



UNITED STATES  
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

*Independence National Historical Park*

*420 Chestnut Street*

*Philadelphia 6, Pennsylvania*

IN REPLY REFER TO:

H2215

February 12, 1962

MA 7-1776

Miss Elizabeth Ralph  
University Museum  
33rd & Spruce Streets  
Philadelphia 4, Pa.

Dear Miss Ralph:

I am today forwarding under separate cover a plan of Independence Square on which I have indicated the structural remains found during archeological excavations.

It was a great pleasure having you and Mr. and Mrs. Wailes visit the Park with your resistivity equipment. I shall look forward to your future visits with a great deal of interest.

Sincerely,

B. Bruce Powell  
Park Archeologist

February 20, 1962

Mr. B. Bruce Powell  
Independence National Historical Park  
420 Chestnut Street  
Philadelphia 6, Penna.

Dear Mr. Powell:

Thank you very much for your generous help and hospitality during our visit with the resistivity equipment. We are extremely grateful to you too for the copy of your plan of Independence Square.

Within the next week or so, and weather permitting, we should like to return to try out other rods and learn a little more about the use of the "Geohm". At any time after that the instrument will be available for Dr. Cotter's and/or Mr. Larabie's field trips.

Sincerely yours,

Elizabeth K. Ralph

EKR/ldw

C  
O  
P  
Y

October 8, 1962

Regional Director, Southeastern Region  
National Parks Service  
Federal Building  
P. O. Box 100008  
Richmond 40, Virginia.

Dear Sir:

One of our main projects in the Applied Science Center Center for Archaeology is the development and testing of instruments for underground exploration. Some of our work with these is described by C. M. Levici in the enclosed copy of Expedition.

I am writing to you because of our need for nearby sites, preferably ones where the ground is not frozen in the winter, and also the climate not too cold, for the testing of new instruments. We are trying to develop, in particular, a device based on the sonic principle that will be capable of detecting buried walls and building foundations.

For these initial trials, it has occurred to us that there may be historical sites in the southeastern U. S. where the location and depths (preferably at least, 2 meters) of such features are known. We should appreciate it very much if you would suggest some possible sites and if we could have permission to test new instruments at one or more during the course of the late fall and winter.

It is our hope that, with these instruments, the location of buried archaeological and historical features will be greatly facilitated. If we can assist your archaeologists in underground exploration at "unknown" sites, we shall be glad to offer our services with the instruments which are now available if appropriate for the particular detection problems. Cooperation of this type with the National Parks Service was initiated this summer by Dr. John Cotter and Mr. Edward Lawabee at the site of the U. S. Rifle Works, Harpers Ferry, W. Va. with a resistivity instrument; Hamilton Carson succeeded in locating a turbine pit and several walls, as revealed

Regional Director  
Southeastern Region, National Parks Service

Page 2  
October 8, 1962

by subsequent test excavations.

Thank you for consideration of our testing problems.

Sincerely yours,

Elizabeth K. Ralph

EKR:pc

October 17, 1962

H2215

Mr. Ronald F. Lee  
National Park Service  
143 South Third Street  
Philadelphia 6, Pennsylvania

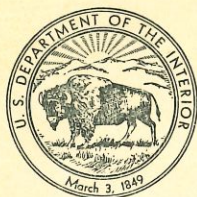
Dear Mr. Lee:

I was very pleased to have your letter of October 11 suggesting that we might cooperate with the Park Service on Isle Royale in search for copper deposits. We think there is a very good possibility for testing some of our instruments and would be glad to talk to Dr. Cotter at any time. Moreover Dr. Elizabeth Ralph of our Applied Science Center has written someone in the Park Service regarding other sites, preferably colonial, in the south, where we might do some experimental work this winter. If this reaches your desk be assured that we here are most anxious to collaborate with the Park Service and think that some of our devices can be useful to you.

With very best wishes,

Froelich Rainey  
Director

FR:ad



UNITED STATES  
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

Northeast Region  
143 South Third Street  
Philadelphia 6, Penna.

IN REPLY REFER TO:

H2215

October 11, 1962

Dr. Froelich Rainey, Director  
University Museum  
University of Pennsylvania  
33rd and Spruce Streets  
Philadelphia 4, Pennsylvania

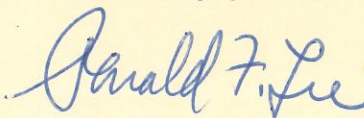
Dear Dr. Rainey:

I should like to tell you how very pleased the National Park Service has been with the excellent results of the exploration tests at Harpers Ferry National Monument. As you know, the resistivity equipment used by Mr. Hamilton Carson from the Applied Science Laboratory for Archaeology was of great value in revealing clues which were subsequently proved when digging disclosed the wheel pit of an early water turbine. The National Park Service was very glad to assist Mr. Carson with limited funds to complete this small test but it is to the University that we are indebted for supplying the equipment and making the test possible.

We should like to suggest that the National Park Service would be interested in testing the applicability of electronic or other sensing equipment at the prehistoric copper mine construction located in the McCargo Cove area of Isle Royale. This is the site where radio carbon dates obtained in the early '50's by the Michigan School of Mines and the University of Michigan indicated mining activity 3,800 years before the present. This is also the location where a large copper mass was found in the early 1870's which was transported to Philadelphia and exhibited at the Centennial exhibition of 1876. The copper mass was subsequently smelted and lost to science. Photographs indicated at the time that the surface of the mass had been scarred and battered by the hammerstones of Indians seeking to obtain pieces of copper. It is our hope that this area comprising more than about twenty acres can be tested selectively for the examples of large copper masses lying within the old mining pits which were too large to be removed by the ancient miners and which have subsequently been lost to view. It might also be possible to trace the vein system which lies close to the surface beneath the rubble of the mine pits.

In this regard we should be happy to cooperate with the University Museum in making it possible for Mr. Carson to visit Isle Royale and spend sufficient time to test the McCargo Cove area with the protonmagnetometer or other devices suggested by Miss Elizabeth Ralph which would be suitable for digging bodies of native copper. The pits themselves are usually sufficiently apparent for ready identification without the use of testing devices. If you should be interested in pursuing this project, Dr. Cotter of this Office will be glad to arrange the details of a cooperative agreement which would entail on our part a purchase order providing for a portion of Mr. Carson's expenses.

Sincerely yours,



Ronald F. Lee  
Regional Director



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

Southeast Region  
Federal Bldg.  
Box 10008  
Richmond 40, Virginia  
OCT 31 1962

IN REPLY REFER TO:  
A3815

Miss Elizabeth K. Ralph, Associate Director  
Applied Science Center for Archaeology  
The University Museum - University of Pennsylvania  
33rd and Spruce Streets  
Philadelphia 4, Pennsylvania

Dear Miss Ralph:

Since writing you recently our Regional Archeologist, Mr. John Griffin, has returned to the office and has given considerable thought to suitable localities for the testing of your sonic devices as requested in your letter of October 8.

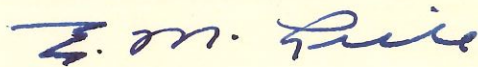
The new instruments for the location of underground features certainly are an exciting development for the field of Archeology. We can think of instances where even the simpler devices now available would have saved much time and effort in the location and delineation of historic structures. Such a case was Fort Frederica National Monument in Georgia. Here we had to devote considerable time to the diagonal trenching of town lots in order to discover which ones contained evidences of structure. Not all of the town site has been explored, and the new instruments would certainly be worth a try here. However, we are unfortunately not funded to follow up with the testing which would be necessary to give a check on the instrument readings. In this instance, also, the remains are at a much shallower depth than you would like for a test situation of two meters. We would certainly like to keep in touch with you, for some day we will be able to go back to Frederica, but we cannot do so now.

The factor of shallowness which is present at Frederica recurs in most of the sites within this Region of which we are aware. This being the case we cannot come up with a suggestion for a site which would be a good test for the sonic instrument.

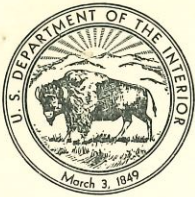
In fact, we have reviewed our archeological exploration needs on historic sites, as we see them now, and have been unable to come up with a single situation which would provide the test conditions which you desire. We regret this, for we would certainly stand to profit from cooperating with you.

If we do encounter a situation which would serve your purposes and in which we would be able to provide the necessary testing to follow up on the findings, we will certainly be glad to get in touch with you. Also, if we find that other workers in the Southeast have problems which would fit into your program we will let you know. We are highly appreciative of your offer of assistance, and will follow with extreme interest the further development of the new methods which are being made available through work such as yours.

Sincerely yours,

A handwritten signature in blue ink, appearing to read "E. M. Lisle". The signature is written in a cursive style with a prominent initial "E".

E. M. Lisle  
Acting Regional Director



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
Southeast Region  
Richmond, Virginia

*See  
Mr. Lisle*

IN REPLY REFER TO:  
A3815

OCT 18 1962

Miss Elizabeth K. Ralph, Associate Director  
Applied Science Center for Archaeology  
The University Museum - University of Pennsylvania  
33rd & Spruce Streets  
Philadelphia 4, Pennsylvania

Dear Miss Ralph:

In your letter of October 8, you request our cooperation in carrying out experimentation with certain archeological testing equipment. We will be glad to work with you on this project and believe we can come up with some suggestions for sites that meet your requirements.

Our Regional Archeologist, Mr. John Griffin, is out of the office this week but we will call your letter to his attention as soon as he returns and you will hear from us further on the matter in the near future.

Sincerely yours,

*E. M. Lisle*

E. M. Lisle  
Assistant Regional Director  
Conservation, Interpretation and Use

November 7, 1962

Mr. E. M Lisle  
Acting Regional Director  
Southeast Region, National Park Service  
Federal Bldg., Box 10008  
Richmond 40, Virginia

Ref: A3815

Dear Mr. Lisle:

Thank you very much for your letter of October 31, 1962. Our sonic devices are still in various stages of development, but if we succeed in putting together a workable model in the course of the winter, it might be possible for us to contribute funds for a few test excavations at a site such as the one you mentioned at Frederica, Georgia. Of course, there are probably many other problems involved and arrangements necessary in order to undertake even a limited excavation, but I thought that I should mention this to you in case this or other possibilities do develop.

We are experimenting also with a portable drill that could be used in conjunction with the instruments to confirm the locations of walls and other solid objects. The drill is operated with water and is, therefore, limited to regions where water is available unless a portable water tank can be borrowed or rented.

Thank you for the interest which you expressed in our instrument program.

Sincerely yours,

Elizabeth K. Ralph

EKR:dml

*Arch Tschuyger*

January 8, 1963

Mr. E. M. Lisle  
Acting Regional Director  
Southeast Region, National Park Service  
Federal Bldg., Box 10008  
Richmond 40, Virginia

Dear Mr. Lisle:

I note from your letter to Miss Ralph of October 31, that you are interested in our electronic instruments for archaeological prospecting and that there is a possibility of finding some historic site in the south where we could do some experimental work this winter. At the moment we are perfecting our techniques with these difficult instruments and we are anxious to find some historic site in a fairly temperate climate where we can try them out on buried walls or structures of known location. I wonder if Jamestown is such a site? Probably most historic structures would be relatively shallow but even so, they would be useful for our purposes. We would also like to demonstrate to your men in the Park Service how these instruments operate and we would be glad to loan at least one of the instruments to you for your own experimentation. We think they are very promising but they still require much development.

It might be helpful in such experiments to excavate shallow test pits in order to judge the anomalies picked up with the instruments but if we could work out some brief field trip with one of your men this could be decided on the spot. We will handle any costs involved. There are certain instruments we hope to try out before continuing at Sybaris in Italy early in April.

Very best wishes,

Froelich Rainey  
Director

FR/mh



IN REPLY REFER TO:

H30

UNITED STATES  
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

Southeast Region  
Richmond, Virginia

JAN 11 1963

*Raeple*

Dr. Froelich Rainey, Director  
The University Museum  
University of Pennsylvania  
Thirty-third and Spruce Streets  
Philadelphia 4, Pennsylvania

Dear Dr. Rainey:

We are very interested in your proposal to experiment with electronic instruments on archeological sites, discussed in your letter of January 8. Mr. John Griffin, Regional Archeologist, is on a field trip this week, but he will write you as soon as he returns, and work out arrangements for a test.

Sincerely yours,

*E. M. Lisle*

E. M. Lisle  
Assistant Regional Director,  
Conservation, Interpretation & Use

PPS

Techniques

March 26, 1965

Dear Mr. Logan;

Your letter of March 10th regarding the use of the Gossen Geohm resistance apparatus at Fort Laramie, interests me very much because I have tried the instrument in various arid countries, i. e. Turkey, Arizona, East Mexico and so forth. However, a certain amount of moisture is necessary, but my guess is that Wyoming is not so arid that the resistance equipment will not work. The major problem is probably the kind of structures you are trying to pick up and earth walls, sod block or adobe probably would be tough. Actually we find that every site is a problem in itself and it is very hard to predict where any given instrument will work. However, I certainly think it is worth trying and if we can give you any assistance please let me know.

Very best wishes,

Froelich Rainey  
Director

Mr. Wilfred D. Logan  
Research Archaeologist  
United States Department of the Interior  
Midwest Region  
1709 Jackson Street  
Omaha, Nebraska 68102

FGR/vg



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

MIDWEST REGION  
1709 Jackson Street  
Omaha, Nebraska 68102

IN REPLY REFER TO:

H2215-MWR (RS)

March 10, 1965

Dr. Froelich Rainey, Director  
Applied Science Center for Archaeology  
The University Museum  
University of Pennsylvania  
33rd & Spruce Streets  
Philadelphia, Pennsylvania 19104

Dear Dr. Rainey:

I have received Volume 1, Number 1, of the ASCA Newsletter and found the contents most interesting.

I would like to obtain your opinion concerning the possibility of successful use of the Gossen Geohm at one or two of the areas that the National Park Service administers in this Region. For example, at Fort Laramie National Historic Site, near Lingle, Wyoming, we know that the foundations of many buildings exist underground. We do not know the exact location of many of them and would like to determine these locations so as to mark the sites. Many of the buildings were unimportant and we would prefer to avoid spending the amounts of money necessary to locate them by traditional archeological excavation technique.

Some months ago, Jack Cotter called my attention to the University of Pennsylvania's experiments with the Gossen Geohm. Since then, I have obtained considerable additional information on the use of resistivity surveying equipment. However, what I cannot ascertain is how effective it might be under the soil conditions which pertain at Fort Laramie. Although eastern Wyoming is not as dry as Arizona and New Mexico, it is relatively arid. I would like to know whether this makes a difference in the applicability of resistivity surveying. Fort Laramie is the major spot at which I would try to apply the resistivity surveying technique; however, there are other places where equipment of this kind might be of value.

At Fort Larned, Kansas, the original Fort was made of an earth

material. It is unclear to me if these were sod blocks or adobes produced from local clays. I would be interested in hearing your opinion as to whether a resistivity survey might assist in locating the various components of the original Fort at this site.

Any information you can give me on this will be appreciated.

Sincerely yours,

A handwritten signature in cursive script that reads "Wilfred D. Logan". The signature is written in dark ink and has a long, sweeping horizontal line extending to the right from the end of the name.

Wilfred D. Logan  
Research Archeologist

*Technique*

April 30, 1965

Dear Mr. Harrington:

First, let me apologize for the long delay in replying to your letter of March 31st, addressed to Elizabeth Ralph. I have been away and now Miss Ralph is in Turkey. But, I have had Hugh Bergh, our Geophysicist, look over the data from Fort Raleigh which you sent, and he concludes unfortunately that with all the trees on that site, it would be practically impossible to carry out a successful instrument survey. We have been using the resistance apparatus and the magnetometer in most of our survey work, and we find that tree roots so much confuse the detection of anomalies, that we now are carefully avoiding any forest areas. The only possible technique for such a survey, so far as I can see, is the method of boring a number of holes into the ground at regular intervals, which we employed in our work at Sybaris. It is tedious, but effective, since with an Auger drill we could locate building remains and also lift fragments of potsherds, charcoal and so forth, from considerable depths.

At Sybaris, we used a McCullough engine on an Auger drill constructed in sections one meter long, and were able to locate cultural refuse as much as six meters deep.

Sorry, but I know of no instruments which are at present successful in a heavily wooded area.

Very best wishes,

Froelich Rainey  
Director

Mr. J. C. Harrington, Resource Studies Advisor  
National Park Service  
P. O. Box 10008  
Richmond, Virginia 23240



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

SOUTHEAST REGION  
P. O. BOX 10008  
RICHMOND, VIRGINIA 23240

MAR 31 1965

IN REPLY REFER TO:

H2215 SER(RS)

Dr. Elizabeth K. Ralph, Associate Director  
Applied Science Center for Archaeology  
33rd & Spruce Streets  
Philadelphia, Pennsylvania 19104

Dear Dr. Ralph:

Some time ago we received a request from ASCA for suggestions as to sites on which some of the new magnetic detection techniques might be tested. We had no suitable sites to suggest at the time, but we have a situation now that I think might offer a real challenge, as well as an excellent test. If successful, it should also have good publicity value (from a scientific standpoint, of course!).

You may know something of our archeological explorations at Fort Raleigh, North Carolina, the present-day name for the site of the 1585-1587 English colonizing ventures. I am enclosing a copy of my published report on this project. Although we located and fully explored the earthen fort, we were unsuccessful in finding any trace of the settlement area. In fact, I even went so far as to suggest that it might be at quite some distance from the earthwork.

We were hampered in our exploratory testing by heavy vegetation and by the presence of sand dunes, some of which are several feet thick. We would be willing to sacrifice a few trees, beautiful as they are, if we could be assured that significant finds would result. But we just could not bring ourselves to destroy the forest cover in an aimless and possibly fruitless search, especially when the documentary evidence was so indefinite.

Now we are on firmer ground. A recent salvage excavation ahead of construction has revealed a feature which we have

*ASCA  
letter in reply  
by F & R Sawyer  
trees make it  
impossible for  
instruments  
addressed  
directly*

not yet identified. The significant point is that this feature contained a relatively large quantity of re-used brickbats and roofing tiles which had quite clearly been salvaged from a structure. The material is definitely 16th century; there can be no doubt of this. The obvious inference is that someone secured these clay products from a nearby building or ruin. It is almost inconceivable that broken tiles and brickbats would have been carried any distance for the use to which they were put in the recently discovered feature.

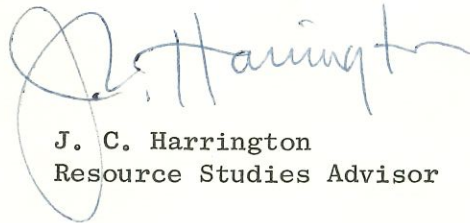
Unless the original site has eroded into the sound, which is possible, but not likely, there should be at least one concentration of bricks, tiles, mortar, and probably plaster, within a radius of say 500 feet from the recent find. From what I read and hear of your recent achievements, I would gather that it would be possible to locate such a concentration, if it exists, with your equipment and techniques. I assume you can work close to large trees, which we could not do with our exploratory trenches.

The irregular sand dunes may present a problem. They vary considerably in depth, but are as much as 5 or 6 feet deep in places. They post-date the settlement, so any remains we would be looking for would be in, or on, the old topsoil. The dunes, like the rest of the area, are heavily wooded. Except for the possibility of wells, I would not expect anything much below the old surface. Building refuse would seem to be the best bet.

I have attached an overlay to figure 28, page 35, of the enclosed report showing the location of the unidentified feature in which the bricks were found, and the area in which I believe a search would be most warranted. It does not seem plausible that the colonists would have built houses between the fort and the sound, so I have not indicated that area for testing.

I hope this situation is sufficiently intriguing to elicit a positive response from you. If you are at all interested, I would be glad to discuss it further and could arrange a conference, either in Philadelphia or at Fort Raleigh, at your convenience. There may be points I could clarify by letter.

Sincerely yours,

A handwritten signature in blue ink, appearing to read "J. C. Harrington". The signature is written in a cursive style with a large, looping initial "J".

J. C. Harrington  
Resource Studies Advisor

Enclosures



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

February 10, 1967

*George Bahr*  
*the looks like we*  
*must have*  
*look!*  
*want to go?*  
*Fro*

Dr. Froelich Rainey  
The University Museum  
University of Pennsylvania  
33rd and Spruce Streets  
Philadelphia, Pennsylvania 19104

Dear Fro:

I am sending along the material and maps which John Place turned over to me. I can't tell you what these things are either. I showed the photos to some of the Fish and Wildlife Service people who are presumably familiar with the area without such success except the suggestion they might be oyster shell dumpings - but they seem too regular for that.

Everybody agrees, the only way to find out is go take a look. Lets do that about the 20th of March. Bill Thurston of the Geological Survey would like to go along too. I'll be in touch with you to get it up. The Fish and Wildlife Service office here will write a letter to their manager there if we let them know in time.

With best regards always,

John M. Corbett  
Chief Archeologist

Enclosure



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
WASHINGTON, D.C. 20242

February 10, 1967

Dr. Froelich Rainey  
The University Museum  
University of Pennsylvania  
33rd and Spruce Streets  
Philadelphia, Pennsylvania 19104

Dear Dr. Rainey:

Enclosed are the infrared photographs of the Chincoteague area which you sent to us for interpretation. Being sent to you in a separate mailing tube are the large-scale topographic sheets of that area with the locations in question identified.

The unclassified radar (very small scale) image in our possession shows the dense "patterns" which can be seen in the smaller photographs. This indicates that these features are at, or above, the water surface. This is a very interesting problem and I only wish I had time to pursue it further in the field; I suspect that the solution will be of greater interest to a geographer than to an archeologist.

I am passing these back to you via Dr. John Corbett, who also expressed interest in seeing the photographs.

Sincerely yours,

John L. Place  
Geographic Applications Program

Enclosures



IN REPLY REFER TO:

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION  
801 19TH STREET, N. W.  
WASHINGTON, D. C. 20006

H2215-HA

March 5, 1969

*Remise C-D Jo-Procharke  
Prof. Bruce Stewart  
615-974-3180  
Wesley Law*

Dr. Froelich Rainey  
Director, University Museum  
University of Pennsylvania  
33rd and Spruce Streets  
Philadelphia, Pennsylvania 19104

Dear Dr. Rainey:

Dr. Corbett received your letter of February 28 just before leaving on a trip, and he asked that we reply rather than have it wait his return next week. He will be glad to do whatever he can, but first we need more information before going to our contact man with NASA.

We must know more about the flight, such as the date, with whom it was arranged, etc. Who is Lt. Richard Williams, and what reasons could there be for turning the information over to NASA? NASA, as we all know, is a complex organization, and any information you could provide to help identify this particular project might aid in getting to the right office or individual concerned in the organization.

We cannot promise at this time that we will have much success, but we will do all we can because we also have an interest in any new techniques that will aid in archeological research.

Sincerely yours,

*Zorro A. Bradley*

Zorro A. Bradley  
Acting Chief, Division of Archeology

March 20, 1969

Dear Mr. Bradley:

This refers to your letter of March 5 and the remote sensing experiment by the U. S. Air Force at Snaketown and Casa Grande. Yesterday I talked with Lt. Williams at Hanscom Field and discovered to my surprise that they had never sent the material to NSAS. Actually, the color camouflage and other data from their experimental flight over these two sites is still at Hanscom Field where they have had only one copy. Now he tells me that they have facilities for reproducing this and he can get more copies within a month. I have here the standard black and white films of those two sites made at the same time, and I was waiting to forward them to Emil Haury until I had the data on the more interesting experimental work. However, I will now forward these black and whites to Emil, and tell him that the other data will be coming in about a month.

I am sending a copy of the standard black and white under separate cover to you, and the second set to Emil Haury in Tuscon. The third set we will keep here. We can then decide about the other data when it arrives in about another month. The major issue is still to find someone able to interpret the results.

All be st wishes,

Froelich Rainey  
Director

Mr. Zorro A. Bradley  
Acting Chief, Division of Archaeology  
National Park Service  
801 19th Street, N. W  
Washington, D. C. 20006

FR/j

NPS

January 10, 1973

Dear Mr. Coverdale:

I see from a letter from Jack Ruby to you of November 13 a statement concerning a payment of government monies. A copy of Miss Ralph's letter to Dr. Rainey is included for your records.

Yours sincerely,

David Crownover  
Executive Secretary

Mr. Harold F. Coverdale  
Manager Contracts Section  
Comptroller's  
3rd Floor  
Franklin Building

United States Department of the Interior

NATIONAL PARK SERVICE  
WASHINGTON, D.C. 20240

November 13, 1972

*Elizabeth K. Ralph  
Bureau  
has bloody  
copies  
JRS*

*John Coffey  
Jackson*

November 29, 1972

Mr. Merrill F. Coverdale  
Manager - Contract Accounting  
University of Pennsylvania  
Controller's Office  
Philadelphia, Pa. 19104

Dr. Jack R. Rudy  
Acting Chief Archaeologist  
National Park Service  
United States Department of the Interior  
Washington, D. C. 20240

for installment of \$1,500.00 for contract  
number 14-10-9-900-369, Study of Aerial Photograph Ref. H22-PHA

Dear Dr. Rudy:

Dr. Rainey has asked me to reply to your letter of November 13 to Dr. Coverdale in regard to the final report for contract number 14-10-9-900-369, entitled "Study of Aerial Photographic Systems."

Unfortunately the report is not yet ready. Various aerial photographs are now being interpreted, and we hope to complete the report within a few months.

Sincerely yours,

*E K Ralph*

Elizabeth K. Ralph

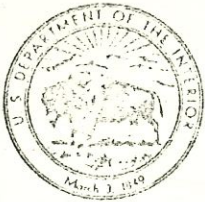
cc: Dr. H.F. Coverdale  
Univ. of Pa.

EKR/c

cc: Dr. H.F. Coverdale

*John Coffey  
Royce  
Folbrice  
Sara Rose*

*6.75  
2.30  
9.05*



United States Department of the Interior

NATIONAL PARK SERVICE  
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

H22-PHA

November 13, 1972

*John Coffer  
Julian*

*Beth Ralph  
Bruce Brown*

*More bloody  
copies?*

*Jro*

Dr. Harold F. Coverdale  
Manager - Contract Accounting  
University of Pennsylvania  
Comptroller's Office  
3451 Walnut Street  
Philadelphia, Pennsylvania 19104

Dear Dr. Coverdale:

We have received an invoice for final payment of \$1,500.00 for contract 14-10-9-900-369, "Study of Aerial Photographic Systems."

We are unable to provide this payment because we have not received the required five (5) copies of the final report.

Sincerely yours,

*Jack R Rudy*  
Jack R Rudy  
Acting Chief Archeologist

cc:

Dr. F. Rainey, Univ. of Pa.

*John Hampton  
Royal Comm. on Hist. Monuments  
Fortress House  
Savile Row, London, W. 1*

*6.75  
2.50  
9.25*



THE TRUSTEES OF THE  
**UNIVERSITY of PENNSYLVANIA**  
COMPTROLLER'S OFFICE, 3451 WALNUT STREET  
Philadelphia, Pa. 19104

To: U. S. Department of Interior  
National Park Service  
Attn: Mr. Rex Wilson  
Washington, D. C.

Date: October 12, 1972

Contract No. - 14-10-9-900-369

Contract To. Dr. F. Rainey

Account of 4-10100-3-5424

Contract Amount: \$6,000.00

---

TITLE: "Study of Aerial Photographic Systems"

MAY 7, 1971 TO OCTOBER 15, 1971

Invoice per terms of agreement - - -

\$1,500.00

|             |                          |
|-------------|--------------------------|
| Contract    | \$6,000.00               |
| Receipts    | <u>4,500.00</u>          |
| PAYMENT DUE | <u><u>\$1,500.00</u></u> |

Respectfully submitted,

*Harold F. Coverdale*

Harold F. Coverdale  
Manager - Contract Accounting

tony

*Fule*



United States Department of the Interior

NATIONAL PARK SERVICE  
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

H22-PHA

November 13, 1972

Dr. Harold F. Coverdale  
Manager - Contract Accounting  
University of Pennsylvania  
Comptroller's Office  
3451 Walnut Street  
Philadelphia, Pennsylvania 19104

Dear Dr. Coverdale:

We have received an invoice for final payment of \$1,500.00 for contract 14-10-9-900-369, "Study of Aerial Photographic Systems."

We are unable to provide this payment because we have not received the required five (5) copies of the final report.

Sincerely yours,

*Jack R Rudy*  
Jack R Rudy  
Acting Chief Archeologist





# United States Department of the Interior

## NATIONAL PARK SERVICE

Midwest Archeological Center  
Federal Building, Room 474  
100 Centennial Mall North  
Lincoln, Nebraska 68508

IN REPLY REFER TO:

S7229

November 14, 1979

Dr. Elizabeth K. Ralph  
Radiocarbon Laboratory  
University of Pennsylvania  
Department of Physics, DRL/El  
Philadelphia, Pennsylvania 19104

Dear Dr. Ralph:

Over the last several years, the Midwest Archeological Center has enlarged the scope of its archeological field activities. Consequently, we have an increasing need for radiocarbon dating services and are contacting a number of radiocarbon laboratories to request information about their services and fees. If your laboratory is willing to undertake work on a fee-per-sample basis, we would appreciate receiving information on the following:

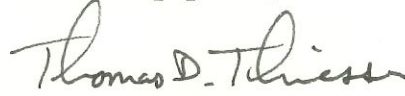
1. Fee charged per wood or wood charcoal sample. If you charge different rates for different materials, such as bone collagen, please indicate this also.
2. A description of the counting methods employed by your laboratory, including the minimum counting time used. If a longer counting time than normal can be requested by the submitter, please indicate any additional charges.
3. A brief description of the techniques used in your laboratory to pretreat or prepare the samples for counting.
4. Instructions for submitters regarding sample preparation and submission procedures.
5. An indication of the normal "turn-around" time, from the submission of samples to the receipt of final dates.

We will retain any information you provide. If we will have need of your services at any future time, please be assured that we will contact you by telephone first to confirm arrangements.



Thank you for your cooperation. We hope to be able to work with you  
in the future.

Sincerely yours,

A handwritten signature in cursive script that reads "Thomas D. Thiessen". The signature is written in dark ink and is positioned above the typed name.

Thomas D. Thiessen  
Acting Chief

TDThiessen:clt

# UNIVERSITY of PENNSYLVANIA

PHILADELPHIA 19104

*The Faculty of Arts and Sciences*

DEPARTMENT OF PHYSICS

November 20, 1979

Dr. Thomas D. Thiessen  
Midwest Archeological Center  
Federal Building, Room 474  
100 Centennial Mall North  
Lincoln, Nebraska 68508

Dear Dr. Thiessen:

At the moment we have a backlog of  $1\frac{1}{2}$  years for  $^{14}\text{C}$  dating. However, if the situation should improve and we hope it will, here are answers to some of your questions.

1. \$200 for all samples.
2. Minimum of two 1000-minute counts- more if the two counts are not consistent.  $\text{CO}_2$  counting.
3.  $\text{HCl}$  for all samples. Additional  $\text{NaOH}$  if humic acid contamination is suspected.  $\text{CHCl}_3$  for bitumen (especially mummy wrappings).
4. Put samples in 0.004 in plastic bags. Items of information required are enclosed.
5. Normal is 1 year.

Sincerely yours,

Elizabeth K. Ralph

EKR:bac

Enclosure



# United States Department of the Interior

NATIONAL PARK SERVICE  
Midwest Archeological Center  
Federal Building, Room 474  
100 Centennial Mall North  
Lincoln, Nebraska 68508

IN REPLY REFER TO:

S7229

December 28, 1979

Dr. Elizabeth K. Ralph  
Department of Physics  
University of Pennsylvania  
Philadelphia, Pennsylvania 19104

Dear Dr. Ralph:

Thank you for your reply to our November 14 inquiry regarding the radio-carbon dating services offered by your laboratory. The information you provided will be kept on file and should we have need of your services in the future, we will contact you by telephone first.

Again, thank you for your consideration.

Sincerely,

Thomas D. Thiessen  
Acting Chief





United States Department of the Interior  
NATIONAL PARK SERVICE

REMOTE SENSING DIVISION  
SW CULTURAL RESOURCES CENTER  
P. O. Box 26176  
Albuquerque, N.M. 87125

IN REPLY REFER TO:

*Nick*

April 2, 1980

*rec'd 7/29/80*

Dear Friend:

Please forgive the xeroxed letter; there are a number of you that I must contact and time is of the essence. I am writing in regard to the second edition of the American Society of Photogrammetry's MANUAL OF REMOTE SENSING, which you agreed to help us with, and I enclose a tentative draft of the outline for the chapter on archaeology and anthropology. Indicated in this outline, under very general headings, are the sections that you thought you'd be able to contribute to.

In order to compile a detailed chapter outline, I would like to ask each of you to put a sub-outline together for your topic. This probably won't be difficult (I hope not!), and would be a great help for structuring further compilation of the chapter itself. The chief editors of the Manual need detailed outlines as soon as possible, and I'd really like to get these off to them by about May 1.

Information and materials to be included in the Manual should be designed for use by people already somewhat familiar with the fundamentals of remote sensing, and should concern themselves primarily with archaeological and/or anthropological applications of the techniques under your subheadings.

I will not be available from the 7th through the 25th of April, but please feel free to call me at any other time at my office, (505) 277-4165. At other times, Tom Lyons (same number) would probably be able to answer any questions that you might have about appropriateness of content, etc.

I'll look forward to hearing from you -- and thanks!

Sincerely,

*Jim Ebert*

James I. Ebert

Manual of Remote Sensing chapter:

ARCHAEOLOGY AND ANTHROPOLOGY:  
CULTURAL RESOURCES REMOTE SENSING

- I. Historical overview: Remote Sensing in Archaeology, Anthropology (Dwight L. Drager)
- II. Cultural Resources Management: A New Approach to Archaeology and Anthropology (Thomas R. Lyons and Douglas H. Scovill)
  - A. Legal aspects and requirements
  - B. Remote sensing approaches: toward a philosophy
- III. Archaeological Applications of Remote Sensing
  - A. Exploratory Techniques
    1. Optical interpretation (Dwight L. Drager)
    2. Film/filter combinations (Bruce W. Bevan)
    3. Temporal effects on resource visibility (Bruce W. Bevan)
    4. "Shoestring budget" aerial photography (Bruce W. Bevan)
    5. Darkroom enhancement techniques (Bruce W. Bevan)
    6. Oblique photography for discovery (Irwin Scollar)
  - B. Archaeological Sampling and Survey (James I. Ebert, Eileen L. Camilli)
    1. Field uses of aerial photography: planning, locational
    2. Informed stratification using remote sensor data
      - a. ecologic/cover-type mapping
      - b. other methods for stratification
    3. Predictive modeling of site locations
    4. Cultural resource survey sampling
    5. Remote sensing as a mitigation measure
  - C. Photogrammetry and mapping of cultural resources (Hans Muessig, James I. Ebert)
    1. Photographic recording of archaeological sites
    2. Archaeological mapping requirements, problems, solutions
      - a. uncontrolled overlay mapping
      - b. controlled planimetric mapping
      - c. photogrammetric mapping
        - i. aerial
        - ii. terrestrial
      - d. orthophotography
    3. Electronic Distance Measurement (EDM) applications
    4. Cultural Resource Monitoring
    5. Intrasite feature and artifact mapping
  - D. In the Laboratory: Remote Sensing and Artifactual Evidence (Nicholas Hartmann)
  - E. Digital Image and Data Analysis: New Directions in Cultural Resources Remote Sensing (Stanley A. Morain, Thomas Budge, David Williams)

- V. Remote Sensing in Historical Architecture (Hugh Miller, Ben Howland, Thomas R. Lyons)
  - A. Problems and Needs
  - B. Recording and Monitoring Structures
  - C. Architectural Analysis and Interpretation
  - D. Landscapes
  
- V. Ethnology, Anthropology and Remote Sensing
  - A. Perspectives: Local vs. Regional
    - 1. Intrasite structure and organization
    - 2. Settlement systems
  - B. Present-Day Cultural Resources
  - C. Land-Use Classifications for the Anthropologist (Priscilla Reining)
  - D. Economy and Subsistence-Oriented Analyses (Robert K. Hitchcock)
  - E. Development Anthropology and Remote Sensing (James I. Ebert, Robert K. Hitchcock)
  - F. Ecological Change and Its Human Impact (Stanley A. Morain, James I. Ebert)
    - 1. Desertification
    - 2. Climate Change and Its Measurement
    - 3. Resource Diversity and Periodicity
  
- VI. Conclusion: Past, Present and Future Cultural Resources Remote Sensing

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#

4060 or 4057 Lunny

from Tom Lyons

proposal costs

xerox for Nick & Diane

BASIC MANUAL SUPPLEMENTS  
(Outline of Contents)

. Physiographic area, e.g. Southwest U.S.

. Environmental description

. ecological zonation - Diane Bernington

. land forms Diane

. climate Diane

. general geology Diane

. pedology Diane

. Historic, prehistoric (cultural) characteristics of area

. early man

. archaic

. Anasazi, Navajo (Athapascan), Hohokam, Sinagua, etc.

. Western European Nick

. Scientific & managerial problems of area

push - managing cultural resources

. archeological manifestations

. historic resources

. control, preservation, stabilization, etc.

. Identification of specific problems for remote sensing examination

. site

. exploration

. intrasite definition/mapping

. analysis

. ruin maintenance

. environmental variables

? Nick

.Specification for acquisition of remote sensor data for resolution or amelioration of problems

.types

.signature development

.Imagery Interpretation

.visual inspection

.Instrumental aids

.procedures

.mapping

.surveying

.intrasite detailing

.Resource monitoring

.storm damage assessment

.long range park use planning

.etc.

.Applications

.managerial tool

.archeological tool

.other-discipline tool

.Limitations

*Mark*