

9 FEBRUARY 1953
STANDARD BLUE BOOK BRIEFING

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Standard Project Blue Book Briefing

This is the standard briefing that is given on Project Blue Book, the project for the investigation of reports of Unidentified Flying Objects. The briefing touches on all aspects of the project including a brief history, current situation, analysis, and reporting. In instances where certain of these aspects are of no interest to the audience it is modified to eliminate these unwanted portions.

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Security Classification

First of all I would like to tell you about the security of this project. The majority of the information is currently being carried as ^{UNCLASSIFIED} ~~Restricted~~. This is merely to protect the names of the people who have given us reports, it is not any attempt to cover up any information that we have. The required security classification for admittance to this briefing is Secret, however. The reason for this is that in some instances we may get into a discussion of classified equipment, classified location, or classified projects during the question and answer period that follows this briefing. When the project was first started, it was classified as Top Secret. This is probably the reason for the rumors that the Air Force has Top Secret information on this subject; it does not. The only reason for the original classification was that when the project first started the people on the project did not know what they were dealing with and, therefore, unknowingly put on this high classification.

We release all information to the press that they ask for, except the names of persons involved in the sighting, methods used to obtain information when this involves intelligence methods and ^{OTHER THINGS} ~~anything else~~ such as locations of radar sets, types of radar sets, performance of aircraft, etc., that may be classified.

The Air Technical Intelligence Center

Many people are not familiar with the Air Technical Intelligence Center. The Air Technical Intelligence Center was at one time part of Air Materiel Command, however, in mid 1952 the command was changed and it is now a field activity of the Directorate of Intelligence, Headquarters Air Force. Our chief, Brigadier General Garland, is directly responsible to Major General Samford, the Director of Intelligence, Headquarters USAF. The prime function of the Air Technical Intelligence

Center is not to investigate "flying saucer" reports, it is charged with the prevention of technological surprise by a foreign country. This means that all enemy aircraft, guided missiles, etc., and any equipment related to these articles, is studied at the Air Technical Intelligence Center.

Definitions

We normally do not like to use the term "flying saucer" in conjunction with this project although it does seem to be an internationally recognized term. The official term for these reported objects is Unidentified Flying Objects. They are defined as being anything that by performance, aerodynamic characteristics or unusual features does not conform to any presently known type of aircraft or missile, or which cannot be identified as a known object.

History of the Project

To give you a brief history of this project, it started in 1947, when on 24 June 1947 a Mr. Kenneth Arnold sighted several disc-like objects near Mt. Rainier in the State of Washington. From that time until August 1949, 375 reports were collected and analyzed. In August 1949, a report was written on these 375 incidents and it was concluded that all sightings were due to:

- a. Mass hysteria or war nerves.
- b. Hoaxes or persons seeking publicity.
- c. Psychopathological persons.
- d. Misinterpretation of known objects.

These conclusions have been given a great deal of study and it is now concluded that the vast majority of the reports received are not due to hysteria, war nerves, hoaxes, publicity seekers, psychopathological persons, etc., but they are reports made by persons who have definitely seen something that they themselves could not explain at the time of the sighting and have very sincerely made their

report to the Air Force. This does not mean that these reports could not have been misinterpretations of known objects, as not all of us are familiar with the many different ways known objects can appear under various conditions.

In the summer of 1951 the project was reviewed at the request of Headquarters USAF and Project Blue Book was established. Between 1949 and 1951 the project had not been dropped, but it was being carried on a low priority basis. The reason for the renewed interest in the project was that between 1949 and 1951 very little publicity had been given this subject, however, reports continued to come in. (These reports were mainly from military personnel, and could be classed as good reports. I would like to stop here a minute and explain what we mean by a good report. To us, a good report is one in which several people were involved and the motives of these people in making the report cannot be questioned. They have made comparatively careful observations and have reported everything that they observed. Very few, if any, of the reports in ATIC files could be classed as an excellent report, since everyone is familiar with the frailties of human powers of observation and with the necessity for obtaining readings by instruments to get exact calculations.)

After reorganization of the project in the summer of 1951, reports continued to come in at the rate of about ten a month. In the spring of 1952 there was an increase in the number of reports and they hit a peak of 70 per day in July 1952. At the present time they have dropped off to about five a week. There is no doubt that the emphasis placed on this subject by the press caused this big up-sweep in reports. *add*

Current Situation

W. J. P. It can be stated now that as far as the current situation is concerned, there are no indications that the reported objects are a direct threat to the United States nor is there any proof that the reported objects are any foreign body over the United

States or, as far as we know, the rest of the world. This always brings up the question of space travel. We have gone into this with many people and it is the opinion of most scientists or people that should know that it is not impossible for some other planet to be inhabited and for this planet to send beings down to the earth. However, there is no, and I want to emphasize and repeat the word "No", evidence of this in any report the Air Force has received. I would like to go back over that once more for the sake of the record. We have no evidence in any of our reports that the earth is being visited by any people or beings from outer space.

We have arrived at the conclusion that these reported objects are no direct threat to the United States for several different reasons. One, we have never picked up any "hardware". By that we mean any pieces, parts, whole articles, or anything that would indicate an unknown material or object. We have received many pieces of material to be analyzed but in every case there was no doubt as to what this material was.

Photographs

We have photographs of some unusual things, but in all of those that show any amount of detail, there is a varying amount of doubt as to their authenticity. Still photographs are very easy to fake, without retouching the negative. Our files contain many photos that were submitted in good faith. Some have turned out to be flaws in the negative, light flares or photos of some relatively rare known natural phenomena. We have some that cannot be readily explained since they are merely "blobs" of light and could be various things. None of the photos on file that cannot be explained show any detail in the object or are cause for any undue speculation.

Statistical Study

We have made a statistical study of the data that we have collected in order

to attempt to determine whether or not there is any common pattern in the sightings but we have had no success in finding any such pattern. The statistical study made by ATIC was made on cross-index cards with 16 items, such as a reported shape, a reported direction, color, etc., being cross-indexed in an attempt to find a pattern, but we found none. In order to make a more detailed study, and since it is very difficult to handle 2,000 reports on cross-index cards, an IBM study is now being made. In this study approximately 80 items will be placed on the IBM cards. These items will be cross-correlated and any patterns should be apparent. This has not yet been completed. The results we will obtain will possibly help us in the future planning for the project.

Why Continue the Project

Two points that are of interest but are not in themselves greatly significant are plots of the distribution of our unknown sightings and a plot of the frequency of reports. A definition of the term "unknown" will be given later.

(Slide of Location of Unknowns)

You will notice that the unknown reports do tend to cluster around critical areas in the United States. One explanation might be that the people in these areas are aware of the fact that they are in a critical area and are more aware of unusual things.

(Slide on Frequency of Reports)

A plot of the frequency of reports shows a series of peaks in July of each year. We cannot account for this. Some people have offered the explanation that there is better weather in July, more clear skies. We have checked this and there seems to be no correlation.

The question arises then, why does the Air Force continue this project? I might state now that the Air Force is continuing this project, is taking a great

deal of interest in it, and treating the subject seriously. There are several reasons why it is being continued. One, there are reports that we cannot explain. With the world situation what it is and the present advances in science, it behooves the Air Force to have a system whereby they can receive reports of, evaluate, and determine the identity of everything that is flying over the United States.

Two, there is no assurance that at some future date some foreign country may not develop some object that by present day standards is unconventional. It may be unconventional in appearance or performance. Due to the fact that the term "flying saucer" has become almost a household word, it is possible that these objects, if they should be developed, come across the United States and be seen, would be reported as a "flying saucer". The Japanese balloons of WW II are an example of this. We realize that Air Defense Command has the prime responsibility for the detection and interception of any foreign intruders, but it would be the function of ATIC to determine the nature and characteristics of such intruders.

The third reason is related to the first in that the Air Force is responsible for the aerial protection of the United States and it is our responsibility to assure ourselves and the public that these reported incidents, and we feel that they will continue to be reported, are not a threat. *- add to purpose for*

Operations of the Project

To give you a little better idea of the project, I would like to tell you how we operate. Air Force Letter 200-5 is the basis for our operation. It states that the Air Technical Intelligence Center is responsible for analyzing all reports of Unidentified Flying Objects, and that each Air Force unit is responsible for forwarding reports that they receive to the Air Technical Intelligence Center. It further states that all reports will be forwarded by wire then followed up within three days by a written AF Form 112. If AF Form 112's are not available, the

report can be made in letter form. This reporting requirement in AFL 200-5 does not mean that the officer receiving the report from the source or the observer does not have the prerogative to make his own evaluation and determine whether or not the observation is worth forwarding. He may do this in two ways. He may be able to identify the object, if he does, it is no longer an unidentified flying object, and, therefore, does not have to be forwarded. Secondly, he may evaluate the report according to source and content and determine that it would be of no value as far as analysis is concerned. To break this last point down further, the officer receiving the report may believe the source is of doubtful character or it may be obvious that the source did not make careful observations. In general, a report from only one unexperienced observer is not too helpful. This is not because we doubt the observer's word as to what he saw; it is because most people have difficulty estimating time, angles, relative size, etc. If several people make an observation their estimates can be arranged and the results are a little more accurate. It is a good idea, however, to at least note the name and address or telephone number of such sources since it might be that their observation would tie in with others and it would be necessary to contact them again.

Project Operations

When we receive a report, the first thing that we check it for is the possibility of its being a balloon, aircraft or astronomical body because these three objects give us the most trouble. To go into each of them a little more specifically, we will start with balloons.

Balloons: There are two different general categories of balloons. One is the research type balloon. These balloons vary in shape and size and are released from various points in the United States depending upon what projects are being conducted and are not launched at any scheduled time. They may be small like weather balloons,

they may be clusters of these weather balloons, or they may be large polyethylene balloons that are 100 ft. in diameter. With the present emphasis on cosmic ray study many different types of balloons are being launched in the United States.

The other category is the regularly launched weather balloons. These are launched from known locations in the United States at definite times.

Project Blue Book gets data on the large research type balloons either through ADC or, if necessary, direct from the launching agency. Due to the nature of this problem, ATIC is familiar with most of the agencies in the country who are launching research balloons and can go directly to these people to get information on their balloon tracks.

On the regularly scheduled weather balloon launches, Blue Book has data on all launch sites and knows the approximate time of launch each day. We have the authority to go directly to these stations to obtain data on their balloons or, if the time element is not critical, to go through Air Weather Service to get it from their central files. Fortunately, many of these balloons are tracked, either by radar or by radio DF and it is possible to get the exact tracks of the balloons.

(Slide of Weather Balloon Launch Sites)

Balloons do not give us any trouble when they look like balloons, it is when they don't look like balloons that they give us trouble and they can take on many odd appearances. In the daytime a balloon will appear to be a very bright star in the sky. What is happening is that the sun's rays are diffusing into the balloon and causing it to glow. Under ideal conditions a balloon can be seen as high as 90,000 ft, but under more adverse conditions a balloon possibly cannot be seen over 4,000 to 6,000 ft. It depends a great deal on the haze. During the daytime a balloon at very high altitude will appear to be stationary or traveling very slowly. At night balloons that are lighted will appear to be a radically moving light. This light may even appear to change color, due to the atmospheric conditions.

The balloon will change direction with wind and will appear to be on a jerky, zig-zaggy course. Since most people observing these balloons do not have any reference point in the sky, the balloons appear to be moving very much faster than they really are. At dawn or dusk a balloon can appear to be a fiery red, circular shaped object in the sky. The reason for this is that the balloon is picking up the slanted rays of the sun, exactly the same as a cloud will pick up the sun's rays in a sunset. It may be that if the balloon is high enough, it can be dark on the ground but it will be sunset at altitude.

Some balloons carry radar reflectors or metallic loads capable of giving a radar return. The clue to this is that they will be traveling with and at the same speed as the wind at their altitude.

Aircraft

Aircraft, as aircraft, do not give us a great deal of trouble, it is when they are high and reflecting sunlight or leaving a vapor trail that they are most often misrecognized. Similar to the situation with balloons, a vapor trail will appear to glow at dawn or dusk. Many times the aircraft leaving the vapor trail cannot even be seen, however, the vapor will appear to be a bright fiery red streak of flame in the sky. Formations of aircraft reflecting the sunlight can very often appear as a formation of disc-shaped objects. At times the reflection will suddenly diminish causing the objects to look like they were either moving rapidly out of sight or just disappearing.

ATTC does not have a satisfactory system for checking aircraft. This is because Flight Service and CAA does not keep a permanent record of aircraft flights very long after the aircraft has landed. Therefore, it is up to the officer receiving the report from the observer to thoroughly check aircraft movements immediately. He may check these through the control tower, through Flight Service, through CAA radio

stations, or many various ways, but he should check thoroughly to see whether or not there were any aircraft flights in the area of the sighting.

Astronomical Bodies

As far as astronomical bodies are concerned, ATIC has a professional astronomer under contract to review sightings that they believe to be caused by astronomical bodies. By astronomical bodies we mean bright stars, planets, or meteors. The most valuable information in the analysis of an unidentified flying object that is suspected of being an astronomical body is the bearing, the azimuth, and the time. From this we can check back through almanacs and determine the locations of certain bright stars. Stars that give us trouble are Venus, Jupiter, Capella and several others.

Meteors are not too difficult to evaluate because they seem to have a standard description. If someone reports an object similar to a rocket going across the sky at high speed and leaving a trail behind it, chances are it is a meteor. However, in certain instances we have had very unusual meteors reported. We have found that there are certain classes of meteors that astronomers call fireballs. These are so rare that there is a good chance that you may see only one in your life, if any. This has probably accounted for many reports by pilots who state that they met a huge ball of fire coming directly at their aircraft and at times have even racked up the aircraft to get out of its path. Many times these are reported as missiles. We have had pilots who have complained to the Air Force about shooting rockets, or experimental missiles, through the airways and endangering their aircraft. (This is a rather foolish statement, however, when you get to thinking about it. One, if a missile appeared anywhere outside the proving grounds chances are it would be enemy. However, if you have studied missiles you will note that the burning time, or the time before fuel cut-off, is only a relatively short period during the missile's flight. If we would say, hypothetically, a rocket was shot from some

foreign country into the United States, chances are very good that the fuel shut-off point would have come long before the rocket ever reached the United States and it would not be emitting a flame.

Other Causes of Reports

Naturally balloons, aircraft and astronomical bodies do not account for all the sightings. We have a smaller percentage of other things, such as ducks flying over drive-in theaters at night, searchlights on clouds, blimps, pieces of paper caught in an updraft, and many other things that cause reports. These are very difficult to check and to check them we normally go back to old sightings. For example, sometime back, approximately a year ago, the city of Fargo, North Dakota, was somewhat disturbed by glowing objects that flew over the city on various nights. Finally, some of the more enterprising souls in the city took enough interest in the subject to attempt to determine what they were. All it was were flocks of ducks or geese reflecting the city's lights. We will take a case like this and mentally file it. When we come across a similar report, we'll go back and compare the two reports. If they are similar enough, we will write the new report off as being the same thing. This is about the only method we have of checking such things.

Radar Sightings

We receive quite a few radar sightings and we are very aware of the fact that weather effects and interference between the two radars can give many odd returns. In some cases we are definitely able to show how these radar signals occurred, other times we are not able to definitely show how it happened. We hope that as more study is put on the subject of radar anomalies that more and more of our reports will be explainable.

There are no reports of radar sightings in our file that cannot be questioned. to some degree. In none of the cases of erratic or high speed (above Mach 1) that

we have on file can it be shown that the track was actually that of a material object. One rare exception to this is when radars have happened to track meteors. More of our unknown high speed tracks might be meteors but unless we get reports of a meteor track to correlate with the radar track it is difficult to separate out these reports. Lightning is another possibility but a very vague one.

Radar Scope Photos

A large number of Air Defense Command radar stations are equipped with radar scope cameras. ADC Regulation 200-5 authorizes the use of these cameras for photographing abnormal returns. These scope cameras should be ready to operate at all times since scope photos are an absolute necessity for the accurate evaluation of reports involving radar. In addition, they give valuable data for the study of weather and interference effects.

Simultaneous Radar Visual Sightings

Reports of simultaneous visual reports that supposedly correlate with unusual, high speed or erratic radar tracks, with the rare exceptions of meteors and lightning, are a different story. No presently known phenomena or condition will give this situation. If it can be shown that the object sighted visually and the radar track are the same, the report warrants a detailed investigation. So far, this has not happened in any of our unknown cases. We have good reports of simultaneous visual-radar sightings but again there are always factors that shed varying degrees of doubt as to whether or not the observations involved the same object.

The first factor in establishing a correlation is to check the flight path or location of the visually observed object with that shown on radar. If this correlates closely the next step is to establish that the time was the same, sometimes a difficult task. Other checks can also be made but these two are basic.

Other Simultaneous Sightings

Any report of an object seen from two separated locations is relatively important. These include two locations on the ground, from the ground and air, etc. Of these the best way to gather very accurate data is to utilize two theodolites or a theodolite combined with a plain visual sighting. The use of a theodolite is considered an instrumented observation. For those who are not familiar with the term a theodolite is a device for accurately measuring the azimuth and elevation angles during weather balloon flights. Nearly every air base and large civilian airport has one. It can be put into use by merely calling the weather station and requesting that they try to observe the reported object. The data needed are the time, elevation, and azimuth at one minute intervals for as long as the object is in view or for at least 20 minutes if it appears to be hovering. If an adjacent air base can be contacted and requested to do the same, preferably at the same time, you've hit the jackpot as far as good data are concerned.

(Show Triangulation Slide)

Reporting Solutions

If, during an investigation of a sighting, after a TWX has been sent reporting the incident, the investigating officer should identify the reported object, ATIC should be immediately notified as to the solution.

Popular Theories

Many theories have been advanced that all of the reports are due to mirages, sun dogs, ice clouds and what-have-you. Some of our reports are caused by such things. We have received excellent photos of sun dogs and descriptions of mirages. These are definitely in the minority, however, and cause only a small percentage of the sightings.

Another popular solution is that all "flying saucers" are "skyhook" balloons. To check this a study of about 25 cross-country balloon tracks were made. To

remove any doubt, the tracks were taken of flights made during July and August 1952 when reports were coming in at the rate of 50 per day. These balloons were seen and reported as "flying saucers" at only _____ points.

(Slide - show typical balloon tracks)

Questionnaires

To increase the efficiency of the collection of data, ATIC has devised several different types of questionnaires. One of these questionnaires is for use by ground observers, or people who sight something from the ground, one is for people who sight things from the air, one for radar sightings, and one for general background information. These questionnaires have been made up after a great deal of study. Approximately a year ago, ATIC arranged to have a group of scientists and professional people to design a questionnaire. These people studied all questionnaires that had been previously used in this project, they studied our file of sightings, and arrived at a tentative version of our present questionnaire. This tentative questionnaire was used for a period of approximately three months, the results analyzed, revisions made, and a final questionnaire was made up.

It is believed that these questionnaires will accomplish two things: (1) if the officer in the field receiving the report will use it, it will give him a better idea as to what data is wanted and will make his collection much more efficient and faster. These questionnaires can be attached to an AF Form 112 as an inclosure or attached to a letter report. Although AF Letter 200-5 states what information will be sent, it does not mean that this will be the only information sent. If you are familiar with this letter, you will note that it says that all information pertaining to the sighting will be sent. The questionnaires contain all of the required data plus other, so it is legal to use them. Copies of these questionnaires can be reproduced in your own unit, obtained from your headquarters, or from ATIC.

Statistics

You might be interested in a breakdown of our reports for 1952. In breaking down these reports, we use several degrees of certainty under each category. We'll take balloons, for example. We will classify them as a known balloon, a probable balloon, or a possible balloon. A known balloon means that we were definitely able to correlate the facts of the sighting with the data on a balloon track and there is no doubt that the object was a balloon. Probably a balloon means that we were not able to correlate all the data, but there is no doubt in our minds but what the reported object was a balloon. A possible balloon is where we check the report with balloon data and cannot find a correlation yet we still believe the object was a balloon. This factor accounts for "lost" balloons, that is, balloons that may have developed slow leaks and floated great distances. In all our categories of balloons, aircraft, and astronomical bodies, we use these three breakdowns.

(Slide showing Breakdown of Conclusions)

In analyzing 1021 reports, and those are reports that have been received through military channels and do not include several hundred reports from civilians direct to ATIC, as of 22 December 1952 a total of 18.51% of all our reports were balloons. A further breakdown of this: 1.57% of the total were known balloons; 4.99% of the total were probably balloons; and 11.95% were possible balloons. As far as aircraft is concerned, 11.76% of all the reports were aircraft. Of these .98% were known to be aircraft; 7.74% were probably aircraft; and 3.04% were possibly aircraft. Of the reports, 14.2% were analyzed as being astronomical bodies. Of these 2.55% were known; 7.4% were probable and 4.01% were possible astronomical. In the "other" category, which includes ducks over drive-in's, paper in an updraft, etc., accounted for 4.21% of the total reports, hoaxes were 1.67% - now by hoaxes we mean those reports where the persons purposely set out to perpetrate a hoax, 6.84% were radar

cameras, however, and consequently have not put them out in the field. The grating is a rather touchy piece of equipment and we are having trouble getting it to stand up under certain conditions.

We realize that this is not a fool-proof measure. These cameras are not a piece of highly developed scientific equipment, but we do hope that we may be able to obtain some information.

(Slides of Videon Camera and how it operates)

Other Instrumentation

The possibilities of more extensive instrumentation has been discussed in detail. Many suggestions for more complete cameras, special aircraft instrumentation, and other detection devices have been studied. It is possible that a study contract for such instrumentation may be let, but no actual program will be started now. The cost of such a program would out-weigh the results.

Conclusion

In concluding this briefing it can again be stated that in none of the reports so far received are there any indications that the reported objects are a direct threat to the United States, nor is there any proof that any of the reports received have been reports of any radically new unknown material object. We admit we cannot explain every report but we believe we know enough about the unknowns to say they are not anything to invoke undue speculation.

The project will be continued. Even if a system for the fool proof explanation of every sighting is developed it will continue because you never know what may happen in the future.

The one threat that could come out of this problem of "flying saucers" is a "wolf, wolf" situation. Some people take an exceedingly "dim view" of such reports and use no logic in trying to explain them. We do not want to clutter

reports that we could not definitely establish the cause, and 22.72% of our reports were classified as having insufficient data and were not analyzed.

This leaves a balance of 20.1% of the reports which are classified as unknown. At this point a definition of the term "unknown" is in order. Usually there is more than one source or observer. Again, this does not mean that just because a person is alone, sees something he cannot explain to himself and reports it, his account of what he saw is laughed off. Normally one person just cannot supply the necessary data. For this reason, we dwell more on reports where the data can be substantiated by others. To go a step farther, there can be no doubt as to the reliability of the persons making the observation. If the report contains a relatively good amount of data, it is then checked against the location of known objects, phenomena, etc. If none of these explain the sighting, it is classed as unknown. It might well be that if we had more data on the sighting, it could easily be explained.

(Slide of Locations of Unknowns)

Videon Cameras

You may have heard about a camera that has been modified for use on this project. At the present time, we have 100 of these cameras. They are a commercial model stereo camera with one lens fitted with a diffraction grating. The grating serves as a prism to separate the light source into its various components. Any light source that is made up of an element or combination of elements has a distinctive spectrum. This spectrum is similar to a finger print. A file of the spectra of known objects, stars, meteors, etc., is being assembled and this file spectra can be compared to the spectra obtained from photos from the cameras. These cameras will be placed in control towers and a few selected radar stations throughout the United States. We are having some difficulty with the gratings on these

communications channels with worthless reports. If you can logically explain a report, fine, there is no need to waste your time and effort forwarding it. All we ask is that you do use logic in writing it off a report as a "flying saucer".