at any remote, rapidly expanding field, say the chemistry and energetics of photosynthesis; and there are hundreds of able research men and thousands of publications. The key thoughts are necessarily expressed in language which it would take years to master. An individual can now make an advance of such moment that it would have excited the entire intellectual community in the days when science was simple; but the advance becomes known only in an intimate circle and is grossly distorted when it is described outside the circle. The esteem of colleagues, the recognition by men of understanding, which is dear to those whose lives are devoted to unraveling our common mysteries, becomes severely circumscribed. The great awards become artificial and of doubtful value when there are dozens of accomplishments daily, and the truly admirable advances are often beyond the comprehension of laymen. In such a morass how are the great syntheses of the future to be brought to light?

There are a number of things that can be done about it. Aids to man's thinking have proceeded far beyond pencil and paper. Analytical machines are evolving rapidly. Digital machinery, at the moment, holds the center of the stage with analogue machines in the background. Yet one can conceive an analogue machine which could handle the routine of organic chemistry far better than a man can do. It could have a far more extensive and accurate memory. It could manipulate relationships far more rapidly and with greater and more accurate restraints than a human brain. It could even learn by experience if necessary, like Shannon's mechanical mouse, which blunders through a maze by trial and error the first time it is inserted, but the second time proceeds unerringly to the exit, thus showing much better learning capacity than the mouse produced by evolution. Machines for proceeding from an x-ray spectrograph to the parameters of a crystal still need human intervention to supply missing phase relations, but they may be freed of this disability and become powerful instruments indeed. There are rapid selectors, which can examine a thousand items a second and print out the text of the items selected in accordance with a complex code. It is possible, on paper at least, to build a machine which will proceed from item to item by principles of association, as does the brain, without relying on pyramidal indexing. There is no reason why man should not relegate to the machine all those parts of his thought processes which are repetitive

or subject to precise formulation. There is every reason why he should do so and should turn over to the machine all similar parts of the job of recording and consulting his scientific record. In fact he must do so if he is to handle at all the mass of data he is creating and proceed into the maze of complexity which every branch of science promises to become in the days just ahead. But the developing of such machines is now everyone's business in general and no one's business in particular. It requires a major effort over many years and great facilities and support. The coding of existing material presents a barrier to progress which has thus far dismayed those who might otherwise have plunged in to attack the difficulty broadly. So we nibble about the edges, and the main central bulky problem remains almost wholly untouched. It is not a job for genius, for pulling rabbits out of hats, but for years of effort by diverse groups that have varied techniques at their finger tips. Of course the problem will ultimately be solved if we proceed down the road of mechanization and do not get involved in atomic war; but science will probably go deeper into the morass of extensive, uncorrelated, essentially unavailable product, before it emerges.

It appears that science needs new methods as it approaches problems which reach beyond the simple relations on which much of its present success has been built. These methods will involve new ways of storing and consulting the record, no doubt. But they will involve also new patterns of collaboration where several highly specialized disciplines, beyond true mastery by any one individual, are essential for full insight. Civilization began when an individual could approach a problem bolstered by the inheritance of a written record and sharing experience with his fellows. We can proceed effectively on many of the paths now open only when we learn to interrelate the thought patterns of allied minds with far more intimacy than is now furnished by books, lectures, or seminars. As this occurs the ways in which a scientist will proceed about his business, the ways in which youth will be trained, the position of science in society, will be altered greatly.

Why do we pursue science at all? What are the motivations of scientists? It is well to examine these from time to time, but especially so as we attempt to consider the trends and the ways in which scientists may be called upon to work together in new relationships.

Much of the motivation is clear and immediate.

We need not consider applied science, conducted for commercial or military reasons. Nor do we need to consider basic science pursued because it may later contribute to profitable applications. There are more important categories. One is the research aimed at bettering man's lot, without thought of gain: the attack on disease, or ignorance, or overpopulation. Here the immediate objective is clear, though the underlying motivation is usually unexpressed. But there is a category of research that has no relation to material advantage; it is fundamental science, directed merely at the extension of man's understanding of himself or his environment, or at the extension of his ability to understand.

The motivation behind much of this kind of scientific inquiry is, no doubt, mere curiosity—that strange characteristic of man which, more than anything else, has led to his ascendancy on our planet, and which drives him still toward the mastery of what may now seem the unknowable. Joined to curiosity, and responsible for some of the most amazing flights of genius, is the same aesthetic urge that leads to great art and music. This is peculiarly the case with respect to some of the more abstruse developments in the fields of astronomy, physics, and mathematics. And many scientists derive their strongest motivation, in one way or another, from religion and carry on their mission by faith.

The question of motivation has been examined since science began; every mature scientist has answered it for himself long ago and requires no elucidation of it from me. But there is a reason why it should, from time to time, be considered anew. The number of youth entering on a career in science today is great, and the interest of the public at large in the work of scientists has grown enormously. What do we say to the young man who is immersed in science, with his whole life wrapped up in it? The new things that he must master, if he will advance with his fellows beyond superficiality to creative activity in a specialized field, are so numerous and difficult that he has little time to spend on the philosophical thinking of the past. He is prone to acquire his philosophical orientation accidentally or casually from his scientific teachers, and in doing so he may easily be misled. For I fear that some of the things that are told him in this respect by scientists are erroneous, logically unsound; yet they are likely to be accepted by him just because they appear in scientific dress.

Science has been enormously successful in its representation of reality. Many subjects, once thought to be beyond its purview, have finally yielded to its attack. It normally recognizes, as it proceeds, that there are things it will never know, things that lie permanently beyond the weak sense of man, however extended by instruments. Yet its scope is the whole panorama of the physical universe and all physical aspects of organic life on earth; and these vast areas of knowledge, it is confident, will one day be subjected to its dominion. And out of this confidence, too vaguely defined, there sometimes grows a degree of scientific arrogance. Scientists forget momentarily the limits which science initially set for itself.

Let us consider a presentation that is being made today very forcefully and convincingly. There is nothing fundamentally new about it, for the same presentation appears throughout the history of human thought; but it now acquires a completeness and elaboration which is highly attractive to those who think logically, or believe they do. In substance the presentation goes as follows:

We find ourselves in a mechanistic universe, riding on a fragment from a primeval explosion, projected into nothingness, destined to plunge through space for a while, and then to cool to utter inertness. On this fragment evolution has occurred, an entirely mechanistic evolution from the chance appearance of reproducing molecules, through a myriad of species, sorted out by natural selection, to the appearance of man. Now man, the highest animal, is destined to ride for a while and then perish. There may be millions of other fragments, with organic life on them, sentient beings, conscious of their presence in a role not of their own choosing, riding also to their deaths.

We need not quarrel with this presentation so far. Its formulation is one of the tasks of science. In it science confines itself strictly to the things that can be measured and recorded. It carefully skirts all questions that are not answerable by its methodology.

But from this presentation of the mechanistic universe some recent writers have gone on to formulate a code of ethics as though it followed in logical consequence. This code, in summary, is very simple. Man controls his destiny; let him so control it as to build for himself a better life. That is good which leads in this direction. The code is laudable enough as far as it goes; but it is incomplete and without a logical base in the facts from which it purports to be derived. For it is

based on a tacit assumption that the mechanistic account of the universe that has been constructed within the accepted limitations of science is in fact a complete account, and a proper basis on which to build a complete ethical code. This is to assert that there is no reality beyond those things which we can measure with a rule or time by a clock and that value can be deduced from a statement of fact. But man's motivations emerge from his entire experience. The seat of ethics is in our hearts, not in our minds. Our ignorance is vast. At every turn, as we reach the boundaries beyond which strict definition and logic, measurement and manipulation, cannot be applied, we are confronted with mystery. Our little minds have carved out a region within which science has proved a guide through the murk, leaving blanks and emptiness, but building a consistent conception. In the few thousand years of our existence the logical powers of the mind have accomplished a synthesis in which we can take pride. But to imply that we now grasp the sorry world entire, that we can now draw final conclusions, is to mistake a first step for a journey. We have a useful formulation, within its realm, but have thus far proved little on which to judge our duty or our mission.

Yet there must be motivations for the moment; we cannot wait until our children perhaps lift the edge of the veil a bit, in order to orient our lives today. Thus there is no fault to find with those who go no further than to consider: here we are; let us build a better world—provided this is stated merely as a working formula. Upon such a simple formula, joined with an equally simple definition of what would be a better world, can be erected an acceptable code of ethics. Such a code has been erected by a large portion of those who work in science. It is at times as fine a code as any that has been adhered to by serious men to guide their lives.

Within limits man now controls his destiny. True, the processes of evolution are still effective, and man's control is as yet feeble. True, he can merely deflect a bit the powerful forces of mechanism and chance which rule his life. But his power is growing, and can be consciously enhanced. By this power let us build a world in which men may live happily. Let us conquer disease and banish the causes which distort men's minds. Let us end war and the pressure of population upon the means of existence, which is one of its causes. The construction of an environment in which there is peace and harmony is

worthy of our best efforts. It may enable a little child to be happy and healthy and to avoid the mental distortions which produce distress. In it there will be music and art and a flowering of those attributes of the race which somehow transcend the dull problems of food and shelter. In it man may develop his individuality and rise to true dignity. Let us so build that our children may lead better lives. Our code will be a simple one: that is good which leads toward this consummation.

It is dangerous, however, to regard such a code as logically derived from our scientific attainment. The same logic and the same attainment could equally well support a far different conception of what is good. It does support motivations today which are in stark contrast with those by which we wish to live. Logic alone can lead one toward a code which subordinates all means to their end, means of cruelty and deception to an end of regimentation where the free spirit is at the mercy of a communistic state. The urge to serve one's fellow man is not based on any scientific dogma, and the attempt to give it scientific justification involves a dangerous fallacy. The urge is based upon a deep-seated aspiration of the race, which is its only hope.

The simple creed of service set forth above suffices for the day's work for many a scientist. Yet there is joined with it a deep conviction, a faith if you will, which for many a man furnishes motivation and satisfaction, entirely apart from the current struggle. This is the conviction that it is good for man to know, that striving for understanding is his mission. We are embarked upon a great adventure, and it is our privilege to further it. Even though at times the box that is opened be Pandora's, even though there is both good and evil in what we learn, it is our duty and our calling to extend man's grasp of the universe in which he lives, and of himself. By this process, of beginning to understand, we have made such progress as we have. Though the path be thorny, this is still the way in which we should proceed if we would finally emerge from darkness and strike into the light. For who can tell what we may yet learn? Are we now so wise that we can see the picture whole? A million years is a long time, and it was only yesterday that we embarked upon the great adventure. Who are we to conclude that those things which may be today expressed in ergs or quanta encompass all that we shall ever grasp?

The concrete convictions from experiment have seldom lasted more than a generation or a century. The gap between the now knowable and unknowable is vast, and the borderline may shift in unexpected ways. We may still learn many things, and our immature science is no rock on which to erect a final structure for man's ethical guidance.

Thus, as we build codes, even simple codes for the ordering of the work of the day, we need to supplement and extend, to incorporate the scientific faith that the extension of knowledge is a good in itself. If we build well, our children's children may lead happy lives. That alone, yes, is worthy of our best. They may lead lives of harmony, and mutual respect, and diversity, such as we can only dream of. But they may increase in understanding. They may be wise. Their grasp may include mysteries which now elude us, even some of those which we now believe to be forever beyond our ken. We would build for them. We would build not only so that they may live the good life; not only so that man may develop to the full extent of his organic potentialities; but we would build so that our sons may penetrate the gloom a bit, may increase in wisdom and under-

standing, and perhaps even begin to realize what the great adventure is all about.

Here is a key to a motivation and code that we can in all honesty place before youth. To those young scientists who derive their motivation from their religion we do not need, as scientists, to speak. To those who have lost this anchor, sometimes through the very intensity of their devotion to science, we would offer a motivation that is worthy of their best efforts. When we lean upon the simple faith that it is man's mission to learn to understand, there is no place for a fatalism, for an urge to live in comfort and enjoy, for tomorrow we die. There is no true logic in codes that would submerge and regiment and destroy man's spirit. We wish to so act that those who follow may be healthy men, unharassed, in decent and dignified relationships, free and individual, and to develop the powers of the mind to the utmost. This is our definition of the "better" though not of the ultimate good, and it is not subject to distortion for the enslavement of man's spirit. The definition does not flow from logic but from faith, even from the simple faith which is exemplified by our own devotion to the advance of science. If we build well our children may indeed think more deeply and more surely.

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21 September 1957

MEMORANDUM FOR: Acting Director, Central Intelligence

SUBJECT: Unidentified Flying Object Reported on 20 September 1957

1. As reported by components of the US Air Defense Command, an unidentified flying object (UFO) was tracked by US radars on a relatively straight course from the eastern tip of Long Island to the vicinity of Buffalo. The object was reportedly moving westward at an altitude of 50,000 feet and speed of 2,000 kts. "Jamming" was reported by several radars in this vicinity and westward as far as Chicago. In a subsequent briefing for representatives of the IAC, the US Air Force reported that the original reports had been degraded somewhat by information that: (a) there was an 11 minute break in the track; (b) weather conditions in the area wors of the type which have in the past produced false radar pips and electronic interference; (c) B-47's of SAC were in the area near Chicago on an ECM training flight. The ADC has not completed its investigation of this incident, but in any event it now seems clear that the phenomena reported west of Buffalo were not related to the UFO.

2. We have no intelligence on Soviet activities (e.g., long-range air, submarine, or merchant shipping operations) which can be related specifically to this reported event. We believe it unlikely that a Soviet aircraft could conduct a mission at this speed and altitude and return to base territory. However, we credit the USSR with the capability to have a submarine-launched cruise-type missile of low ^{subsonic} performance and a range of about 500 n.m., but we have no specific evidence of the existence of such a missile.

3. We have examined possible Soviet motives for launching a one-way vehicle on an operation over the US, and consider that there would be little motivation at this time, except possibly a psychological or retaliatory motive, which we believe is marginal. One-way reconnaissance operations are largely ruled out by the likelihood that the results would be of small value, and the risk of compromise would be very great.

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4. We conclude, therefore, that it is highly improbable that a Soviet operation is responsible for the UFO reports of 20 September.

5. Considering the facts that the ADC investigation is incomplete, and that weather phenomena are increasingly likely explanations of the original reports, we recommend that no IAC meeting be called on this subject at this time.

25X1A

HERBERT SCOVILLE, Jr.

Copies to IAC Agencies as follows:

AEC	1
ONI	3
FBI	1
JFC	2
ARMY	3
AIR FORCE	3
STATE	3
CIA	5

NOFORN

TOP SECRET

DECLASSIFIED
Authority NND 023570
By S. MARRAS 12/10/06

SECRET

Approved For Release 2004/07/09 : CIA-RDP91-00965R000400050068-8

16 May 1958

*Dr. Burns
Boland
Tacher*

MEMORANDUM FOR THE RECORD

SUBJECT: Meeting with Air Force Representatives concerning Unidentified Flying Objects

25X1

1. At the request of [redacted] of OSI, I attended an OSI meeting with representatives of the Air Force on the subject of unidentified flying objects. Present at the meeting were [redacted] of OSI, Majors Burns, Boland and Tacher, and Dr. Francis Arcerir of the Air Force.

25X1

2. The Air Force representatives indicated that in view of the continuing public interest in the field of unidentified flying objects (flying saucers), and in view of the feeling of the Permanent Investigating Subcommittee of the Senate Committee on Government Operations that the Air Force should dispel the air of mystery surrounding the flying saucer report of 1953, the Air Force proposes to prepare a press release on this subject. Major Tacher, who is with the Air Force Information Service, indicated that he is being badgered constantly by UFO groups and various individuals concerning the subject of UFOs generally and the 1953 report specifically. Among these individuals is a Dr. Leon Davidson who has recently written to Tacher, again making certain unfounded allegations concerning the 1953 report.

3. Major Tacher circulated to the members of the meeting a draft reply which he proposed to send to Dr. Davidson. With certain changes made, it was agreed by those present that the letter should be sent. A change requested by the OSI people was the deletion of any reference to the Office of Scientific Intelligence or to the fact that CIA had convened the panel which made this report. Other changes were relatively minor.

4. It was further agreed that Major Tacher would prepare a draft of a news release to be made by the Air Force in the near future. The release is to contain the strongest possible language on the subject which would dispel this air of mystery concerning the 1953 report and any sightings or develop-

Approved For Release

5. Several other points important of which was the with a group headed by a M. Kehoe's organization is keeping position which it has taken strongly that Admiral Hiller gives it considerable prestige is aware of the position which UFO report. The CIA report approaching Admiral Hiller is required by CIA until the for coordination.

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- 1 - Sen. Govt. Operations
- 1 - A-DD/S
- 1 - Col. Grogan

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Approved For Release 2004/07/09 : CIA-RDP91-00965R000400050068-8

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Di...

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Distribution:

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- 1 - A-DD/S
- 1 - Col. Grogan

DPD-2170-59

17 August 1959

MEMORANDUM FOR: Director, Photographic Intelligence Center

SUBJECT : [REDACTED] 25X1A

25X1A 1. I have been negligent in writing to you, as has long been my intention, to record my favorable reactions to the work of your Deputy, [REDACTED]

25X1A 2. You are well aware of the fact that I am in almost daily communication with [REDACTED] on a number of questions bearing upon the relationship of your office to the handling and exploitation of materials and information resulting from a very sensitive project. 25X1A

25X1A It has been a source of satisfaction to me to be able to get the information and assistance which I need promptly and which I get through [REDACTED] careful and precise management. His technical competence and familiarity with both the policies and details bearing on these problems is a great asset.

25X1A 3. May I also take this occasion to say that [REDACTED] 25X1A recent mission [REDACTED] may be judged a success by virtue of the development since that time. I commend his performance in that regard. 25X1A

[REDACTED]
JAMES Q. REBER
Chief, Special Requirements Staff
DPD-DD/P

cc: DD/I via Asst to DD/I (P)

C/SRS/DPD-DD/P:JQReber:alw
O&I - Addressee
1 - A/C/DPD-DD/P
2 - C/SRS/DPD-DD/P
✓ - Registry/DPD-DD/P

6

19 July 1967

MEMO FOR: Mr. Duckett

SUBJECT : Reply to Vice President's Letter from [REDACTED] 25X9

1. As we discussed the other day about the possibilities of replying, the following are some of the alternatives for a reply to the Vice President.

a. Recommend that he ignore the letter from [REDACTED] and not reply. 25X9

b. If the Vice President decides he wishes to send a reply that a non-committal one should be prepared and signed by [REDACTED] acknowledging receipt of the letter and indicating it was forwarded to the appropriate Agency.

25X1A

2. The Agency has to consider the five previous letters sent to the Englishman wherein the replies may not have been accurate. Apparently the more recent letters sent to [REDACTED] just refer to the fact that the Agency is no longer concerned with the UFO problem and this is in the province of the Air Force. 25X9

3. The other facet of the problem is the increasing number of newspaper articles generated principally by Dr. McDonald, who is on a lecture series charging the Agency with concealing or withholding the 1953 Panel Report. The question here is: Do we (the Agency) wish to release the report and put out any further fires that may be caused by allegations being thrown about by UFO-niks.

25X1A

[REDACTED]

- 6

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25X1A

[REDACTED]

Memorandum for the D/CI

Subject: Air Force Request to Declassify CIA Material on Unidentified Flying Objects (UFO)

1. The following is a brief review of events pertinent to the subject matter.

2. In 1953 OSI convened a panel of scientists to consider reports on unidentified flying objects and to advise us on the potential threat to national security. This resulted in a report classified "secret."

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3. In 1957 following some publicity on CIA involvement in the UFO

[Redacted]

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8. On 10 August the Air Force representative called to ask about the status of our reply. She stated that Mr. John Lear~~g~~, a newsman, had published an article on UFO's in the Saturday Review. (See attachment E, paragraph 3) This was the first indication during the recent interchanges that the USAF wanted to release the complete CIA report to the public.

9. On 15 August a declassified version of the complete 1953 report was forwarded to the Air Force. (See attachment F)

10. Prior to USAF receipt of the OSI reply, the Air Force called twice on 16 August to determine the status of our response and to ask about the extent of the sanitizing.

11. They called again on 18 August to request return of the USAF copy of the CIA report which had been sent to us for sanitizing. (See attachment G)

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[Redacted]
Executive Officer

OSI/DSD/ACMB: [Redacted] ch/7621 (1 September 66)

FOR CIA INTERNAL USE ONLY

23 AUG 1966

MEMORANDUM FOR RECORD:

SUBJECT: Air Force Request to Declassify CIA UFO Report

REFERENCE: 1. Memo to Ch/DED dated 20 July 1966
2. Memo for Record dated 12 August 1966

1. Mrs. Sara Hunt of the Air Force Office of Information called the undersigned twice on 18 August and once on 18 August.

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2. The first time she asked if our response had gotten out and I told her it had. She requested the phone number of the office responsible for issuing the reply and I gave her [redacted] number.

3. The second time Mrs. Hunt called she wanted to know the extent of the deletions, if any. I told her that, at least, reference to CIA and names of CIA employees were removed, and that I had heard that some additional sanitizing probably was done in the processing of the reply.

4. The ^{third} ~~fourth~~ call was to state that Air Force had received our response, and to ask for the return of their copy of the CIA report which had been forwarded to us with the request for declassification.

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Distribution:

Orig & 1 - ACMB/DSD/OSI
1 - DSD/OSI
1 - EO/OSI

OSI/DSD/ACMB: [redacted] :sjm/7621 (23 Aug 66)

STATINTL

FOR CIA INTERNAL USE ONLY

FOR OFFICIAL USE ONLY

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS FOREIGN TECHNOLOGY DIVISION (AFSC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433



REPLY TO: WDETR
ATTN OFF:

SUBJECT: Declassification of the "Report of the Scientific Panel on Unidentified Flying Objects"

JUL 13 1966

TO: Central Intelligence Agency
Deputy Director for Scientific Intelligence

1. Request that consideration be given to declassify the "Report of the Scientific Panel on Unidentified Flying Objects", dated 17 January 1953.
2. This particular report has been referred to in a number of articles by the news media and by some of the more vocal UFO hobby clubs.
3. Request that consideration be given to declassifying the report to "UNCLASSIFIED" or "FOR OFFICIAL USE ONLY".

FOR THE COMMANDER

Eric J. McInerney
ERIC T. de JONCKHEERE, Colonel, USAF
Deputy for Technology and Subsystems

FOR OFFICIAL USE ONLY

~~CONFIDENTIAL~~

INTERNAL USE ONLY

20 JUL 1966

13

MEMORANDUM FOR: Chief, Defensive Systems Division/OSI

SUBJECT: Air Force Request to Declassify an OSI Paper on UFO's

REFERENCE: CIA/OSI "Report of the Scientific Panel on Unidentified Flying Objects" dated February 1953

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1. Mrs. Sara E. Hunt, of the Office of Information, Office of the Secretary of the Air Force, visited [redacted] on 19 July 1966 to discuss an Air Force request to declassify the referenced report.

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2. Mrs. Hunt indicated that this request was triggered by the 12 May "CBS Reports" program. [redacted] Chairman of the panel, was on the show and reportedly made sufficient references to CIA involvement in UFO analysis to cause a press reaction.

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3. A review of the documents supplied by Mrs. Hunt showed that [redacted] had approved a similar Air Force request in December 1957. This resulted in a sanitized version of the original consultants' report. This report presented most of the conclusions but it did not refer to the original meeting minutes, case histories, or indicate CIA involvement. [redacted] has OSI copies of the reports and correspondence).

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4. Although the Air Force request now in OSI does not request additional declassification, Mrs. Hunt expressed the view that this was intended. Mrs. Hunt said that the Air Force is not trying to declassify all U.S. Government work on UFO's.

5. Inasmuch as my review of the original material showed that significant deletions would be required for further declassification, I suggested that Mrs. Hunt ask the Air Force originator to submit a second request, if they wanted declassification of additional material from the minutes and case histories.

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the case histories of significant sightings discussed in
detail were the following:

Bellefontaine, Ohio (1 August 1952); Tremonton, Utah
(2 July 1952); Great Falls, Montana (15 August 1950);
Yaak, Montana (1 September 1952); Washington, D.C.
area (19 July 1952); and Haneda A.F.B., Japan
(5 August 1952), Port Huron, Michigan (29 July 1952);
and Presque Isle, Maine (10 October 1952).

After review and discussion of these cases (and about
15 others, in less detail), the Panel concluded that
reasonable explanations could be suggested for most sight-
ings and "by deduction and scientific method it could be
induced (given additional data) that other cases might be
explained in a similar manner". The Panel pointed out that
because of the brevity of some sightings (e.g., 2-3 seconds)
and the inability of the witnesses to express themselves
clearly (semantics) that conclusive explanations could not
be expected for every case reported. Furthermore, it was
considered that, normally, it would be a great waste of
effort to try to solve most of the sightings, unless such

Approved For Release 2000/08/25 : CIA-RDP69B00596R000100170006-2

action would benefit a training and educational program (see below). The writings of Charles Fort were referenced to show that "strange things in the sky" had been recorded for hundreds of years. It appeared obvious that there was no single explanation for a majority of the things seen.

On Lack of Danger.

The Panel concluded unanimously that there was no evidence of a direct threat to national security in the objects sighted. Instances of "Foo Fighters" were cited. These were unexplained phenomena sighted by aircraft pilots during World War II in both European and Far East theaters of operation wherein "balls of light" would fly near or with the aircraft and maneuver rapidly. They were believed to be electrostatic (similar to St. Elmo's fire) or electromagnetic phenomena or possibly light reflections from ice crystals in the air, but their exact cause or nature was never defined. If the term "flying saucers" had been popular in 1943-1945, these objects would have been so labeled.

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1944 there was material evidence of the existence of "hardware" obtained from crashed vehicles in Sweden. This evidence gave the investigating team a basis upon which to operate. The absence of any "hardware" resulting from unexplained UFO sightings lends a "will-of-the-wisp" nature to the problem. The results of the investigation, to date, strongly indicate that no evidence of hostile act or danger exists. Furthermore, the current reporting system would have little value in the case of detection of enemy attack by conventional aircraft or guided missiles; under such conditions "hardware" would be available almost at once.

Artifacts of Extraterrestrial Origin.

It was interesting to note that none of the members of the Panel were loath to accept that this earth might be visited by extraterrestrial intelligence beings of some sort, some day. What they did not find was any evidence that related the objects sighted to space travelers. One of the Panel members, in his presentation, showed how he

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studied these films, the case history, ATIC's interpretation, and received a briefing by representatives of the USN Photo Interpretation Laboratory on their analysis of the film. This team had expended (at Air Force request) approximately 1000 man-hours of professional and sub-professional time in the preparation of graph plots of individual frames of the film, showing apparent and relative motion of objects and variation in their light intensity. It was the opinion of the P.I.L. representatives that the objects sighted were not birds, balloons or aircraft, were "not reflections because there was no blinking while passing through 60° of arc" and were, therefore, "self-luminous". Plots of motion and variation in light intensity of the objects were displayed. While the Panel Members were impressed by the evident enthusiasm, industry and extent of effort of the P.I.L. team, they would not accept the conclusions reached. Some of the reasons for this were as follows:

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intensity of the lights indicated extremely high speed in small orbital paths.

g. Apparent lack of guidance of investigators by those familiar with UFO reports and explanations.

h. Analysis of light intensity of objects made from duplicate rather than original film. The original film was noted to have a much lighter background (affecting relative brightness of object) and the objects appeared much less bright.

i. Method of obtaining data of light intensity appeared faulty because of unsuitability of equipment and questionable assumptions in making averages of readings.

j. No data had been obtained on the sensitivity of Kodachrome film to light of various intensities using the same camera type at the same lens openings.

k. Hand "jitter" frequencies (obtainable

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Potential Related Dangers.

The Panel Members were in agreement that although evidence of any direct threat from these sightings was wholly lacking, related dangers might well exist resulting from:

- a. Misidentification of actual enemy artifacts by defense personnel.
- b. Overloading of emergency reporting channels with "false" information ("noiseto signal ratio").
- c. Subjectivity of public to mass hysteria and greater vulnerability to possible enemy psychological warfare.

The first two of these problems may seriously affect the Air Defense intelligence system, and should be studied by experts, possibly under ADC. If UFO's become discredited in a reaction to the "flying saucer" scare, or if

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data related to UFO's. However, it was recognized that such action would tend to allay public concern in the subject until an educational program had taken effect. It was believed that procurement of these cameras was partly the result of public pressure in July 1952. With the poor results of the year-long Project TWINKLE program of 24-hour instrumentation watch (two frames of film showing nothing distinguishable), a widespread program of skywatching would not be expected to yield much direct data of value.

There was considerable discussion of a possible "sky patrol" by amateur astronomers and by wide-angle cameras. It was pointed out that at present a considerable fraction of the sky is now -- and has been for many years -- under surveillance every clear night in several meteor and aurora observing programs as well as sky mapping programs at the various locations listed below. Although the attention of these astronomers is largely directed toward identified rather than unidentified objects, no case of any striking unidentified object is known to the Panel. Such an object

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Panel member believed that one answer to this problem was the use of a "doppler filter" in the receiving circuit. Another suggested that the problem might be better solved by the use of a "controlled jitter" wherein the operator receiving "very fast tracks" (on the order of 1000-2,000 mph) would operate a circuit which would alter slightly his station's pulse frequency rate. If the signal received on the screen had been caused by mutual interference with another station, the track would now show itself at a different distance from the center of the screen, if it still appeared at all. Such a technical solution was thought to be simpler and would cost much less than a "doppler filter".

Unexplained Cosmic Ray Phenomena.

Two reported cases were examined: one at Palomar Mountain, California, in October 1949, when cosmic ray counters went "off scale for a few seconds", apparently while a "V" of flying saucers was observed visually; and two, a series of observations by the "Los Alamos Bird

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strong psychological reaction. This education could be accomplished by mass media such as television, motion pictures, and popular articles. Basis of such education would be actual case histories which had been puzzling at first but later explained. As in the case of conjuring tricks, there is much less stimulation if the "secret" is known. Such a program should tend to reduce the current gullibility of the public and consequently their susceptibility to clever hostile propaganda.

Members of the Panel had various suggestions related to the planning of such an educational program. It was felt strongly that psychologists familiar with mass psychology should advise on the nature and extent of the program. Also, someone familiar with mass communication techniques, perhaps an advertising expert, would be helpful. The teaching techniques used for aircraft identification during the past war were cited as an example of a similar educational task. The amateur astronomers in the U.S. might be a potential source of enthusiastic talent "to

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The help of one or two psychologists and writers and a subcontractor to produce training films would be necessary in addition. The Panel considered that ATIC's efforts, temporarily expanded as necessary, could be most useful in implementing any action taken as a result of its recommendations. Experience and records in ATIC would be of value in both the public educational and service training program envisaged. At least one Panel member was of the opinion that after public gullibility lessened and the service organizations, such as ADC, had been trained to sift out the more readily explained spurious sightings, there would still be a role for a very modest-sized ATIC section to cope with the residuum of items of possible scientific intelligence value. This section should concentrate on energetically following up those cases which seemed to indicate the evidence of unconventional enemy artifacts. Reports of such artifacts would be expected to

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The following cases were discussed (as have been others, including those mentioned) by the lack of sound data in the great majority of the first cases; also, in the lack of speedy follow-up and preliminary investigation and limited facilities of the AFSS section concerning the history of significant sightings discussed in detail in the following:

Walden, Ohio (2 August 1952); Trenton, Utah (2 July 1952); Great Falls, Montana (15 August 1950); York, Montana (2 September 1952); Washington, D. C. area (29 July 1952); and Etna, A.F.S.S., Spain (5 August 1952), Fort Huron, Michigan (29 July 1952); and Boscawen Isle, Maine (20 October 1952).

After review and discussion of these cases (and about 25 others, in this detail), the Panel concluded that reasonable explanations could be suggested for most sightings and "by deduction and scientific method could be included (given additional data) that other cases might be explained in a similar manner". The Panel pointed out that because of the brevity of some sightings (e.g. 2-3 seconds) and the inaccuracy of the witness, expressions themselves clearly (scientific) that conclusive explanations could not be expected for every case reported. Furthermore, it was considered that, normally, it would be a great waste of effort to try to solve most of the sightings, unless such action would be part of a training and educational program (see below). The writings of Charles Fort were referenced to show

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that strange things in the sky had been recorded for hundreds of years. It appeared obvious that there was no single explanation for a majority of the things seen. The presence of radar and astronaut specialists on the Panel proved of value at once in their confident recognition of phenomena related to their fields. It was apparent that specialists in such additional fields as psychology, *etc* aerology, aerodynamics, ornithology and military air operations would augment the ability of the Panel to recognize many more categories of little-known phenomena.

OPINION OF DAUGHTER

The Panel concluded unanimously that there was no evidence of a direct threat to national security in the objects sighted. Instances of "Foo Fighters" were cited. These were unexplained phenomena sighted by aircraft pilots during World War II in both European and Far East theaters of operation wherein "balls of light" would fly near or with the aircraft and maneuver rapidly. They were believed to be electrostatic (similar to St. Elmo's fire) or electromagnetic phenomena or possibly light reflections from ice crystals in the air, but their exact cause or nature was never defined. Both *etc* 25X1A [redacted] had been concerned in the investigation of these phenomena, but David T. Griggs (Professor of Geophysics at the University of California at Los Angeles) is believed to have been the most knowledgeable person on this subject. If the term "flying saucers" had been popular in 1943 - 1945, these objects would

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Security Information

25X1A [redacted] had been no incident. It was interesting that in at least two cases reviewed that the object sighted was categorized by [redacted] and [redacted] as probably "Foo Fighters", to date unexplained but not dangerous; they were not happy thus to dismiss the sightings by calling them names. It was their feeling that these phenomena are not beyond the domain of present knowledge of physical science; however, *etc* 25X1A

AIR FORCE RESPONSE SYSTEM

It was the Panel's opinion that some of the Air Force concern over U.F.O.'s (notwithstanding Air Defense Command anxiety over that matter weeks) was probably caused by public pressure. The result today is that the Air Force has instituted a fine channel for receiving reports of nearly anything anyone sees in the sky and fails to understand. This has been particularly encouraged in popular articles on this and other subjects, such as space travel and science fiction. The result is the mass receipt of low-grade reports which tend to overload channels of communication with material quite irrelevant to hostile objects that might some day appear. The Panel agreed generally that this mass of poor-quality reports containing little, if any, scientific data was of no value. Quite the opposite, it was possibly dangerous in having a military service foster public concern in "nocturnal ascending lights". The implication being, since the interested agency was military, that these objects were or might be potential direct threats to national security. Accordingly, the need for decampanization made itself apparent. Comments on a possible educational program are enumerated below.

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It was the opinion of [redacted] that the "cancer" problem has been shown to be different in nature from the detection and identification of German V-1 and V-2 guided missiles prior to their conventional use in World War II. In this 1943-1944 intelligence operation (MISSION), there was excellent intelligence and by June 1944 there was material evidence of the existence of "hardware" obtained from crashed vehicles in Sweden. This evidence gave the investigating team a basis upon which to operate. The absence of any "hardcopy" resulting from unexplained U.F.O. sightings leads a "will-which-wisp" nature to the AFIC problem. The results of their investigation, to date, strongly indicate that no evidence of hostile act or danger exists. Furthermore, the current reporting system would have little value in the case of detection of enemy attack by conventional aircraft or guided missiles; under such conditions "hardware" would be available almost at once.

ASSESSMENT OF EXTRATERRESTRIAL ORIGIN

It was interesting to note that none of the members of the Panel were loath to accept that this earth might be visited by extraterrestrial intelligent beings of some sort, some day. What they did not find was any evidence that related the objects sighted to space travelers. [redacted] In his presentation, showed how he had eliminated each of the known and probable causes of sightings leaving him "extraterrestrial" as the only one remaining in many cases. [redacted] background as an aeronautical engineer and technical intelligence

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[redacted] (Project Officer, BUREAU for 15 months) could not be sighted. However, the Panel could not accept any of the cases offered by him because they were raw, unevaluated reports. Extraterrestrial explanations of the sightings were suggested in some cases and in others the time of sighting was so short as to cause suspicion of visual impressions. It was noted by [redacted] that extraterrestrial artifacts, if they did exist, are not cause for alarm; rather, they are in the realm of natural phenomena subject to scientific study, just as cosmic rays were at the time of their discovery 20 to 30 years ago. This was an attitude in which [redacted] did not concur, as he felt that such artifacts would be of immediate and great concern not only to the U. S. but to all countries. (Nothing like a common threat to unite peoples!) [redacted] Page noted that present astronomical knowledge of the solar system makes the existence of intelligent beings (as we know them) elsewhere than on the earth extremely unlikely, and the concentration of their attention by any controllable means confined to any one continent of the earth quite preposterous.

RECENT PANEL SIGHTING

This case was considered significant because of the excellent documentary evidence in the form of Kodachrome motion picture films (about 1600 frames). The Panel studied these films, the case history, AFIC's interpretation, and received a briefing by representatives of the AFIC Photo Interpretation Laboratory on their analysis of the film. This team had expended (at Air Force request) approximately

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5000 man-hours of professional and sub-professional time in the preparation of graph plots of individual frames of the film, showing apparent and relative motion of objects and variation in their light intensity. It was the opinion of the P.I.L. representatives that the objects sighted were not birds, balloons or aircraft, were "not reflections because there was no blinking while passing through 60° of arc" and were, therefore, "continuous". Plots of motion and variation in light intensity of the objects were displayed. While the Panel Members were impressed by the evident thoroughness, industry and extent of effort of the P.I.L. team, they could not accept the conclusions reached. Some of the reasons for this were as follows:

- a. A semi-circular object can readily produce a reflection of sunlight without "blinking" through 60° of arc travel.
- b. Although no data was available on the "albedo" of birds or polyethylene balloons in bright sunlight, the apparent motions, sizes and brightnesses of the objects were considered strongly to suggest birds, particularly after the Panel viewed a short film showing high reflectivity of seagulls in bright sunlight.
- c. P.I.L. description of the objects sighted as "circular, bluish-white" in color would be expected in cases of specular reflections of sunlight from convex surfaces where the brilliance of the reflection would obscure other portions of the object.

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1. Objects in the Great Falls case were believed to have probably been aircraft, and the bright lights such reflections.
2. There was no valid reason for the attempt to relate the objects in the Transcon sighting to those in the Great Falls sighting. This may have been due to misunderstanding in their objective. The objects in the Great Falls sighting are strongly suspected of being reflections of aircraft known to have been in the area.
3. The intensity change in the Transcon lights was too great for acceptance of the P.I.L. hypothesis that the apparent motion and changing intensity of the lights indicated extremely high speed in small orbital paths.
4. Apparent lack of guidance of investigators by those familiar with U.F.O. reports and explanations.
 - a. Analysis of light intensity of objects made from duplicate rather than original film. The original film was noted to have a much lighter background (affecting relative brightness of object) and the objects appeared much less bright.
 - b. Method of obtaining data of light intensity appeared faulty because of unreliability of equipment and questionable assumptions in making averages of readings.
 - c. No data had been obtained on the sensitivity of Kodakrome film to light of various intensities using the same camera type at the same lens openings.

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10. Term "jitter" frequencies (obtainable from early part of
Ammanon film) were not removed from the plots of the
"single pass plots" at the end of the film.

The Panel believed strongly that the data available on this
sighting was sufficient for positive identification if further data
is obtained by photographing polyethylene "pillow" balloons released
near the site under similar weather conditions, checking bird flight
and reflection characteristics with competent ornithologists and
conducting experiment "CP" devices acting upon objects from their apparatus
in the. It was concluded that the results of such tests would prob-
ably lead to creditable explanations of value in an educational or
training program. However, the Panel noted that the cost in technical
manpower effort required to follow up and explain every one of the
thousand or more reports received through channels each year (1,200 in
1952) would not be justified. It was felt that there will always be
sightings, for which complete data is lacking, that can only be
explained with disproportionate effort and with a long time delay. It
is felt that the long delay in explaining a sighting tends to eliminate
its intelligence value. A "training" program should
have as a major purpose the elimination of popular feeling that every
sighting, no matter how poor the data, must be explained in detail.
Attention should be directed to the requirement every scientist that
his explanation, to be accepted, must be completely and convincingly
documented. In other words, the burden of proof is on the scientist,
not the sighting.

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GENERAL CONCLUSIONS

- The Panel members were in agreement with O/SI opinion that, although evidence of any direct threat from these sightings was
highly lacking, related dangers might well exist resulting from
1. Misidentification of actual enemy artifacts by defense personnel.
 2. Crowding of enemy reporting channels with "false" information ("noise to signal ratio" analogy - Barker).
 3. Subjectivity of pilots to mass hysteria and greater vulnerability to possible enemy psychological warfare.

Although not the concern of OII, the first two of these problems
may seriously affect the AIR National Intelligence system, and should
be studied by experts, possibly under IES. If U.S.O.'s become dis-
credited in a reaction to the "flying saucer" scare, or if report-
ing channels are saturated with false and poorly documented reports,
our capability of detecting hostile activity will be reduced.
The Panel noted that more competent screening or filtering of reported
sightings at or near the source is required, and that this can best
be accomplished by an educational program.

GENERAL LOCATIONS OF UNEXPLAINED SIGHTINGS

The map prepared by ATIC showing geographic locations of officially
reported unexplained sightings (1952 only) was examined by the Panel.
This map showed clusters in certain strategic areas such as Los Alamos.
This might be explained on the basis of 24-hour watchful guard and

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the kinds of security measures near such locations. On the other hand, there had been no sightings in the vicinity of sensitive related AE establishments while there were occasionally multiple cases of unexplained sightings in non-strategic areas. Furthermore, there appeared to be no logical relationship to population centers. The Panel could find no ready explanation for these clusters. It was noted, however, that if terrestrial artifacts were to be observed it would be likely that they would be seen first near foreign areas rather than central U. S.

RECOMMENDATIONS TO OFFICIALS

The Panel was of the opinion that the present ATU program to place 100 inexpensive 35 mm. stereo cameras in the hands of various airport control tower operators would probably produce little valuable data related to U.F.O.'s. However, it was recognized that such action would tend to allay public concern in the subject until an educational program had taken effect. It was believed that procurement of these cameras was partly the result of public pressure in July 1952. With the poor results of the year-long Project WHITMAN program of 24-hour instrumentation watch (two frames of film showing nothing distinguishable), a widespread program of sky-watching would not be expected to yield much direct data of value.

There was considerable discussion of a possible "sky patrol" by amateur astronomers [redacted] and by wide-angle cameras [redacted] and [redacted] pointed out that at present a considerable fraction

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of the sky as observed has been for many years--active surveillance of the night in several cities and direct observing programs as well as sky-watching programs at the various locations listed below. Much of the attention of these astronomers is largely directed toward identified rather than unidentified objects, no case of any unidentified object is known to [redacted] Such sightings would certainly be reported if found on patrol plates. [redacted] was cited where an astronomer refused to interrupt his schedule in order to photograph an alleged sighting in a different part of the city. This led [redacted] to say that, if a program of sky-watching could be an adjunct of planned astronomical programs, little [redacted] would be involved and that the trained astronomical personnel might photograph a sighting of an unidentified object.

The location of some of these programs and their directors are believed to be:

- a. Harvard University, Cambridge and New Mexico (meteor patrol)--Wiggles.
- b. Yerkes Observatory, University of Chicago and Fort Davis, Texas (several programs)--Heinel (comets), Kuiper (asteroids), Morgan (wide angle camera).
- c. University of Alaska, Fairbanks (aurorae)--Elvey
- d. Dominion Observatory, Ottawa (meteors)--Hillman
- e. Palomar Observatory, California (sky map)--Hinkowphi
- f. Lick Observatory, California (sky map)--Stans

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It was agreed by the Panel that no government-sponsored program of optical wide-area sky patrol is workable at the present time, and that the encouragement of amateur astronomers to undertake such a program might have the adverse effect of over-emphasizing "flying saucer" stories in the public mind. However, the issue of radar "scops" centers for recording peculiar radar echoes would serve several purposes, including the better understanding of radar interference as well as identification of U.F.O.'s.

THE PROBLEM OF MUTUAL INTERFERENCE

This characteristic problem of radar operation wherein the pulse signal (of approximately the same frequency) from station A may be picked up on the screen of station B and show as a high-speed track as source of data was recognized to have probably caused a number of U.F.O. reports. This problem was underlined by information received reflecting ADC concern in solving this problem of signal identification in their service use of very high-speed aircraft or guided missiles

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(1955-1956). [redacted] believed that one answer to this problem was the use of a "Doppler filter" in the receiving circuit. [redacted] suggested that the problem might be better solved by the use of a "controlled jitter" wherein the operator receiving "very fast tracks" (in the order of 1000-20,000 mph.) would operate a circuit which would alter slightly his station's pulse frequency rate. If the signal received on the screen had been caused by mutual interference with another station, the track would now show itself at a different distance

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from the center of the screen, as it still appeared at all. [redacted] felt that a technical solution was simple and would cost much less than a "Doppler filter".

RECORDS OF THE PALOMAR OBSERVATORY

The reported cases were examined: one at Palomar Mountain, California, in October 1949, when cosmic ray counters went "off scale for a few seconds", apparently while a "V" of flying saucers was observed visually; and two, a series of observations by the "Los Alamos Bird Watchers Association" from August 1950 to January 1951, when cosmic ray coincidence counters behaved queerly. Circuit diagrams and records were available for the latter, and [redacted] was able quickly to point out that the recorded data were undoubtedly due to instrumental effects that would have been recognized as such by more experienced observers.

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The implication that radioactive effects were correlated with unidentified flying objects in these two cases was, therefore, rejected by the Panel.

EDUCATIONAL PROGRAM

The Panel's concept of a broad educational program integrating efforts of all concerned agencies was that it should have two major aims: training and "deprogramming".

The training aim would result in proper recognition of unusually identified objects (e.g., balloons, aircraft reflections) as well as natural phenomena (meteors, fireballs, mirages, noctilucent clouds). Both visual and radar recognition are concerned. There would be many

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levels in such education from enlisted personnel to command and research personnel. Relative emphasis and degree of explanation of different programs would correspond to the categories of duty (e.g., radar operators; pilot; control tower operators; Ground Observer Corps personnel; and officers and enlisted men in other categories.) This training should result in a marked reduction in reports caused by misidentification and resultant confusion.

The "downing" case would result in reduction in public interest in "flying saucers" which today evokes a strong psychological reaction. This education could be accomplished by mass media such as television, motion pictures, and popular articles. Each of such education would be actual case histories which had been puzzling at first but later explained. As in the case of conjuring tricks, there is much less stimulation if the "secret" is known. Such a program should tend to reduce the current gullibility of the public and consequently their susceptibility to clever hostile propaganda. The Panel noted that the general absence of Russian propaganda based on a subject with so many obvious possibilities for exploitation might indicate a possible Russian official policy.

Members of the Panel had various suggestions related to the planning of such an educational program. It was felt strongly that psychologists familiar with mass psychology should advise on the nature and extent of the program. In this connection, Dr. Hadley Cantril (Princeton University) was suggested. Cantril authored "Invasion from

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Russia" (a study in the psychology of panic, written about the famous Oriskany battle incident in 1920) and has since performed advanced laboratory studies in the field of perception. The names of Don Margolis (University of Michigan) and Leo Rosten were mentioned as possibly suitable as consultant psychologists. Also, someone familiar with mass communication techniques, perhaps an advertising expert, would be helpful. Arthur Godfrey was mentioned as possibly a valuable channel of communication reaching a mass audience of certain levels. [redacted] suggested the U. S. Navy (ONR) Special Devices Center, Sand Point, L. I., as a potentially valuable organization to assist in such an educational program. The teaching techniques used by this agency for aircraft identification during the past war [redacted] cited as an example of a similar educational task. [The Jam Handy Co. which made World War II training films (motion picture and slide strips) was also suggested, as well as Walt Disney, Inc. animated cartoons. [redacted] suggested that the amateur astronomers in the U. S. might be a potential source of enthusiastic talent "to spread the gospel". It was believed that business clubs, high schools, colleges, and television stations would all be pleased to cooperate in the showing of documentary type motion pictures if prepared in an interesting manner. The use of true cases showing first the "mystery" and then the "explanation" would be forceful.

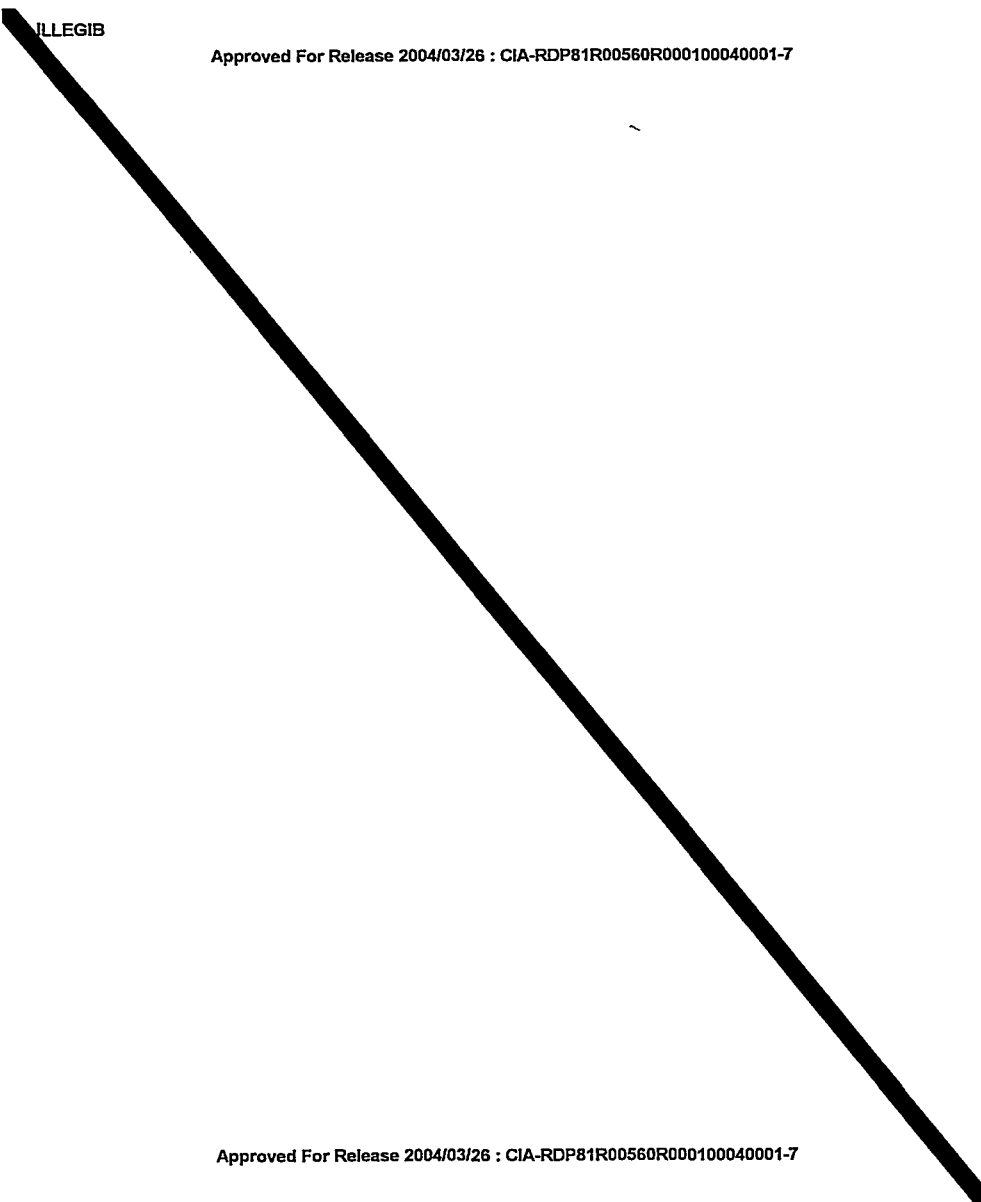
To plan and execute such a program, the Panel believed was no small task. The current investigatory group at ATIC would, of necessity, have to be closely integrated for support with respect to not only the

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... of "yellow balloons" at different distances
... weather conditions at the site.

The work of one of the psychologists and uniters and a subcommittee
... would be necessary in addition. The Panel
... expanded as necessary,
... in implementing any action taken as a result of
... . Experience and records in ATEB would be of value
... both the public educational and service training program envisaged.

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[redacted] at least ^{in a number of} was of the opinion that after public gullibility ^{had}
... and the service organizations, such as ATEB, had been trained
... to pick out the more readily explained spurious sightings, there would
... be a role for a very modest-sized ATEB section to cope with the
... of items of possible scientific intelligence value. This
... should concentrate on energetically following up (perhaps on
... of qualified Air Force Scientific Advisory Board members) ⁱⁿ
... which seemed to indicate the evidence of unconventional
... artifacts. Reports of such artifacts would be expected to
... mainly from Western outposts in far closer proximity to the
... than Inhof, Texas.

EXTRACURRICULAR INVESTIGATIVE GROUPS

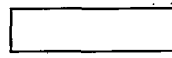
The Panel took cognizance of the existence of such groups as the
"Whittian Flying Saucer Investigators" (Los Angeles) and the "Aerial
... Research Organization (Wisconsin)". It was believed that
... should be watched because of their potentially

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STATINTL



SCIENTIFIC ADVISORY BOARD ON
TECHNICAL INTELLIGENCE
1950-1954

NAME	POSITION	EXPERIENCE
Dr. [Name]	Chief, [Department]	Physics, weapons systems
Dr. [Name]	[Position]	Physics, nuclear
Dr. [Name]	[Position]	Mathematics
Dr. [Name]	[Position]	Atomic structure, mathematical problems
Dr. [Name]	[Position]	Astronomy, Astrophysics
Dr. [Name]	[Position]	Astronomy
Dr. [Name]	[Position]	Rockets, guided missiles
Dr. [Name]	[Position]	Scientific and technical intelligence
Dr. [Name]	[Position]	Scientific and technical intelligence
Dr. [Name]	[Position]	Scientific and technical intelligence

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Acting Chief, P&E Division, SI
THROUGH: Chief, WP Branch, P&E Division, SI
GP Branch

27 January 1953

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Meetings of OSI Advisory Group on Unidentified Flying Objects,
14-17 January 1953

1. At your request I represented P&E Division at the subject meetings. I was present at nearly all meetings of the group with the exception of the afternoon of Friday, the 16th and the session on Saturday, the 17th. During the latter two sessions the Advisory Group went into executive session for the preparation of their report to AD/SI.

2. The following OSI Consultants formed the Advisory Group:

25X1A [redacted] Chairman

[redacted] (missed morning session on 16th)
(present only on afternoon of 16th and 17th)
Dr. J. A. Hynak (an ATIC consultant - he sat in all the sessions after the first day, but did not sign the report to AD/SI as an official group member)

3. The following OSI staff members attended:

25X1A Dr. H. H. Chadwell (most of the first day only)
(first day only)
[redacted] (although now an OSI consultant, he functioned as a staff member for the conference and attended all sessions including the executive sessions)

25X1A [redacted] Weapons Division

25X1A [redacted] P&E Division

4. The following persons were invited to present certain background information to the Advisory Group:

Captain Edward Ruppelt, ATIC who presented information on the work of Proj. Bluebook (and its predecessors "Grudge", "Saucer", and "Sign") and discussed in detail many of their specific investigations.

Major Journey, AFUIN (by now on inactive status and with The Ethyl Corps.) who presented findings independent of ATIC. Representatives of the Navy Photographic Labs who presented their analysis of films of a "Sighting."

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5. The first business on the agenda was a welcome by and a charge (Att. #1) to the Group by Dr. Chadwell. This was followed by a statement of the CIA interest by [redacted] CIA had been requested by IAC to look into the "flying saucer problem" because of three related national security problems: (a) possible exploitation to produce mass hysteria, (b) the confusions and dangers inherent in observations of "flying saucers" by the U.S. radar and observer systems, (c) the danger of "flying saucer reports" overloading the emergency communication facilities of the Department of Defense.

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6. Because of the quality of the consultants and the excellence of their introduction to the subject by Dr. Chadwell and [redacted] the Advisory Group never lost sight of its goals in spite of the fact that the discussion took many excursions.

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7. The Advisory Group submitted its report to AD/SI on 17 January 1953. Their principal finding was that at the present time the unidentified flying objects pose no threat to the security of the United States. They recommended the establishment of program of education regarding the sightings particularly as concerns the U.S. radar and observer system, and for the general public as well.

8. Most of the OSI files on this subject are being retained in the office of the AD/SI. Weapons Division has a considerable file which according to [redacted], they would like to dispose of because of the findings of the Advisory Group that "flying saucers" pose no present threat to the United States security. [redacted] feels that the material in the Weapons Division file should be maintained in one of the substantive Divisions of OSI and has suggested that P&E Division take them over and maintain them. [redacted] of Weapons Division currently has the material and estimates that several hours per week will be required to keep it current. He indicates that he is suggesting to [redacted], Chief of Weapons Division, that P&E Division get the files. I would like to suggest that the Acting Chief, P&E Division discuss this with [redacted] I personally don't see why P&E Division has any greater interest in this material than Weapons Division.

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9. If OP Branch, P&E Division is given the responsibility for the files mentioned in paragraph 8, above, one (1) additional safe will be required.

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cc: Orig. & / - Div. Off.
1 - DDF
1 - GFF

APPEN. A

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SECURITY INFORMATION

CHARGE TO O/BI ADVISORY GROUP ON UNIDENTIFIED FLYING OBJECTS

1. To review available evidence on unidentified flying objects and to consider possible dangers to national security related thereto.
2. To advise concerning the amount and kind of data necessary for a scientific evaluation of these phenomena.
3. In particular to comment on:
 - a. Validity of current CIA evaluation of related dangers.
 - b. Methodology and scope of current and planned ATTC investigation.
 - c. Advisability of further meetings of this group or further review of the subject by a larger panel.

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S E C R E T
SECURITY INFORMATION

CHARGE TO O/SI ADVISORY GROUP ON UNIDENTIFIED FLYING OBJECTS

1. To review available evidence on unidentified flying objects and to consider possible dangers to national security related thereto.
2. To advise concerning the amount and kind of data necessary for a scientific evaluation of these phenomena.
3. In particular to comment on:
 - a. Validity of current CIA evaluation of related dangers.
 - b. Methodology and scope of current and planned AFIC investigation.
 - c. Advisability of further meetings of this group or further review of the subject by a larger panel.

S E C R E T

**REPORT OF THE SCIENTIFIC PANEL
ON
UNIDENTIFIED FLYING OBJECTS**

Released in MORI

17 January 1953

1. The undersigned Panel of Scientific Consultants has met at the request of the Government to evaluate any possible threat to national security posed by Unidentified Flying Objects ("Flying Saucers"), and to make recommendation. The Panel has received the evidence as presented by cognizant Governmental agencies, primarily the United States Air Force, and has reviewed a selection of the best documented incidents.

2. As a result of its considerations, the Panel concludes:

That the evidence presented on Unidentified Flying Objects shows no indication that these phenomena constitute a direct physical threat to national security.

We firmly believe that there is no residuum of cases which indicates phenomena which are attributable to foreign artifacts capable of hostile acts, and that there is no evidence that the phenomena indicate a need for the revision of current scientific concepts.

3. In the light of this conclusion, the Panel recommends:

That the national security agencies take immediate steps to strip the Unidentified Flying Objects of the special status they have been given and the aura of mystery they have unfortunately acquired.

Released in MORI

We suggest that this aim may be achieved by an integrated program designed to reassure the public of the total lack of evidence of inimical forces behind the phenomena.

/s/ Lloyd V. Berkner
Associated Universities, Inc.

/s/ H. P. Robertson, Chairman
California Institute of Technology

/s/ S. A. Goudmit
Brookhaven National Laboratories

/s/ Luis W. Alvarez
University of California

/s/ Thornton Page
John Hopkins University

Memorandum for file OSI-W/A

21 January 1953

Meeting of OSI Advisory Group on UFO
January 14 thru 17, 1953

At 0945 on January 14, 1953, an ad hoc panel of scientific consultants was convened to review the "Unidentified Flying Objects" problem. A detailed statement of the problem presented to the group by CIA is attached as Appendix A. The panel consisted of the following:

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Dr. J.A. Hynek, consultant to ATIC.

The following members of the staff of OSI were present for various parts of the discussions.

Dr. H.M. Chadwell

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To assist the scientific panel in its review and analysis of evidence, Capt. E. J. Ruppelt of ATIC, Lt. Neasham and Mr. H. Woo of the Navy photo interpretation lab at Anacostia, and Major Fournet and Capt. Smith of Air Force Directorate of Intelligence were present.

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A final report on the results of the meeting is being prepared for the AD/SI by [redacted] but it is believed that the following is a fair statement of the conclusions reached:

1. No evidence is available to indicate any physical threat to the security of the United States.
2. No evidence is available to indicate the existence or use of any as yet unknown (to us) fundamental scientific principles.
3. The subject "UFO" is not of direct intelligence interest. It is of indirect intelligence interest only insofar as any knowledge about the innumerable unsolved mysteries of the universe are of intelligence interest.
4. The subject "UFO" is of operational interest for three reasons:
 - (a) Interference with air defense by intentional enemy jamming or by lack of ability on the part of operating personnel to discriminate between radar anomalies and actual airborne weapons
 - (b) Related to (a), interference with air defense by overloading communication lines from the air defense observation stations.
 - (c) Possibility of a psychological offensive by the enemy timed with respect to an actual attack could conceivably seriously

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reduce the defense effort of the general public.

It is noted that these general conclusions as stated here do not specifically answer the needs presented in Appendix A. However, it is anticipated that comment on these points will be presented in a written statement from the scientific panel to AD/SL.

DBS:gl (typed 12 February 1953)

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TAB A

SCIENTIFIC ADVISORY PANEL ON

UNIDENTIFIED FLYING OBJECTS

Released in MORI

14 - 17 January 1953

<u>MEMBERS</u>	<u>ORGANIZATION</u>	<u>FIELD OF COMPETENCY</u>
Dr. H. P. Robertson (Chairman)	California Institute of Technology	Physics, weapons systems
Dr. Luis W. Alvarez	University of California	Physics, radar
Dr. Lloyd V. Berkner	Associated Universities, Inc.	Geophysics
Dr. Samuel Goudsmit	Brookhaven National Laboratories	Atomic structure, statistical problems
Dr. Thornton Page	Office of Research Operations, Johns Hopkins University	Astronomy, Astrophysics
<u>ASSOCIATE MEMBERS</u>		
Dr. J. Allan Hynek	Ohio State University	Astronomy
Mr. Frederick C. Durant	Arthur D. Little, Inc.	Rockets, guided missiles
<u>INTERVIEWEES</u>		
Brig. Gen. William M. Garland	Commanding General, ATTC	Scientific and technical intelligence
Dr. H. Marshall Chadwell	Assistant Director, O/SI, CIA	Scientific and technical intelligence
Mr. Ralph L. Clark	Deputy Assistant Director, O/SI, CIA	Scientific and technical intelligence

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<u>INTERVIEWEE (cont)</u>	<u>ORGANIZATION</u>	<u>FIELD OF COMPETENCY</u>
Mr. Philip G. Strong	Chief, Operations Staff, O/SI, CIA	Scientific and technical intelligence
Mr. Stephen T. Fensony	Acting Chief, Special Study Group, D/I USAF	Scientific and technical intelligence
Capt. Edward J. Ruppelt, USAF	Chief, Aerial Phenomena Branch, ATIC, USAF	Scientific and technical intelligence
Mr. J. Dewey Fournet, Jr.	The Ethyl Corporation	Aero Eng.
Lt. R. S. Kousham, USN	USN Photo Interpretation Laboratory, Anacostia	Photo interpretation
Mr. Harry Wao.	USN Photo Interpretation Laboratory, Anacostia	Photo interpretation

Released in MORI

SCIENTIFIC ADVISORY PANEL ON
UNIDENTIFIED FLYING OBJECTS

Released in MORI 14 - 17 January 1953

EVIDENCE PRESENTED

1. Seventy-five case histories of sightings 1951 - 1952 (selected by ATIC as those best documented).
2. ATIC Status and Progress Reports of Project GRUDGE and Project BLUE BOOK (code names for ATIC study of subject).
3. Progress Reports of Project STORK (code name for Battelle Memorial Institute contract work supporting ATIC).
4. Summary Report of Sightings at Holloman Air Force Base, New Mexico.
5. Report of USAF Research Center, Cambridge, Mass., Investigation of "Green Fireball" Phenomena (Project TWINKLE).
6. Outline of Investigation of U.F.O.'s Proposed by Kirtland Air Force Base (Project POUNCE).
7. Motion Picture Films of sightings at Tremonton, Utah, 2 July 1952 and Great Falls, Montana, August 1950.
8. Summary Report of 89 selected cases of sightings of various categories (Formations, Blinking Lights, Hovering, etc.).
9. Draft of manual: "How to Make a FLYERPT", prepared at ATIC.
10. Chart Showing Plot of Geographic Location of Unexplained Sightings in the United States during 1952.
11. Chart Showing Balloon Launching Sites in the United States.
12. Charts Showing Selected Actual Balloon Flight Paths and Relation to Reported Sightings.
13. Charts Showing Frequency of Reports of Sightings, 1948 - 1952.
14. Charts Showing Categories of Explanations of Sightings.
15. Kodachrome Transparencies of Polyethylene Film Balloons in Bright Sunlight Showing High Reflectivity.

16. Motion picture of seagulls in bright sunlight showing high reflectivity.
17. Intelligence Reports Relating to U.S.S.R. Interest in U. S. Sightings.
18. Samples of Official USAF Reporting Forms and Copies of Pertinent Air Force, Army and Navy Orders Relating to Subject.
19. Sample Polyethylene "Pillow" Balloon (54 inches square).
20. "Variations in Radar Coverage", JAMP 101 (Mammal illustrating unusual operating characteristics of Service radar).
21. Miscellaneous official letters and foreign intelligence reports dealing with subject.
22. Copies of popular published works dealing with subject (articles in periodicals, newspaper clippings and books).

Released in MORI

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Security Information

REPORT OF THE SCIENTIFIC PANEL JAN 17 1953
ON
UNIDENTIFIED FLYING OBJECTS

Released in MORI

1. Pursuant to the request of the Assistant Director for Scientific Intelligence, the undersigned Panel of Scientific Consultants has met to evaluate any possible threat to national security posed by Unidentified Flying Objects ("Flying Saucers"), and to make recommendations thereon. The Panel has received the evidence as presented by cognizant intelligence agencies, primarily the Air Technical Intelligence Center, and has reviewed a selection of the best documented incidents.

2. As a result of its considerations, the Panel concludes:

- a. That the evidence presented on Unidentified Flying Objects shows no indication that these phenomena constitute a direct physical threat to national security.

We firmly believe that there is no residuum of cases which indicates phenomena which are attributable to foreign artifacts capable of hostile acts, and that there is no evidence that the phenomena indicate a need for the revision of current scientific concepts.

3. The Panel further concluded:

- a. That the continued emphasis on the reporting of these phenomena does, in these perilous times, result in a threat to the orderly functioning of the protective organs of the body politic.

We cite as examples the clogging of channels of communication by irrelevant reports, the danger of being led by continued false alarms to ignore real

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Security Information
IAC-2-
Date

INTELLIGENCE ADVISORY COMMITTEE

UNIDENTIFIED FLIGHT OBJECTS

1. Transmitted herewith for your information and appropriate action is a copy of the report of the scientific panel convened as a result of the action taken by the Intelligence Advisory Committee on 4 December (IAC-4-90, paragraph 3 a) on this subject. Attached to the report are a list of personnel participating and a summary of evidence presented.

2. It is proposed to transmit copies of this report to the Secretary of Defense; the Director, Federal Civil Defense Administration; and the Chairman, National Security Resources Board for their information and such action as they may feel necessary.

3. The results of the panel's studies have moved CIA to conclude that no National Security Council Intelligence Directive on this subject is warranted.

4. Please inform the undersigned by _____ if you do not concur in the action and conclusions contained in paragraphs 2 and 3, above.

25X1A

Acting Secretary

Attachments:

1. Panel report
2. List of personnel
3. Summary of evidence presented

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Security Information

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POSSIBLE EXPLANATIONS

A. Hysteria, hallucinations, hoaxes, etc. (Psychological)

B. Misidentifications of conventional objects:

- X₁ 1. Aircraft, missiles, searchlight reflections, etc. (man-made, controlled)
- X₂ 2. Balloons, kites, etc. (man-made, uncontrolled)
- X₃ 3. Birds, bugs, etc. (animal)
- > 4. Dust, seeds (e.g. dandelion), paper, etc. (foreign matter)

C. Natural Phenomena:

- X₁ 1. Light aberrations, reflections, refractions, etc.
- X₂ 2. Anomalous radar propagation.
- X₃ 3. Ionization, static electricity, ball lightning, etc.
- X₄ 4. Planets, meteors and other astronomical bodies.
- 5. Others.

D. Unconventional man-made devices:

- X₁ 1. US
- X₂ 2. USSR and other foreign

E. Extraterrestrial origin

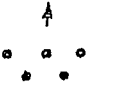
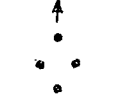

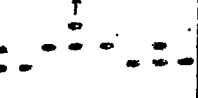
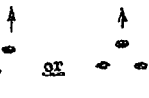


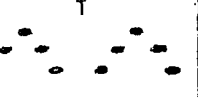
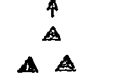
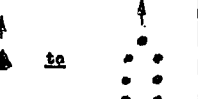

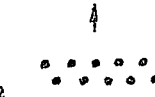

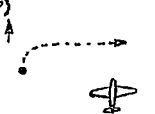
- 1. Animal
- 2. Machine.

*Basis of Maj. Jennings' presentation
to OSI Adv. Sp 14-17 Jan 53
(given on 16 Jan)*

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SECURITY INFORMATION

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FORMATIONS

<p>(1) ↑  (3 in rear darted around in circular or sig-sag manner)</p>	<p>(2) ↑  (All objects had a swerving motion from side to side)</p>	<p>(3) ↑ </p>	<p>(4) ↑ </p>
<p>(5) ↑ ↑  or</p>	<p>(6) ↑ </p>	<p>(7) ↑ ↑  to (Presumed)</p>	<p>(8) ↑  (Presumed)</p>
<p>(9) 2 in general trail formation (trailing object varied position)</p>	<p>(10) 4 objects (exact formation not specified)</p>	<p>(11) ↑  (perfect formation)</p>	<p>(12) ↑ to ↑  (Presumed)</p>
<p>(13) Cluster to ↑ to ↑  (Presumed)</p>	<p>(14) ↑ </p>	<p>(15) ↑ </p>	
<p>(16) 2 objects, one above other 5° apart</p>	<p>(17) ↑ </p>		

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SECRET HANDLE VIA CODEWORD CHECKED

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3. REQUESTER (LAST, FIRST NAME)			
4. AGENCY/OFFICE/DIVISION CIA/OSI/LSD		5. REQUESTER'S DATE MAY 1 1975	
7. PHONE 4035		8. INTERMEDIARY (IF APPLICABLE)	
9. DATE NEEDED 25X1A		10. CLASSIFICATION (HIGHEST CLASSIFICATION TO BE INCLUDED; CHECK ONE) <input type="checkbox"/> TS <input checked="" type="checkbox"/> SECRET <input type="checkbox"/> CONFIDENTIAL <input type="checkbox"/> UNCLASSIFIED	
11. CONTROL (CHECK ONE) <input type="checkbox"/> CW <input type="checkbox"/> COLLATERAL <input checked="" type="checkbox"/> ALL SOURCE		12. REQUEST STATEMENT (LIST DOCUMENT/PHOTO NUMBERS IN SEQUENCE)	

Please send copy of each of the marked documents attached.

Ref-180 401 21-68 - will follow

15

*To Read
1/28/75
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13. EDPSD SPECIAL INSTRUCTIONS (PRIORITIES)		14. DATE NEEDED BY ISG	
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15. DPSP SPECIAL INSTRUCTIONS (PRIORITIES)		16. DATE NEEDED	
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17. SEND PRODUCT TO <input type="checkbox"/> ISG ANAL <input type="checkbox"/> REQUESTER		18. RESPONSIBLE ANALYST	
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19. PHONE/RM		20. RESPONSIBLE COMP.	
		332	
21. SERVICE (CODE) PROVIDED (AMT)		22. DAY/MO REC'D	
		10/6	
23. SERVICE TIME		24. PAGES REPRO	
25. PHOTO PRINTS		26. SERVICE TIME	
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29. FILES USED <input type="checkbox"/> BIO CARD.02 <input type="checkbox"/> BACKGRND.01 <input type="checkbox"/> C.W. PERS.37 <input type="checkbox"/> LY REF.4R <input type="checkbox"/> BIB(SOVBLOC).03 <input type="checkbox"/> HAVECHK NAME.3N <input type="checkbox"/> CIRCUL.01 <input type="checkbox"/> REMOTE OTHER (specify) <input type="checkbox"/> YOUNG FOLD.08 <input type="checkbox"/> BIO FOLD.04 <input type="checkbox"/> ANAL FILE.4F <input type="checkbox"/> DDP TRAVEL.7F <input type="checkbox"/> CIV CIR.1C <input type="checkbox"/> BIRDEN-USSR.3N <input type="checkbox"/> HAVECHK INST.-3H <input type="checkbox"/> INTAF.41 <input type="checkbox"/> TDM.8F <input type="checkbox"/> PLANT FOLD.06 <input type="checkbox"/> CAT. FILE.37 <input type="checkbox"/> PERS PHOT.12 <input type="checkbox"/> NEG. FILE.3N <input type="checkbox"/> NY SER.1S <input type="checkbox"/> BIRDEN-USSR.3N <input type="checkbox"/> NSA TRAVEL.7F <input type="checkbox"/> AEGIS SUB.50 <input type="checkbox"/> RSM.8S			
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DOCUMENT SERVICES BRANCH

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THE AEGIS SYSTEM IS ONLY ONE OF MANY INFORMATION SERVICES PROVIDED BY THE CENTRAL REFERENCE SERVICE. FOR FURTHER DETAILS ON ALL CAS SERVICES, PLEASE CONTACT THE ADDRESS OF THE AGENCY

CAS IS INTERESTED IN YOUR EVALUATION OF THE AEGIS SYSTEM. YOUR COMMENTS MAY BE PASSED ORALLY OR IN WRITING TO THE CAS ANALYST HANDLING YOUR REQUEST OR TO THE APPROPRIATE CAS AREA DIVISION

COMMENTS:

NO FOREIGN DISSEM

SECRET CONTROLLED DISSEM

Approved For Release 2001/04/02 : CIA-RDP81R00560R000100010001-0
NATIONAL INVESTIGATIONS COMMITTEE ON AERIAL PHENOMENA
1536 Connecticut Avenue, N.W.
Washington, D.C. 20036

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Prof. Charles A. Maney; Head, Department of Physics, Defiance College, Ohio. Author of Atoms For Peace proposal now on file in National Archives, M.S. Univ. of Chicago (1915), astrophysics, additional graduate work Universities of Michigan and Kentucky.

Mr. Dewey Fournet, Jr., former Major USAFR; Baton Rouge, La. Former Air Force Headquarters Monitor of AF Project Blue Book UFO investigation, prepared analyses of UFO data for AF, liaison officer between Dayton project and Pentagon.

Rev. Albert Baller; German Congregational Church, Clinton, Mass. Author of children's books, graduate Nebraska Wesleyan University and Boston University School of Theology.

Rear Adm. H.B. Knowles, USN (Ret.); Eliot, Maine. Veteran of both World War I and World War II, held important submarine commands, graduate U.S. Naval Academy, Annapolis (1917).

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Mr. Lou Corbin, Chief WFBR News Bureau, Baltimore, Maryland.
Mr. Lee R. Munsick, news and radio, Morristown, New Jersey.
Mr. Leonard H. Stringfield, public relations, Ground Observer Corps, Cincinnati, Ohio.
Mr. George Todt, columnist, Los Angeles Herald Examiner, California.

SAUCERS 12/22 NX
ADV FOR AMS WED DEC 27
BY RICHARD LONGWORTH

MOSCOW (UPI)--DR. FELIX ZIGEL, ASTRONOMY PROFESSOR AT THE MOSCOW AVIATION INSTITUTE, HAS RELEASED FINDINGS OF A TEAM OF SOVIET SCIENTISTS OF SIGHTINGS OF "LUMINOUS ORANGE-COLORED FLYING SAUCERS OVER RUSSIA."

HE CALLED FOR GLOBAL INVESTIGATION OF THE PHENOMENA. THE STATEMENT BY ZIGEL, ISSUED TO THE FOREIGN PRESS THROUGH THE NEWS AGENCY NOVOSTI BUT NOT YET CIRCULATED DOMESTICALLY, FOLLOWS REVELATION OF AIR GEN. PORFIY POLYAROV IN NOVEMBER THAT AN OFFICIAL COMMISSION HAS BEEN ESTABLISHED TO INVESTIGATE UNIDENTIFIED FLYING OBJECTS (UFO).

ZIGEL SAID THE UFO PHENOMENON WAS "A PROBLEM OF PRIME IMPORTANCE THAT CAN BE SOLVED ONLY BY A JOINT EFFORT OF ALL THE SCIENTISTS OF THE WORLD."

"IT IS SAFE TO CLAIM THAT THE UFO PROBLEM HAS ASSUMED A GLOBAL CHARACTER AND THEREFORE CALLS FOR GLOBAL RESEARCH," HE SAID.

"THE MAIN TASK NOW IS TO ORGANIZE THE SYSTEMATIC INSTRUMENTAL STUDY OF THE UFO FROM ASTRONOMICAL AND METEOROLOGICAL OBSERVATORIES, TO GET GOOD PHOTOGRAPHS AND SPECTRA OF THESE OBJECTS."

ZIGEL REPORTED THAT A "BIG TEAM" OF SOVIET SCIENTISTS AND SPECIALISTS HAS STUDIED 200 REPORTS OF SIGHTINGS--INCLUDING OBSERVATIONS BY KAZAN ASTRONOMERS AND THE ASTRONOMICAL STATION NEAR KOSLOVODSK OF UFOS SEEN OVER THE UKRAINE, CRIMEA AND CAUCASUS IN JULY, SEPTEMBER AND OCTOBER OF 1967.

"THE MOST CHARACTERISTIC TYPE OF UFO," WROTE ZIGEL, "IS A LUMINOUS ORANGE-COLORED CRESCENT WITH A DIAMETER OF 15 TO 20 DEGREES OF THE ARC, FLYING WITH ITS OUTWARD CURVE FORWARD. ITS SURFACE IS ONLY A LITTLE DULLER THAN THAT OF THE MOON."

"THE HORNS OF THE CRESCENT THROW OUT JETS, SOMETIMES WITH SPARKS. THE OUTER CONTOUR OF THE CRESCENT IS SHARP AND THE INNER CONTOUR BLURRED AND WAVY."

"A BRIGHT FLASHING DISC PRECEDED BY A CRESCENT IS OBSERVED SOMETIMES. SOMETIMES THE CRESCENT IS PRECEDED AND FLANKED BY WHAT LOOK LIKE FIRST-MAGNITUDE STARS WHICH KEEP AT A CONSTANT DISTANCE FROM THE CRESCENT."

ZIGEL SAID STUDIES HAVE INDICATED THAT SUCH OBJECTS "OBVIOUSLY COULD NOT HAVE BEEN MADE BY MAN AND ARE DEFINITELY NOT ARTIFICIAL EARTH SATELLITES OR SPACE ROCKETS."

THE SOVIET SCIENTISTS REPORTED ON THE OBSERVATIONS OF THREE LATVIAN ASTRONOMERS AT OGRA ON JULY 26, 1965, WHEN THEY WERE STUDYING SILVERY CLOUDS AT THE OBSERVATORY AND SPOTTED AN UNUSUALLY BRIGHT STAR SLOWLY MOVING WEST. THEY SAID:

"VIEWED THROUGH 8-POWER BINOCULARS, THE STAR APPEARED AS A SMALL FLAT SPOT. THE TELESCOPE REVEALED A TRULY AMAZING PICTURE -- THERE WAS A SMALL BALL IN THE CENTER OF THE LENS-SHAPED DISC. THE ASTRONOMERS SET THE DISC DIAMETER AT ABOUT 100 METERS (328 FEET)."

"AROUND THE DISC, AT A DISTANCE OF ITS TWO DIAMETERS, THERE WERE THREE BALLS LIKE THE ONE IN THE CENTER OF THE DISC. THE BALLS SLOWLY ROTATED AROUND THE DISC, AND THE WHOLE SYSTEM DWINDLED AS IT RECEDED AWAY FROM THE EARTH."

"SOME 15 TO 20 MINUTES LATER, THE BALLS BEGAN TO DEPART FROM THE DISC IN DIFFERENT DIRECTIONS. THE BALL IN THE CENTER ALSO LEFT ITS PLACE AND FLEW ASIDE. FINALLY AT 10 P.M., (25 MINUTES AFTER THE FIRST SIGHTING), ALL THESE BODIES, WHICH EMITTED A GREENISH-PEARL GLOW, FADED INTO THE DISTANCE."

THE NAVIGATOR OF A SOVIET POLAR AIRLINER WAS QUOTED AS HAVING REPORTED THE PLANE DIVED TO AVOID HITTING A VEHICLE THAT LOOKED LIKE A "BIG PEARL-COLORED LENS WITH WAVY, PULSATING EDGES."

"WE DETECTED NO ANTENNAE, SUPERSTRUCTURE, WINGS OR PORTHOLES ON THE DISC," SAID THE NAVIGATOR. "THERE WAS NEITHER A GAS JET EXHAUST NOR THE INVERSION TRAIL AND THE SPEED OF ITS DEPARTURE WAS SO GREAT THAT THE WHOLE PHENOMENON SEEMED SOMEWHAT SUPERNATURAL."

ZIGEL SAID UFO SIGHTINGS IN RUSSIA "FIT INTO THE CLASSIFICATIONS OF THOSE OBJECTS ACCEPTED IN THE WEST. PARTICULARLY THE 'BIG PEARL-COLORED LENS WITH WAVY, PULSATING EDGES' TYPE."

FOR CIA INTERNAL USE ONLY

12 AUG 1966

(2)
MEMORANDUM FOR RECORD:

SUBJECT: Air Force Request to Declassify CIA
UFO Report

REFERENCE: Memo for Chief, DSD/OSI, dated 20 July 66

1. Miss Sara Hunt of Air Force Office of Information phoned on 10 August to determine the status of our response to their request.
2. Upon instructions from Dr. Walter Mackey I told her that the declassified report was being retyped and would be forwarded soon. Miss Hunt's restraint was admirable. She pressed gently for a more specific response, which was not forthcoming.
3. Miss Hunt concluded by saying that Mr. John Leard, a newsman, had an article on UFO's in last week's Saturday Review. She stated that they wanted to show the new version to him as soon as it was declassified.

D. B. STEVENSON

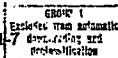
Distribution:

Orig & 1 - ACMB/DSD/OSI
2 - DSD/OSI

OSI/DSD/ACMB:DBStevenson:sjm/7621 (11 Aug 66)

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(11)

15 AUG 1966

Colonel Gerald E. Jorgensen
Chief, Community Relations Division
Office of Information
Department of the Air Force
Washington, D. C.

Attention: SAFOIC

Dear Colonel Jorgensen:

Consideration has been given to your request of 27 July 1966 for the declassification of the "Report of the Scientific Panel on Unidentified Flying Objects." The Office of Scientific Intelligence feels that the report, as originally drafted, cannot be downgraded. As an alternative, an unclassified version has been prepared which omits names of personnel and participating organizations, and we are agreeable to the release of this version. It should be noted that permission for release has not been obtained from persons or organizations involved in the original panel report, and that the panel members themselves agreed only to the release of the edited summary and conclusions indicated by Mr. P. G. Strong in his 29 December 1957 memorandum to AFCIN.

We are most anxious that further publicity not be given to the information that the panel was sponsored by the Central Intelligence Agency. Further, we cannot authorize the disclosure

Approved

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action would benefit a training and educational program (see below). The writings of Charles Fort were referenced to show that "strange things in the sky" had been recorded for hundreds of years. It appeared obvious that there was no single explanation for a majority of the things seen.

On Lack of Danger.

The Panel concluded unanimously that there was no evidence of a direct threat to national security in the objects sighted. Instances of "Foo Fighters" were cited. These were unexplained phenomena sighted by aircraft pilots during World War II in both European and Far East theaters of operation wherein "balls of light" would fly near or with the aircraft and maneuver rapidly. They were believed to be electrostatic (similar to St. Elmo's fire) or electromagnetic phenomena or possibly light reflections from ice crystals in the air, but their exact cause or nature was never defined. If the term "flying saucers" had been popular in 1943-1945, these objects would have been so labeled.

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1944 there was material evidence of the existence of "hardware" obtained from crashed vehicles in Sweden. This evidence gave the investigating team a basis upon which to operate. The absence of any "hardware" resulting from unexplained UFO sightings lends a "will-of-the-wisp" nature to the problem. The results of the investigation, to date, strongly indicate that no evidence of hostile act or danger exists. Furthermore, the current reporting system would have little value in the case of detection of enemy attack by conventional aircraft or guided missiles; under such conditions "hardware" would be available almost at once.

Artifacts of Extraterrestrial Origin.

It was interesting to note that none of the members of the Panel were loath to accept that this earth might be visited by extraterrestrial intelligence beings of some sort, some day. What they did not find was any evidence that related the objects sighted to space travelers. One of the Panel members, in his presentation, showed how he

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studied these films, the case history, ATIC's interpretation, and received a briefing by representatives of the USN Photo Interpretation Laboratory on their analysis of the film. This team had expended (at Air Force request) approximately 1000 man-hours of professional and sub-professional time in the preparation of graph plots of individual frames of the film, showing apparent and relative motion of objects and variation in their light intensity. It was the opinion of the P.I.L. representatives that the objects sighted were not birds, balloons or aircraft, were "not reflections because there was no blinking while passing through 60° of arc" and were, therefore, "self-luminous". Plots of motion and variation in light intensity of the objects were displayed. While the Panel Members were impressed by the evident enthusiasm, industry and extent of effort of the P.I.L. team, they would not accept the conclusions reached. Some of the reasons for this were as follows:

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intensity of the lights indicated extremely high speed in small orbital paths.

g. Apparent lack of guidance of investigators by those familiar with UFO reports and explanations.

h. Analysis of light intensity of objects made from duplicate rather than original film. The original film was noted to have a much lighter background (affecting relative brightness of object) and the objects appeared much less bright.

i. Method of obtaining data of light intensity appeared faulty because of unsuitability of equipment and questionable assumptions in making averages of readings.

j. No data had been obtained on the sensitivity of Kodachrome film to light of various intensities using the same camera type at the same lens openings.

k. Hand "jitter" frequencies (obtainable

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In other words, the burden of proof is on the sighter, not the explainer.

Potential Related Dangers.

The Panel Members were in agreement that although evidence of any direct threat from these sightings was wholly lacking, related dangers might well exist resulting from:

- a. Misidentification of actual enemy artifacts by defense personnel.
- b. Overloading of emergency reporting channels with "false" information ("noise to signal ratio").
- c. Subjectivity of public to mass hysteria and greater vulnerability to possible enemy psychological warfare.

The first two of these problems may seriously affect the Air Defense intelligence system, and should be studied by experts, possibly under ADC. If UFO's become discredited in a reaction to the "flying saucer" scare, or if

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data related to UFO's. However, it was recognized that such action would tend to allay public concern in the subject until an educational program had taken effect. It was believed that procurement of these cameras was partly the result of public pressure in July 1952. With the poor results of the year-long Project TWINKLE program of 24-hour instrumentation watch (two frames of film showing nothing distinguishable), a widespread program of skywatching would not be expected to yield much direct data of value.

There was considerable discussion of a possible "sky patrol" by amateur astronomers and by wide-angle cameras. It was pointed out that at present a considerable fraction of the sky is now -- and has been for many years -- under surveillance every clear night in several meteor and aurora observing programs as well as sky mapping programs at the various locations listed below. Although the attention of these astronomers is largely directed toward identified rather than unidentified objects, no case of any striking unidentified object is known to the Panel. Such an object

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Panel member believed that one answer to this problem was the use of a "doppler filter" in the receiving circuit. Another suggested that the problem might be better solved by the use of a "controlled jitter" wherein the operator receiving "very fast tracks" (on the order of 1000-10,000 mph) would operate a circuit which would alter slightly his station's pulse frequency rate. If the signal received on the screen had been caused by mutual interference with another station, the track would now show itself at a different distance from the center of the screen, if it still appeared at all. Such a technical solution was thought to be simpler and would cost much less than a "doppler filter".

Unexplained Cosmic Ray Phenomena.

Two reported cases were examined: one at Palomar Mountain, California, in October 1949, when cosmic ray counters went "off scale for a few seconds", apparently while a "V" of flying saucers was observed visually; and two, a series of observations by the "Los Alamos Bird

Watchers Association" from August 1950 to January 1951

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strong psychological reaction. This education could be accomplished by mass media such as television, motion pictures, and popular articles. Basis of such education would be actual case histories which had been puzzling at first but later explained. As in the case of conjuring tricks, there is much less stimulation if the "secret" is known. Such a program should tend to reduce the current gullibility of the public and consequently their susceptibility to clever hostile propaganda.

Members of the Panel had various suggestions related to the planning of such an educational program. It was felt strongly that psychologists familiar with mass psychology should advise on the nature and extent of the program. Also, someone familiar with mass communication techniques, perhaps an advertising expert, would be helpful. The teaching techniques used for aircraft identification during the past war were cited as an example of a similar educational task. The amateur astronomers in the U.S. might be a potential source of enthusiastic talent "to

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photographing of "pillow balloons" at different distances under similar weather conditions at the site.

The help of one or two psychologists and writers and a subcontractor to produce training films would be necessary in addition. The Panel considered that ATIC's efforts, temporarily expanded as necessary, could be most useful in implementing any action taken as a result of its recommendations. Experience and records in ATIC would be of value in both the public educational and service training program envisaged. At least one Panel member was of the opinion that after public gullibility lessened and the service organizations, such as ADC, had been trained to sift out the more readily explained spurious sightings, there would still be a role for a very modest-sized ATIC section to cope with the residuum of items of possible scientific intelligence value. This section should concentrate on energetically following up those cases which seemed to indicate the evidence of unconventional enemy artifacts. Reports of such artifacts would be expected to

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handling of true indications of hostile action, and to minimize the concomitant dangers alluded to above, the Panel recommends:

That the national security agencies take immediate steps to strip the Unidentified Flying Objects of the special status they have been given and the aura of mystery they have unfortunately acquired.

We suggest that this aim may be achieved by an integrated program designed to reassure the public of the total lack of evidence of inimical forces behind the phenomena, to train personnel to recognize and reject false indications quickly and effectively, and to strengthen regular channels for the evaluation of and prompt reaction to true indications of hostile measures.

STATISTICS FOR 1964

(Compiled 8 Jan 65)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Astronomical	6	9	5	7	17	5	15	22	13	5	10	4	118
Aircraft	2	3	1	5	13	9	13	11	4	2	2	0	65
Balloon	0	0	0	2	3	0	8	2	1	0	2	0	18
Insufficient Data	4	4	5	7	13	8	12	12	9	5	6	0	85
Other	3	5	4	10	12	8	14	4	6	7	2	2	77
Satellite	2	4	3	9	20	4	42	30	4	4	17	3	142
Unidentified	0	0	1	2	2	1	4	5	1	0	0	0	16
Pending	0	0	0	0	1	0	1	0	1	0	5	3	11
TOTAL	17	25	19	42	81	35	109	86	39	23	44	12	532

ASTRO CASES

Meteors	5	5	1	4	5	3	9	9	6	2	9	1	59
Stars & Planets	1	4	4	3	12	2	5	12	6	2	1	3	55
Other	0	0	0	0	0	0	1a	1b	1b	1c	0	0	4
TOTAL	6	9	5	7	17	5	15	22	13	5	10	4	118

a) Moon b) Sun Dog c) Moon Dog

OTHER CASES

Hoaxes, Hallucinations, Unreliable Reports and Psychological Causes	1	2	2	4	5	2	4	2	3	3	1	1	30
Missiles & Rockets	1	1	1	1	0	0	1	0	1	1	0	0	7
Reflections	0	0	0	0	0	1	0	1	0	0	0	0	2
Flares & Fireworks	0	0	1	0	2	1	3	0	0	0	0	0	7
Mirages & Inversions	0	0	0	1	0	0	1	0	0	0	0	0	2
Search & Groundlights	0	0	0	2	1	0	1	0	1	1	0	0	6
Clouds & Contrails	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaff	0	0	0	0	0	0	0	0	0	0	0	0	0
Birds	0	0	0	1	1	0	2	0	0	0	0	0	4
Physical Specimens	0	0	0	0	1	3	2	0	0	1	1	0	8
Radar Analysis	0	0	0	0	0	0	0	0	0	0	0	1	1
Photo Analysis	0	0	0	0	0	0	0	1	0	1	0	0	2
Satellite Decay	1	1	0	0	0	0	0	0	0	0	0	0	2
Other	0	1	0	1	2	1	0	0	1	0	0	0	6
TOTAL	3	5	4	10	12	8	14	4	6	7	2	2	77

STATISTICS FOR 1964

(Compiled 8 Jan 65)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Astronomical	6	9	5	7	17	5	15	22	13	5	10	4	118
Aircraft	2	3	1	5	13	9	13	11	4	2	2	0	65
Balloon	0	0	0	2	3	0	8	2	1	0	2	0	18
Insufficient Data	4	4	5	7	13	8	12	12	9	5	6	0	85
Other	3	5	4	10	12	8	14	4	6	7	2	2	77
Satellite	2	4	3	9	20	4	42	30	4	4	17	3	142
Unidentified	0	0	1	2	2	1	4	5	1	0	0	0	16
Pending	0	0	0	0	1	0	1	0	1	0	5	3	11
TOTAL	17	25	19	42	81	35	109	86	39	23	44	12	532

ASTRO CASES

Meteors	5	5	1	4	5	3	9	9	6	2	9	1	59
Stars & Planets	1	4	4	3	12	2	5	12	6	2	1	3	55
Other	0	0	0	0	0	0	1a	1b	1b	1c	0	0	4
TOTAL	6	9	5	7	17	5	15	22	13	5	10	4	118

a) Moon b) Sun Dog c) Moon Dog

OTHER CASES

Hoaxes, Hallucinations, Unreliable Reports and Psychological Causes	1	2	2	4	5	2	4	2	3	3	1	1	30
Missiles & Rockets	1	1	1	1	0	0	1	0	1	1	0	0	7
Reflections	0	0	0	0	0	1	0	1	0	0	0	0	2
Flares & Fireworks	0	0	1	0	2	1	3	0	0	0	0	0	7
Mirages & Inversions	0	0	0	1	0	0	1	0	0	0	0	0	2
Search & Groundlights	0	0	0	2	1	0	1	0	1	1	0	0	6
Clouds & Contrails	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaff	0	0	0	0	0	0	0	0	0	0	0	0	0
Birds	0	0	0	1	1	0	2	0	0	0	0	0	4
Physical Specimens	0	0	0	0	1	3	2	0	0	1	1	0	8
Radar Analysis	0	0	0	0	0	0	0	0	0	0	0	1	1
Photo Analysis	0	0	0	0	0	0	0	0	0	0	0	0	2
Satellite Decay	1	1	0	0	0	0	0	0	0	0	0	0	2
Other	0	1	0	1	2	1	0	0	1	0	0	0	6
TOTAL	3	5	4	10	12	8	14	4	6	7	2	2	77

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STATISTICS FOR 1964

(Compiled 2 Jan 65)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Astronomical	6	9	5	7	17	5	15	22	13	5	10	4	118
Aircraft	2	2	1	3	13	9	13	11	4	2	2	0	65
Balloon	0	0	0	2	3	0	2	2	1	0	2	0	18
Insufficient Data	4	4	5	7	13	8	12	13	9	5	6	0	85
Other	3	5	4	10	12	8	14	4	0	7	2	2	77
Satellite	2	4	3	9	20	4	42	30	4	4	17	3	142
Unidentified	0	0	1	2	2	1	4	5	1	0	0	0	16
Pending	0	0	0	0	1	0	1	0	1	0	5	3	11
Total	17	25	19	29	81	33	106	88	39	23	44	12	532

ASTRO CASES

Meteors	5	5	1	4	5	2	9	9	5	2	9	1	59
Stars & Planets	1	4	4	3	12	3	5	12	6	2	1	2	55
Other	0	0	0	0	0	0	1a	1b	1b	1c	0	0	4
Total	6	9	5	7	17	5	16	22	13	4	10	4	118

a) Moon b) Sun Dog c) Moon Dog

OTHER CASES

Boxes, Hallucinations, Unreliable Reports and Psychological Causes	1	2	2	4	5	2	4	7	3	3	1	1	30
Missiles & Rockets	1	1	1	1	0	0	1	0	1	1	0	0	7
Reflections	0	0	0	0	0	1	0	1	0	0	0	0	2
Flares & Fireworks	0	0	1	0	2	1	3	0	0	0	0	0	7
Mirages & Inversions	0	0	0	1	0	0	1	0	0	0	0	0	2
Search & Ground-Lights	0	0	0	2	1	0	1	0	1	1	0	0	6
Clouds & Contrails	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaff	0	0	0	0	0	0	0	0	0	0	0	0	0
Birds	0	0	0	1	1	0	2	0	0	0	0	0	4
Physical Specimens	0	0	0	0	1	3	2	0	0	1	1	0	8
Radar Analysis	0	0	0	0	0	0	0	0	0	0	0	1	1
Photo Analysis	0	0	0	0	0	0	0	1	0	1	0	0	2
Satellite Decay	1	1	0	0	0	0	0	0	0	0	0	0	2
Other	0	1	0	1	2	1	0	0	1	0	0	0	6
Total	3	5	4	10	12	8	14	4	8	7	2	3	77

STATISTICAL DATA FOR YEARS 1954 - 1963

(Compiled 1 Nov 64)

TOTAL CASES BY CATEGORY

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	TOTAL
Astronomical	137	135	227	341	231	144	235	201	135	53	1568
Aircraft	80	124	168	217	105	83	66	75	67	72	1018
Balloon	63	102	93	113	87	30	22	37	19	28	564
Insufficient Data	103	94	130	190	111	65	106	175	92	57	1062
Other	58	83	61	120	90	72	83	74	64	56	751
Satellite	0	0	0	8	13	0	21	69	77	81	274
Unidentified	46	23	15	16	11	13	14	12	15	12	180
Total	487	523	686	1005	623	327	556	593	489	363	5717

ASTRONOMICAL SIGHTINGS

Meteors	92	79	83	179	163	109	187	119	94	57	1183
Stars & Planets	44	82	121	144	56	40	45	78	36	23	649
Other	1	4	3	12	7	4	3	6	6	3	56
Total	137	165	207	341	221	144	235	203	135	83	1868

OTHER CASES

Boxes, Hallucinations, Unreliable Reports and Psychological Causes	6	17	17	37	22	13	12	17	11	15	173
Missiles and Rockets	1	1	2	2	6	14	12	12	9	13	73
Reflections	6	4	3	2	7	10	9	3	3	0	47
Flares & Fireworks	4	8	6	8	3	5	7	4	3	2	51
Mirages & Inversions	2	4	1	5	2	4	3	0	3	0	32
Search & Groundlights	6	14	9	12	8	5	6	1	3	2	66
Clouds & Contrails	3	2	1	9	5	2	4	5	4	3	40
Chaff	2	0	1	2	6	1	4	3	5	2	26
Birds	7	2	5	1	1	0	2	2	2	2	26
Radar Analysis	7	0	7	27	2	8	8	0	0	1	68
Photo Analysis	1	3	4	1	5	4	6	2	2	3	32
Physical Specimens	6	5	3	5	10	3	7	4	15	3	51
Satellite Decay	0	0	0	0	1	0	9	3	3	3	19
Other	7	4	0	2	3	3	3	3	1	4	39
Total	53	63	61	130	80	72	63	74	64	58	751

STATISTICAL DATA FOR YEARS 1954 - 1963

(Compiled 1 Nov 64)

TOTAL CASES BY CATEGORY

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	TOTAL
Astronomical	137	135	222	341	231	144	235	203	135	85	1868
Aircraft	80	124	148	217	105	63	66	75	67	73	1018
Balloon	63	102	93	113	57	30	22	37	19	28	564
Insufficient Data	103	94	130	190	111	65	105	115	92	57	1062
Other	58	63	61	120	90	72	93	74	64	56	751
Satellite	0	0	0	8	18	0	21	69	77	81	274
Unidentified	46	25	15	16	11	13	14	12	15	13	180
Total	487	543	669	1005	623	387	556	585	469	393	5717

ASTRONOMICAL SIGHTINGS

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	TOTAL
Meteors	92	79	88	179	168	100	187	119	94	57	1163
Stars & Planets	44	52	131	144	56	40	45	78	36	23	649
Other	1	4	3	18	7	4	3	6	5	5	56
Total	137	135	222	341	231	144	235	203	135	85	1868

OTHER CASES

Hoaxes, Hallucinations, Unreliable Reports and Psychological Causes . . .	6	17	17	37	28	13	12	17	11	15	173
Missiles and Rockets . . .	1	1	3	2	6	14	12	12	9	13	73
Reflections	6	4	3	2	7	10	9	3	3	0	47
Flares & Fireworks . . .	4	8	6	8	3	5	7	4	3	3	51
Mirages & Inversions . . .	2	4	1	5	2	4	5	6	3	0	32
Search & Groundlights . . .	6	14	9	12	8	5	6	1	3	2	66
Clouds & Contrails . . .	3	2	1	9	5	2	4	5	4	5	40
Chaff	2	0	1	2	6	1	4	3	5	2	26
Birds	7	2	6	1	1	0	3	2	2	2	26
Radar Analysis	7	0	7	27	2	8	6	8	0	1	66
Photo Analysis	1	2	4	1	6	4	6	3	2	3	32
Physical Specimens	6	5	3	5	10	3	7	4	15	3	61
Satellite Decay	0	0	0	0	1	0	9	3	3	3	19
Other	7	4	0	9	5	3	3	3	1	4	39
Total	58	63	61	120	90	72	93	74	64	56	751

	<u>INCOMING</u>	<u>OUTGOING</u>
Correspondence Files	1762	339
Reading File	23	0
General Files	16	16
Consultants File	21	21
Ltrs in Case Files	387	200
Moon Dust Files	82	32
Echo Schedules to Journal Herald	0	49
TOTAL	2291	657

In addition to the above, the following messages and materials were received and processed:

Echo City Schedules	100
Satellite Situation Reports	24
Moonwatch Reports	12
Freelance Reports	220
Intelligence Reports	120
Satellite Frag Reports	350
TOTAL	826

Total Materials processed by TDEW(UFO), excluding UFO reports and publications, for the year 1964 is: 3774

In addition to the above figures there are over 400 requests, for the forthcoming Air Force Fact Sheet on Project Blue Book, being held at SAFOI-PB as of 31 Dec 64.

Appears to be Air Force Doc.

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- 2. Obtain some idea as to scope of AF effort
- 3. Obtain specific recent reports + AF evaluation
- 4. Clearances needed

May. Hector
 Quintanilla

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Conclusions have not
 substantially changed from
 those written in 1953-1955
 time period for unclassified - Manual
 from classified Blue Book

appendix?

Review & evaluation of
 selected recent sightings

Community current
 effort in problem -

- The Accusations
- ① for the past 3 yrs a rising incidence
 - ② total supression of news by AF - a government-wide news blackout

The cited incidences (Recent)

- 9 Apr 64 first launch of 2-man Gemini capsule - a UFO's implied radar track on vehicles tracked for a full orbit - then away
- 10 Jan 61 Polaris missile from Cape K UFO "followed" launch
- 3 May 64 State program A-794 sighting of UFO at Canberra Dr. Siple & NASA involved
- 18 July 68 Sonnywell - 4 AF jets and intercept of UFO new report by AF

Maj. Hector Quintanilla
 Aerial Phenomenon Branch
 FTD

X 69216
 66378

Jim:

This is the fellow who sits on the UFO files at FTD. He's an physicist by trade and a very cooperative character. He can, in a matter of minutes, give full

Reference to
the
RGS

(A)

Results of these investigations are filed and considered unclassified. They are open to inspection by any scientific investigator or member of the press, but the Air Force feels that to open them to the general public (including members of the 100 or so "Flying Saucers" clubs throughout the US) would strain their resources beyond reasonable limits.

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Soviet Scientists Possibly Involved in Investigation of UFO Phenomena

- Prof. Boris P. Konstantinov VP of Acad. Sci.
- F. Y. Zigel
- Gen. Anatoly Stolgovskiy Chmn, Commission on UFOs
- T. S. Shklovskiy Astronomer

DDI

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Dr. Lloyd V. Berkner
President
Associated Universities, Incorporated
Room 6920
350 Fifth Avenue
New York 1, New York

Dear Lloyd:

You will recall in January 1953, we constituted a Scientific Advisory Panel on Unidentified Flying Objects with Drs. H. P. Robertson as Chairman, Samuel Goudsmit, Luis W. Alvarez, Thornton Page, and yourself as members. After its deliberation, the Panel reached two conclusions and made two recommendations which were included as Tab A of the report. Very recently, the Air Force has requested that the conclusions of this report be declassified so that they may be used in the press. A copy of the report is enclosed herewith for your information.

I have discussed this matter with Dr. Robertson and Dr. Goudsmit who agree that the conclusion contained in paragraph 2 and the recommendation contained in paragraph 4a can be declassified. But, they, as well as this Agency, will not agree to a declassification of the conclusion in paragraph 3 or the recommendation in paragraph 4b. It is our feeling that

and that the final six lines of paragraph 4 can stand as written.

I have queried the Air Force as to whether the names of the Panel members would be used. They have replied that names would be used only within official circles and would not be given to the press. But as such information has a tendency at times to filter out, it should be recognized that, if approval is given for use of the names, they may well become common knowledge.

STATINTL

It would be very much appreciated if you could let me know as soon as possible what your reaction is to the Air Force declassification proposal; whether you agree with Dr. Robertson, Dr. Goudsmit and myself on limiting any declassification; and whether you would approve or disapprove the use of your name, granted that Agency connection with the Panel is withheld.

Very best regards.

Sincerely,

Deputy Assistant Director

STATINTL

Enclosure
UFO Report (Secret)

COPY

NEWS RELEASE

PLEASE NOTE DATE

FACT SHEET

NOVEMBER 5, 1957

DEPARTMENT OF DEFENSE

OFFICE OF PUBLIC INFORMATION

Washington 25, D. C.

NO. 1083-57

LI 5-6700 Ext. 75131

AIR FORCE'S 10 YEAR
STUDY OF UNIDENTIFIED FLYING OBJECTS

In response to queries as to results of previous investigation of Unidentified Flying Object reports, the Air Force said today that after 10 years of investigation and evaluation of UFO's, no evidence has been discovered to confirm the existence of so-called "Flying Saucers".

Reporting, investigation, analysis and evaluation procedures have improved considerably since the first sighting of a "flying saucer" was made on 27 June 1947. The study and analysis of reported sightings of UFO's is conducted by a selected scientific group under the supervision of the Air Force.

Dr. J. Allen Hynek, Professor of Astrophysics and Astronomy at Ohio State University, is the Chief Scientific Consultant to the Air Force on the subject of Unidentified Flying Objects.

The selected, qualified scientists, engineers, and other personnel involved in these analyses are completely objective and open minded on the subject of "flying saucers". They apply scientific methods of examination to all cases in reaching their conclusions. The attempted identification of the phenomenon observed is generally derived from human impressions and interpretations and not from scientific devices or measurements. The data in the sightings reported are almost invariably subjective in nature. However, no report is considered unsuitable for study and categorization and no lack of valid evidence of physical matter in the case studies is assumed to be "prima facie" evidence that so-called "flying saucers" or interplanetary vehicles do not exist.

General categories of identification are balloons, aircraft, astronomical, other, insufficient data and unknowns.

Approved For Release 2001/04/02 : CIA-RDP81R00560R000100080014-9

every day. There are two general types of balloons: weather balloons and upper-air research balloons. Balloons will vary from small types 4 feet in diameter to large types 200 feet in diameter. The majority released at night carry running lights which often contribute to weird or unusual appearances when observed at night. This also holds true when observed near dawn or sunset because of the effect of the slant rays of the sun upon the balloon surfaces. The large balloons, if caught in jet streams, may assume a near horizontal position when partially inflated, and move with speeds of over 200 MPH. Large types may be observed flattened on top. The effect of the latter two conditions can be startling even to experienced pilots.

Many modern aircraft, particularly swept and delta wing types, under adverse weather and sighting conditions are reported as unusual objects and "flying saucers". When observed at high altitudes, reflecting sunlight off their surfaces, or when only their jet exhausts are visible at night, aircraft can have appearances ranging from disc to rocket in shape. Single jet bombers having multi-jet pods under their swept-back wings have been reported as UFOs or "saucers" in "V" formation. Vapor trails will often appear to glow with fiery red or orange streaks when reflecting sunlight. Afterburners are frequently reported as UFOs.

The astronomical category includes bright stars, planets, meteors, comets, and other celestial bodies. When observed through haze, light fog, or moving clouds, the planets Venus, Mars, and Jupiter have often been reported as unconventional, moving objects. Attempts to observe astronomical bodies through hand-held binoculars under adverse sky conditions has been a source of many UFO reports.

The "other" category includes reflections, searchlights, birds, kites, blimps, clouds, sun-dogs, spurious radar indications, hoaxes, firework displays, flares, fireballs, ice crystals, bolides, etc., as examples: Large Canadian geese flying low over a city at night, with street lights reflecting off their bodies; searchlights playing on scattered clouds, appearing as moving disc-like shapes.

The insufficient data category include all sightings where essential or pertinent items of information are missing, making it impossible to form a valid conclusion. These include description of the size, shape or color of the object; direction and altitude; exact time and location; wind weater conditions, etc. This category is not used as a convenient way to get rid of what might be referred to as "unknowns". However, if the data received is insufficient or unrelated, the analysts must then place that particular report in this category. The Air Force needs complete information to reach a valid conclusion. Air Force officials stressed the fact that an observer should send a complete report of a bona fide sighting to the nearest Air Force activity. There the report will be promptly forwarded to the proper office for analysis and evaluation.

A sighting considered as "unknown" when a report contains all pertinent data necessary to normally suggest at least one valid hypothesis on the cause or explanation of the sighting but when the description of the object and its maneuvers cannot be correlated with any known object or phenomenon. In its Project Blue Book Special Report #14, released in October, 1955, the Air Force showed that evaluated sightings in the "unknown" category had been reduced to 3% at that time.

Previously "unknown" sightings had been 9% in 1953 and 1954 and in the previous years "flying saucer" sightings had run as high as 20% "unknowns". Project Blue Book Special Report #14, covered "flying saucer" investigations from June 1947 to May 1955. Latest Air Force statistics show the number of unknowns has since been reduced to less than 2%.

The following table presents the results of the evaluation of all reports received by the Air Force from the time that Project Blue Book, Special Report #14 was completed through June 1957. The table gives the percentage of all the reports received by the Air Force during each time period.

	1955 June thru December	1956	1957 January thru June
Balloons	27.4%	26.0%	26.4%
Aircraft	29.3%	24.6%	28.8%
Astronomical	20.1%	26.3%	24.4%
Other (Hoax, search- light, birds, etc)	12.3%	6.8%	6.4%
Insufficient Information	8.8%	14.1%	12.1%
Unknown	2.1%	2.2%	1.9%
TOTAL NUMBER OF SIGHTINGS	273	778	250

Air Force conclusions for the ten years of UFO sightings involving approximately 5,700 reports were: First, there is no evidence that the "unknowns" were inimical or hostile; second, there is no evidence that these "unknowns" were interplanetary space ships; third, there is no evidence that these "unknowns" represented technological developments or principles outside the range of our present day scientific knowledge; fourth, there is no evidence that these "unknowns" were a threat to the security of the country; and finally there was no physical or material evidence, not even a minute fragment, of a so-called "flying saucer" was ever found.

The Air Force emphasized the belief that if more immediate detailed objective observational data could have been obtained on the "unknowns" these too would have been satisfactorily explained.

A critical examination of the reports revealed that a high percentage of them were submitted by serious people, mystified by what they had seen and motivated by patriotic responsibility.

Reports of UFOs have aroused much interest on this subject throughout the country and a number of civilian clubs, committees and organizations have been formed to study or investigate air phenomena. These private organizations are not governmental agencies and do not reflect official opinion with respect to their theories or beliefs based upon observed phenomena or illusions.

No books, motion pictures, pamphlets, or other informational material on the subject of unidentified flying objects have been cleared, sponsored, or otherwise coordinated by the U. S. Air Force, with the exception of the official press releases issued by Headquarters, USAF, in Washington.

The Air Force, assigned the responsibility for the Air Defense of the United States, will continue to investigate, through the Air Defense Command, all reports of unusual aerial objects over the U. S. including objects that may become labeled Unidentified Flying Objects. The services of qualified scientists and technicians will continue to be utilized to investigate and analyze these reports, and periodic public statements will be made as warranted.

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R. J. Durant


WILL THE REAL SCOTT JONES

PLEASE STAND UP ?

The purpose of this monograph is to sing the praises of the Renaissance Man of the Paranormal, Cecil B. Scott Jones, Ph.D.

If your field is ufology, you know Scott as a mover, shaker, organizer and confidante of some of the central figures in UFO research. And if you are a parapsychologist, you recognize the same face from countless symposia, boards of directors, and the like. Ufologists and parapsychologists seldom communicate, and even more rarely do they attend each other's meetings. So it comes as a shock to each group to learn that Scott has a foot so firmly planted in the "other" arena.

His interest in these fields appears to have been triggered by personal experience. Scott describes his UFO

in the field. But they would be puzzled if asked to identify C. B. Scott Jones.

Scott rarely puts anything on paper, preferring instead to work behind the scenes, keeping in touch via telephone or personal visit. He attends most conferences of note, and goes to great lengths, in the literal geographical sense, to meet not only researchers but important witnesses. He has shown particular interest in spending time with "abductees" in recent years. But unlike so many others in ufology who rush to the typewriter to broadcast their opinions, Scott keeps his own quiet counsel. Thus he provides us all with an uplifting example of humility.

In a departure from his usual rule against publishing, Scott presented a paper at the 1991 conference of the Mutual UFO Network. The title was "Government UFO Connections." Those who were advised in advance of the title, and who knew something of Scott's background, thought the paper would contain a spectacular revelation.

In a sense, it did. But more on that later.

PARAPSYCHOLOGY

Scott Jones has been a fixture at parapsychology symposia ranging from the most august academic gatherings to New Age meetings and those of the human potential movement at least since the mid-1970s, when he organized a parapsychology conference in Casper, Wyoming. Among the conferences he has attended are those of the Parapsychological Association, the American Society for Psychical Research, the Society for Scientific Exploration, the Southeastern Regional Parapsychological Association, the Association for Research and Enlightenment, the Society for Psychical Research, the International Forum on New Science, and the Archaeus Congress, to name a few.³

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that in his post-Navy career he "worked in the private sector research and development community involved in the U.S. Government sponsored projects for the Defense Nuclear Agency, Defense Intelligence Agency [DIA], and U.S. Army Intelligence and Security Command" (INSCOM).

In 1985 Scott came in from the cold in a big way. Senator Claiborne Pell of Rhode Island, Chairman of the Senate Foreign Relations Committee and one of the most senior politicians on Capitol Hill, appointed him to a position as Special Assistant. From this very prestigious vantage Scott continued to do exactly what he had been doing before, which is to say making the rounds of ufological and parapsychological meetings. He was always available, either at the Senate office he used in Washington thanks to the Senator's largesse, or on the road. It is not clear whether Jones ever did ordinary "aide" work. Rather, it seems that he devoted himself entirely to the field of paranormal inquiry.

It is quite an exceptional situation that Jones found, and one that most of us in anomalies research would envy. The taxpayers of Rhode Island seem not to have noticed, and the December 5, 1988 issue of U.S. News & World Report, which devoted a great deal of space to New Age belief in the Halls of Congress, mentioned Pell and his protege Jones', but failed to note that Jones was on the government payroll primarily as a psychic/UFO facilitator.

In March of 1991 there came a parting of the ways, and Scott left the employ of Senator Pell, but not the field of the paranormal. He is now at his new organization, the Human Potential Foundation.⁵ With his assistant Menelika McCarthy, Scott continues to do that which he has done so well for the last decade. His foundation is ensconced in the resplendent offices of Sandground Barondess and West,

TRAVELS

Few scientists or academicians have the ability to travel the way Scott does. There is literally no significant conference in ufology or parapsychology in any part of the world that seems beyond the means of Scott Jones to visit. In addition to trips throughout the United States, Jones has gone to China, the U.S.S.R., the U.K., Continental and Eastern Europe, and South America, all in connection with paranormal research.

It would probably be rude to inquire about the source of funds for all this globe trotting (and what Scott's "funders" expect to gain).

CONNECTIONS

Scott's unique position on the staff of one of the ranking members of the U.S. Senate (Claiborne Pell) has been discussed above. The official connection alone is enough to guarantee easy access to the widest range of government agencies and private organizations at the executive level. Beyond that, Senator Pell's personal network, firmly based on his credentials as an Eastern Establishment aristocrat, was at the disposal of Jones. It is difficult to imagine any door that could not be opened by this awesome combination.

Thus Scott often escorted Prince Hans-Adam of Liechtenstein, a very wealthy European with a longstanding interest in the paranormal. Together, they visited parapsychological laboratories and UFO conferences. According to the Sunday Times of India for August 4, 1991, Hans-Adam controls 97% of the voting rights and 85% of the share capital of the Bank of Liechtenstein, which in turn controls the 3.3 billion dollar GT Management of London. The personality magazine Special Report (November 1990-January 1991) described the Prince as "Heir to the last remnant of the Holy Roman Empire."

Recently, in a bizarre turn of events that was reported in several outlets including Harper's Magazine (January 1991, page 25), a personal letter from Scott to "Dear Dick" Cheney, the Secretary of Defense, was published.⁶ That Jones should be in a position to write a letter to the Secretary and address him as "Dick" is illuminating.

One would suppose that all this "clout" would result in a tangible flow of money into the accounts of laboratories and individuals engaged in paranormal research. Oddly, this does not seem to be the case. In the last three years, two major parapsychological laboratories have closed due to lack of funds. Scott was well familiar with their work and their

plight, but was unable to help. Scott enjoys considerable support, even luxury, in his own pursuit of paranormal inquiry. Yet the ASPR, of which he is president, is widely known to be in dire financial straits. The flow of information and money appears to be to Scott, not from him.

RUMORS

A number of intriguing rumors have been circulated by Scott watchers:

- That Jones has approached professional parapsychological researchers and questioned them about how best to recruit and utilize psychics for military intelligence gathering.
- That Jones has visited an enormous number of psychics for "readings."
- That Jones has taken a number of psychic development courses.
- That for many years Jones has been involved with classified research on electronic mind control.⁷
- In the Fall of 1988 a television documentary entitled "UFO Coverup? - Live" was shown throughout the U.S. The program featured "revelations" from alleged intelligence agents about aliens enjoying the hospitality of the government at an unnamed Air Force base. This program is considered to be a classic instance of UFO disinformation. Rumor has it that, two years prior to this, Jones had approached media representatives about doing a show about UFOs, and that he had offered to provide secret information from the government for the program.
- Among some of the New Agers who have been in Scott's company, he has acquired a reputation for having an extraordinary memory. It is said that he can uncannily repeat, word for word, conversations that took place long before. This is done without the benefit of notes or a tape recorder, and is said to occur in instances where witnesses to the conversation thought he wasn't even paying attention. This gift must have been useful to Scott in his intelligence career.

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Vallee, Ballantine, 1991).¹⁰ There is overwhelming evidence that personnel from the Air Force Office of Special Investigations (AFOSI), a counter intelligence organization, have for years been involved in disinformation activities in the UFO field.

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The following are a few well known examples of "activity of the U.S. Government" in the field of UFOs. Despite his repeated claims of ignorance, Jones' name has surfaced in some of these cases.

William L. Moore

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A ubiquitous character in this continuing saga is one William L. Moore, a former Minnesota school teacher and co-author of The Philadelphia Experiment (Berlitz and Moore, 1979) and The Roswell Incident (Berlitz and Moore, 1980). In fact it was Moore who sparked the intense interest in the now celebrated Roswell incident. Moore's name is also well known in relation to Richard Doty, Jaime Shandera, MJ-12, Paul Bennewitz, and Lee Graham, and reports also link him to our favorite "know-nothing" for some years.

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In the June 1989 issue of the MUFON UFO Journal, Robert Hastings published a blistering attack on the credibility of William Moore. A few months later, in a speech delivered to an astonished audience at the 1989 MUFON Symposium, Moore admitted to a long career as a "controlled informant" to the U.S. Government. Further, in the same amazing talk, Moore admitted to having deceived a number of people. The ensuing uproar has yet to subside, and in a recent interview Moore admitted to still being a controlled informant (UFO, 1992 Vol. 7, No. 1).

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In his 1991 Omega Conference talk, Jones echoed some of the themes of Moore's 1989 MUFON spectacle. Jones spoke

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discouragingly of the use of the Freedom of Information Act, and in one of his parenthetical remarks, he spoke of Moore with approbation. In fact, only two other ufologists, Professor Michael Swords and conference organizer John White, were mentioned in the entire speech. Shortly after his remarks about Moore, Jones again proclaimed that he "quite honestly...didn't have the vaguest idea of what the government was doing" in the field of UFOs.

Sergeant Richard Doty

One of Moore's long-time buddies is Sergeant Richard Doty, with whom he is now advertising a co-authored forthcoming book. Doty was formerly a special agent with the Air Force Office of Special Investigations (AFOSI) assigned to Kirtland Air Force Base in Albuquerque. Hastings' 1989 paper makes a strong case that Doty was involved in fabricating a UFO report delivered to the civilian Aerial Phenomena Research Organization (APRO) in 1980.

Linda M. Howe, a television journalist known for her work on cattle mutilations, was invited to Kirtland AFB in 1983 by Doty. At the time, she was working on a documentary on UFOs. During her visit, Doty showed her what he claimed were briefing documents prepared for the president of the United States and which discussed crashed saucers and recovered bodies of ETs (UFO Universe July 1988). Doty promised movie footage would be provided later. But the footage never arrived, and Howe's documentary was cancelled, which Howe now suspects was the intended purpose of offering her the "bait."

Howe produced a sworn statement describing her meeting with Doty. He later denied the incident, but in an apparently unrelated matter, Doty's honesty was questioned by the military and he flunked a lie detector test, thus casting further doubt on Doty's integrity (Skeptics UFO Newsletter, January 1991). There is every reason to believe

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should establish and maintain a relationship with R. Shandera also let it be known that he was in contact with a scientist in the military involved with remote viewing. R began having apparently precognitive dreams involving Saddam Hussein and Iraq, and he reported them to Shandera. Shandera told R that he passed these along to "authorities." R later learned that Shandera and Moore were in contact with Scott Jones, and R called Jones. Jones expressed familiarity with the reported dreams and went on to say that he was familiar with Psi Tech but gave little further information.¹¹

Paul Bennewitz

Paul Bennewitz, a physicist and manufacturer of temperature and humidity measuring devices sold to the military, claimed to have discovered alien devices and communications at Kirtland AFB. The military apparently took Bennewitz seriously, and he was invited to Kirtland to present his material. Bennewitz eventually was hospitalized for psychiatric care and has dropped out of UFO research. It appears that Bennewitz was the object of a program of psychological destabilization originated by AFOSI at Kirtland. Documents concerning Bennewitz were signed by Special Agent Doty. In his published MUFON speech, Moore claimed that he had no hand in the "dirty tricks," but in fact tried to protect Bennewitz, although he knew Bennewitz was being disinformed and becoming progressively more unbalanced. This is one of the most ominous chapters in the Moore-Doty-AFOSI litany, and it cries out for investigation by the legislative branch of the U.S. government. Unfortunately, Jones, in his Diogenes-like search for "activity of the U.S. government" has missed this one.

Lee Graham

Before the appearance of the MJ-12 papers, UFO researcher Lee Graham, a technician with a secret clearance working for Aerojet Electrosystems, Azusa, California, was contacted by William Moore. Graham had never met Moore, but had written to him after the publication of the Moore-Berlitz book on Roswell. During the next few months Moore gave to the perplexed Graham a series of documents, all exhibiting security classification markings. These papers included the alleged Eisenhower briefing document and other material relating to UFOs and government involvement with aliens or alien technology.

Graham, whose livelihood depends on maintaining his security clearance, eventually took the documents to the Aerojet official in charge of security, and asked that both the documents and Moore be investigated by the Defense Investigative Service (DIS). Ultimately, the documents were back in Graham's hands, marked "unclassified." Graham, however, became the object of intense scrutiny by the DIS.

He repeatedly demanded that Moore be investigated for distributing documents that appeared to be extremely sensitive, and for exhibiting an identification card indistinguishable from those used by the many DIS agents that Graham had encountered. But to the best of Graham's knowledge, Moore has never been interviewed by DIS or any other agency concerning these serious charges. It would be a simple matter for Pell's office to request an investigation of Moore on the basis of Graham's charges.

In 1987, Graham was paid an intimidating visit at his workplace by FBI Special Agent William Hurley, accompanied by a man in civilian clothes who did not identify himself, but who was later identified as no less than Major General Michael Kerby, USAF, at that time the Director of the Air Force Legislative Liaison office. Kerby's military career differs from that of most of the uniformed players in this drama, in that he seems to have had no intelligence background. Prior to the assignment with congressional liaison, Kerby appears to have been in command of the operational aspects of the "stealth" fighter aircraft, as well as other very sensitive aviation activities at Nellis AFB.

During the interview with Hurley and his companion, Graham was shown a document identifying the then Top Secret designation of the F-117 "Stealth" fighter, a piece of information Graham had tirelessly pursued through Freedom of Information Act requests. He was also given a form to sign, certifying that he had been given information "for which you have no need to know." This very unusual action was followed by a lengthy "pep talk" in which Hurley and Kerby praised Graham for his work in disseminating the MJ-12 documents! Graham says that the bulk of the one hour interview concerned the MJ-12 papers.

The news that the man accompanying FBI Agent Hurley was a two-star general came to Graham from an unexpected and extraordinary source: C. B. Scott Jones. Graham had never met Jones, nor did the name mean anything to him when Jones called and opened the conversation by saying that he and Graham "had a mutual acquaintance." Jones was referring to the mystery man who accompanied Special Agent Hurley on the interview with Graham. During the course of the conversation, Jones promised to send information that would help Graham identify the mysterious interviewer.

Shortly thereafter, Graham received a note from Jones, on U.S. Senate letterhead, together with the official Air Force biography of Kerby, including his photograph. Graham recognized the face at once as that of the man who accompanied the FBI agent, and who spoke so enthusiastically about the MJ-12 papers.

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The Fund for UFO Research has concluded that breaking the federal secrecy about UFOs can only be accomplished through the legislative branch of the U.S. government. To this end, the Fund has placed top priority on preparing video and written briefings for members of Congress and their aides. A meeting was held in the Fall of 1991 to gather principal UFO researchers and staff from relevant congressional committees in order to assess the state of UFO research. Jones was invited, and one would suppose that the man who travels so easily to China and the U.S.S.R. would have no problem attending a meeting of such critical importance held almost literally in his own back yard. He did not attend. Nor did the other congressional staff members who were invited. (Personal communication, Fred Whiting, Secretary of the Fund, 26 December 1991).

GOVERNMENT UFO CONNECTIONS -- II

In their book Clear Intent, Fawcett and Greenwood discuss the infiltration of the National Investigations Committee on Aerial Phenomena (NICAP), a major civilian UFO organization. They begin their discussion by reciting the activities of some of the earliest NICAP members such as Nicholas de Rochefort, employed by the Psychological Warfare Staff of the CIA, Bernard J. O. Carvalho, who was involved in various secretly owned CIA business enterprises, and Vice Admiral Roscoe Hillenkoetter, the first Director of the CIA. Fawcett and Greenwood go on to say:

"Further evidence of CIA influence in NICAP developed during the period immediately before NICAP's decline. On December 3, 1969, Donald Keyhoe was ousted as NICAP's Director during a Board meeting. Who led the effort to remove Keyhoe? The Chairman of the Board, Col. Joseph

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effect of mind on probability in computer systems.

GENERALS

One wonders about a two-star General (Kerby) showing up incognito to interview a "UFO buff," (Graham) and who also spends some of his time with a congressional aide who specializes in paranormal and New Age topics. But stealth specialist Kerby is not the only general officer who seems to be on friendly terms with Scott Jones.

While Kerby seems to devote his energies to the UFO problem, Major General Albert Stubblebine focuses on parapsychology. I will quote from Howard Blum's book Out There (Simon & Schuster, 1990), which is devoted to an account of U.S. Government activities in the fields of ufology and parapsychology. Nearly every review of this book has pointed out the extraordinary number of factual errors it contains, but the information on Stubblebine appears to be correct:

"In the early 1980s, Army Intelligence was an inventive, why-not-give-it-a-try sort of organization. It was spending millions on parapsychological experiments. It had contracted with the Monroe Institute in Faber, Virginia, for studies to relieve stress through 'advanced states of consciousness.' It had spent research dollars on 'hemisphere synchronization,' a process that uses patterns of sound waves to intensify consciousness by 'uniting' both hemispheres of the brain. Marksmen were being taught to concentrate through paranormal methods (a project so intense that several officers later claimed they suffered recurring mental problems as a result.) And the

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the psi field, but his connection with McDonnell Douglas is virtually never mentioned. Dr. Robert Wood has written on the UFO phenomenon and is known to have monitored the field of parapsychology.

2. The Laibow-Jones presentation at the Society for Psychical Research was promoted by Ralph Noyes, a former Ministry of Defence official who is involved with UFOs and Crop Circles.

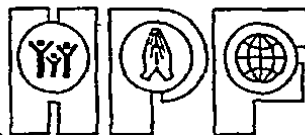
3. When Scott's busy schedule does not permit his attendance at a conference, his son or his assistant, Menelika McCarthy, have sometimes been spotted in the audience.

4. Jones served an assignment with the Naval Scientific and Technical Intelligence Center as head of the Missiles, Ordnance, and Astronautics Division. There he produced intelligence reports for the Navy and Defense Intelligence Agency (DIA) at all levels of security classification. He was chairman of the Naval Missile Group (NMG), which supported the Guided Missile and Astronautic Intelligence Committee. He directed the Navy's Intelligence Anti-Ship Missile Task Force, which provided intelligence for anti-missile defence research. Other assignments included Chief, Targets Development Branch in the Intelligence Directorate of Headquarters, U.S. European Command, and a stint at the National Military Command System Support Center.

5. The Human Potential Foundation logo is shown below:

Human Potential Foundation

C. B. Scott Jones, Ph.D.
President



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6. This incident involved "backward masking." Jones and his colleagues had played tape recordings backwards of speeches given by Bush, Baker and Cheney. Jones suggested that this may have revealed an important code word relevant to the Gulf crisis. Despite the wide ridicule which greeted his suggestion, privately Jones continues as a strong advocate of "reverse speech therapy" even though there seems to be no scientific support for the notion.

7. According to Larry Collins, author of Maze, the Navy has had an interest in electronic mind control. He specifically mentioned a very mysterious character named Dr. Jack Vorona. (Playboy January 1990).

8. Psychotronics in the U.S. is comprised largely of a bizarre mix of electronics and occultism. Government personnel and defense contractors regularly attend psychotronics conventions.

9. Reports say that Jones's position and charm allowed him to meet with extremely high level Chinese officials in the paranormal research field, levels denied to most visiting scientists.

10. In a recent interview for Green Egg, Vallee reported that "One government informant has even come forward to reveal that he, in fact, had been recruited to befriend various UFOlogists and to write psychological profiles of them. Every UFO organization is monitored by government informers."

11. This is by no means the first time officials in the Pentagon have expressed an interest in parapsychological aspects of UFOs. In 1973, a helicopter crew of the U.S.

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DEPARTMENT OF THE AIR FORCE
WASHINGTON, 6 FEBRUARY 1955

INTELLIGENCE

Unidentified Flying Objects (UFO)

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This regulation establishes the responsibility and procedure for reporting information and evidence on unidentified flying objects (UFO) and for releasing pertinent information to the general public.

SECTION A—GENERAL

1. Background Information. The Air Force investigation and analysis of UFO's over the United States are directly related to its responsibility for the defense of the United States. Prompt reporting and rapid identification are necessary to carry out the second of the four phases of air defense—detection, identification, interception, and destruction; therefore, the Air Force maintains the Unidentified Flying Object Program. To implement this program successfully requires strict compliance with this regulation by all commanders.

2. Definitions. To insure proper and uniform usage in UFO screenings, investigations, and reportings, the objects are defined as follows:

a. *Familiar or Known Objects*—Aircraft, birds, balloons, kites, searchlights, and astronomical bodies (meteors, planets, stars).

b. *Unknown Aircraft:*

- (1) Flying objects determined to be air-

craft. These generally appear as a result of ADIZ violations and often prompt the UFO reports submitted by the general public. They are readily identifiable as, or known to be, aircraft, but their type, purpose, origin, and destination are unknown. Air Defense Command is responsible for reports of "unknown" aircraft and they should not be reported as UFO's under this regulation.

- (2) Aircraft flares, jet exhausts, condensation trails, blinking or steady lights observed at night, lights circling or near airports and airways, and other similar phenomena resulting from, or indications of, aircraft. These should not be reported under this regulation as they do not fall within the definition of a UFO.
- (3) Pilotless aircraft and missiles.

c. *Unidentified Flying Objects*—Any airborne object which, by performance, aerody-

*This regulation supersedes AFR 200-2, 12 August 1954.
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dynamic characteristics, or unusual features, does not conform to known aircraft or missiles, or which does not correspond to definitions in a and b above.

3. Objectives. Air Force interest in UFO's is three-fold: First, as a possible threat to the security of the United States and its forces; second, to determine the technical or scientific characteristics of any such UFO's; third, to explain or identify all UFO sightings as defined in paragraph 2c.

a. *Air Defense.* The great majority of flying objects reported have been found to be conventional, familiar things of no great threat to the security of the United States and its possessions. However, since the possibility cannot be ignored that UFO's reported may be hostile or new foreign air vehicles of unconventional design, it is imperative that sightings be reported rapidly, factually, and as completely as possible.

b. *Technical and Scientific.* The Air Force will continue to collect and analyze reports of UFO sightings until all can be scientifically or technically explained, bearing in mind that:

- (1) To measure scientific advances, the Air Force must have the latest experimental and developmental information on new or unique air vehicles or weapons.
- (2) The possibility exists that foreign air vehicles of revolutionary configuration or propulsion may be developed.
- (3) There is a need for further scientific knowledge in such fields as geophysics, astronomy, and the upper atmosphere which the study and analysis of UFO's and similar aerial phenomena may provide.
- (4) The reporting of all pertinent factors will have a direct bearing on scientific analyses and conclusions of UFO sightings.

c. *Reduction of Percentage of UFO "Unknowns."* Air Force activities must reduce the percentage of unknowns to the minimum. Analysis thus far has provided explanation for all but a few of the sightings reported. These unexplained sightings are carried statistically as unknowns. If more immediate, detailed objective data on the unknowns had been available, probably these too could have been explained. Due to the human factors involved, and the fact that analyses of UFO sightings are based primarily on the personal impressions and interpretations of the observers, rather than on accurate scientific data or facts obtained under controlled conditions, it is improbable that all of the unknowns can be eliminated.

4. Responsibilities:

a. *Reporting.* Commanders of Air Force bases will report all information and evidence of UFO sightings, including that received from other Services, Government agencies, and civilian sources. (See section C.)

b. *Investigation.* The commander of the Air Force base nearest to the location of the reported UFO sighting will be responsible for the conduct of all investigative action necessary to submit a complete initial report of a UFO sighting. Every effort will be made to resolve the sighting in the initial investigation. A UFO sighting reported to an Air Force base other than that closest to the scene of such sighting, immediately will be referred to the commander of the nearest Air Force base for appropriate action. (See paragraph 6.)

c. *Analysis.* The Air Technical Intelligence Center (ATIC), will analyze and evaluate:

- (1) Information and evidence reported within the zone of interior after the investigators of the responsible Air Force base nearest the sighting have exhausted their efforts to identify the UFO.
- (2) Information and evidence collected in overseas areas.

NOTE. *Exceptions:* The ATIC, independently or in participation with pertinent Air Force activities, may conduct any additional investigations necessary to further or conclude its analyses or findings.

d. *Public Relations and Information Services.* The Office of Information Services, Office of the Secretary of the Air Force, will be responsible for releasing information on sightings, and, in coordination with ATIC, for answering correspondence from the public regarding UFO's. (See paragraphs 7 and 8.)

e. *Congressional Inquiries.* The Office of Legislative Liaison will:

- (1) In coordination with the ATIC and/or the Office of Information Services, when necessary, answer all congressional mail regarding UFO's addressed to the Secretary of the Air Force and the United States Air Force.
- (2) Forward those inquiries which are scientific and technical to the ATIC for information on which to base a reply. The ATIC will return this information to the Office of Legislative Liaison for reply to the inquiry.
- (3) Process requests from congressional sources in accordance with AFR 11-7.

f. **Cooperation.** All Air Force activities will cooperate with Air Force UFO investigators to insure the technical and prompt success of investigations and analyses. When feasible, this cooperation will include furnishing air or ground transportation and other assistance.

5. **Guidance.** The thoroughness and quality of a report or investigation of UFO's are limited only by the skill and resourcefulness of the person who receives the initial information and/or prepares the report. The usefulness and value of any report or investigation depend upon the accuracy and timeliness of its contents. Following are aids for screening, evaluating, and reporting sightings:

a. Logic, consistency, and coherence of the observer's report should be given careful study. An interview with the observer by personnel preparing the report is especially valuable in determining the source's reliability and the validity of the information given. Particular attention should be given to the observer's age, occupation, and education; whether his occupation involves observation reporting or technical knowledge.

b. Theodolite measurements of changes of azimuth, and elevation and angular size.

c. Interception, identification, or air search if appropriate and within the scope of air defense regulations.

d. When feasible, contact with local aircraft control and warning (ACW) units, ground observer corps (GOC) posts and filter centers, pilots and crews of aircraft aloft at the time and place of sighting. Also contact with any other persons or organizations that may have factual data on the UFO or can offer corroborating evidence—visual, electronic, or other.

e. Consultation with military or civilian weather forecasters for data on tracks of weather balloons released in the area and any unusual meteorological activity which may have a bearing on the UFO.

f. Consultation with navigators and astronomers in the area to determine whether any astronomical body or phenomenon would account for the sighting.

g. Contact with military and civilian tower operators, air operations units, and airlines to determine whether the sighting could have been an aircraft. Local units of the Civil Aeronautics Administration (CAA) are often of assistance in this regard.

h. Contact with persons who may know of experimental aircraft of unusual configuration,

rocket and guided missile firings, or aerial tests in the area.

i. Contact with photographic units or laboratories. Usually, these installations have several cameras available for specialized intelligence or investigative work. Photography is an invaluable tool and, where possible, should be used in investigating and analyzing UFO sightings. (See paragraph 19.)

6. **Zone of Interior Collection.** Both the Assistant Chief of Staff Intelligence, Headquarters USAF, and the Air Defense Command have a direct and immediate interest in the facts pertaining to UFO's reported within the zone of interior.

a. All Air Force activities will conduct UFO investigations to the extent necessary for their required reporting action (see paragraphs 15, 16, and 17); however, investigations should not be carried beyond this point, unless such action is directed by Assistant Chief of Staff, Intelligence, Headquarters USAF.

b. After initial reports are submitted, the ATIC may require additional data, such as narrative statements, sketches, marked maps and charts, and other required data, which can be supplied more quickly and economically by the Air Force activity that made the initial report. Therefore, ATIC is authorized to contact the appropriate Air Force activity.

c. Direct communication is authorized between ATIC and other Air Force activities in matters pertaining to UFO investigations. Specifically, the ATIC may call upon the 1006th Air Intelligence Service Squadron (AISS) to assist the base commander responsible for further field investigation if review of the initial report indicates such a requirement. (See paragraph 4b.)

SECTION B—PUBLIC RELATIONS, INFORMATION, CONTACTS, AND RELEASES

7. **Maintaining Public Relations.** The Office of Information Services is responsible for:

a. In coordination with the ATIC when necessary, maintaining contact with the public and the press on all aspects of the UFO program and its related activities.

b. Releasing information on UFO sightings and results of investigations.

c. Periodically releasing information on this subject to the general public.

d. Processing, answering, and taking action on correspondence received from the general

SECTION C—PREPARING AND SUBMITTING REPORTS

12. General Information:

a. Paragraphs 2 and 5 will be used as an aid and guidance to screenings, investigations, and reporting. The format will be as outlined in paragraph 15. Activities initially receiving reports of aerial objects and phenomena will screen the information to determine if the report concerns a valid UFO within the definition of paragraph 2c. Those reports not within that definition will not be considered for further action under the provisions of this regulation.

b. To assist activities and personnel responsible for handling, screening, and processing initial, incoming UFO information, the general sources and types of reports are given here:

- (1) Generally, initial UFO reports are received from three sources:
 - (a) Civilian (airline, private and professional pilots, tower operators, technical personnel, casual observers, and the public in general), by correspondence, telephone, or personal interview;
 - (b) Military units and personnel (pilots, observers, radar operators, aircraft control and warning units, etc.), by telephone, electrical message, or personal interview;
 - (c) Quasi-military units (Ground Observer Corps (GOC) posts, observers, and filter centers), usually by telephone.
- (2) Generally, UFO reports received from civilian sources are of two types:
 - (a) Those referring strictly to an observed UFO, containing either detailed or meager information;
 - (b) Those referring only in part to an observed UFO, but primarily requesting information on some aspect of the UFO program.

c. Reports considered to fall primarily in a public relations or information service category (see paragraphs 4d, 7, 8, 9 and b(2) above) should be referred to the Office of Information Services. UFO data sufficient for investigation and/or analysis may be extracted before referral to that office.

13. **Methods for Transmitting Reports.** Coupled with any necessary screenings and investigations that must be performed preparatory to reporting, all information on UFO's will be reported promptly. Reports under 3 days from

public, pertaining to the public relations, interest, and informational aspects of the subject. (See paragraph 9.) This office will forward correspondence and queries which are purely technical and scientific to ATIC for information on which to base a reply.

8. **Releasing Information.** All information or releases concerning UFO's, regardless of origin or nature, will be released to the public or unofficial persons or organizations by the Office of Information Services, Office of the Secretary of the Air Force. This includes replies to correspondence (except congressional inquiries) submitted direct to ATIC, and other Air Force activities by private individuals requesting comments or results or analysis and investigations of sightings.

9. **Exceptions.** In response to local inquiries resulting from any UFO reported in the vicinity of an Air Force base, information regarding a sighting may be released to the press or the general public by the commander of the Air Force base concerned only if it has been positively identified as a familiar or known object. Care should be exercised not to reveal any classified aspects of the sighting or names of persons making reports. (See paragraph 18.) If the sighting is unexplainable or difficult to identify, because of insufficient information or inconsistencies, the only statement to be released is the fact that the sighting is being investigated and information regarding it will be released at a later date. If investigative action has been completed, the fact that the results of the investigation will be submitted to the ATIC for review and analysis may be released. Further inquiries should be referred to the local Office of Information Services.

10. **Release by Non-Air Force Sources.** If newsmen, writers, publishers, or private individuals desire to release unofficial information concerning a UFO sighting, every effort will be made to assure that the statements, theories, opinions, and allegations of these individuals or groups will not be associated with or represented as being official information.

11. **Contacts.** Private individuals or organizations requesting Air Force interviews, briefings, lectures, or private discussions on UFO's will be referred to the Office of Information Services, Office of the Secretary of the Air Force. Air Force personnel, other than those of the Office of Information Services, will not contact private individuals on UFO cases nor will they discuss their operations and functions with unauthorized persons unless so directed, and then only on a "need-to-know" basis.

date of sighting will be electrically transmitted with a "Priority" precedence. Electrically transmitted reports over 3 days old should carry a "Routine" precedence.

Written reports of sightings over 3 days old may be submitted on AF Form 112, Air Intelligence Information Report (AIIR) and AF Form 112a, supplement to AF Form 112 (see paragraphs 14 and 15); however, their use should be kept at a minimum in reporting initial sightings. The delays often involved in processing and transmitting AF Forms 112 through channels may make followup investigations difficult, producing only limited usable information. This factor must be considered in cases where an immediate investigation or study of a reported sighting is considered necessary. Reporting by electrical means will eliminate delays. A follow-up and/or complete report of all sighting initially reported electrically will be submitted on AF Form 112.

14. Where to Submit Reports:

a. *Electrical Reports.* Submit multiple addressed electrical reports to:

- (1) Commander, Air Defense Command
Ent Air Force Base
Colorado Springs, Colorado
- (2) Nearest Air Division (Defense). (For zone of interior only.)
- (3) Commander, Air Technical Intelligence Center
Wright-Patterson Air Force Base
Dayton, Ohio
- (4) Assistant Chief of Staff, Intelligence Headquarters USAF
Washington 25, D.C.
- (5) Office of Information Services
Headquarters USAF
Washington 25, D.C.

b. *Written Reports:*

- (1) Within the zone of interior, submit all reports direct to ATIC. ATIC will reproduce each report and distribute it to interested zone of interior intelligence activities and to Office of Information Services, if such action is deemed necessary.
- (2) Outside the zone of interior, submit reports as prescribed in "Intelligence Collection Instruction" (ICI) June 1954, direct to:
Assistant Chief of Staff, Intelligence
Headquarters USAF
Washington 25, D.C.

c. *Reports from Civilians.* Where possible, civilian sources contemplating reporting UFO's should be advised to submit the report, for proc-

essing and transmission, to the nearest Air Force base, other than ATIC.

15. *Basic Reporting Data and Format.* Show the abbreviation "UFO" at the beginning of the text of all electrical reports and in the subject of written reports. Include in all reports the data required, in the order shown below:

a. *Description of the Object(s):*

- (1) Shape.
- (2) Size compared to a known object (use one of the following terms: Head of a pin, pea, dime, nickel, quarter, half dollar, silver dollar, baseball, grapefruit, or basketball) held in the hand at about arm's length.
- (3) Color.
- (4) Number.
- (5) Formation, if more than one.
- (6) Any discernible features or details.
- (7) Tail, trail, or exhaust, including size of same compared to size of object(s).
- (8) Sound. If heard, describe sound.
- (9) Other pertinent or unusual features

b. *Description of Course of Object(s):*

- (1) What first called the attention of observer(s) to the object(s)?
- (2) Angle or elevation and azimuth of the object(s) when first observed.
- (3) Angle or elevation and azimuth of object(s) upon disappearance.
- (4) Description of flight path and maneuvers of object(s).
- (5) How did the object(s) disappear? (Instantaneously to the North etc.)
- (6) How long was the object(s) visible. (Be specific, 5 minutes, 1 hour, etc.)

c. *Manner of Observation:*

- (1) Use one or any combination of the following items:
Ground-visual, ground-electronic, air electronic. (If electronic, specify type of radar.)
- (2) Statement as to optical aids (telescopes, binoculars, and so forth) used and description thereof.
- (3) If the sighting is made while airborne, give type of aircraft, identification number, altitude, heading, speed, and home station.

d. *Time and Date of Sighting:*

- (1) Zulu time-date group of sighting.
- (2) Light conditions. (Use one of the following terms: Night, day, dawn, dusk).

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e. *Location of Observer(s).* Exact latitude and longitude of each observer, and/or geographical position. A position with reference to a known landmark also should be given in electrical reports, such as "2mi N of Deeville;" "3mi SW of Blue Lake." Typographical errors or "garbling" often result in electrically transmitted messages, making location plots difficult or impossible.

Example: 89 45N, 192 71W for 39 45N, 102 21W.

f. *Identifying Information on Observer(s):*

- (1) Civilian—Name, age, mailing address, occupation.
- (2) Military—Name, grade, organization, duty, and estimate of reliability.

g. *Weather and Winds-Aloft Conditions at Time and Place of Sightings:*

- (1) Observer(s) account of weather conditions.
- (2) Report from nearest AWS or U.S. Weather Bureau Office of wind direction and velocity in degrees and knots at surface, 6,000', 10,000', 16,000', 20,000', 30,000', 50,000', and 80,000' if available.
- (3) Ceiling.
- (4) Visibility.
- (5) Amount of cloud cover.
- (6) Thunderstorms in area and quadrant in which located.

h. Any other unusual activity or condition, meteorological, astronomical, or otherwise, which might account for the sighting.

i. Interception or identification action taken (such action may be taken whenever feasible, complying with existing air defense directives).

j. Location, approximate altitude, and general direction of flight of any air traffic in the area at time of sighting.

k. Position title and comments of the preparing officer, including his preliminary analysis of the possible cause of the sighting(s).

1. Existence of physical evidence, such as materials and photographs.

16. *Negative or Inapplicable Data.* Even though the source does not provide or has not been asked for specific information by an interviewer, do not use the words "negative" or "unknown" until all logical leads to obtain the information outlined under paragraph 15 have been exhausted. For example, information on weather conditions in the area, as requested in paragraph 15g, may be obtained from the local military or civilian weather facility. Use the

phrase "not applicable" (N/A) only when the question does not apply to the particular sighting being investigated.

17. *Comments of Preparing Officer.* The preparing officer will make a preliminary analysis, and a comment on the possible cause or identity of the object being reported, together with a statement supporting his comment and analysis. Every effort will be made to obtain pertinent items of information and to test all possible leads, clues, and hypotheses concerning the identity or explanation of the sighting. (See paragraph 5.) The preparing officer receiving the report initially is in a much better position to conduct an "on-the-spot" survey or followup than subsequent investigative personnel and analysts who may be far removed from the area, and who may arrive too late to obtain vital data or the missing information necessary for firm conclusions.

18. *Classification.* Do not classify reports unless data requested in paragraph 15 require classification. Classify reports primarily to protect:

a. Names of sources reporting UFO's and other principals involved, if so requested by these persons or considered necessary;

b. Intelligence, investigative, intercept, or analytical methods or procedures;

c. Location of radar and other classified sites, units, and equipment;

d. Information on certain types, characteristics, and capabilities of classified aircraft, missiles, or devices that may be involved in the sighting.

19. *Reporting Physical Evidence.* Report promptly the existence of physical evidence (photographic or material):

a. *Photographic:*

(1) *Still Photographs.* Forward the negative and two prints. Title the prints and the negatives, or indicate the place, time, and date of the incident.

(2) *Motion Pictures.* Obtain the original film. Examine the film strip for apparent cuts, alterations, obliterations, or defects. Include in the report comment on any irregularities, particularly if received from other than official sources.

(3) *Supplemental Photographic Information.* Negatives and prints, in themselves, often are insufficient to provide certain valid data or to permit firm conclusions. (See AFM 200-9—a

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classified document receiving limited distribution.) Information that will aid in plotting or in estimating distances, apparent size and nature of object, probable velocity, and movements includes:

- (a) Type and make of camera,
 - (b) Type, focal length, and make of lens,
 - (c) Brand and type of film,
 - (d) Shutter speed used,
 - (e) Lens opening used, that is, "f" stop,
 - (f) Filters used,
 - (g) Was tripod or solid stand used,
 - (h) Was "panning" used,
 - (i) Exact direction camera was pointing with relation to true north, and its angle with respect to the ground.
- (4) *Other Camera Data.* If supplemental information cannot be obtained, the minimum camera data required are the type of camera, and the smallest and largest "f" stop and shutter-speed readings of the camera.

- (5) *Radar.* Forward two copies of each still-camera photographic print. Title radarscope photographic prints in accordance with AFR 95-7. Classify radarscope photographs in accordance with section XII, AFR 205-1, 3 January 1956.

NOTE: If possible, develop photographic film before forwarding. If undeveloped film is forwarded, mark it conspicuously to indicate this fact. Undeveloped film often has been destroyed by exposure during examinations made while en route through mail channels to final addressees.

b. *Material.* Each Air Force echelon receiving suspected or actual UFO material will safeguard it in a manner to prevent any defacing or alterations which might reduce its value for intelligence examination and analysis.

c. *Photographs, Motion Pictures, and Negatives Submitted by Individuals.* Photographic and motion picture material is often submitted by individuals as part of their UFO reports. All original material submitted, will be returned to the individual upon completion of necessary studies, analyses, and duplication by the Air Force.

BY ORDER OF THE SECRETARY OF THE AIR FORCE:

OFFICIAL:

J. L. TARR
Colonel, USAF
Director of Administrative Services

THOMAS D. WHITE
Chief of Staff

DISTRIBUTION:

S

*History and methodology of
"flying saucer" intelligence.*

THE INVESTIGATION OF UFO'S

Hector Quintanilla, Jr.

Unidentified flying objects are not a new phenomenon. In 583 B.C. Ezekiel recorded a whirlwind to the north which appeared as a fiery sphere. In 1254 at Saint Albans Abbey, when the moon was eight days old, there appeared in the sky a ship elegantly shaped, well equipped and of marvelous color. In 1520 in France there were sighted a round-shaped object with rotating lights and two fiery suns. In 1874 in Texas a farmer reported seeing a dark flying object in the shape of a disc cruising in the sky at a wonderful speed. These are a mere sampling of the many such events recorded by historians.

The modern era of UFOs, however, can be dated from 24 June 1947, when a flyer made some strange observations which national news coverage and authors with a poetic license so played up as to excite public entertainment of a notion that our planet had been visited by unknown vehicles from outer space.

Supersonic Saucers

On that 24 June, Kenneth Arnold was out flying in his private plane. He was looking for a Marine transport that was supposed to have crash-landed somewhere on the southwest side of Mt. Ranier. First he flew directly toward the mountain from the west at an altitude of approximately 9,500 feet, searching all of the various ridges for the downed plane. Then he made a sweep back to the west, found nothing, and headed again toward Mt. Ranier. The air was so smooth that it was a real pleasure flying; he trimmed out the aircraft and relaxed, admiring the crystal-clear sky and the terrain. There was a DC-4 to his left and rear at approximately 14,000 feet.

He hadn't flown more than two or three minutes on this course when a bright flash reflected on his airplane. He couldn't find where

the reflection came from, but to the left, north of Mt. Ranier, he did observe a chain of nine peculiar-looking objects flying from north to south at approximately 9,500 feet. They were approaching Mt. Ranier very rapidly, and he at first assumed them to be jet aircraft. Every few seconds two or three of them would dip or change course slightly, so as to catch the sun at an angle and reflect brightly. They were too far away for him to determine their shape or formation.

As they approached Mt. Ranier, however, he observed their outline quite clearly—except that, oddly, he could not find their tails. He watched them pass the southern edge of Mt. Ranier flying directly south-southeast down the hog's-back of a range. Their elevation seemed to vary by as much as one thousand feet, but they remained very near the horizon, therefore around his own elevation. They flew rather like geese, in a diagonal chain as though they were linked together. They seemed to maintain their orientation while swerving in and out of the high mountain peaks.

Arnold estimated the distance from him to the objects at approximately 25 miles. Using a Zeus fastener and a cowling tool, he estimated their size to be about two-thirds that of the DC-4. Watching them pass a high snow-covered ridge between Mt. Ranier and Mt. Adams, he saw that as the first object was leaving its south crest the last one was entering its northern crest. Later the length of this ridge, and therefore that of the chain of objects, was determined to be about five miles. Arnold timed their flight from Mt. Ranier to Mt. Adams, 47 miles, at 1 min. 42 sec., a speed of 1,659 miles per hour.

In a subsequent interview with newsmen, Arnold described the objects as appearing like saucers skipping on water. This description, shortened to "flying saucers" by newsmen, gave rise to the popular term for UFOs. The sighting, like most, was not reproducible for purposes of investigation; it involved uncontrollable atmospheric conditions. The Air Force was left with one man's subjective interpretation of what he had experienced. Scientists who reviewed Arnold's sighting concluded that the objects were a mirage. The smooth, crystal-clear air that he noted indicated the very stable conditions which are associated with inversions and a high index of refraction of the atmosphere.

Although Arnold's experience could not be reproduced, another phenomenon in some respects similar and observed in the same area

found a satisfactory explanation. Navy Commander W. J. Young reported in November 1948 that on several occasions he had seen over the Willamette valley and the plains of eastern Washington and Oregon what could easily have been mistaken for flying discs. One striking example occurred over the Willamette valley on a clear sunny day when the ever-present blue haze seemed somewhat thicker than usual. His aircraft was flying at altitudes between 1,000 and 5,000 feet when bright flying objects appeared, some on his beam and others on the bows or dead ahead. From time to time they would disappear and new ones appear.

Young finally determined that what looked to be aircraft at various altitudes were reflections of the sun from the aluminum roofs of farm buildings at great distance from his plane. The perspective of the land converging with the sky on the horizon, with limited ground visibility, made it appear as though the roof reflections were actually airborne at various altitudes in the haze. Thus one UFO sighting was solved by the observer himself. Although there is no uniform pattern among reported UFO phenomena, some characteristics of one may be found in others, as in Young's and Arnold's.

Sign and Grudge

Newspaper publicity for Arnold's flying saucers started an avalanche of other sightings. The Air Force began receiving reports from people in all walks of life. Before December 1947 no specific organization was responsible for investigating and evaluating these. Without any basis in measurable data or controlled experiment, the reported phenomena were variously assessed, even within the military structure, as due to a new aerodynamic configuration, to natural occurrences, to misinterpretation of conventional objects, or to space ships under intelligent control. The military interest touched the fields of air defense, R&D, and intelligence, responsibilities vested in many different organizations.

To end this confusion, the Chief of Staff directed on 30 December 1947 that a project be established to collect, collate, evaluate, and distribute within the government all information concerning sightings which could be construed as of concern to the national security. Responsibility for the project, assigned the code name "Sign," was given to the Air Technical Intelligence Center. In February 1949 Project

Sign, having completed its evaluation of the 243 UFO cases submitted to it, issued a report:

No definite and conclusive evidence is yet available that would prove or disprove the existence of these unidentified objects as real aircraft of unknown and unconventional configuration. It is unlikely that positive proof of their existence will be obtained without examination of the remains of crashed objects. Proof of non-existence is equally impossible to obtain unless a reasonable and convincing explanation is determined for each incident. . . . Explanations of some of the incidents revealed the existence of simple and easily understandable causes, so that there is the possibility that enough incidents can be solved to eliminate or greatly reduce the mystery associated with these occurrences. . . . Under wartime conditions, rapid and convincing solutions of such occurrences are necessary to maintain morale of military and civilian personnel.

With the backlog of cases disposed of, the project was continued on a reduced scale and under a new code name, "Grudge." Project Grudge completed its evaluation of 244 reports in August 1949, relying heavily on the work of university scientists and other outside consultants, as well as the USAF Air Weather Service and the U.S. Weather Bureau. The Grudge Report concluded that the UFO sightings signified nothing that would constitute a threat to the national security of the United States, that they were chargeable to misinterpretations of conventional objects, a mild form of mass hysteria or war nerves, and fabrications for the sake of hoax or publicity.

Special Report No. 14

The soothing conclusions of Project Grudge caused very little comment, and the project was continued on a reduced scale. Nevertheless, the fringe of people that still believed in extraterrestrial visitation was growing with the popularity of science fiction articles and magazines. In December 1951 a contract was let to an industrial firm for a detailed study, unclassified, of the UFO cases on file. It took three years to complete this study.

Meanwhile, in March 1952, the project was given its present name, "Blue Book." During this period numerous books were written about the UFOs. Some representative titles are *The Coming of the Saucers, Space, Gravity, and the Flying Saucer, Is Another World Watching, The Flying Saucers Are Real, Flying Saucers from Outer Space, and Flying Saucers Come from a Distant World*. UFO hobby clubs were formed throughout the country. Most professed to be studying the phenomena scientifically, but few, if any, had physical or behavioral

scientists on their so-called evaluation committees. During the early fifties it became fashionable to accuse the Air Force of censorship or of withholding UFO information from the public.

In January 1953, while the three-year contract study was still in process, a Scientific Advisory Panel was formed to make an authoritative quick evaluation. It was composed of civilian scientists outside the government with well-known and respected names—H. P. Robertson, Luis W. Alvarez, Lloyd V. Berkner, S. A. Goudsmit, Thornton Page. Following is an extract from their report:

The panel . . . has reviewed a selection of the best documented incidents. . . . We firmly believe that there is no residuum of cases which indicates phenomena which are attributable to foreign artifacts capable of hostile acts, and that there is no evidence that the phenomena indicate a need for the revision of current scientific concepts. The panel further concludes that the continued emphasis on the reporting of these phenomena does, in these perilous times, result in a threat to the orderly functioning of the protective organs of the body politic. We cite as examples the clogging of channels of communication by irrelevant reports, the danger of being led by continued false alarms to ignore real indications of hostile action, and the cultivation of a morbid national psychology in which skillful hostile propaganda could induce hysterical behavior and harmful distrust of duly constituted authority.

The panel recommended:

That the national security agencies take immediate steps to strip the unidentified flying objects of the special status they have been given and the aura of mystery they have unfortunately acquired.

One action taken on this recommendation was to establish, within the Office of Information at the Air Force Secretary's level, an office to answer public questions and release information regarding UFOs. Throughout the years, the responsibility for releasing UFO information to the public has remained with the Office of Information, Secretary of the Air Force.

When the unclassified contract study was ready at the end of 1954, it was immediately released to the news media. It was released under ATIC cover, because the competent company which produced it wished to remain anonymous in this field of research. It is commonly referred to as Special Report No. 14, the first 13 having been administrative progress reports.

Special Report No. 14 reduced and evaluated all the UFO data held in the Air Force files. It contains graphs showing the frequency distribution of sightings by time, date, location, shape, color, duration,

azimuth, and elevation. It records an attempt to build a model of the typical UFO and an ultimate finding that UFOs come in all sizes, shapes, and colors. It concludes as follows:

It can never be absolutely proven that "Flying Saucers" do not exist. . . . Scientifically evaluated and arranged, the data as a whole did not show any marked patterns or trends. . . . A critical examination of the distributions of the important characteristics of sightings, plus an intensive study of the sightings evaluated as unknown, led to the conclusion that a combination of factors . . . resulted in the failure to identify as *Knowns* most of the objects classified as *Unknowns*. An intensive study aimed at finding a verified example of a "Flying Saucer" or at deriving a verified model or models of "Flying Saucers" led to the conclusion that neither goal could be attained using the present data.

It is emphasized that there was a complete lack of any valid evidence consisting of physical matter in any case of a reported unidentified aerial object. Thus, the probability that any of the unknowns considered in this study are "Flying Saucers" is concluded to be extremely small, since the most complete and reliable reports from the present data, when isolated and studied, conclusively failed to reveal even a rough model, and since the data as a whole failed to reveal any marked patterns or trends.

Therefore, on the basis of this evaluation of the information, it is considered to be highly improbable that any of the reports of unidentified aerial objects examined in this study represent observations of technological developments outside the range of present-day scientific knowledge.

Investigation Procedures

The objectives of the UFO program, outlined in 1953 by Air Force Regulation 200-2, remain unchanged:

- (1) To determine if UFO phenomena present a threat to the security of the United States.
- (2) To determine if UFO phenomena exhibit any technological advances which could be channeled into U.S. R&D.
- (3) To explain or identify the stimuli which caused the observer to report a UFO.

Our Project Blue Book office at Wright-Patterson has a complement of only one officer, two sergeants, and one civilian stenographer. The initial investigation of all UFO sightings is therefore undertaken by the commander of the nearest Air Force base. In its subsequent analysis of UFO cases, also, the project office is assisted by many organizations and professional individuals. Project Consultant for the past eighteen years has been Dr. J. Allen Hynek, astrophysicist

and Chairman of the Dearborn Observatory, Northwestern University. It is Dr. Hynek, obviously, who has maintained continuity on the project, in addition to evaluating all suspected astronomical cases. We have used the services of Dr. Charles P. Olivier, head of the American Meteor Society, in evaluating some suspected meteor cases.

For help on suspected aircraft sightings we have gone to Federal Aviation Agency offices, local airports, the Strategic Air Command, and the Air Defense Command. In suspected balloon sightings we have called upon local airports, local weather stations, the U.S. Weather Bureau, Holloman AFB Balloon Control Center, the National Center for Atmospheric Research, General Mills, Raven Industries, Sea Space Systems, and colleges and universities conducting balloon research. For suspected satellite sightings we use the printed Echo schedules, NASA satellite reports, the Smithsonian North and South Equatorial Crossings, and the professional services of the Space Detection and Tracking System. For suspected missile observations we go directly to Cape Kennedy, Vandenberg AFB, Point Magu, Wallops Island, Eglin AFB, Holloman AFB, and Green River.

For radar analysis we contact one of our internal organizations. For photo analysis we use an internal organization but also Kodak in Rochester, N.Y. On physical specimens we have used the services of the Air Force Materials Laboratory, Battelle Memorial, the Food and Drug Administration, Libby Owens, Corning Glass, Institute of Paper Chemistry, and the Northwestern Geology Department. Numerous other organizations and individuals have helped the project in the past. No individual, government agency, or industrial group has ever refused assistance.

As indicated above, UFO sightings are classified according to the suspected real event that gave rise to each report. The characteristics of these different categories are sketched below.

Propeller Aircraft

Regular scheduled airliners fly in air corridors, are usually controlled by FAA. Lighting will probably be typical red and green wing lights with rotating beacon. They use landing lights on takeoff as well as in landing pattern. Sighting report may include hovering or stationary period if the aircraft is in a turn or approaching the observer. Total duration should be consistent with flight maneuvers, not likely to exceed five minutes unless some series of maneuvers is being performed. Landing light, blotting out the red and green

Flashing lights, is often reported as a single light at night. Experimental and unusual lighting effects can vary with the lighting configuration of each aircraft. Color most often reported as white, can be red. Objects reported in straight flight at certain altitude can be checked against local flight corridors; then FAA can be checked if there remains doubt that an object is an aircraft or if positive identification of a specific flight is required. There may or may not be sound associated with the visual effect reported. If near an airport, this type of object is not classed as a UFO; moving lights in and around airports which could be caused by aircraft are assumed to be aircraft.

Private or non-scheduled flights have the same characteristics in general. Speeds may be slower and duration longer. Altitude usually lower. No sound if the wind is blowing away from the observer. Duration should not exceed seven or eight minutes unless maneuvers can account for additional time. Normally flight is cleared from some local airport and not carried on radar plots through FAA; hardest type to make positive identification of. Evaluation made on reported flight characteristics consistent with aircraft.

Jet Aircraft

Airliner and high-altitude missions are similar to conventional flights in visual characteristics with the following exceptions: (1) The color is most often reported as red. (2) No sound is associated with the object. (3) Flight is usually straight or with one turn. Duration is about three to five minutes, depending upon the length of arc visible. FAA has designated airways for these flights.

Special low-level military missions are flown at 2,000 feet in known air corridors. Sighting is usually brief, one minute or less. May be reported hovering if flight is directly toward the observer. May include a sudden burst of speed. No sound if wind is away from observer. Usually reported as a single light, but may be more than one. Sightings are at night; during the day these aircraft can be seen too well to be misinterpreted.

Special test or training missions, varying from a single plane to multiple flights or major air operations, may give rise to reports. These flights can be determined by contact with local, regional, or major air commands.

A jet with afterburner in operation, viewed from the side, may give the appearance of a short flame. It is usually reported as blue and

tapering. When the afterburner is cut off, the object may be thought to have either just vanished or zoomed off into space. Duration is usually brief. The sighting is frequently during climb. As viewed from the rear, the jet may be reported red or orange with some yellow and of no distinct shape. Here again the disappearance may be sudden. If at high altitude, only a nondescript light may be reported.

Refueling Missions

Here lights on the tanker and the multiple aircraft engaged add new visual characteristics. Sightings are at night only; daylight operations would be recognized for what they are. They may be at low or high altitude. Multiple lights will be moving around, in formation, going on and off. The basic light formation will fly straight for a set distance, then may make a 180-degree turn. Duration in an area may run as high as 15 minutes, but any single pass should not last more than four or five. Lights may be seen going one way and then appear on their return path later. The 922 Air Refueling Squadron at Wright-Patterson furnishes information on the visual characteristics of night refueling operations, and SAC recently photographed a refueling mission for the benefit of UFO analysts.

Refueling operations are controlled and conducted in specific areas. A "Flight Planning Guide" issued by the Aeronautic Chart and Information Center gives the location of these areas and the agency controlling each. A phone call to the controller will determine whether an area was in use at a particular time and what squadron flew the mission. Then communication with the squadron will give the number and type of aircraft flown and their entry and exit times.

Photo Aircraft

Aircraft using flare drops for photo work are most often reported simply as flares. Similarly, aircraft using strobes to illuminate their target, which may work at either low or high altitudes, are reported as a series of evenly spaced flashes. Duration of these sightings is usually less than two minutes, more frequently 30 seconds.

Infra-red photo planes have turbine generators to drive their equipment. These make a whining noise which can be heard above the noise of the engines. Not many agencies do this work, which is often classified. The planes used are rather slow, less than 125 mph.

Much of the work is done early in the morning, with landing lights on because of the low altitudes flown.

Advertising Aircraft

Planes towing targets or banners during daylight hours are not usually misinterpreted unless they remain at such a distance that the observer cannot distinguish the tow vehicle and sign. Frequently in such cases the reports are accompanied by drawings picturing the towed banner as part of the UFO. Duration is longer than for other aircraft sightings, and the flight generally includes maneuvers. The frequently used loud speaker would presumably not be heard unless the flight were close enough for correct identification. Local investigators can check for these aircraft, since FAA regulations require a permit for such flights.

Aircraft with electrically lighted signs have the same essential characteristics except that they are normally sighted at night. On occasion the sign lights have been mistaken for windows of a much larger craft. Flights are relatively slow, characteristically maneuvering back and forth in one area. One usually operates over the same area for more than one day and can be viewed on successive nights, weather permitting.

Helicopters

Motion slow, may or may not hover. It needs to be far enough away from the observer to escape daylight identification. It may be reported as a black speck moving back and forth, up and down. During the night weird effects can be caused by the red rotating beacon flashing through the canopy. Motion will be erratic if the flight includes hovering. Positive identification is usually simple to obtain by checking the flight schedules of military and civilian helicopters in the area.

Balloons

Flight characteristics here are affected by meteorological factors. Wind data is obtained from the Weather Bureau. An Air Weather Service liaison officer assists in evaluating the meteorological data. Low-level weather balloons are described in sightings as round or oval, occasionally oblong. The flight may be reported as hovering, rising, zig-zag, or erratic, but the object must be moving with the

wind. It will be picked up by radar only if a radar reflector is attached. A frequent time for sightings is at dusk, before the balloon disappears into earth's shadow. It is rarely sighted at night; its small white lights are not visible to ground observers from above 10,000 feet without optical aids. The sighting from planes is usually very brief, and on occasion even experienced pilots have attributed unusual motion to balloons.

An upper-air balloon may be described as round or oval, usually silver during the day and orange at dusk. It will appear stationary or in slow motion. Actually, it moves with prevailing winds at the altitude—six months to the east and six to the west. It will probably be picked up on radar and remain in the area long enough to be identified by aircraft scrambled or diverted for this purpose. Sudden disappearance is to be expected at dusk, and may be reported as a zooming off into space. The sun's reflection through folded panels can give unusual flashing effects. Every effort is made to pin to a specific launch any reports attributable to upper-air balloons; this practice has assisted the scientific community in recovering some of them.

Upper air research balloons are launched by military and civilian agencies for cosmic ray and other studies. These are about 100 feet in diameter, usually of polyethylene. They can be programmed to fly at various altitudes between 80,000 and 125,000 feet or higher. Their appearance may vary with the equipment suspended below and other attachments, but what is visible from the ground without optical aids is generally the same for all. The speed will vary with the wind, from hovering in the same area for some days up to 200 mph in jet streams. At night the balloon will descend as the gas cools and the next day go back up to the programmed altitude. It usually carries a radio beacon which is followed by tracking stations, as well as running lights and radar reflectors. Occasionally, multiple balloons are used to carry heavy equipment. Pilots scrambled to check on this kind of balloon cannot reach its altitude but can get close enough to identify it. At dawn the balloon may appear suddenly, as it moves into sunlight, and similarly disappear at dusk.

Earth Satellites

In order for a report to be evaluated as deriving from an artificial satellite, the following criteria must be met: (1) Time of sighting must be at night and at such an hour that the vehicle can reflect the

un's rays. (2) Object should resemble a star in visual characteristics. (3) Direction of flight can have a westerly component only in the case of retrograde satellites. (4) Duration (considering the degrees of arc through which the object is observed) must be consistent with satellite orbital velocities.

Satellites are normally reported as star-like moving lights, most frequently white but occasionally yellow, green, blue, orange, and even red. Motion may be steady, hesitating, or zig-zag; portions of the flight may be seen as hovering or stationary. The path may be reported straight or arching, and a turn may be ascribed to it at the beginning or end of the flight. The object may appear or disappear suddenly. The speed should be about 15° of arc per minute, the average duration three to six minutes.

When a known satellite has a flight path over the observer's area at the time of the report (only Echo and Pegasus schedules are screened), and the above considerations are fulfilled, the sighting is evaluated as of that specific vehicle. There are more than 30 satellites in orbit visible to the naked eye. When a reported object does not correspond with Echo or Pegasus passages but displays the required characteristics, it is then evaluated as a probable or possible satellite.

Astronomical Events

The most common UFO reports are of astronomical sightings—bright stars, planets, comets, fireballs, meteors, auroral streamers, and other celestial bodies. When observed through haze, light fog, moving clouds, or other obscurations or unusual conditions, the planets, especially Venus, Jupiter, and Mars, have been reported as UFOs. Stellar mirages are also a source of astronomical reports.

Other Categories

There are three other classifications used for UFO reports. An *Insufficient Data* category takes care of those in which one or more elements of information essential for the evaluation are missing—for example the duration of the sighting, the date, time, location, or position in the sky, weather conditions, and the manner of appearance or disappearance. If there is any indication that such a sighting may be important from the viewpoint of security, scientific or technical value, or public interest, every attempt is made to obtain

the additional information necessary before placing the report in this category.

Another category is a catch-all labeled *Other*. It includes missiles, reflections, mirages, searchlights, birds, kites, spurious radar indications, hoaxes, fireworks, and flares.

And finally, a sighting is considered *unidentified* when a report apparently contains all the data necessary to suggest a valid hypothesis but its description cannot be correlated with any known object or phenomenon.

Through 1965, 10,147 UFO reports had been disposed of and classified in one or another of the seven categories. In 1964, a fairly average year, the figures were as follows:

Astronomical	123
Aircraft	71
Balloon	90
Insufficient Data	99
Other	88
Satellite	142
Unidentified	19
Total	568

Policeman's Report

One intriguing, classic case of the 10 listed above as unidentified will also illustrate how widely government agencies, industrial firms, and individuals cooperate in the UFO project.




On 24 April 1964 at approximately 1745 hours, a Socorro, New Mexico, police officer, *Lonnie Zamora*, was headed south chasing a speeding automobile when he suddenly heard a roar and saw a flame in the sky to the southwest. He decided to let the speeder go in favor of investigating the flame, because there was a dynamite shack in that area and it might have blown up. He turned right onto a gravel road that ran by the shack.

As he was driving slowly along the road, Zamora saw above a steep hill just ahead a funnel-shaped flame, bluish and sort of orange. The base of the flame was hidden behind the hill; there was no smoke connected with it. He had trouble getting the car to the top of the hill because of loose gravel; he had to try three times before he made it. As he reached the top of the hill he saw a shiny object to the south, this side of the dynamite shack, about 150-200 yards away. It was off the road to the left in an arroyo, and at first glance it

looked like a car turned over; but when he drove closer, it appeared to be aluminum color, not chrome, and oval-shaped like a football.

Zamora drove about 50 feet along the hill crest, radioing back to the sheriff's office, "10-44 [accident], I'll be 10-6 [busy out of the car] checking a wreck down in the arroyo." From this point, seated in the car, he could not see the object over the edge of the hill. As he stopped the car, he was still talking on the radio, and while he was getting out he dropped the mike. He picked it up and put it back and started down toward the object.

Just then he heard a very loud roar, not exactly like a blast but not steady like a jet engine. It was of low frequency at first and then became higher. At the same time he saw a light blue flame, sort of orange at the bottom. Zamora believes this flame came from the underside of the object; he could see no smoke but some dust in the vicinity. He panicked; he thought the object was going to blow up. In his own words (with slight rearrangements for the sake of clarity):

As soon as saw flame and heard roar, . . . ran away from object but did turn head towards object. Object was  in shape. It was smooth—no windows or doors. As roar started, it was still on or near ground. Noted red lettering of some type like . Insignia was about 2 1/4 inches high and about 2 inches wide, guess. Was in middle of object, like . Object still like aluminum white.

[Running], bumped leg on car—back fender area. Car facing southwest. . . . Fell by car and [sun] glasses fell off, kept running to north, with car between me and object. . . . I guess I had run about 95 feet when I glanced back and saw the object. . . . rise to about level of car, about 20 to 25 feet, guess. Took, I guess, about six seconds when object started to rise and I glanced back. . . . It appeared about directly over the place where it rose from.

I was still running. . . . [then] about 50 feet from car I ducked down, just over edge of hill. . . . I stopped because I did not hear the roar. I was scared of the roar, and I had planned to continue running down the hill. I turned around toward the object and at the same time put my head toward ground, covering my face with my arms. . . . When the roar stopped, heard a sharp tone whine and the whine lasted maybe a second. Then there was complete silence about the object.

That's when I lifted up my head and saw the object going away from me. . . . in a southwest direction. . . . It did not come any closer to me. It appeared to go in straight line and at same height—possibly 10 to 15 feet from ground, and it cleared the dynamite shack by about three feet. Shack about eight feet high. Object was traveling very fast. It seemed to rise up, and take off immediately across country.

I ran back to my car and as I ran back, I kept an eye on the object. I picked up my . . . sun glasses, got into the car, and radioed to *Nep Lopes*, radio operator, to look out the window, to see if you could see an object. He asked, what is it?

I answered, it looks like a balloon. I don't know if he saw it. If *Nep* looked out his window, which faces north, he couldn't have seen it. I did not tell him at the moment which window to look out of.

As I was calling *Nep*, I could still see object. The object seemed to lift up slowly, and to get small in the distance very fast. It seemed to just clear the Box Canyon or Mile Canyon Mountain. It disappeared as it went over the mountain. It had no flame whatsoever as it was traveling over the ground, and no smoke or noise.

Feeling in good health. Last drink—two or three beers—was over a month ago. Noted no odors. Noted no sounds other than described. Gave direction to *Nep Lopes* at radio and to Sergeant *MS Chaves* [of New Mexico state police at Socorro] to get there. Went down to where the object had been, and I noted the brush was burning in several places. . . . I got my pen and drew a picture of the insignia on the object. . . .

Then Sgt. *Chaves* came up, asked me what the trouble was because I was sweating and he told me that I was white, very pale. I asked the Sgt. to see what I saw and that was the burning brush. Then Sgt. *Chaves* and I went to the spot and Sgt. *Chaves* pointed out the tracks.

When I first saw the object (when I thought it might be a car) I saw what appeared to be two legs of some type from the object to the ground. At the time, I didn't pay much attention to. . . the two legs. The two legs were at the bottom of the object, slanted outwards to the ground. The object might have been about three and a half feet from the ground at that time. . . .

Diagnosis: Unsolved

There is no doubt that *Lonnie Zamora* saw an object which left quite an impression on him. There is also no question about *Zamora's* reliability. He is a serious police officer, a pillar of his church, and a man well versed in recognizing airborne vehicles in his area. He is puzzled by what he saw, and frankly, so are we. This is the best-documented case on record, and still we have been unable, in spite of thorough investigation, to find the vehicle or other stimulus that scared *Zamora* to the point of panic.

During the course of the investigation and immediately thereafter, everything that was humanly possible to verify was checked. Radiation in the landing area was checked with Geiger counters from Kirtland AFB. The Holloman AFB Balloon Control Center was checked for balloon activity. All local stations and Air Force bases were checked for release of weather balloons. Helicopter activity was checked throughout the state of New Mexico. Government and private aircraft were checked. The reconnaissance division in the Pentagon was checked. The White House Command Post was checked. The Commander at Holloman AFB was interviewed at length about special activities from his base. Down-range controllers

at the White Sands Missile Range were interviewed. Letters were written to industrial companies engaged in lunar vehicle research activity. The companies were extremely cooperative, but to no avail. The Air Force Materials Laboratory analyzed soil samples from the landing area.

The findings were altogether negative. No other witnesses could be located. There were no unidentified helicopters or aircraft in the area. Radar installations at Holloman AFB and at Albuquerque observed no unusual blips; but the down-range Holloman MTI radar, closest to Socorro, had been closed down for the day at 1600 hours. There was no unusual meteorological activity, no thunderstorms; the weather was windy but clear. There were no markings of any sort in the area except the shallow "tracks" Chaves and Zamora found. The soil analysis disclosed no foreign material. Radiation was normal for the "tracks" and surrounding area. Laboratory analysis of the burned brush showed no chemicals that could have been propellant residue.

The object was traveling at approximately 120 miles per hour when it disappeared over the mountain, according to Zamora's best guess of the time it took. Not an interplanetary speed, at any rate; and the findings are also negative for any indication that the Socorro UFO was of extraterrestrial origin or that it presented a threat to the security of the United States.

INTELLIGENCE IN RECENT PUBLIC LITERATURE

SECRETS OF ELECTRONIC ESPIONAGE. By John M. Carroll. (New York: Dutton. 1968. 224 pp. \$3.95.)

This is a light and rather superficial review of the half century of electronic surveillance activities which began in World War I soon after the discovery of the vacuum tube. A short evening's reading, it will appeal more to devotees of *Popular Mechanics* than to *Scientific American* subscribers. Those knowledgeable of electronic espionage today will not find much of interest in it except perhaps a reminder that in World War I, as now, the thing was to apply the latest scientific techniques to espionage. Then it was the first vacuum tube amplifiers; now it is tunnel diodes and lasers.

The book could have been put together, whether it was or not, by going to standard reference works for what took place in the two world wars and then keeping a good file of clippings from newspapers and magazines to cover events in the last 15 years. The scissors-and-paste technique gives the reader a series of episodes rather than a coherent history of the subject.

There are a number of inaccuracies, growing more serious as the story approaches the present time—"Army Air Force" rather than Air Corps, "C-47" for C-54, glass "tubes" instead of rods in fiber optics, and then the retrieval of capsules ejected from satellites by nets *strung between planes* in flight. Illustrations in the section devoted to ferret activities and overflights are mostly photos of planes in their conventional configuration, not the aircraft modified for Elint or technical surveillance.

The account of the Soviet audio penetration of the American embassy discovered in 1964 is almost completely erroneous. It has only the 8th through the 10th floors bugged, neglecting the 8th and 7th, and counts only 40 microphones, a 25% error. In several pages describing the microphones buried deep in the walls, the author tells us they were attached to long wooden pegs extending almost to the surface of the plaster to pick up the walls' voice-induced vibrations, wooden pegs being used instead of the metal spikes of contact microphones in order to defeat search by metal detectors. In reality, these were wooden tubes leading to open holes in the plaster behind the hot water radiators and so providing an air path to each microphone's diaphragm. He says the microphones were connected to

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the telephone lines; they had their own wiring systems. He describes the transponder concealed in the Great Seal as U-shaped with a steel vibrator; really it was a small cylindrical resonant cavity with a thin aluminum diaphragm at one end and a short antenna rod projecting from one side.

Those concerned with the possible compromise of today's technical operations need not worry over this publication. Many sensitive developments are completely ignored; others are given superficial treatment. No mention is made of the Navy's underwater short or long range anti-submarine surveillance efforts. Although our interest in Soviet space technology is mentioned, little is said of particular techniques for monitoring Soviet missile launches or observing the re-entry characteristics of nose cones. In the field of audio surveillance techniques there is nothing that hasn't been thoroughly rehashed at Congressional hearings or in the open press, and some things in fact which have received wide press coverage are not mentioned. When discussing the monitoring of conversations by bouncing some sort of beam off window panes, for example, the author mentions only techniques which are quite unrewarding.

It would be interesting to know if this discretion of Mr. Carroll's reflects a lack of information or a deliberate effort to preserve security. In view of the disproportionate coverage he gives to airborne activities, I suspect that he has drawn heavily on *Aviation Week* as well as on *Electronics*, and his slighting of the subaqueous field may well be due to the lack of any similar periodical devoted to oceanography.

A. K. DERTWINKLE

Scientists Debate The Question Of UFO's-

Editor's note: With this article, the Star starts a two-part series on the fascinating subject of unidentified flying objects. At the Washington meeting of the American Society of Newspaper Editors last April, Dr. James E. McDonald of the University of Arizona, spoke at the invitation of the editors, taking as his subject UFO's. He was followed by Dr. Donald H. Menzel of Harvard University. The minutes of the ASNE meeting now being transcribed and available, the Star, because of the special public interest in the differences of opinion between Dr. McDonald and Dr. Menzel, presents the remarks of both. Dr. Menzel's side of the case will appear Wednesday. Dr. McDonald was introduced by John Quincy Mahaffey, editor of the *Texarkana, Tex., Gazette*.

Mr. Mahaffey: And now I should like to present our first scientist, Dr. James E. McDonald, who now holds the position of senior physicist, Institute of Atmospheric Physics, and professor, Department of Meteorology, University of Arizona.

Briefly, his educational background includes a B.A. in chemistry from the University of Omaha, an M.S. in meteorology from Boston Tech and a Ph.D. in physics from Iowa State University. He has been a research physicist at the University of Chicago and has taught physics at Iowa State University prior to his current position. He is a member of the American Meteorological Society, the American Geophysical Union, the Royal Meteorology Society and Sigma Xi.

I am honored to present our distinguished guest, Dr. McDonald.

Dr. McDonald: Ladies and gentlemen, I am pleased to have the chance to talk with you and discuss the results of what I have found in approximately a 12-month intensive study of this extremely interesting problem of unidentified flying objects.

About last April I began to take a close look at the problem, having been moderately interested in the problem for some years prior to that. I have been to Wright-Patterson at Project Blue Book three times and I have examined 150 or so cases in their files and talked to the scientific and military staff at Blue Book.

I have talked with people in the Air Force, both scientific and military, about other aspects of the problem. I have been around the country discussing it with independent groups, such as NICAP (National Investigations Committee on Aerial Phenomena) here in Washington. NICAP is one of the outstanding independent groups; it has done an excellent job over the years of digging into this fascinating problem.

I have, on my own hook, interviewed dozens of key witnesses in important cases around the country and have examined hundreds of cases in a good deal of detail. I have gone over Air Force evaluations, Dr. Menzel's analyses of problems and other evaluations.

It is against that background that I now tell you that the sighting Mr. Powell

discussed, and which I was quite interested to hear about, is by no means unrepresentative of the categories of sightings that demand immediate serious scientific attention in this country and all over the world. And that is part of what I am here to tell you today.

(Editor's note: William C. Powell of Radoor, Pa., and a friend, Miss Muriel McClave, had already reported to the editors on their May 21, 1966, sighting of what they said was a saucer-shaped object with a slightly raised dome on the top. They said the bottom was brilliant red, the top a brilliant white. They said they saw the object while flying near Willow Grove Naval Air Station in Pennsylvania.)

This is not a nonsense problem, as it has been made out. A lot of you have had fun, I suppose, writing feature stories about little green men and hoaxers and so on. Believe me, that is the wrong part of this problem to look at.

In the past week I have spent all of my time discussing my serious concern with scientific colleagues and with military people here in

Washington. This week I think I have given 10 talks and briefings. I am glad to say to you that scientific and official concern is beginning to change. I have been at the Naval Research Lab. I've been at the Pentagon twice this week briefing civilian, military, Air Force and other personnel. This week I have also talked to the National Academy people, the National Science Foundation and other persons whose influence on the problem I believe will quickly show up, but whose affiliation I am not free to discuss with you.

I have to say to you that, as a result of a pretty close look at this problem, I think we have all missed the boat. I think the problem has been most seriously mishandled officially for 20 years. The problem has been misrepresented by many interacting factors including yourselves and scientists such as myself.

I have tried to put all of this down in a rather long paper that is available to you at the back of the room. It is entitled "UFO's: Greatest Scientific Problem of Our Times?" In 20 minutes I can't possibly go over all of the details. But I will refer to the sections of this 28-page paper as I go along. Since I know you can't read it now and I doubt you'll be able to



DR. JAMES E. McDONALD

read it before you leave, I hope that all of you will take it, either to read on the airplane or to carry it home to read and then pass on to your scientific editors or aeronautical editors or what have you. The paper goes into considerable detail and explains my point of view.

I think the problem has been superficially and incompetently handled by the Air Force. I have said that in many open discussions. I have said it to Air Force generals this week. I said it to Air Force generals months ago. And I say it again.

The history of the problem, as Maj. Quintanilla (Maj. Hector Quintanilla Jr., chief of Project Blue Book and also a convention speaker) indicated, began in 1947. The pivot point in the history of the UFO's was the Robertson Panel of 1953 - five well-known scientists assembled by the Air Force and CIA to have a look at the problem. The security agency's concern that led to formation of the group grew out of the heavy wave of reports of 1952, not exceeded even by last year's 1,000 reports.

I was startled when I went into Maj. Quintanilla's office and saw five feet of shelving just devoted to the 1952 waves of sightings. There were so many cases that the

cerned with the clogging of intelligence channels.

They fourth recommendation came after strong interaction with the CIA representatives at the final session. (I am in the peculiar position of being almost the only one outside official Air Force channels who has seen this document. Maj. Quintanilla gave it to me and I made extensive notes from it. When I asked for a copy on a subsequent visit, things happened, and it has been reclassified by the CIA. I made no comments about this for several months. It was fully clear to all the personnel at Blue Book and in the Foreign Technology Division that I had all these notes. I have no hesitation now to discuss it in full . . .)

The fourth recommendation asked for a systematic "debunking of the flying saucers." The stated objective of the "debunking" was to "reduce public interest in flying saucers."

No Deception

I wish to make it very clear that I do not regard this as a dark and sinister action of a covert body trying to deceive the citizenry. They wanted to get the "noise" out of the "signals" that were clogging the intelligence channels. Hence, viewed narrowly from security viewpoints, it made good sense to get this "noise" suppressed. But it was a scientific tragedy that at that time this problem was not turned over, in the face of nonhostility, to scientific groups. It was not. It

stayed in the Air Force; and, gradually, as near as I can see, it has been downgraded and classified as Restricted and me, as we just told you project which, when I was there first, involved the major, a sergeant and a secretary.

Now Maj. Quintanilla has indicated that the Air Force draws on other sources of expertise. And when we read the press releases from the Pentagon desk, we do indeed get the impression that Air Force expertise, which is not zero by any means, has been used.

My examination of the problem strongly indicates that the Air Force expertise has had very little to do with Project Blue Book, and that this is the heart of the trouble. For instance, in the case of radar, I talked not very many days ago to the Air Force's best radar propagation man, Dr. David Atlas, who indicated to me he had never been brought into any discussions of propagation anomalies or anything like that in all his years at the Air Force Cambridge Research Lab. And I could go on to illustrate examples of that sort.

The question of what the UFO's are is crucial when you look at sightings such as Mr. Powell and Miss McClave talked about and when you realize, as I now do - but did not 12 months ago - that these are not unrepresentative sightings. The close-range sightings of disks and cigar-shaped objects frequently seen at tens of feet in populous areas are on the increase. There are credible observers, multiple witnesses. A case in Beverly, Mass., where five adults - two of them police officers - were within 20 feet of an object that was right over the middle of the street. In the back of my paper are 18 cases out of thousands. And this particular case of last spring is cited.

That sort of thing and Powell's observation are representative of the interesting sightings. They are not confined to the United States. One finds this going on all over the world. I can vouch only for the American reports that I have checked, and

Balderdash, Rot

Book tells you and me, as we just told you a moment ago, that there is nothing in the unidentified flying objects that defies present-day explanation in terms of science and technology, that's balderdash; it is utter rot, I assure you. How would you explain the kind of; a dome-shaped object that Mr. Powell

saw? Well, if it was the only one you ever heard of, you would forget about it. But look at the unidentified cases: Exeter, N. H.; Damon, Tex.; Port Huron, Mich. Look at the sightings only a couple of months ago in Davis, Calif. Look at the cases that simply fit no conventional, no scientific, no known explanation.

Something is going on here of the greatest scientific interest that has been shoved under a rug, ridiculed and laughed out of court. You and your feature writers have helped ridicule it. It's easier to write a funny story. And once the Air Force tells you there is nothing to it, what is more logical than to say, "People see things; there are a lot of nuts around the country?" And that has led to the net effect that very few of these are reported.

For example, Mr. Powell's report never got on the wires. He told me he called the Naval Air Station at Willow Grove after a day's deliberation, and they weren't very interested; and he didn't go any further with it.

The number of embittered citizens who have been hurt by Air Force callous rejection and discrediting, saying they saw twinkling stars and so on, is very large and I have had firsthand contact with many of them. As a citizen I am a little disgruntled at this kind of treatment. If there were some reason for it, if there were a national security reason - but it's just incompetence in operation.

It has led to a lot of serious students of the problem to speculate that there might be some conspiracy. And I have

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given that very careful thought for a number of reasons. The group at WPA here in Washington has had much more contact with this problem than either the Air Force or I, and they have again and again encountered cases where it looked to them as if there must be some really high-level conspiracy.

People have suggested that maybe Blue Book is only a front organization and doesn't know that it's only a front organization. Well, I can't begin to tell you the sources that I have checked on this. But I do not think it is a grand cover-up. It is a grand foupup, a foupup of incredible proportions, unprecedented in my experience.

There have been scientists who have looked at the problem — not very many. Dr. Menzel is one. I cannot agree with the optical-physical-astronomical principles — the arguments that Dr. Menzel uses.

Plasma Phenomena

Another person who has recently looked at the problem is Philip Klass, who has thought that these, perhaps, are plasma phenomena. That is a reasonable thing to have a look at, and I have had a look at it. I can't agree with Philip Klass that any substantial portion of the cases can be accounted for in terms of plasma phenomena associated with corona discharges on power lines or halts of lightning. In the best labs in the country it is the biggest problem in fusion research to get plasma lifetimes of more than seconds. But how did Mr. Powell see this plasma coming along at him from ahead and watch it for tens of seconds? How did two California Highway Patrolmen at Red Bluff, Calif., stand about 150-200 feet from a 100-foot-long object that had great big bright blinking lights on it, that maneuvered up and down and led them a chase of about 70 minutes? How did the Portage County, Ohio, sheriff's deputies last spring follow for an hour and a half a plasma or a twinkling star or, as Maj. Quintanilla

has said, a combination of Echo and Venus — an extraterrestrial? And it still stands as the official explanation. Congressman Stanton (Rep. John W. Stanton, R-Ohio) has been told that a reinvestigation confirms that. That too is utter rot.

I tell you that this sort of thing has to stop. And you editors are in an excellent position to help stop this by pressing for what I am afraid, at this juncture, may be the only way to escalate serious scientific concern, and that is to ask for a full and fair congressional inquiry into the past 20 years of mishandling of this extremely important problem.

The scientist doesn't usually like to pursue these kinds of routes. I don't. You often get not only less than you hoped for but you also lose scientific progress. We must have a hearing that is not like the one last spring which was called by Congressman Ford (Rep. Gerald R. Ford R-Mich.) as a result of constituents' concern over Air Force handling of the Michigan cases that were explained in terms of swamp gas. No single explanation has brought the Air Force more ridicule. The swamp gas theory is nonsense. And it still stands as the explanation. This is the explanation that came directly from Dr. Hynek, and Maj. Quintanilla has assured me that it is Hynek, not him, with whom I must have any discussions. And I have, but the explanation has not been retracted.

(Editor's note: Dr. J. Allen Hynek of Northwestern University is the Air Force consultant on UFO's.)

When Ford got an investigation, who conducted it? The Armed Services Committee. Who testified? Three Air Force-related people, period. That we can't have. We must have what NICAP, for example, has been pleading for for years.

The Best Source

If you want to get the single best source of information about the whole UFO problem, I refer you to a "The UFO Evidence." If

comes to mind at the moment because it contains a list of the very best scientists who are going to be very bewildered when they examine, as I, for example, have examined, the astounding volume of evidence that exists on this problem that has been generally put under the rug.

This even shows up abroad. Jacques Vallee, a French investigator of UFO's, who is now in this country, has written two fairly good books on the subject. I asked him; "Why doesn't the French government, for example, do something?" He replied, "When we go to the French government, they say the U.S. Air Force has been spending a lot of money for many years on this and has shown there is nothing to it. Why should we spend French money?" And so this image of expertise that has been spread abroad — which has

behind it zero — is holding this problem in a limbo that it must be blasted out of. Although I saw some progress this week — progress of an entirely different sort — I don't think we are really going to get the serious concern among many top-notch scientists. What we need are scientists who are much better equipped than myself to look at this problem. This has to go to the top-caliber scientists all over the world, because something is involved here that is of concern to all of us. It is not a simple problem. I mean, obviously, how am I going to explain a 30, 40, 50-foot disk that goes by an experienced pilot like Mr. Powell, who, I understand has logged 18,000 hours and he sees this object just as he might see a Cadillac a few

Well, I much prefer to talk about the purely scientific aspects of some of these explanations. I have no startling scientific illumination of the problem. It's baffling to me. Nothing in my scientific education prepares me to give you a pat explanation of what is going on here. There are hoaxes; there are misinterpreted phenomena; there are all these things, of course. But there are not advanced test vehicles, believe me. No Air Force test vehicle is going to go for five miles behind a loaded gas truck in Oklahoma — this sort of thing — landing in the middle of cities. No

Wire Services

The wire service editors know it's a lot of nonsense. If something happens out in Sank Center, maybe even the Sank Center Gazette doesn't report it. But if it does, the wire service editor is sure disinclined to report it. And so the discrepancy between what you as editors suspect is the nature of the problem and what you see in just looking at clipping service coverage — where you get all the Sank Center Gazette reports — is, well, it's almost incredible.

I couldn't believe it when last spring I saw the NICAP clipping service coverage. I thought I knew something about the problem, but the number of incidents in Shamokin, Penn. or Custer, Wash., or what-have-you — you never hear of them, and nobody else hears of them. If you read the New York Times and your own paper, you won't have heard of them, because we have collectively helped the Air Force forget about this somewhat uncomfortable problem. And you have helped. Yet, the evidence is simply astounding.

Well, I much prefer to talk about the purely scientific aspects of some of these explanations. I have no startling scientific illumination of the problem. It's baffling to me. Nothing in my scientific education prepares me to give you a pat explanation of what is going on here.

There are hoaxes; there are misinterpreted phenomena; there are all these things, of course. But there are not advanced test vehicles, believe me. No Air Force test vehicle is going to go for five miles behind a loaded gas truck in Oklahoma — this sort of thing — landing in the middle of cities. No

American test vehicle is going to be tested in Brazil or New Zealand and no Russian test vehicle is going to be tested in the United States or England. There is every reason to believe that the phenomenon is global. They are not advanced test vehicles; they are not hallucinations. I have had three sessions with psychologists and I have asked them, "Is there anything in your clinical experience that would match this?" The answer is, "No, it certainly doesn't sound like anything psychological." After all, there are cases involving dozens of witnesses and

others involving radar sightings — although if the Air Force is involved, the sightings are disclaimed and blamed on weather, electronic malfunctions and so on; at least, that's how they have been so attributed since 1953. If you want to get all the Air Force radar sightings, you go back before the CIA request for a "debanking" policy and Air Force Regulation 9000-2.

A Beginning

Well, what is to be done? The Colorado Program (an Air Force-sponsored study) is a beginning, but I am uneasy about the Colorado Program. There is not nearly enough scientific talent on that program. I have said that quite openly — without intending to carp — to many people in Washington. It should be beefed up immediately. What we need is much more attention to this problem, and that, unfortunately, requires money. But it also requires people and that is what is short out at Colorado. I'm afraid they have not taken the problem seriously enough to muster the scientific talent to do justice to that.

We need an immediate escalation of the problem. Congressional inquiry, if you can press for it, will perhaps do the trick; it might also send the problem awry. I don't have great confidence in a congressional inquiry being the greatest solution. I'll

continue to try, as one scientist, to pursue it in other ways. The problem is not a science-oriented agency, not the military. And by their own statement, with which I agree, there is no clear-cut evidence of hostility. But let's get it into a scientific agency.

Amusingly, all my efforts to interest NASA in this gives me the feeling that they think it's nonsense too. I think they have been woodwinked and sort of unintentionally brainwashed for years and years. And all this is not as a result of any high-level conspiracy. It's just a foupup. But a foupup of really incredible proportions. We must launch a new level of investigation.

There are very specific things. Radar is already deployed. The trouble is it's compromised by present regulations. There are many radar sightings. This would be an immediate objective source of information that could be put into scientific terms and be very useful.

There are a number of electromagnetic effects known in the evidence — car-stopping cases, for instance. In Texas, in 1957, the fascinating case, nine different vehicles stopped. But this is going on all the time. NICAP must have 150 examples of this. It's going on in Australia, England and so on.

Associated with this are apparently interference effects, radio and TV, magnetometers, compasses, a lot of electromagnetic effects. Science knows a lot about electromagnetic sensing devices, and many things could be done quickly if only the problem were taken seriously.

Airline Reports

There are many airline reports in the old evidence. But once the Air Force began to discredit pilots — and they have, in some cases, unmercifully discredited them — that source of information pretty much dried up.

That can be changed. Mobile teams need to be prepared to get out into the field in a hurry with a lot of gear. And this can be done. I discussed this in the Pentagon last week with the people about that sort of thing that I do.

The whole question of the pre-1947 sightings, which I must be looked at by historical scholars as well as students of the history of technology, to examine the interesting question of whether sightings that appear to constitute a continuum at low levels, running back to the turn of the century at least, are the same phenomena. NICAP is coming out with a volume in a few months, one that represents a good compilation of evidence. But historical sophistication is needed to assess the evidence. That is a very important thing to do, because the whole nature of the problem is quite different, if it is the case — and I lean in this direction — that aside from the marked increase beginning in 1947, there appears to be the same phenomenon of craft — like, machine-like objects operating in our environment for tens of years.

The heart of the problem is the "ridiculous lid," and you're sitting on it. You're sitting on it in a way that is very important. Get off that lid! That is, get your wire service people to take it seriously; look at the problem yourself; examine it for yourself and get off that lid, because that is a big part of the problem now.

You don't know whether changes in the frequency of sightings is a real change, or whether they occur just because you have given it serious credence in your area, which makes people come out with reports that they wouldn't otherwise have told a soul about.

You are on the lid. Get off it. Ask for congressional investigation.

My report lists 18 or 20 editorial comments. It shows that some of your colleagues have already pressed for this — too faintly — in the past. Have a look for yourself at the evidence. You will find an astounding picture of enormous interest that has been mishandled and misrepresented for far too long.

That can be changed. Mobile teams need to be prepared to get out into the field in a hurry with a lot of gear. And this can be done. I discussed this in the Pentagon last week with the people about that sort of thing that I do.

has examined the evidence and I have drawn slightly different conclusions from those presented by the previous speaker.

(The previous speaker was Dr. McDonald, who said that he had concluded, after a 12-month study of "the extremely interesting problem of unidentified flying objects" that a proper approach was not being taken toward them by the Air Force or others, and that a closer look should be taken. Dr. McDonald said, "Something is going on here of the greatest scientific interest that has been shoved under a rug, ridiculed, and laughed at." Dr. McDonald's view is that UFO's very well may be visitors from space.)

Similar sightings of flying saucers go far back in history, where they have assumed different forms for different people. Old records refer to them as fiery dragons, fiery chariots, wills-o'-the-wisp, jack-o'-lanterns, fire-drakes, fox fire and even the devil himself.

And now we are having urged on us a new legend to explain a rash of mysterious sightings. Certain UFO buffs argue that the peculiar properties and maneuvers of these apparitions, as reported by reliable people of all different kinds, are so remarkable that only one explanation for them is possible: they must be vehicles from outer space, manned by beings far more intelligent than we, because the operators have clearly built vehicles capable of something far beyond anything we can conceive of. This is the argument that we are asked to accept.

On the face of it, it sounds much like the reasoning of Sherlock Holmes, who said on several occasions, "It is an old maxim of mine that when you have excluded the impossible, whatever remains, however improbable, must be the truth." I am willing to go along with this formula, but only after we have followed Holmes and excluded every possibility but that of manned UFO's. And we must also show that no further possibilities exist.

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Deceptive Reasoning

The believers, I feel, are much too eager to reach a decision. Their method is quite simple. They try to find someone whom they can establish as an authority, someone who will support their views. Then they quote and often misquote various authorities, or they misquote one another, until they believe what they are saying. Having no real logic on their side, they resort to innuendo and ridicule and try to discredit those who fail to support their view. The UFO magazines all refer to me as the archdemon of saucerdom!

To the buffs all sightings are true UFO's unless proved otherwise.

I concede that the concept of manned spaceships is not an absolute impossibility. Neither are the concepts of ghosts, spirits, witches, fairies, elves, hobgoblins or the devil. The only trouble with this last list is the fact that they are somewhat out of date. We live in the age of space. Isn't it natural that beings from outer space should exhibit a similar interest in us? But when we consider that those beings — if indeed they are beings — have been bugging us for centuries, why should not one have landed on the White House lawn and shown himself to the President of the United States, to a member of the National Academy of Sciences or at least to some one of you editors?

Now, please don't misunderstand me. I think it is very possible that intelligent life, hopefully more intelligent than we — may exist somewhere in the vast reaches of outer space. But it is the very vastness of this space that complicates the problem. The distances are almost inconceivable. The time required to reach the earth — even at speeds comparable to that of light — range in hundreds, if not thousands, of years for some of our nearer neighbors. And it takes light some billions of years to reach us from the most distant galaxies, times comparable with that for the entire

life history of our solar system. The number of habitable planets in the universe is anybody's guess. My figures you have heard, including mine, are just guesses. I have guessed that on my own Milky Way many contain as many as a million such planets. That sounds like a lot, but the chances are that if this figure is right, the nearest inhabited planet would be so far away that if we sent out a message to it today, we should have to wait about 2,000 years to get a reply. Alas, the evidence is poor for intelligent life in our solar system, although I would rather expect to find some low forms of life on planet Mars.

Other Reasons

With respect to UFO's, my position is simply this: that other natural explanations exist — Dr. McDonald to the contrary — for the unexplained sightings. The Air Force has given me full access to their files. I concur with Dr. MacDonald that there is no vast conspiracy by either the Air Force or the CIA to conceal the facts from the public, as many groups have charged.

The Air Force has made its mistakes. They never have had enough scientists in the project. They have failed to follow up certain sightings of special importance. To me their questionnaire is amateurish, almost cleverly designed in certain cases to get the wrong answers and lose track of the facts. The Air Force is aware of my criticism. And at Major Quinta-

millia's invitation I have been making constructive criticisms and trying to help them in a revision of the questionnaire. It is not an easy job.

From 1947 until 1954 a bewildered group of Air Force personnel tried honestly and sincerely to resolve the UFO problem. Many highly reliable persons had reported seeing objects moving at fantastic speeds and apparently taking evasive action in a manner impossible for known terrestrial craft. By 1952 a sizable number of those in the Air Force group had concluded that extraterrestrial vehicles were the only explanation. Some of this explanation was published in the

plotted these ideas, and soon various UFO clubs came into being. I have heard, a committee of scientists headed by H.P. Robertson of Cal Tech met at CIA to consider a number of the Air Force's most convincing cases. These cases were supposedly the ones that had convinced the Air Force personnel who had worked on them as the 20 to 30 most outstanding cases, the ones that looked as if there was absolutely no other explanation except UFO's from outer space to account for the sightings. The Robertson Committee immediately solved a number of them. The rest they could not solve only because of poor or insufficient data. The questionnaire again! They concluded that all cases had a natural solution. And the report states that there is no evidence to support the idea that UFO's are vehicles from another world.

Nevertheless, the UFO buffs believe, almost as an article of faith, that special observers, such as military or airline pilots, couldn't possibly mistake a meteor or a planet or a star, a sundog or a mirage for a UFO. This viewpoint is absolute nonsense, and the Air Force files bear witness to its falsity! They contain thousands of solved cases — sightings by the same kind of "reliable individuals," like the pilots. But such persons have often made huge errors in the identification.

Meteor Mistaken

A huge meteor flashes by in the sky! The copilot thinks it is going to strike the plane and takes evasive action. He may even imagine that his plane is hit by the backwash from this UFO. The pilot disagrees, the pilot is right. The UFO proves to be a bright fireball or meteor a hundred miles away! Such occurrences are frequent, not rare.

Distances, especially in space, are hard to estimate. If you're in the air, a thing you might think is 100 feet away from you actually may be a star that is clear back in the firmament.

Conversely, a pilot may think the bright object on the horizon, in reality a star or planet, that lies just beyond his wing tip is a UFO. Sometimes a layer of warm air, sandwiched between two layers of cold air, can act as a lens, projecting a pulsing, spinning, vividly colored saucer-like image of a planet. (I have seen this phenomenon myself, despite the fact that the previous speaker in his lengthy manuscript tries to discredit my sighting.) Pilots, thinking they were dealing with a nearby flying object, have often tried to intercept such images which evade, of course all attempts to cut them off. The distance may seem to change rapidly as the star fades or increases in intensity. Because, as the pilot flies along, the star may even be completely cut off at times by a mountain or by a forest and it will seem to buzz in and out from the plane, attacking the plane. It's realistic and very frightening.

The observations of this type fortify the UFO legend that these objects "maneuver as if under intelligent control." But the pilots fail to realize that the "intelligent control" came from within themselves, and I think that the Air Force personnel of Project Blue Book still do not appreciate this important UFO phenomenon.

Mirages aren't the only apparitions that appear to maneuver. I think I was the first person to point out that a special kind of reflection of the sun (or moon) from ice crystals, sometimes called a *sundog* (or *moonog*), can also perform evasive action. Layers of ice crystals are necessary like those found in cirrus clouds. An aviator, flying through cirrus, sometimes sees a peculiar metallic-appearing reflection. The reflection often has a reddish tinge on one side, a reflection of the sun or moon. He may elect to chase it. The apparition recedes if approached.

But there are still a few other phenomena that can produce the flash you will have an opportunity to see when the light from the flash produces immediate change in the so-called visual purple of the retina. In a sense the retinal spot where the light fell on the eye becomes fatigued and, for some minutes after the flash, you will be able to see a bright usually greenish floating spot which could be mistaken for a UFO by someone unfamiliar with the problem.

Material Causes

But such behavior does not imply, as the UFO addicts try to imply, the presence of an intelligent pilot to guide it.

As we look over the Air Force files, we find that some 90 per cent of the solved cases result from the presence of material objects in the atmosphere, reflections from planes banking in the sun and balloons — child's balloons, weather balloons, lighted or unlighted, especially those enormous plastic balloons as large as a 10-story building, which carry scientific instruments sometimes to 100,000 feet — reflecting full sunlight while the earth below lies in dim twilight. Such balloons shine more brilliantly than Venus. Advertising planes or illuminated blimps frequently become UFO's.

Birds, by day or night, often reflect light from their shiny backs. Windblown kites, hats, paper, plastic sacks, feathers, spider webs, seed pods, dust devils have all contributed their share of UFO sightings. Insects — single insects or insects in swarms — saucer-shaped clouds of a searchlight on clouds, special space experiments, such as rocket-launched sodium vapor releases or balloons launched from rockets from Wallops Island, have also produced spectacular apparitions, visible all up and down the East Coast. Ball lightning and the aurora borealis occasionally contribute.

Reflections from powerlines, insulators, television antennas, radars, radio telescopes, even apartment windows! These, too have, in their turn, produced realistic UFO's and I could go on adding almost indefinitely to this list.

But the chief point that I want to make is that a simple phenomenon like any of the above have tricked intelligent people into reporting a UFO.

Let me quote from an article on "Vision" in Volume 14 of the McGraw-Hill Encyclopedia of Science and Technology: "...any observant person can detect swirling clouds or spots of 'light' in total darkness or while looking at a homogeneous field such as a bright blue sky." So, if you want to see flying saucers, just look up. If you don't see them, you probably aren't "observant."

I can see them most clearly in a dark room or on a moonless night with the sky even darker with heavy clouds. I find the background of stars on a clear night somewhat distracting. Just lie on your back, open your eyes and see the saucers spin. You will almost surely see bright irregular patches of light forms. Some of them seem gray-green but I occasionally see silver or gold and occasionally red. I can even imagine windows in some of them. As you move your eyes, they will cavort across the sky. To speed up the action, just rub your eyes like a person coming out of a sleep. Occasionally, the whole field will become large and luminous. Now, I ask you, how can you be sure that the UFO reported by an airline pilot is not just one of these spurious images? And even if an alerted copilot confirms it, he might also be responding to a similar effect in his own eyes, since we don't know that he is seeing exactly the same thing that the other man is reporting.

Eye Errors

The chemistry and physiology of the human eye are certainly responsible for many UFO sightings. The eye responds in a different way to different kinds of stimuli. Taken a sudden burst of bright light like that coming from a flashlight. You newspaper editors, and especially you reporters, and especially you writers, would know

that when you look at a sudden flash you will have an opportunity to see when the light from the flash produces immediate change in the so-called visual purple of the retina. In a sense the retinal spot where the light fell on the eye becomes fatigued and, for some minutes after the flash, you will be able to see a bright usually greenish floating spot which could be mistaken for a UFO by someone unfamiliar with the problem.

But let me take an actual case which is typical of a large number in the files of Project Blue Book. A child going to the bathroom turns on a bright light and accidentally awakens one of his parents who is blinded by the sudden illumination. The child turns off the light and the parent, for some reason, also gets up and just happens to glance out of the window. He is startled to see a peculiar spot of light floating over the trees and making irregular jerky motions. He watches the UFO for a minute or two until it finally disappears. He can't be blamed for failing to realize that the erratic and often rapid movements of the UFO are due to similar movements of his own eye. The UFO simply appears in the direction in which he happens to be looking, and that's all. And yet he may describe it graphically as a luminous object "cavorting across the sky."

Many such stimuli are possible by day and night. A few weeks ago I was driving toward the setting sun. I came to a stoplight and looked out the side window of the car. I was startled to see a large black object shaped something like a dirigible surrounded by dozens of small black balloons. I suddenly realized that these were after-images of the sun. The big one was where I had been looking more fixedly. The spots were images where my eye had wandered. A UFO buff could have sworn that he was seeing a "mother ship" and a swarm of UFO's in rapid flight.

I once had another similar experience. I suddenly glanced up and was surprised to see a whole flotilla of UFO's in formation across the sky. They looked like after-images, but I hadn't been conscious of the visual stimulus responsible. I quickly retraced my steps and found it: sunlight reflected from the shiny surface of the fender of a parked car.

I am sure that many UFO's, still unknown, belong in this class. Look fixedly at the full moon for at least 30 seconds and then turn away. A greenish balloon will swim over your head and perform maneuvers' startling or impossible for any real object. I have been able to attain the same effect with the planet Venus when it is near maximum brilliance. Yet most observers will swear that such UFO's are true objects. And the Air Force questionnaire, failing to recognize even the existence of this kind of UFO, contains not a single question that would help them identify it. In fact, the words signifying UFO, unidentified flying object, showed the state of mind of the Air Force personnel who invented this abbreviation. What I am saying is that the UFO's are not identifiable. They are often not flying and many are not even objects. It is this point of view, to regard the apparition as actual solid objects, that has retarded the solution so long.

After-images possess still another complicated characteristic. Colored light tends to produce an after-image of complementary color. A green flash will cause a red after-image and vice versa.

Color-blind persons and persons with defective vision will often experience effects dif-

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ferent from those of people with normal eyesight.

Another optical illusion that can produce an illusion: you may forget that the eyeball jumps a little every time that you blink. Walking transmits vibrations to the eye at every step. Many individuals think they see stars, planets or satellites oscillating when the movement is actually that of the eye. It self.

Let me give you this quotation from a book:

On our return across Minnesota we had an experience which I have always remembered as illustrative of the fallacy of all human testimony about ghosts, rappings and other phenomena of that character. We spent two nights and a day at Fort Snelling. Some of the officers were greatly surprised by a celestial phenomenon of a very extraordinary character which had been observed for several nights past. A star had been seen, night after night, rising in the East as usual, and starting on its course toward the South. But instead of continuing that course across the meridian, as stars invariably had done from the oldest antiquity, it took a turn for the North, sank toward the horizon and finally set near the north point of the horizon. Of course, an explanation was wanted.

My assurance that there must be some mistake in the observation could not be accepted, because this erratic course of the heavenly body had been seen by all of them so plainly that no doubt could exist on the subject. The men who saw it were not of the ordinary untrained kind, but graduates of West Point, who, if anyone, ought to be free from optical deceptions. I was confidently invited to look out that night and see for myself. We all watched with the greatest of interest.

In due time, the planet Mars was seen in the East making its way towards the South. "There it is!" was the exclamation.

"Yes, there it is," said I. "Now, that planet is going to keep right on its course toward the South."

"No, it is not," said they; "you will see it turn around and go down towards the East."

Hour after hour passed and as the planet continued its regular course, the other watchers began to get a little nervous. It showed no signs of deviating from its course. We went out from time to time to look at the sky.

"There it is," said one of the observers at length pointing to Capella, which was just rising a little to the East of North; "there is the star setting."

No, it isn't," said I. "There is the star we have been looking at, now quite inconspicuous near the meridian, and that star which you think is setting is really rising and will soon be higher up."

A very little additional watching showed that no deviation of the general laws of Nature had occurred, but that the observers of previous nights had jumped at the conclusion that two objects, widely apart in the heavens, were the same.

Those words came from a book called "Reminiscences of an Astronomer," published in 1903 by Simon Newcomb, who was in charge of the American Nautical Almanac office from 1877 until 1897. This event actually occurred in 1860. The similarity to modern UFO's is overpowering. A star cavorling across the sky! Military officers, as reliable and responsible witnesses!

Light Reflections

For you who wear eye-glasses, there is still another way of seeing a UFO. Look directly at some bright light. There are a lot of them around the room here. Keep your head turned slightly to the left or right and you will undoubtedly see a faint, roundish, out-of-focus spot. This is light reflected from the front surface of your eyeball, back to the lens and then back into the pupil of your eye. A bright source, to one side and slightly behind you, can also reach your eye through reflection from the internal surface of the spectacle lens.

To this moment I haven't mentioned still another method of detecting saucers — one of the human eye. I mean radar. Radar is a machine. It can't make mistakes. Or at least that is the common argument advanced by the UFO buffs.

The previous speaker in his document violently discredited my work and reveals his ignorance of the phenomenon of radio propagation of these radar waves. It so happens that during that three-year service in the Navy, which has already been referred to, and 22 years since then as consultant to the Central Radio Propagation Laboratory of the National Bureau of Standards, I have had a little experience with this particular phenomenon and the conditions. Radar is cursed with all of the potential afflictions that any complicated electrical gadget can suffer. But let me mention only one: mirage.

Let me explain briefly what a radar does. It sends out a pulse of radio waves. We know the direction, northeast for example. We know the elevation above the horizon. An echo returns. From the interval between the transmission and the return of the signal we know how far away the object is that reflected the pulse. We think, therefore, we detect a plane — or a UFO in flight — because the radar directs its pulse upward.

But we haven't any way of following the pulse in its path toward the target. A layer of warm, dry air or even a layer containing a few bubbles of warm air will bend the radar beam back to earth. This is what we call partial trapping and this is, for example, what happened in Washington in the famous sighting in 1952.

The reflection of the beam after it has been directed backward comes back from a distant building, a train or a ship. No wonder that planes that were sent out to intercept the radar UFO found nothing. In one such case a well-known writer on flying saucers wrote: "The discovery of visible saucers had been serious enough. The discovery now of invisible flying saucers frighten anyone."

I know of no reliable cases of simultaneous visual and radar sightings. In view of the physical properties of the eye, the surprising fact is that so few cases have been reported.

Time won't permit me to elaborate on still another relevant phenomenon. The Air Force appears to have neglected completely the psychological angle of mass hallucination. Back in 1919, in Spain, a not unrelated phenomenon occurred. Thousands of people — reliable people — swore that they had seen images of saints rolling their eyes, moving their hands, dripping drops of blood, even stepping out of their pants. One person would call out, "Look, there it goes!" and everyone else would look and they would see this phenomenon. There were many similar events recorded through history.

Many Hoaxes

Then there are hundreds and thousands, perhaps, of hoaxes, like that at the University of Colorado when some enterprising pranksters made hot air balloons from candles and plastic bags and it gave the university officials who were investigating the UFO phenomenon an opportunity to see how poor the evidence can be, a fact well known to the legal profession. This is still another point that the Air Force has sometimes failed to realize. Moreover, their poor questionnaire has only further confused an already confused picture.

Several times during this talk I have used the phrase "UFO's cavorling across the sky." I did so deliberately because it seems to be a favorite phrase of my good friend, Dr. J. Allen Hynek of Northwestern University, and consultant to the Air Force Project Blue Book. He has sometimes expressed doubts about the UFO because stars don't "cavorl" across the sky.

What I have tried to show today is that many kinds of optical stimuli can produce weird effects. With all these kinds of phenomena masquerading as UFO's, many of them, like those related to the psychology of the human eye still practically not investigated, I think I can reasonably claim, applying the criterion of Sherlock Holmes, that we have not excluded all of the impossibles. I have shown that the arguments advanced in favor of the interplanetary nature of UFO's are fallacious. Their alleged high speeds and ability to maneuver, their alleged short distances are completely underestimated and they have natural explanations.

I think it is time for the Air Force to wrap up Project Blue Book. It has produced little of scientific value. Keeping it going only fosters the belief of persons that the Air Force must have found something to substantiate belief in the UFO's. In making this recommendation I am not criticizing the present or recent administration of the project. But it's time that we put an end to chasing ghosts, hobgoblins, visions and hallucinations.

As for the true believers, bless their little hearts, let them go on believing in UFO's, fairies or Santa Claus, if they want to. Nothing will change their minds. They will go on forever demanding more dollars for investigation and more congressional investigation of the UFO's and the Air Force.

Incidentally, I would like to mention that a complete discussion of many of these phenomena appears in the book, "The World of Flying Saucers" by Lyle G. Boyd and myself.

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History and methodology of "flying saucer" intelligence.

THE INVESTIGATION OF UFO'S

Hector Quintanilla, Jr.

Unidentified flying objects are not a new phenomenon. In 593 B.C. Ezekiel recorded a whirlwind to the north which appeared as a fiery sphere. In 1254 at Saint Albans Abbey, when the moon was eight days old, there appeared in the sky a ship elegantly shaped, well equipped and of marvelous color. In 1520 in France there were sighted a round-shaped object with rotating lights and two fiery suns. In 1874 in Texas a farmer reported seeing a dark flying object in the shape of a disc cruising in the sky at a wonderful speed. These are a mere sampling of the many such events recorded by historians.

The modern era of UFOs, however, can be dated from 24 June 1947, when a flyer made some strange observations which national news coverage and authors with a poetic license so played up as to excite public entertainment of a notion that our planet had been visited by unknown vehicles from outer space.

Supersonic Saucers

On that 24 June, Kenneth Arnold was out flying in his private plane. He was looking for a Marine transport that was supposed to have crash-landed somewhere on the southwest side of Mt. Ranier. First he flew directly toward the mountain from the west at an altitude of approximately 9,500 feet, searching all of the various ridges for the downed plane. Then he made a sweep back to the west, found nothing, and headed again toward Mt. Ranier. The air was so smooth that it was a real pleasure flying; he trimmed out the aircraft and relaxed, admiring the crystal-clear sky and the terrain. There was a DC-4 to his left and rear at approximately 14,000 feet.

He hadn't flown more than two or three minutes on this course when a bright flash reflected on his airplane. He couldn't find where

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the reflection came from, but to the left, north of Mt. Ranier, he did observe a chain of nine peculiar-looking objects flying from north to south at approximately 9,500 feet. They were approaching Mt. Ranier very rapidly, and he at first assumed them to be jet aircraft. Every few seconds two or three of them would dip or change course slightly, so as to catch the sun at an angle and reflect brightly. They were too far away for him to determine their shape or formation.

As they approached Mt. Ranier, however, he observed their outline quite clearly—except that, oddly, he could not find their tails. He watched them pass the southern edge of Mt. Ranier flying directly south-southeast down the hog's-back of a range. Their elevation seemed to vary by as much as one thousand feet, but they remained very near the horizon, therefore around his own elevation. They flew rather like geese, in a diagonal chain as though they were linked together. They seemed to maintain their orientation while swerving in and out of the high mountain peaks.

Arnold estimated the distance from him to the objects at approximately 25 miles. Using a Zeus fastener and a cowling tool, he estimated their size to be about two-thirds that of the DC-4. Watching them pass a high snow-covered ridge between Mt. Ranier and Mt. Adams, he saw that as the first object was leaving its south crest the last one was entering its northern crest. Later the length of this ridge, and therefore that of the chain of objects, was determined to be about five miles. Arnold timed their flight from Mt. Ranier to Mt. Adams, 47 miles, at 1 min. 42 sec., a speed of 1,659 miles per hour.

In a subsequent interview with newsmen, Arnold described the objects as appearing like saucers skipping on water. This description, shortened to "flying saucers" by newsmen, gave rise to the popular term for UFOs. The sighting, like most, was not reproducible for purposes of investigation; it involved uncontrollable atmospheric conditions. The Air Force was left with one man's subjective interpretation of what he had experienced. Scientists who reviewed Arnold's sighting concluded that the objects were a mirage. The smooth, crystal-clear air that he noted indicated the very stable conditions which are associated with inversions and a high index of refraction of the atmosphere.

Although Arnold's experience could not be reproduced, another phenomenon in some respects similar and observed in the same area

found a satisfactory explanation. Navy Commander W. J. Young reported in November 1948 that on several occasions he had seen over the Willamette valley and the plains of eastern Washington and Oregon what could easily have been mistaken for flying discs. One striking example occurred over the Willamette valley on a clear sunny day when the ever-present blue haze seemed somewhat thicker than usual. His aircraft was flying at altitudes between 1,000 and 5,000 feet when bright flying objects appeared, some on his beam and others on the bows or dead ahead. From time to time they would disappear and new ones appear.

Young finally determined that what looked to be aircraft at various altitudes were reflections of the sun from the aluminum roofs of farm buildings at great distance from his plane. The perspective of the land converging with the sky on the horizon, with limited ground visibility, made it appear as though the roof reflections were actually airborne at various altitudes in the haze. Thus one UFO sighting was solved by the observer himself. Although there is no uniform pattern among reported UFO phenomena, some characteristics of one may be found in others, as in Young's and Arnold's.

Sign and Grudge

Newspaper publicity for Arnold's flying saucers started an avalanche of other sightings. The Air Force began receiving reports from people in all walks of life. Before December 1947 no specific organization was responsible for investigating and evaluating these. Without any basis in measurable data or controlled experiment, the reported phenomena were variously assessed, even within the military structure, as due to a new aerodynamic configuration, to natural occurrences, to misinterpretation of conventional objects, or to space ships under intelligent control. The military interest touched the fields of air defense, R&D, and intelligence, responsibilities vested in many different organizations.

To end this confusion, the Chief of Staff directed on 30 December 1947 that a project be established to collect, collate, evaluate, and distribute within the government all information concerning sightings which could be construed as of concern to the national security. Responsibility for the project, assigned the code name "Sign," was given to the Air Technical Intelligence Center. In February 1949 Project

Sign, having completed its evaluation of the 243 UFO cases submitted to it, issued a report:

No definite and conclusive evidence is yet available that would prove or disprove the existence of these unidentified objects as real aircraft of unknown and unconventional configuration. It is unlikely that positive proof of their existence will be obtained without examination of the remains of crashed objects. Proof of non-existence is equally impossible to obtain unless a reasonable and convincing explanation is determined for each incident. . . . Explanations of some of the incidents revealed the existence of simple and easily understandable causes, so that there is the possibility that enough incidents can be solved to eliminate or greatly reduce the mystery associated with these occurrences. . . . Under wartime conditions, rapid and convincing solutions of such occurrences are necessary to maintain morale of military and civilian personnel.

With the backlog of cases disposed of, the project was continued on a reduced scale and under a new code name, "Grudge." Project Grudge completed its evaluation of 244 reports in August 1949, relying heavily on the work of university scientists and other outside consultants, as well as the USAF Air Weather Service and the U.S. Weather Bureau. The Grudge Report concluded that the UFO sightings signified nothing that would constitute a threat to the national security of the United States, that they were chargeable to misinterpretations of conventional objects, a mild form of mass hysteria or war nerves, and fabrications for the sake of hoax or publicity.

Special Report No. 14

The soothing conclusions of Project Grudge caused very little comment, and the project was continued on a reduced scale. Nevertheless, the fringe of people that still believed in extraterrestrial visitation was growing with the popularity of science fiction articles and magazines. In December 1951 a contract was let to an industrial firm for a detailed study, unclassified, of the UFO cases on file. It took three years to complete this study.

Meanwhile, in March 1952, the project was given its present name, "Blue Book." During this period numerous books were written about the UFOs. Some representative titles are *The Coming of the Saucers*, *Space, Gravity, and the Flying Saucer*, *Is Another World Watching*, *The Flying Saucers Are Real*, *Flying Saucers from Outer Space*, and *Flying Saucers Come from a Distant World*. UFO hobby clubs were formed throughout the country. Most professed to be studying the phenomena scientifically, but few, if any, had physical or behavioral

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scientists on their so-called evaluation committees. During the early fifties it became fashionable to accuse the Air Force of censorship or of withholding UFO information from the public.

In January 1953, while the three-year contract study was still in process, a Scientific Advisory Panel was formed to make an authoritative quick evaluation. It was composed of civilian scientists outside the government with well-known and respected names—H. P. Robertson, Luis W. Alvarez, Lloyd V. Berkner, S. A. Goudsmit, Thornton Page. Following is an extract from their report:

The panel . . . has reviewed a selection of the best documented incidents.

. . . We firmly believe that there is no residuum of cases which indicates phenomena which are attributable to foreign artifacts capable of hostile acts, and that there is no evidence that the phenomena indicate a need for the revision of current scientific concepts. The panel further concludes that the continued emphasis on the reporting of these phenomena does, in these perilous times, result in a threat to the orderly functioning of the protective organs of the body politic. We cite as examples the clogging of channels of communication by irrelevant reports, the danger of being led by continued false alarms to ignore real indications of hostile action, and the cultivation of a morbid national psychology in which skillful hostile propaganda could induce hysterical behavior and harmful distrust of duly constituted authority.

The panel recommended:

That the national security agencies take immediate steps to strip the unidentified flying objects of the special status they have been given and the aura of mystery they have unfortunately acquired.

One action taken on this recommendation was to establish, within the Office of Information at the Air Force Secretary's level, an office to answer public questions and release information regarding UFOs. Throughout the years, the responsibility for releasing UFO information to the public has remained with the Office of Information, Secretary of the Air Force.

When the unclassified contract study was ready at the end of 1954, it was immediately released to the news media. It was released under ATIC cover, because the competent company which produced it wished to remain anonymous in this field of research. It is commonly referred to as Special Report No. 14, the first 13 having been administrative progress reports.

Special Report No. 14 reduced and evaluated all the UFO data held in the Air Force files. It contains graphs showing the frequency distribution of sightings by time, date, location, shape, color, duration,

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azimuth, and elevation. It records an attempt to build a model of the typical UFO and an ultimate finding that UFOs come in all sizes, shapes, and colors. It concludes as follows:

It can never be absolutely proven that "Flying Saucers" do not exist. . . . Scientifically evaluated and arranged, the data as a whole did not show any marked patterns or trends. . . . A critical examination of the distributions of the important characteristics of sightings, plus an intensive study of the sightings evaluated as unknown, led to the conclusion that a combination of factors . . . resulted in the failure to identify as *Knowns* most of the objects classified as *Unknowns*. An intensive study aimed at finding a verified example of a "Flying Saucer" or at deriving a verified model or models of "Flying Saucers" led to the conclusion that neither goal could be attained using the present data.

It is emphasized that there was a complete lack of any valid evidence consisting of physical matter in any case of a reported unidentified aerial object. Thus, the probability that any of the unknowns considered in this study are "Flying Saucers" is concluded to be extremely small, since the most complete and reliable reports from the present data, when isolated and studied, conclusively failed to reveal even a rough model, and since the data as a whole failed to reveal any marked patterns or trends.

Therefore, on the basis of this evaluation of the information, it is considered to be highly improbable that any of the reports of unidentified aerial objects examined in this study represent observations of technological developments outside the range of present-day scientific knowledge.

Investigation Procedures

The objectives of the UFO program, outlined in 1953 by Air Force Regulation 200-2, remain unchanged:

- (1) To determine if UFO phenomena present a threat to the security of the United States.
- (2) To determine if UFO phenomena exhibit any technological advances which could be channeled into U.S. R&D.
- (3) To explain or identify the stimuli which caused the observer to report a UFO.

Our Project Blue Book office at Wright-Patterson has a complement of only one officer, two sergeants, and one civilian stenographer. The initial investigation of all UFO sightings is therefore undertaken by the commander of the nearest Air Force base. In its subsequent analysis of UFO cases, also, the project office is assisted by many organizations and professional individuals. Project Consultant for the past eighteen years has been Dr. J. Allen Hynek, astrophysicist

and Chairman of the Dearborn Observatory, Northwestern University. It is Dr. Hynek, obviously, who has maintained continuity on the project, in addition to evaluating all suspected astronomical cases. We have used the services of Dr. Charles P. Olivier, head of the American Meteor Society, in evaluating some suspected meteor cases.

For help on suspected aircraft sightings we have gone to Federal Aviation Agency offices, local airports, the Strategic Air Command, and the Air Defense Command. In suspected balloon sightings we have called upon local airports, local weather stations, the U.S. Weather Bureau, Holloman AFB Balloon Control Center, the National Center for Atmospheric Research, General Mills, Raven Industries, Sea Space Systems, and colleges and universities conducting balloon research. For suspected satellite sightings we use the printed Echo schedules, NASA satellite reports, the Smithsonian North and South Equatorial Crossings, and the professional services of the Space Detection and Tracking System. For suspected missile observations we go directly to Cape Kennedy, Vandenberg AFB, Point Mugu, Wallops Island, Eglin AFB, Holloman AFB, and Green River.

For radar analysis we contact one of our internal organizations. For photo analysis we use an internal organization but also Kodak in Rochester, N.Y. On physical specimens we have used the services of the Air Force Materials Laboratory, Battelle Memorial, the Food and Drug Administration, Libby Owens, Corning Glass, Institute of Paper Chemistry, and the Northwestern Geology Department. Numerous other organizations and individuals have helped the project in the past. No individual, government agency, or industrial group has ever refused assistance.

As indicated above, UFO sightings are classified according to the suspected real event that gave rise to each report. The characteristics of these different categories are sketched below.

Propeller Aircraft

Regular scheduled airliners fly in air corridors, are usually controlled by FAA. Lighting will probably be typical red and green wing lights with rotating beacon. They use landing lights on takeoff as well as in landing pattern. Sighting report may include hovering or stationary period if the aircraft is in a turn or approaching the observer. Total duration should be consistent with flight maneuvers, not likely to exceed five minutes unless some series of maneuvers is being performed. Landing light, blotting out the red and green

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flashing lights, is often reported as a single light at night. Experimental and unusual lighting effects can vary with the lighting configuration of each aircraft. Color most often reported as white, can be red. Objects reported in straight flight at certain altitudes can be checked against local flight corridors; then FAA can be checked if there remains doubt that an object is an aircraft or if positive identification of a specific flight is required. There may or may not be sound associated with the visual effect reported. If near an airport, this type of object is not classed as a UFO; moving lights in and around airports which could be caused by aircraft are assumed to be aircraft.

Private or non-scheduled flights have the same characteristics in general. Speeds may be slower and duration longer. Altitude usually lower. No sound if the wind is blowing away from the observer. Duration should not exceed seven or eight minutes unless maneuvers can account for additional time. Normally flight is cleared from some local airport and not carried on radar plots through FAA; hardest type to make positive identification of. Evaluation made on reported flight characteristics consistent with aircraft.

Jet Aircraft

Airliner and high-altitude missions are similar to conventional flights in visual characteristics with the following exceptions: (1) The color is most often reported as red. (2) No sound is associated with the object. (3) Flight is usually straight or with one turn. Duration is about three to five minutes, depending upon the length of arc visible. FAA has designated airways for these flights.

Special low-level military missions are flown at 2,000 feet in known air corridors. Sighting is usually brief, one minute or less. May be reported hovering if flight is directly toward the observer. May include a sudden burst of speed. No sound if wind is away from observer. Usually reported as a single light, but may be more than one. Sightings are at night; during the day these aircraft can be seen too well to be misinterpreted.

Special test or training missions, varying from a single plane to multiple flights or major air operations, may give rise to reports. These flights can be determined by contact with local, regional, or major air commands.

A jet with afterburner in operation, viewed from the side, may give the appearance of a short flame. It is usually reported as blue and

tapering. When the afterburner is cut off, the object may be thought to have either just vanished or zoomed off into space. Duration is usually brief. The sighting is frequently during climb. As viewed from the rear, the jet may be reported red or orange with some yellow and of no distinct shape. Here again the disappearance may be sudden. If at high altitude, only a nondescript light may be reported.

Refueling Missions

Here lights on the tanker and the multiple aircraft engaged add new visual characteristics. Sightings are at night only; daylight operations would be recognized for what they are. They may be at low or high altitude. Multiple lights will be moving around, in formation, going on and off. The basic light formation will fly straight for a set distance, then may make a 180-degree turn. Duration in an area may run as high as 15 minutes, but any single pass should not last more than four or five. Lights may be seen going one way and then appear on their return path later. The 923 Air Refueling Squadron at Wright-Patterson furnishes information on the visual characteristics of night refueling operations, and SAC recently photographed a refueling mission for the benefit of UFO analysts.

Refueling operations are controlled and conducted in specific areas. A "Flight Planning Guide" issued by the Aeronautic Chart and Information Center gives the location of these areas and the agency controlling each. A phone call to the controller will determine whether an area was in use at a particular time and what squadron flew the mission. Then communication with the squadron will give the number and type of aircraft flown and their entry and exit times.

Photo Aircraft

Aircraft using flare drops for photo work are most often reported simply as flares. Similarly, aircraft using strobes to illuminate their target, which may work at either low or high altitudes, are reported as a series of evenly spaced flashes. Duration of these sightings is usually less than two minutes, more frequently 30 seconds.

Infra-red photo planes have turbine generators to drive their equipment. These make a whining noise which can be heard above the noise of the engines. Not many agencies do this work, which is often classified. The planes used are rather slow, less than 125 mph.

Much of the work is done early in the morning, with landing lights on because of the low altitudes flown.

Advertising Aircraft

Planes towing targets or banners during daylight hours are not usually misinterpreted unless they remain at such a distance that the observer cannot distinguish the tow vehicle and sign. Frequently in such cases the reports are accompanied by drawings picturing the towed banner as part of the UFO. Duration is longer than for other aircraft sightings, and the flight generally includes maneuvers. The frequently used loud speaker would presumably not be heard unless the flight were close enough for correct identification. Local investigators can check for these aircraft, since FAA regulations require a permit for such flights.

Aircraft with electrically lighted signs have the same essential characteristics except that they are normally sighted at night. On occasion the sign lights have been mistaken for windows of a much larger craft. Flights are relatively slow, characteristically maneuvering back and forth in one area. One usually operates over the same area for more than one day and can be viewed on successive nights, weather permitting.

Helicopters

Motion slow, may or may not hover. It needs to be far enough away from the observer to escape daylight identification. It may be reported as a black speck moving back and forth, up and down. During the night weird effects can be caused by the red rotating beacon flashing through the canopy. Motion will be erratic if the flight includes hovering. Positive identification is usually simple to obtain by checking the flight schedules of military and civilian helicopters in the area.

Balloons

Flight characteristics here are affected by meteorological factors. Wind data is obtained from the Weather Bureau. An Air Weather Service liaison officer assists in evaluating the meteorological data. Low-level weather balloons are described in sightings as round or oval, occasionally oblong. The flight may be reported as hovering, rising, zig-zag, or erratic, but the object must be moving with the

wind. It will be picked up by radar only if a radar reflector is attached. A frequent time for sightings is at dusk, before the balloon disappears into earth's shadow. It is rarely sighted at night; its small white lights are not visible to ground observers from above 10,000 feet without optical aids. The sighting from planes is usually very brief, and on occasion even experienced pilots have attributed unusual motion to balloons.

An upper-air balloon may be described as round or oval, usually silver during the day and orange at dusk. It will appear stationary or in slow motion. Actually, it moves with prevailing winds at the altitude—six months to the east and six to the west. It will probably be picked up on radar and remain in the area long enough to be identified by aircraft scrambled or diverted for this purpose. Sudden disappearance is to be expected at dusk, and may be reported as a zooming off into space. The sun's reflection through folded panels can give unusual flashing effects. Every effort is made to pin to a specific launch any reports attributable to upper-air balloons; this practice has assisted the scientific community in recovering some of them.

Upper air research balloons are launched by military and civilian agencies for cosmic ray and other studies. These are about 100 feet in diameter, usually of polyethylene. They can be programmed to fly at various altitudes between 80,000 and 125,000 feet or higher. Their appearance may vary with the equipment suspended below and other attachments, but what is visible from the ground without optical aids is generally the same for all. The speed will vary with the wind, from hovering in the same area for some days up to 200 mph in jet streams. At night the balloon will descend as the gas cools and the next day go back up to the programmed altitude. It usually carries a radio beacon which is followed by tracking stations, as well as running lights and radar reflectors. Occasionally, multiple balloons are used to carry heavy equipment. Pilots scrambled to check on this kind of balloon cannot reach its altitude but can get close enough to identify it. At dawn the balloon may appear suddenly, as it moves into sunlight, and similarly disappear at dusk.

Earth Satellites

In order for a report to be evaluated as deriving from an artificial satellite, the following criteria must be met: (1) Time of sighting must be at night and at such an hour that the vehicle can reflect the

sun's rays. (2) Object should resemble a star in visual characteristics. (3) Direction of flight can have a westerly component only in the case of retrograde satellites. (4) Duration (considering the degrees of arc through which the object is observed) must be consistent with satellite orbital velocities.

Satellites are normally reported as star-like moving lights, most frequently white but occasionally yellow, green, blue, orange, and even red. Motion may be steady, hesitating, or zig-zag; portions of the flight may be seen as hovering or stationary. The path may be reported straight or arching, and a turn may be ascribed to it at the beginning or end of the flight. The object may appear or disappear suddenly. The speed should be about 15° of arc per minute, the average duration three to six minutes.

When a known satellite has a flight path over the observer's area at the time of the report (only Echo and Pegasus schedules are screened), and the above considerations are fulfilled, the sighting is evaluated as of that specific vehicle. There are more than 30 satellites in orbit visible to the naked eye. When a reported object does not correspond with Echo or Pegasus passages but displays the required characteristics, it is then evaluated as a probable or possible satellite.

Astronomical Events

The most common UFO reports are of astronomical sightings—bright stars, planets, comets, fireballs, meteors, auroral streamers, and other celestial bodies. When observed through haze, light fog, moving clouds, or other obscurations or unusual conditions, the planets, especially Venus, Jupiter, and Mars, have been reported as UFOs. Stellar mirages are also a source of astronomical reports.

Other Categories

There are three other classifications used for UFO reports. An *Insufficient Data* category takes care of those in which one or more elements of information essential for the evaluation are missing—for example the duration of the sighting, the date, time, location, or position in the sky, weather conditions, and the manner of appearance or disappearance. If there is any indication that such a sighting may be important from the viewpoint of security, scientific or technical value, or public interest, every attempt is made to obtain

the additional information necessary before placing the report in this category.

Another category is a catch-all labeled *Other*. It includes missiles, reflections, mirages, searchlights, birds, kites, spurious radar indications, hoaxes, fireworks, and flares.

And finally, a sighting is considered *unidentified* when a report apparently contains all the data necessary to suggest a valid hypothesis but its description cannot be correlated with any known object or phenomenon.

Through 1965, 10,147 UFO reports had been disposed of and classified in one or another of the seven categories. In 1964, a fairly average year, the figures were as follows:

Astronomical	123
Aircraft	71
Balloon	20
Insufficient Data	89
Other	88
Satellite	142
Unidentified	19
Total	562

Policeman's Report

One intriguing, classic case of the 19 listed above as unidentified will also illustrate how widely government agencies, industrial firms, and individuals cooperate in the UFO project.




On 24 April 1964 at approximately 1745 hours, a Socorro, New Mexico, police officer, Lonnie Zamora, was headed south chasing a speeding automobile when he suddenly heard a roar and saw a flame in the sky to the southwest. He decided to let the speeder go in favor of investigating the flame, because there was a dynamite shack in that area and it might have blown up. He turned right onto a gravel road that ran by the shack.

As he was driving slowly along the road, Zamora saw above a steep hill just ahead a funnel-shaped flame, bluish and sort of orange. The base of the flame was hidden behind the hill; there was no smoke connected with it. He had trouble getting the car to the top of the hill because of loose gravel; he had to try three times before he made it. As he reached the top of the hill he saw a shiny object to the south, this side of the dynamite shack, about 150-200 yards away. It was off the road to the left in an arroyo, and at first glance it

looked like a car turned over; but when he drove closer, it appeared to be aluminum color, not chrome, and oval-shaped like a football.

Zamora drove about 50 feet along the hill crest, radioing back to the sheriff's office, "10-44 [accident], I'll be 10-6 [busy out of the car] checking a wreck down in the arroyo." From this point, seated in the car, he could not see the object over the edge of the hill. As he stopped the car, he was still talking on the radio, and while he was getting out he dropped the mike. He picked it up and put it back and started down toward the object.

Just then he heard a very loud roar, not exactly like a blast but not steady like a jet engine. It was of low frequency at first and then became higher. At the same time he saw a light blue flame, sort of orange at the bottom. Zamora believes this flame came from the underside of the object; he could see no smoke but some dust in the vicinity. He panicked; he thought the object was going to blow up. In his own words (with slight rearrangements for the sake of clarity):

As soon as saw flame and heard roar, . . . ran away from object but did turn head towards object. Object was  in shape. It was smooth—no windows or doors. As roar started, it was still on or near ground. Noted red lettering of some type like  . Insignia was about 2 1/4 inches high and about 2 inches wide, guess. Was in middle of object, like  . Object still like aluminum white.

[Running], bumped leg on car—back fender area. Car facing southwest. . . . Fell by car and [sun] glasses fell off, kept running to north, with car between me and object. . . . I guess I had run about 25 feet when I glanced back and saw the object. . . . rise to about level of car, about 20 to 25 feet, guess. Took, I guess, about six seconds when object started to rise and I glanced back. . . . It appeared about directly over the place where it rose from.

I was still running. . . . [then] about 50 feet from car I ducked down, just over edge of hill. . . . I stopped because I did not hear the roar. I was scared of the roar, and I had planned to continue running down the hill. I turned around toward the object and at the same time put my head toward ground, covering my face with my arms. . . . When the roar stopped, heard a sharp tone whine and the whine lasted maybe a second. Then there was complete silence about the object.

That's when I lifted up my head and saw the object going away from me. . . . in a southwest direction. . . . It did not come any closer to me. I wanted to go in straight line and at same height—possibly 10 to 15 feet from ground, and it cleared the dynamite shack by about three feet. Stank about eight feet high. Object was traveling very fast. It seemed to rise up, and take off immediately across country.

I ran back to my car and as I ran back, I kept an eye on the object. I picked up my. . . sun glasses, got into the car, and radioed to Nep Lopes, radio operator, to look out the window, to see if you could see an object. He asked, what is it?

I answered, it looks like a balloon. I don't know if he saw it. If Nep looked out his window, which faces north, he couldn't have seen it. I did not tell him at the moment which window to look out of.

As I was calling Nep, I could still see object. The object seemed to lift up slowly, and to get small in the distance very fast. It seemed to just clear the Box Canyon or Mile Canyon Mountain. It disappeared as it went over the mountain. It had no flame whatsoever as it was traveling over the ground, and no smoke or noise.

Feeling in good health. Last drink—two or three beers—was over a month ago. Noted no odors. Noted no sounds other than described. Gave direction to Nep Lopes at radio and to Sergeant MS Chaves [of New Mexico state police at Socorro] to get there. Went down to where the object had been, and I noted the brush was burning in several places. . . . I got my pen and drew a picture of the insignia on the object. . . .

Then Sgt. Chaves came up, asked me what the trouble was because I was sweating and he told me that I was white, very pale. I asked the Sgt. to see what I saw and that was the burning brush. Then Sgt. Chaves and I went to the spot and Sgt. Chaves pointed out the tracks. . . .

When I first saw the object (when I thought it might be a car) I saw what appeared to be two legs of some type from the object to the ground. At the time, I didn't pay much attention to. . . the two legs. The two legs were at the bottom of the object, slanted outwards to the ground. The object might have been about three and a half feet from the ground at that time. . . .

Diagnosis: Unsolved

There is no doubt that Lonnie Zamora saw an object which left quite an impression on him. There is also no question about Zamora's reliability. He is a serious police officer, a pillar of his church, and a man well versed in recognizing airborne vehicles in his area. He is puzzled by what he saw, and frankly, so are we. This is the best-documented case on record, and still we have been unable, in spite of thorough investigation, to find the vehicle or other stimulus that scared Zamora to the point of panic.

During the course of the investigation and immediately thereafter, everything that was humanly possible to verify was checked. Radiation in the landing area was checked with Geiger counters from Kirtland AFB. The Holloman AFB Balloon Control Center was checked for balloon activity. All local stations and Air Force bases were checked for release of weather balloons. Helicopter activity was checked throughout the state of New Mexico. Government and private aircraft were checked. The reconnaissance division in the Pentagon was checked. The White House Command Post was checked. The Commander at Holloman AFB was interviewed at length about special activities from his base. Down-range controllers

at the White Sands Missile Range were interviewed. Letters were written to industrial companies engaged in lunar vehicle research activity. The companies were extremely cooperative, but to no avail. The Air Force Materials Laboratory analyzed soil samples from the landing area.

The findings were altogether negative. No other witnesses could be located. There were no unidentified helicopters or aircraft in the area. Radar installations at Holloman AFB and at Albuquerque observed no unusual blips; but the down-range Holloman MTI radar, closest to Socorro, had been closed down for the day at 1600 hours. There was no unusual meteorological activity, no thunderstorms; the weather was windy but clear. There were no markings of any sort in the area except the shallow "tracks" Chaves and Zamora found. The soil analysis disclosed no foreign material. Radiation was normal for the "tracks" and surrounding area. Laboratory analysis of the burned brush showed no chemicals that could have been propellant residue.

The object was traveling at approximately 120 miles per hour when it disappeared over the mountain, according to Zamora's best guess of the time it took. Not an interplanetary speed, at any rate; and the findings are also negative for any indication that the Socorro UFO was of extraterrestrial origin or that it presented a threat to the security of the United States.

INTELLIGENCE IN RECENT PUBLIC LITERATURE

SECRETS OF ELECTRONIC ESPIONAGE. By John M. Carroll. (New York: Dutton, 1966. 224 pp. \$3.95.)

This is a light and rather superficial review of the half century of electronic surveillance activities which began in World War I soon after the discovery of the vacuum tube. A short evening's reading, it will appeal more to devotees of *Popular Mechanics* than to *Scientific American* subscribers. Those knowledgeable of electronic espionage today will not find much of interest in it except perhaps a reminder that in World War I, as now, the thing was to apply the latest scientific techniques to espionage. Then it was the first vacuum tube amplifiers; now it is tunnel diodes and lasers.

The book could have been put together, whether it was or not, by going to standard reference works for what took place in the two world wars and then keeping a good file of clippings from newspapers and magazines to cover events in the last 15 years. The scissors-and-paste technique gives the reader a series of episodes rather than a coherent history of the subject.

There are a number of inaccuracies, growing more serious as the story approaches the present time—"Army Air Force" rather than Air Corps, "C-47" for C-54, glass "tubes" instead of rods in fiber optics, and then the retrieval of capsules ejected from satellites by nets *strung between planes in flight*. Illustrations in the section devoted to ferret activities and overflights are mostly photos of planes in their conventional configuration, not the aircraft modified for Elint or technical surveillance.

The account of the Soviet audio penetration of the American embassy discovered in 1964 is almost completely erroneous. It has only the 8th through the 10th floors bugged, neglecting the 6th and 7th, and counts only 40 microphones, a 25% error. In several pages describing the microphones buried deep in the walls, the author tells us they were attached to long wooden pegs extending almost to the surface of the plaster to pick up the walls' voice-induced vibrations, wooden pegs being used instead of the metal spikes of contact microphones in order to defeat search by metal detectors. In reality, these were wooden tubes leading to open holes in the plaster behind the hot water radiators and so providing an air path to each microphone's diaphragm. He says the microphones were connected to

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NEWS RELEASE
PLEASE NOTE DATE



DEPARTMENT OF DEFENSE
OFFICE OF PUBLIC AFFAIRS
Washington 25, D. C.

IMMEDIATE RELEASE

July 21, 1960

NO. 812-60
OXford 75131

FACT SHEET
AIR FORCE UFO REPORT

A total of 173 sightings of unidentified flying objects or aerial phenomena were reported to the USAF during the period 1 January to 30 June 1960. Of these 173 cases 139 have been analyzed and 34 are pending.

Of the 139 cases analyzed 51 were categorized "Insufficient Evidence." Of these 51 cases 37 were so categorized because there were no additional witnesses. It is the Air Force policy to attempt to determine the probable cause of these sightings. However in keeping with good scientific practices they are categorized for statistical purposes as "insufficient evidence." To give full credit to these particular sightings would be comparable to accepting as fact the results of an experiment which was conducted only once.

During this same period for 1959 the number of sightings reported to the Air Force was 175. Due to the fact that several reports usually reach the Air Force after the end of a period, it is safe to assume that the 1 Jan - 30 June period of 1960 will slightly exceed that of 1959. However, the 173 cases for the first half of 1960 represents a slight decrease from the 189 cases reported to the Air Force for the period 1 July through 31 December 1959.

During the period of this report there were 41 cases reported from foreign countries. The majority of these sightings took place in the Pacific and Far East area.

It is apparent that the public is taking the reporting of unidentified aerial phenomena more seriously. During this reporting period there was only one instance of an actual hoax.

The months of April and June 1960 show a fairly large percentage of astro-

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UFO Report

Astronomical
Aircraft
Balloon
*Insufficient
Other (Bird
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The total number of sightings reported to the United States Air Force since 1947 are as follows:

YEAR	OBJECTS SIGHTED AND REPORTED
1947	79
1948	143
1949	186
1950	169
1951	121
1952	1501
1953	425
1954	429
1955	404
1956	778
1957	1178
1958	573
1959	364
1960 (through 30 June)	173
	<u>6523</u>

Reporting, investigation, analysis and evaluation procedures have improved considerably since the first sighting of unidentified flying object was made on 27 June 1947. The study and analysis of reported sightings of UFO's is conducted by a selected scientific group under the supervision of the Air Force.

Dr. J. Allen Hynek, Head of the Department of Astronomy and Director of the Observatory at Northwestern University, is the Chief, Scientific Consultant to the Air Force on the subject of Unidentified Flying Objects.

The selected, qualified scientists, engineers, and other personnel involved in these analyses are completely objective and open minded on the subject of UFO's. They apply scientific methods of examination to all cases in reaching their conclusions. The attempted identification of the phenomenon observed generally must be derived from human impressions and interpretations because scientific devices or measurements are not available. The data in the sightings reported are almost invariably subjective in nature. However, no report is considered unsuitable for study and categorization.

General categories of identification are balloons, aircraft, astronomical, other, insufficient data, satellites and unidentified.

Approximately 4,000 balloons are released in the U. S. every day. There are two general types of balloons: weather balloons and upper air research balloons. Balloons will vary from types 4 feet in diameter to large types 200 feet in diameter. The majority released at night carry running lights which often contribute to weird or unusual appearances when observed at night. This also hold true when observed near dawn or sunset because of the effect of the slant rays of the sun upon the balloon surfaces. The large balloons, if caught in jet streams, may assume a near horizontal position when partially inflated, and move with speeds of over 200 MPH. Large types may be observed flattened on top. The effect of the latter two conditions can be startling even to experienced pilots.

Many modern aircraft, particularly swept and delta wing types, under adverse weather and sighting conditions are reported as unusual objects and/or "flying saucers." When observed at high altitudes, reflecting sunlight off their surfaces, or when only their jet exhausts are visible at night, aircraft can have appearances ranging from disc to rocket in shape. Single jet bombers

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having multi-jet pods under their swept-back wings have been reported as UFOs or "saucers" in "V" formation. Vapor trails will often appear to glow with fiery red or orange streaks when reflecting sunlight. After burners are frequently reported as UFOs.

The astronomical category includes bright stars, planets, comets, meteors, and other celestial bodies. When observed through haze, light fog, or moving clouds, the planets Venus, Mars, and Jupiter have often been reported as unconventional, moving objects. Attempts to observe astronomical bodies through hand-held binoculars under adverse sky conditions have been a source of many UFO reports.

The "other" category includes reflections, searchlights, birds, kites, blimps, clouds, sun-dogs, spurious radar indications, hoaxes, fireworks displays, flares, fireballs, ice crystals, bolides, etc., as examples: large Canadian geese flying low over a city at night with street lights reflecting off their bodies; searchlights playing on scattered clouds, appearing as moving disc-like shapes.

The insufficient data category includes all sightings where essential or pertinent items of information are missing, making it impossible to form a valid conclusion. These include corroboration of the sighting by an additional witness; description of the size, shape or color of the object; direction and altitude; exact time and location; wind weather conditions, etc. This category is not used as a convenient way to get rid of what might be referred to as "unidentified objects." However, if there is not an additional witness or if the data received is insufficient or unrelated, the analysts must then place that particular report in this category. The Air Force needs complete information to reach a valid conclusion. Air Force officials stressed the fact that an observer should send a complete report of a bona fide sighting to the nearest Air Force activity. There the report will be promptly forwarded to the proper office for analysis and evaluation.

A sighting is considered unidentified or unexplained when a report apparently contains all the pertinent data necessary to normally suggest at least one valid hypothesis on the cause or explanation of the sighting but when the description of the object and its maneuvers cannot be correlated with any known object or phenomenon.

In its Project Blue Book Special Report #14, released in October 1955, the Air Force showed that evaluated sightings in the unidentified category had been reduced to 3 percent at that time.

Unidentified sightings had been 9 percent in 1953 and 1954 and in previous years unidentified sightings had run as high as 20 percent. Project Blue Book Special Report #14, covered UFO investigations from June 1947 to May 1955. Since that time, Air Force statistics show the percentage of unidentified sightings has been reduced to approximately 2 percent.

Air Force conclusions for the thirteen years of UFO sightings involving over 6,500 reports are: first, there is no evidence that unidentified sightings were inimical or hostile; second, there is no evidence that unidentified sightings were interplanetary space ships; third, there is no evidence that these unidentified sightings represented technological developments or principles outside the range of our present day scientific knowledge; fourth, there is no evidence that these unidentified sightings are a threat to the security of the

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country; and finally, no physical or material evidence, not even a minute fragment of a so-called "flying saucer" or space ship has ever been found.

The Air Force emphasized the belief that if more immediate detailed objective observational data could have been obtained on the unidentified or unexplained sightings, these, too, would have been explained satisfactorily.

The Air Force, assigned the responsibility for the Air Defense of the United States, will continue to investigate all reports of unusual aerial objects over the U. S. including objects that may become labeled Unidentified Flying Objects. The services of qualified scientists and technicians will continue to be utilized to investigate and analyze these reports, and periodic public statements on the subject will be made as warranted.

The Air Force Inspector General's Brief, dated 24 December 1959, contained a notice to all unit Commanders that UFO reports are serious business since they are vitally involved in the Air Force's air defense mission. This Brief stressed that Commanders are responsible for seeing that UFO sightings are investigated and evaluated quickly, thoroughly and accurately. The Brief referred to Air Force Regulation 200-2 concerning unidentified flying objects which outlines the Air Force's obligation to keep the public adequately informed on this subject and also stresses the fact that UFO sighting reports are not to be classified. If an UFO report is classified it is classified for other reasons than the UFO sighting itself.

The Air Force is charged by many private UFO groups with possession of classified information which concludes or proves that space ships from other planets exist and are visiting our atmosphere. Nothing could be further from the truth. The Air Force possesses no information, classified or unclassified, which proves this contention. Many individuals associated with these private UFO organizations are self-appointed authorities on UFOs and consider themselves entitled to be unofficial advisors to the United States Air Force Intelligence Community. Since they are not charged under law with these responsibilities it would be entirely inappropriate and even dangerous at times to exercise the Intelligence system in order to give them, or their organizations, any notoriety or publicity. It is an interesting fact that most of these individuals fail to recognize the fact that there is such a thing as legitimate classified security information. For the past thirteen years these groups have repeatedly stated that their organizations possess documented evidence proving the existence of space ships from other planets. However, when asked as patriotic citizens to deliver this evidence to the United States Air Force or other government agencies they have refused to do so. The obvious conclusion is that they do not possess this information or evidence proving the existence of space ships.

From time to time the Air Force has been asked the cost of conducting the UFO program. It is impossible to estimate the exact amount of funds expended by the Air Force in investigating reported sightings of unidentified flying objects because in addition to the entire facilities of the Aerospace Technical Intelligence Center, the entire facilities of the nation's scientific and technical community are at the disposal of the evaluators, and the degree of use varies with each case. Also, investigation in the field can involve individual Air Force base personnel and special investigative units and again, in these instances the amount of time expended and the number of personnel assigned to a specific sighting will vary with each case.

END

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Acting Chief, P&E Division, SI
THROUGH: Chief, GP Branch, P&E Division, SI
GP Branch

27 January 1953

25X1A

Meetings of OSI Advisory Group on Unidentified Flying Objects,
14-17 January 1953

1. At your request I represented P&E Division at the subject meetings. I was present at nearly all meetings of the group with the exception of the afternoon of Friday, the 16th and the session on Saturday, the 17th. During the latter two sessions the Advisory Group went into executive session for the preparation of their report to AD/SI.

2. The following OSI Consultants formed the Advisory Group:

25X1A [redacted] Chairman

[redacted] (missed morning session on 16th)
(present only on afternoon of 16th and 17th)
Dr. J. A. Hynak (an ATIG consultant - he sat in all the sessions after the first day, but did not sign the report to AD/SI as an official group member)

25X1A

3. The following OSI staff members attended:

25X1A Dr. H. M. Chadwell (most of the first day only)
(first day only)
[redacted] (although now an OSI consultant, he functioned as a staff member for the conference and attended all sessions including the executive sessions)

25X1A [redacted] Weapons Division
25X1A [redacted] P&E Division

4. The following persons were invited to present certain background information to the Advisory Group:

Captain Edward Ruppelt, ATIG who presented information on the work of Proj. Bluebook (and its predecessors "Grudge", "Saucer", and "Sign") and discussed in detail many of their specific investigations.

Major Journey, AFOLIN (by now on inactive status and with The Ethyl Corps) who presented findings independent of ATIG. Representatives of the Navy Photographic Labs who presented their analysis of films of a "Sighting."

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5. The first business on the agenda was a welcome by and a charge (Att. #1) to the Group by Dr. Chadwell. This was followed by a statement of the CIA interest by [redacted] CIA had been requested by IAG to look into the "flying saucer problem" because of three related national security problems: (a) possible exploitation to produce mass hysteria, (b) the confusions and dangers inherent in observations of "flying saucers" by the U.S. radar and observer systems, (c) the danger of "flying saucer reports" overloading the emergency communication facilities of the Department of Defense.

25X1A

6. Because of the quality of the consultants and the excellence of their introduction to the subject by Dr. Chadwell and [redacted] the Advisory Group never lost sight of its goals in spite of the fact that the discussion took many excursions.

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7. The Advisory Group submitted its report to AD/BI on 17 January 1953. Their principal finding was that at the present time the unidentified flying objects pose no threat to the security of the United States. They recommended the establishment of programs of education regarding the sightings particularly as concerns the U.S. radar and observer system, and for the general public as well.

8. Most of the OSI files on this subject are being retained in the office of the AD/BI. Weapons Division has a considerable file which according to [redacted] they would like to dispose of because of the findings of the Advisory Group that "flying saucers" poses no present threat to the United States security. [redacted] feels that the material in the Weapons Division file should be maintained in one of the substantive Divisions of OSI and has suggested that P&E Division take them over and maintain them. [redacted] of Weapons Division currently has the material and estimates that several hours per week will be required to keep it current. He indicates that he is suggesting to [redacted] Chief of Weapons Division, that P&E Division get the files. I would like to suggest that the Acting Chief, P&E Division discuss this with [redacted] I personally don't see why P&E Division has any greater interest in this material than Weapons Division.

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9. If OP Branch, P&E Division is given the responsibility for the files mentioned in paragraph 8, above, one (1) additional safe will be required.

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APPEN. A

SECRET
SECURITY INFORMATION

CHARGE TO O/SI ADVISORY GROUP ON UNIDENTIFIED FLYING OBJECTS

1. To review available evidence on unidentified flying objects and to consider possible dangers to national security related thereto.
2. To advise concerning the amount and kind of data necessary for a scientific evaluation of these phenomena.
3. In particular to comment on:
 - a. Validity of current CIA evaluation of related dangers.
 - b. Methodology and scope of current and planned ATIC investigation.
 - c. Advisability of further meetings of this group or further review of the subject by a larger panel.

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SECURITY INFORMATION

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REPORT OF THE SCIENTIFIC PANEL
ON
UNIDENTIFIED FLYING OBJECTS

Released in MORI

17 January 1953

1. The undersigned Panel of Scientific Consultants has met at the request of the Government to evaluate any possible threat to national security posed by Unidentified Flying Objects ("Flying Saucers"), and to make recommendation. The Panel has received the evidence as presented by cognizant Governmental agencies, primarily the United States Air Force, and has reviewed a selection of the best documented incidents.
2. As a result of its considerations, the Panel concludes:

That the evidence presented on Unidentified Flying Objects shows no indication that these phenomena constitute a direct physical threat to national security.

We firmly believe that there is no residuum of cases which indicates phenomena which are attributable to foreign artifacts capable of hostile acts, and that there is no evidence that the phenomena indicate a need for the revision of current scientific concepts.
3. In the light of this conclusion, the Panel recommends:

That the national security agencies take immediate steps to strip the Unidentified Flying Objects of the special status they have been given and the aura of mystery they have unfortunately acquired.

Released in MORI

We suggest that this aim may be achieved by an integrated program designed to reassure the public of the total lack of evidence of inimical forces behind the phenomena.

/s/ Lloyd V. Berkner
Associated Universities, Inc.

/s/ H. P. Robertson, Chairman
California Institute of Technology

/s/ S. A. Goldwit
Brookhaven National Laboratories

/s/ Luis W. Alvarez
University of California

/s/ Thornton Page
John Hopkins University

Memorandum for file

At 0945 on Jan
was convened to review
statement of the pr
A. The panel consi

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Dr. J.A. Hynek

The following
of the discussions.

Dr. H.M. Chadw

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To assist the
Capt. E. J. Ruppelt
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A final report
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2. No evidence
as yet unknown (to

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SECURITY INFORMATION

reduce the defense effort of the general public.

It is noted that these general conclusions as stated here do not specifically answer the needs presented in Appendix A. However, it is anticipated that comment on these points will be presented in a written statement from the scientific panel to AD/SL.

DBS:gl (typed 12 February 1953)

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SECURITY INFORMATION

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SECURITY INFORMATION

SCIENTIFIC ADVISORY PANEL ON

UNIDENTIFIED FLYING OBJECTS

14 - 17 January 1953

Released in MORI

<u>MEMBERS</u>	<u>ORGANIZATION</u>	<u>FIELD OF COMPETENCY</u>
Dr. H. P. Robertson (Chairman)	California Institute of Technology	Physics, weapons systems
Dr. Luis W. Alvarez	University of California	Physics, radar
Dr. Lloyd V. Berkner	Associated Universities, Inc.	Geophysics
Dr. Samuel Goudsmit	Brookhaven National Laboratories	Atomic structure, statistical problems
Dr. Thornton Page	Office of Research Operations, Johns Hopkins University	Astronomy, Astrophysics
<u>ASSOCIATE MEMBERS</u>		
Dr. J. Allen Hynak	Ohio State University	Astronomy
Mr. Frederick C. Durant	Arthur D. Little, Inc.	Rockets, guided missiles
<u>INTERVIEWEES</u>		
Brig. Gen. William M. Garland	Commanding General, ATIC	Scientific and technical intelligence
Dr. H. Marshall Chadwell	Assistant Director, O/SI, CIA	Scientific and technical intelligence
Mr. Ralph L. Clark	Deputy Assistant Director, O/SI, CIA	Scientific and technical intelligence

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