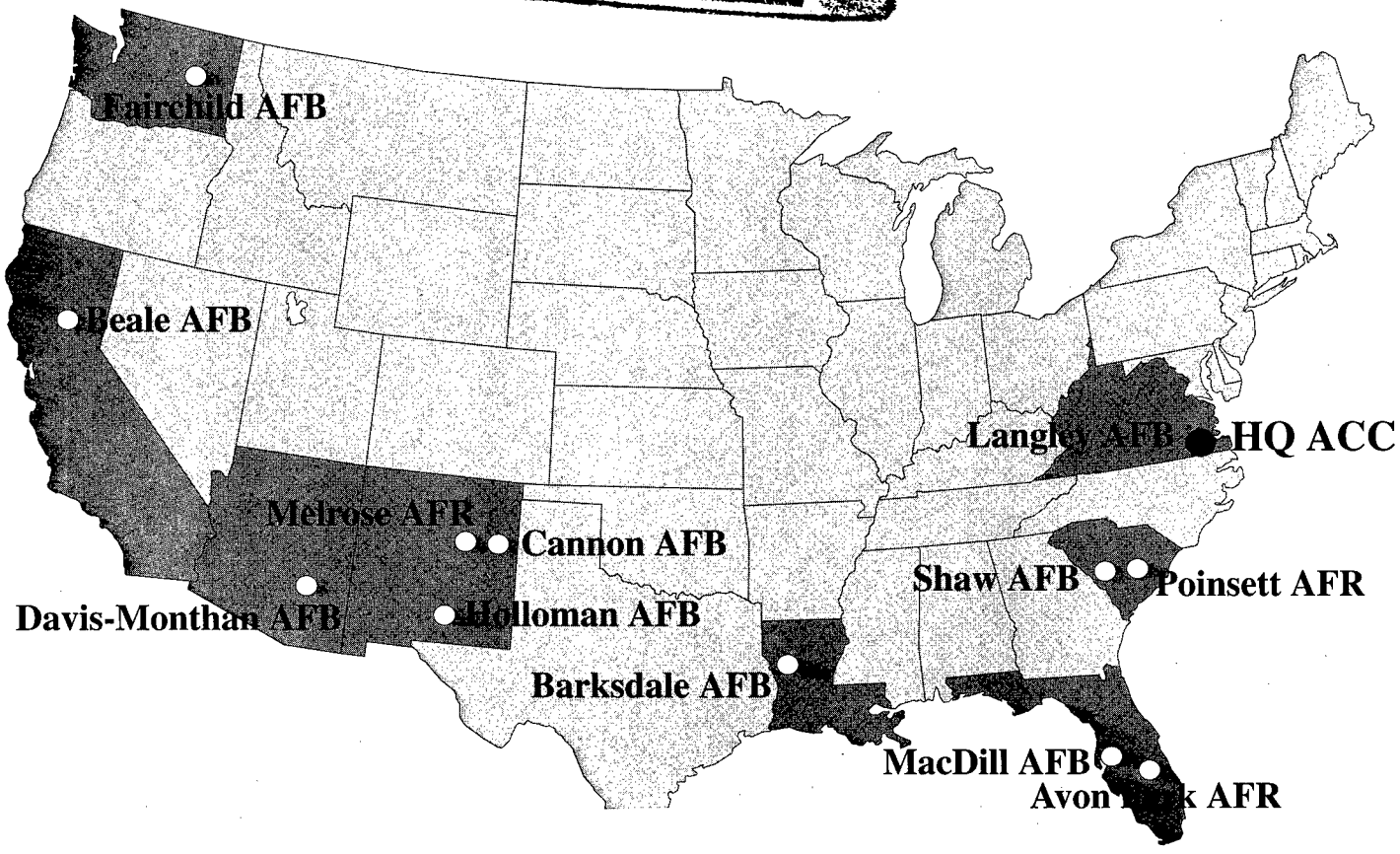
September 1996

An Archaeological Curation-Needs Assessment for Headquarters Air Combat Command

Volume 1



United States Air Force
Air Combat Command

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	1996	Final Report

4. TITLE AND SUBTITLE
An Archaeological Curation-Needs Assessment for Headquarters Air Combat Command

5. FUNDING NUMBERS

6. AUTHOR(S)
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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
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8. PERFORMING ORGANIZATION REPORT NUMBER
Archaeological Curation-Needs Assessment Technical Report No. 10, Volume 1

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Headquarters Air Combat Command, Langley Air Force Base, Virginia

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES
Available from the U.S. Army Corps of Engineers, St. Louis District (CELMS-PD-C)

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

Between September 1993 and May 1995, the U.S. Army Corps of Engineers, St. Louis District's Mandatory Center of Expertise for the Curation and Management of Archaeological Collections (MCX) conducted a survey of archaeological collections and associated documentation generated from archaeological investigations conducted on 42 U.S. Air Force, Air Combat Command (ACC) installations. This initial volume addressed collections from the following installations: Avon Park Air Force Range, Florida; Barksdale Air Force Base, Louisiana; Beale Air Force Base, California; Cannon Air Force Base, New Mexico; Davis-Monthan Air Force Base, Arizona; Fairchild Air Force Base, Washington; Holloman Air Force Base, New Mexico; Langley Air Force Base, Virginia; MacDill Air Force Base, Florida; Melrose Air Force Range, New Mexico; and Poinsett Air Force Range and Shaw Air Force Base, South Carolina. In sum, approximately 101 ft^3 of artifacts in 34 distinct collections and approximately 13 linear feet of records and 125 reports from ACC installations are being curated by 19 repositories in eight different states. All collections require at least partial rehabilitation to comply with Federal regulations, and 50% of the collections require complete rehabilitation.

14. SUBJECT TERMS	15. NUMBER OF PAGES
Archaeology, curation, collections management, 36 CFR Part 79, NAGPRA (P.L. 101-601)	250
	16. PRICE CODE

17. SECURITY CLASSIFIATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL

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Contents

List of Figures

List of Tables

Executive Summary

Problem

Federal archaeological collections are a significant and nonrenewable national cultural resource. Curation of these materials, however, has been largely substandard or ignored for over 50 years. The result has been a steady deterioration of these resources, which include many unique prehistoric and historical-period objects. A significant number of these irreplaceable collections have been abandoned in the attics, basements, and closets of countless storage facilities across the United States. The improper care and subsequent deterioration of these collections not only violate the laws under which they were recovered but also prevent educational and scientific use. Unfortunately many valuable collections related to North American prehistory and history have been lost, and the considerable financial investment of the public in archaeological recovery squandered. A substantial portion of these national cultural treasures, however, still exists. Given proper housing and care, these nonrenewable resources can be saved for future generations. The U.S. Air Force (AF) Air Combat Command's (ACC) preservation ethic is characteristic of the AF's long-term interest in archaeological collections management.

Background

Department of Defense (DoD) installations are responsible for the management of archaeological and historical resources that are located on and recovered from their properties. As mandated by federal law, installations are required to ensure that archaeological materials and their associated records are properly curated in perpetuity. Unfortunately, funding shortfalls, lack of consistent national policy, and a misunderstanding of the magnitude of the problem have prevented compliance.

Collections recovered from DoD installations are public property, the result of many years of archaeological research and the expenditure of millions of federal dollars. A federally sponsored mitigation program usually provides for the recovery of materials from archaeological sites, the analysis of recovered items, the publication and circulation of a final report, and the placement of collections in storage facilities

for preservation, display, or future study. In the past, federal agencies paid little attention to the maintenance of collections once salvage programs were completed. Through the years, most collections have been stored free of charge by universities and museums. Inadequate funding and failing facilities now seriously hinder these institutions' ability to adequately care for archaeological collections and associated records.

At the request of Headquarters Air Combat Command (HQ ACC), the U.S. Army Corps of Engineers, St. Louis District, performed a curation compliance assessment in the fall of 1993 of installations that were, at that time, a part of ACC (see below). The project was funded by ACC, and Dr. Paul Green was the project manager at HQ ACC. Work was to be performed during FY94 and FY95, and two reports summarizing the findings of the St. Louis District were to be produced.

Initial project plans called for evaluations of the 42 installations listed below. Installations selected for evaluations during FY94, and which are the subject of the current discussion (Volume 1), are highlighted in boldface type. An initial telephone survey indicated that archaeological collections had been recovered from these 12 installations. Several other installations had archaeological recovery projects either underway or planned for FY94, and these will be discussed in Volume 2. The discussion below concerns only the first 12 installations evaluated. Installations followed by an asterisk (*) were, after the start of this project, selected for closure or realignment to other commands.

1. Avon Park Air Force Range (AFR), Florida

2. Badlands AFR, South Dakota

3. Balboa West Range, Panama City, Panama

4. Barksdale Air Force Base (AFB), Louisiana

5. Beale AFB, California

6. Cannon AFB, New Mexico

7. Castle AFB, California*

8. Cuddeback Range, California

9. Dare County AFR, North Carolina

10. Davis-Monthan AFB, Arizona

11. Dyess AFB, Texas

12. Ellsworth AFB, South Dakota

13. Ellsworth Missile Complex, South Dakota

14. Fairchild AFB, Washington*

15. Grand Bay AFR, Georgia

16. Griffiss AFB, New York*

17. Holloman AFB, New Mexico

18. Homestead AFB, Florida*

19. Howard AFB, Panama City, Panama

20. Lajes Air Base, Azores Island, Portugal

21. Langley AFB, Virginia

22. Little Rock AFB, Arkansas

23. Loring AFB, Maine*

24. McConnell AFB, Kansas*

25. McConnell Missile Complex, Kansas*

26. MacDill AFB, Florida

27. Melrose AFR, New Mexico

28. Minot AFB, North Dakota

29. Minot Missile Complex, North Dakota

30. Moody AFB, Georgia

31. Mountain Home AFB, Idaho

32. Nellis AFB, Nevada

33. Nellis AFR, Nevada

34. Offutt AFB, Nebraska

35. Poinsett AFR, South Carolina

36. Pope AFB, North Carolina

37. KI Sawyer AFB, Michigan*

38. Saylor Creek AFR, Idaho

39. Seymour Johnson AFB, North Carolina

40. Shaw AFB, South Carolina

41. Whiteman AFB, Missouri

42. Whiteman Missile Complex, Missouri

Thirty-four distinct collections and 125 unique reports pertaining to archaeological investigations on 12 ACC installations were identified (Table 1). Collections of material remains and associated documentation are curated at several repositories located throughout the United States. The term "collections" is used to refer to material remains recovered during an archaeological investigation, any records assembled or generated that document these efforts, or both. Even if no material remains are recovered, a collection of associated documentation is created. Often the documentation is separated from the accompanying material remains and curated by a different repository or repositories, thus resulting in two distinct collections for the same archaeological investigation. Twenty-three different installations and

repositories were visited during FY94 fieldwork. Because many museums and universities maintain multiple collections storage areas and each area was evaluated independently, the total number of storage areas visited by St. Louis District personnel was 36.

Not all of the 23 installations and repositories were fully evaluated, since some collections were to be transferred to another repository in the near future. Furthermore, not all of the facilities that were evaluated curated both material remains and associated documentation. These factors affect the percentages presented in this study. If a repository was not evaluated or if certain categories of questions were not applicable, these were not included when the final percentages were calculated. Of the 23 installations and repositories visited, 13 held material remains from ACC installations. Two of these had only material remains, while the South Carolina Institute of Archaeology and Anthropology (SCIAA) held collections from two ACC installations. Another six facilities held only associated documentation from archaeological investigations conducted on ACC installations. The remaining four facilities had neither material remains nor associated documentation at the time of the evaluation—the 8th AF Museum at Barksdale AFB; Cannon AFB and its subinstallation, Melrose AFR; and MacDill AFB. Finally, one collection from Shaw AFB was identified that had never been returned to the base. This collection was found in the offices of the contractor who conducted the project (CHRS, Inc.). Personnel from the St. Louis District were informed that the collection would be sent to SCIAA for permanent curation. This transfer was not complete at this writing; therefore, the collection

Table 1.
Number of Collections and Reports Generated from Work Conducted on ACC Installations

Installation	Number of Collections	Number of Reports
Avon Park AFR, Fla.	3	4
Barksdale AFB, La.	1	5
Beale AFB, Calif.	2	7
Cannon AFB, N.M.	1	1
Davis-Monthan AFB, Ariz.	2	6
Fairchild AFB, Wash.	1	1
Holloman AFB, N.M.	8	76
Langley AFB, Va.	2	6
MacDill AFB, Fla.	2	6
Melrose AFR, N.M.	9	10
Poinsett AFR, S.C.	2	2
Shaw AFB, S.C.	1	1
Total	34	125

was not evaluated. All evaluations were conducted in accordance with protocols established by the St. Louis District and guided by 36 CFR Part 79 (Curation of Federally-Owned and Administered Archaeological Collections), a 1991 federal regulation that establishes minimum professional standards for the management and care of all federal archaeological collections. Inspections produced evidence documenting the widespread deterioration and neglect of many ACC archaeological collections.

Findings

Status of Physical Facilities

Repository Adequacy

ACC collections of material remains and/or associated documentation are currently curated at 20 repositories (three with multiple storage facilities) in seven different states.

1. Arizona State Museum (ASM), Tucson, Arizona
2. Davis-Monthan AFB, Tucson, Arizona
3. Beale AFB Museum, Marysville, California
4. PAR Environmental Services, Inc., Sacramento, California
5. Avon Park AFR, Avon Park, Florida
6. JANUS Research, Inc., and rented storage space, St. Petersburg, Florida
7. University of South Florida, Tampa (USF–Tampa)
8. SCIAA, Columbia, South Carolina
9. Shaw AFB, Sumter, South Carolina
10. Agency for Conservation Archaeology (ACA) warehouse, Portales, New Mexico
11. U.S. Army Corps of Engineers, Albuquerque District, New Mexico
12. Holloman AFB, Alamogordo, New Mexico
13. Human Systems Research (HSR), Tularosa, New Mexico
14. Museum of Indian Arts and Culture/Laboratory of Anthropology Archaeological Research Collections (MIAC/LOA ARC), specifically, the Laboratory of Anthropology (LOA) and the La Villa Rivera (LVR) Building, Santa Fe, New Mexico
15. Maxwell Museum of Anthropology and its warehouse annex, Albuquerque, New Mexico

16. New Mexico Archaeological Records Management Section (NMARMS), Santa Fe, New Mexico

17. Office of Contract Archaeology (OCA), University of New Mexico, Albuquerque

18. Langley AFB, Newport News, Virginia

19. College of William and Mary Center for Archaeological Research (WMCAR), Williamsburg, Virginia

20. CHRS, Inc., Sharon Hill, Pennsylvania

With the exception of CHRS, all of the above-listed repositories were visited. Three of these repositories house their ACC collections in two separate storage facilities; in all three cases, both facilities were visited. The assessment team also visited the 8th AF Museum at Barksdale AFB, which will be taking over curation of the Barksdale AFB collection currently housed at SCIAA. In all, 23 facilities were visited. Of those visited, 20 were evaluated; however, because such a small amount of documentation was examined at PAR Environmental, it was deemed unnecessary to present the results of that evaluation in this report. (This information is on file at the St. Louis District.) Thus, the results for 19 facilities are discussed here. None of these facilities fulfill all of the standards mandated by 36 CFR Part 79.

Repository Maintenance

Most of the facilities that were inspected receive some measure of service, though on an irregular basis. At most facilities, offices are cleaned by professional companies, but the collections storage areas are cleaned on an as-needed basis by the curatorial staff. In addition, at four facilities (21%), extraneous materials such as excavation equipment, supplies, and excess furniture are kept in collections storage areas, an unacceptable practice in professional collections-management facilities.

Environmental Controls

Environmental monitoring and adequate environmental control—appropriate, stable temperatures and humidity, and adequate monitoring of both—are crucial for the long-term preservation of collections. Only two (11%) of the facilities examined contain appropriate environmental controls. Most facilities are heated and air-conditioned; however, temperature and humidity fluctuations outside the acceptable range dictated by the American Association of Museum (AAM) standards have occurred at most of the facilities. Twelve (63%) of the facilities monitor temperature, while only eight (42%) monitor humidity. Thirteen (68%) of the facilities can control temperature, but only two (11%) can control humidity. Curatorial staff at many of these

facilities are aware of these deficiencies, but lack the requisite funding to rectify the situation.

Security

Only five (26%) of the facilities meet federal standards for security of archaeological collections, which include such measures as intrusion alarms, motion detectors, limited access, absence of windows in collections storage areas, and security on doors. All 19 facilities are locked, and 18 (95%) control access to the collections storage areas. None of the facilities reported cases of loss from unauthorized entry, although the potential for such a loss exists at six (32%) of the examined institutions.

Fire Detection and Suppression

Fire—a major hazard to any museum collection—cannot be adequately detected at 13 (68%) of the facilities, and cannot be adequately suppressed at nine (47%) of the facilities examined. Only three (16%) facilities meet all federal requirements for safeguarding federal archaeological collections from fire hazards, which include the installation of smoke detectors, heat sensors, alarms wired into the local fire department, an overhead sprinkler system, and fire extinguishers. All facilities had at least one fire extinguisher in the collections storage areas, but in 10 (53%) cases, extinguishers were the only measure of fire suppression in these areas.

Pest Management

A professional pest-management program is crucial to the long-term survival of many archaeological collections and all associated records. Only four (21%) facilities have an integrated pest-management system consisting of both professional and staff monitoring and in-place control measures. Twelve (63%) facilities are monitored for pest infestation by curatorial staff. Eight (42%) are monitored by both staff and a professional pest-management company, but only six (32%) are sprayed against pests on a regular basis. All but two facilities have some type of pest management in place. These measures range from professional spraying of an insecticide to trap baiting on an as-needed basis. However, one cannot conclude that the collections and records in these institutions are receiving the pest management they require.

Status of Artifacts

Archaeological collections from the ACC installations discussed in this report consist of approximately 101 ft^3 of material in 15 distinct collections (Table 2). Nine collections consist of both prehistoric and

Table 2.
Summary of ACC Collections

Installation/ Repository[a]	Volume of Collections (ft^3)	Documentation (linear feet)[b]	Archaeological Context
Avon Park AFR	4.0	0.08	prehistoric & historical period
JANUS Research	56.0	2.0	prehistoric & historical period
Barksdale AFB (8th AF Museum)			
SCIAA	3.0	0.75	prehistoric & historical period
Beale AFB (Museum)	1.0	0.08	prehistoric
PAR Environmental		0.16	
Cannon AFB			
NMARMS		0.08	
Davis-Monthan AFB	1 artifact	0.32	prehistoric
ASM	12.0	0.54	prehistoric
Fairchild AFB			prehistoric & historical period
Holloman AFB	0.5	1.5	prehistoric & historical period
Maxwell Museum	4.0		prehistoric & historical period
HSR	1.0	2.0	prehistoric & historical period
NMARMS		0.16	
Albuquerque District		1.16	
OCA		0.75	
Langley AFB	5.4	0.67	prehistoric & historical period
WMCAR		0.13	
MacDill AFB			
JANUS Research		0.16	
USF–Tampa	1.5	0.08	prehistoric
Melrose AFR			
MIAC/LOA ARC	7.5		prehistoric & historical period
NMARMS		1.0	
OCA		0.25	
ACA warehouse	1.0	0.08	prehistoric
Albuquerque District		0.84	
Poinsett AFR			
SCIAA	0.5	0.08	prehistoric
CHRS	3.5	unknown	unknown
Shaw AFB		0.08	
Total	100.9	12.95	

[a] Installations and repositories visited during FY94 fieldwork include: Avon Park AFR, JANUS Research, the 8th AF Museum at Barksdale AFB, SCIAA, Beale AFB Museum, PAR Environmental, Cannon AFB, NMARMS, Davis-Monthan AFB, ASM, Holloman AFB, the Maxwell Museum, HSR, the Albuquerque District, OCA, Langley AFB, WMCAR, MacDill AFB, USF–Tampa, Melrose AFR, MIAC/LOA ARC, the ACA warehouse, and Shaw AFB.

[b] Linear feet is the standard unit of measure for associated records.

Table 3.
Rehabilitation Necessary for Compliance with 36 CFR Part 79

Repository	Rehabilitation for Artifact Collections	Rehabilitation for Record Collections
ACA warehouse	complete	complete
Albuquerque District		complete
ASM	partial	partial
Avon Park AFR	complete	complete
Beale AFB Museum	complete	complete
CHRS	unknown	unknown
Davis-Monthan AFB	partial	complete
Holloman AFB	partial	complete
HSR	complete	complete
JANUS Research	partial	complete
Langley AFB	complete	complete
Maxwell Museum	partial	
MIAC/LOA ARC	partial	
NMARMS		complete
OCA		complete
PAR Environmental		complete
SCIAA (Barksdale AFB)	partial	complete
SCIAA (Shaw AFB)	partial	complete
Shaw AFB		complete
USF–Tampa	partial	complete
WMCAR		complete

Note: Blank cells indicate no collection.

historical-period elements; six collections comprise only prehistoric materials; and the remaining collection, from CHRS, was not evaluated. One prehistoric collection contains human skeletal remains. At the present time, no artifact collections fully meet existing federal requirements for archaeological curation. Each of the 15 collections identified in this study will require at least partial rehabilitation to meet current federal standards (Table 3).

Approximately 60 percent of the secondary containers, the largest receptacles within the primary containers, are plastic zip-lock bags. The remaining 40 percent consist of a variety of containers such as acidic paper bags, plastic garbage bags, polyvinyl chloride (PVC) bags, paper envelopes, cloth bags, and small cardboard boxes. Secondary containers constructed of materials other than polyethylene plastic zip-lock bags and cloth bags are unacceptable museum storage media. Secondary labels consist of directly labeled, acidic paper tags or inserts or of information written directly on the secondary containers.

Acidic paper inserts are inappropriate labels for the long-term curation of archaeological collections; all inserts should be made of acid-free paper stock. Label information written on the exterior of secondary containers is inconsistent, and some media used (e.g., water-soluble inks) are inappropriate.

Status of Human Skeletal Remains

Only one collection identified by the evaluation team contained human skeletal remains. This collection, recovered from MacDill AFB, presently is housed at the USF–Tampa. The remains of at least three individuals are included in the collection. The materials should be partially rehabilitated (e.g., reboxed, rebagged) in order to stabilize the remains, and a complete inventory must be generated in order to comply with the Native American Graves Protection and Repatriation Act (NAGPRA; P.L. 101-601).

Status of Documentation

ACC records encompass approximately 13 linear feet and include 125 reports. The data reflect that the records are at substantial risk. Field records, reports, administrative records, and photographic records are present in over 50 percent of the records examined. However, correspondence, proposals, analysis records, line drawings, maps, and oversized maps and documents were found in only a few collections evaluated. In at least two cases, the associated documentation consists solely of artifact inventories; all other documentation for these collections has been lost. It is apparent that all collections do not contain a full range of each type of record, which is an extremely disturbing finding.

In many instances, associated documentation was never submitted by the contracting archaeologist or agency, and the installations have not requested their transfer. This may be the single most glaring problem with ACC collections. If all significant records of a project are not curated, then the collection is incomplete. It is clear that collections managers or archaeologists have not always considered associated documentation to be a part of an archaeological collection and, therefore, worthy of curatorial care. The result is that records for some of the collections cannot be located, a problem that should be aggressively addressed.

Professional archival-quality practices were noted at only three (18%) of the 17 repositories that curate associated documentation. None of the original paper records at any of the repositories have been duplicated. In some cases, photographic materials have not been isolated or stored in chemically inert sleeves. No records are housed in fireproof cabinets. Primary-container labels consist of directly labeled, acidic paper tags, and adhesive labels, a procedure that is not recommended

for the long-term preservation of records. In sum, the records, which are an integral part of these collections, are receiving the worst treatment and are in the greatest danger. Action to correct this situation should be taken immediately.

Status of Repository Management Controls

Twelve (63%) of the facilities have accession records, and 11 (58%) have a written record of the physical location of the collections within the facility. Ten (53%) facilities have either completed or initiated an inventory of their collections. In most cases, however, the inventory addresses only NAGPRA items, not the facility's entire holdings. Basic policy and procedure statements are present at some facilities but not at others. Nine (47%) have a written curation policy; seven (37%), a records-management policy; six (32%), a deaccessioning policy; six (32%), field-curation procedures; eight (42%), a loan policy; and nine (47%), an inventory policy. Only two of the facilities have a guide to their collections; both on a computer database. Given the above, it is clear that the collections are at great risk, and fully half are not being cared for in a manner acceptable to the provisions of 36 CFR Part 79.

Corrective Actions

A number of corrective actions are necessary to bring ACC collections, and those facilities housing them, into compliance with 36 CFR Part 79. General recommendations include the following.

1. Bring together all collections from installations located within the same state at a single repository located in that state.

2. Develop and implement uniform inventory procedures.

3. Using the uniform system, identify and systematically inventory all archaeological collections and associated documentation recovered from ACC installations.

4. Rehabilitate and/or conserve artifact collections, and archivally preserve all documentation and reports.

5. Develop and implement formal archives-management programs.

If implemented, these corrective measures will permit ACC to meet the minimum federal requirements for the adequate long-term curation of archaeological collections. By adopting this approach, ACC has the opportunity to implement a curation program that will serve its needs well into the next century.

Conclusions

Attainment of each recommendation may not be possible immediately. However, because the collections are rapidly deteriorating in their current storage environments and there is no long-term, consistent management plan for the proper curation of archaeological collections and associated documentation, some action is needed. These federal collections provide raw archaeological data, and if not properly cared for soon, they will lose their educational and research value and potential. Any progress will ensure that these collections will be more adequately preserved than is currently the case, and that they will be useful to future generations.

Acknowledgments

The entire staff of the Mandatory Center of Expertise for the Curation and Management of Archaeological Collections in St. Louis contributed in various ways to the completion of these curation-needs assessments. Additionally, the following individuals gave great time and effort, and for their assistance and contributions to the curation-needs assessments at the institutions/agencies listed below we offer our whole-hearted gratitude.

Air Combat Command, Headquarters

Paul Green, Ph.D., Cultural Resources Manager

Agency for Conservation Archaeology

Steve Kittelson, Research/Curation Assistant
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Arizona State Historic Preservation Office, Phoenix

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Avon Park Air Force Range

Paul Ebersbach, Natural Resource Manager
Kurt Olsen, Natural Resource Manager

Barksdale Air Force Base, 8th Air Force Museum

Harold "Buck" Rigg, Curator

Beale Air Force Base Museum

Ken Moore, Civil Engineering Flight
John Thomson, Civil Engineering Flight

Cannon Air Force Base and Melrose Air Force Range

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1

Introduction

Installations under the command of HQ ACC are responsible for archaeological artifact collections and accompanying documentation (hereafter referred to as archaeological collections) recovered from their bases, which are stored in 20 facilities in seven different states. This responsibility is mandated through numerous legislative enactments, including the Antiquities Act of 1906 (P.L. 59-209), the Historic Sites Act of 1935 (P.L. 74-292), the Reservoir Salvage Act of 1960 (P.L. 86-523), the National Historic Preservation Act of 1966 (P.L. 89-665), and the Archaeological Resources Protection Act of 1979 (P.L. 96-95). Executive Order 11593 (U.S. Code 1971) and amendments to the National Historic Preservation Act in 1980 provide additional protection for these resources. Preservation of federal archaeological collections is secured in the implementing regulation, 36 CFR Part 79. Additionally, the U.S. Army Corps of Engineers (USACE) is the only federal agency that possesses strict curation standards for archaeological materials under their care. USACE Engineer Regulation 1130-2-433, which was implemented in April 1991, serves as a standard for long-term archaeological curation.

In 1990 NAGPRA was enacted (1) to identify federal archaeological collections that contain Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony and (2) to form agreements between federal agencies and Native American Indian Tribes and Native Hawaiian organizations on the repatriation or disposition of these remains and objects. All federal agencies are required to meet mandated deadlines for compliance with NAGPRA. A summary of unassociated funerary objects, sacred objects, and objects of cultural patrimony was required by November 16, 1993. HQ ACC completed its required summaries and forwarded them to HQ AF by the deadline. At the time this report was written, HQ AF had not forwarded the summaries to tribes, because the Department of the Interior had not finalized its relevant implementing regulation, 43 CFR Part 10. Additionally, an inventory of human remains and associated funerary objects was mandated by November 15, 1995.

In January 1994, as the first step in complying with 36 CFR Part 79 and the second NAGPRA deadline, Paul Green, HQ ACC cultural resource manager, contacted the St. Louis District to discuss an interagency agreement that would address these requirements. After a series of consultations with Dr. Michael K. Trimble, chief of the Curation and Archives Analysis Branch, an approach was recommended that would identify and evaluate the collections from ACC installations in accordance with the federal curation requirements of 36 CFR Part 79. Data gathered by the St. Louis District also would provide HQ ACC with NAGPRA-compliance information. A memorandum of agreement was signed between the two parties that empowered the St. Louis District to conduct curation-needs assessments at ACC installations. According to this agreement, the St. Louis District would provide HQ ACC with an inventory of their archaeological collections that would outline their curation needs. Concurrently, collections managers would receive a plan addressing their specific curation needs and, when appropriate, the corrective actions required to bring their facility

and collections into compliance with 36 CFR Part 79.

In the Interagency Agreement, the St. Louis District agreed to provide the following:

1. professional and technical services to HQ ACC for the inspection and inventory of archaeological collections;

2. information that would enable HQ ACC to fulfill the requirements of the November 15, 1995, NAGPRA deadline;

3. a final report that would (a) detail the results of the inspection and evaluation; (b) address the physical description of all repository facilities, recovered-artifact collections, and associated-documentation collections; and (c) make recommendations for compliance with the requirements of 36 CFR Part 79; and

4. a master bibliography of reports associated with archaeological investigations performed on ACC properties.

As part of the curation-needs assessment, St. Louis District personnel would visit the funding agency to examine any reports, records, or inventory data associated with ACC collections and develop an annotated bibliography of reports, which would include a list of the associated collections and their present locations. The St. Louis District anticipated that the fieldwork for the overall project would require two years, FY94 and FY95, and that results would be reported in two volumes.

Methods

Twenty-three curation facilities were visited during the course of FY94 fieldwork (see Executive Summary). Of these, 20 were evaluated in the course of the curation-needs assessment, though the specific results of the evaluation of PAR Environmental are not included in this report (see Chapter 3). The other 19 evaluated facilities were the 8th AF Museum, the ACA warehouse, the Albuquerque District, ASM, Avon Park AFR, Beale AFB Museum, Davis-Monthan AFB, Holloman AFB, HSR, Langley AFB, the Maxwell Museum of Anthropology and its warehouse, LOA and the LVR Building at MIAC/LOA ARC, NMARMS, OCA, SCIAA, USF–Tampa, and WMCAR. Shaw AFB and JANUS Research and its additional storage facility were not evaluated because they did not hold ACC collections or did not plan to curate the collections once the project was completed. In addition to curation facilities, locations such as SHPO offices were visited to obtain project-related information. The following schedule reflects the time allocated to information gathering at each facility.

- September 21, 1993, PAR Environmental Services
- September 22, 1993, Beale AFB Museum
- February 2–3, 1994, HQ ACC, Langley AFB
- March 20–23, 1994, NMARMS and MIAC/LOA ARC (LOA and the LVR Building)
- March 24, 1994, USACE Albuquerque District
- March 25, 1994, Maxwell Museum of Anthropology and its warehouse
- March 25, 1994, Mariah Associates
- March 28, 1994, Cannon AFB and Melrose AFR
- March 28, 1994, ACA warehouse
- March 30, 1994, HSR
- March 30, 1994, Holloman AFB
- July 19, 1994, Arizona State Historic Preservation Office (SHPO)
- July 21, 1994, Arizona State Site Files, ASM
- July 21, 1994, Davis-Monthan AFB
- July 25, 1994, ASM
- September 26, 1994, Langley AFB
- September 28, 1994, SCIAA
- September 29, 1994, Shaw AFB
- November 28, 1994, SCIAA
- December 5–6, 1994, Louisiana SHPO
- December 7, 1994, Barksdale AFB (8th Air Force Museum)
- January 9, 1995, Florida Bureau of Archaeological Research
- January 9, 1995, Florida SHPO

- January 11, 1995, Avon Park AFR
- January 12, 1995, JANUS Research
- January 13, 1995, USF–Tampa
- March 1, 1995, OCA
- May 15, 1995, WMCAR

Pre-Fieldwork Investigation

Assessment of each facility's compliance with 36 CFR Part 79 included the following five items.

1. An initial telephone survey was conducted. Each ACC installation was contacted and questioned about archaeological investigations conducted on the base. From this survey, 12 ACC installations were identified that had archaeological collections; these bases were the focus of FY94 fieldwork.

2. A National Park Service National Archeological Database (NADB) and a general records search were performed for each of the 12 ACC installations.

3. Each funding agency was visited in order to examine all reports, records, and inventory data associated with ACC archaeological collections and to compile an annotated bibliography of reports, which was to include a list of associated collections and their present location.

4. Initial contacts were made with all personnel and agencies with knowledge of ACC archaeological collections.

5. From these initial contacts, a list was developed of all contracting agencies and repositories associated with the recovery or curation of materials from ACC installations.

Field Inspection and Assessment of Repositories and Collections

Assessment of the archaeological collections and the repositories that house them involved the following four major tasks.

1. A survey questionnaire soliciting information on repositories, artifact collections, and associated documentation was completed for every facility involved with the curation of archaeological collections from a given installation.

2. A building-evaluation form, addressing structural adequacy, space utilization, environmental controls, security, fire detection and suppression, pest management, and utilities, was completed for every repository and secondary storage facility involved with the curation of archaeological collections recovered from ACC installations. These data, gathered both by observation and through discussion with collections managers, served as the basis for determining whether or not the facility was in compliance with the requirements for repositories as specified in 36 CFR Part 79.

3. All project and site reports, administrative files, field records, curation records, electronic media, and photographic records were examined to determine their presence or absence, the total linear feet of each type of documentation, the physical condition of the containers and the records, and the overall condition of the storage environment. The determination of whether or not the facility was in compliance with the archives-management requirements specified in 36 CFR Part 79 was based on this research.

4. An examination and evaluation of all artifact collections included an assessment of the (1) primary and secondary containers, (2) degree of container labeling, (3) extent of laboratory processing, (4) material classes included in each collection, and (5) condition of any human skeletal remains. Primary containers—e.g., acidic and acid-free cardboard boxes; cardboard, metal, and wooden trays; and wooden and metal drawers—are the receptacles that house an individual artifact or group of artifacts. Secondary containers—e.g., acidic paper bags, plastic sandwich bags, plastic zip-lock bags, glass jars, film vials, aluminum foil, and small acidic and acid-free cardboard boxes—are the largest receptacles for artifacts within the primary containers.

NAGPRA-Compliance Assessment

Only a single collection of human skeletal remains (from MacDill AFB) was identified in any of the ACC collections by the assessment team. This information was forwarded to HQ ACC and used to fulfill the November 15, 1995, NAGPRA requirements.

Report Preparation

The present report constitutes Volume 1 of two volumes of a written report detailing the results of the curation-needs assessment. It includes descriptions of the facilities, estimates of the sizes of the collections, and assessments of their conditions. The St. Louis District also herein provides to HQ ACC recommendations for rehabilitation of the facilities and/or the collections, according to standards set forth in 36 CFR Part 79.

Chapter Synopsis

Chapters 2–8 detail the state of ACC archaeological collections evaluated during FY94 fieldwork. The report is organized by state because many states encompass multiple ACC installations. Each chapter begins with an executive summary of the collections held by ACC installations in that state. Subsequent discussion includes a detailed examination of the installations and an analysis of all the repositories (universities, museums, and contractors) curating collections from each specific installation. Chapter 9 discusses the status of curation on other ACC installations and previews the installations to be evaluated in Volume 2 of this study. Chapters 10 and 11 include the findings summary and recommendations for the ACC installations described in Chapters 2–8. Appendixes 1–12 are annotated bibliographies for the reports identified during the research leading up to this report. Appendixes 13–17 are policy and procedure statements from some of the repositories evaluated during FY94 fieldwork or from pertinent states. Appendix 18 is a glossary of terms, and Appendix 19 contains examples of memorandums of understanding for curatorial services.

None of the repositories fulfill all of the standards mandated by 36 CFR Part 79 for curating federally owned archaeological collections. Approximately 50 percent meet most of the minimum standards enumerated in federal regulations (e.g., proper environmental controls and security and fire-safety measures). Only 7 (37%) of the 19 repositories employ full-time curators for archaeological collections. Existing conditions at the repositories described in this report unfortunately are the standard for most archaeological collections repositories in the United States. Funding shortfalls, lack of a consistent national policy, and the magnitude of the curation problem have prevented total compliance with federal regulations.

2

Arizona

Davis-Monthan Air Force Base, Tucson

Installation Summary for Davis-Monthan AFB

Volume of Artifact Collections: Approximately 12 ft^3

On Base: One artifact

Off Base: 12 ft^3 (ASM)

Compliance Status: Collection held by the Arizona State Museum (ASM) requires partial rehabilitation to comply with federal regulations governing the long-term curation of archaeological materials. When the Davis-Monthan interpretive display is dismantled, the single artifact on base should be conserved and transferred to ASM for curation.

Linear Feet of Records: 0.88 linear feet

On Base: 0.34 linear feet

Off Base: 0.54 linear feet (ASM)

Compliance Status: All associated documentation located on base requires complete rehabilitation. Documentation curated by ASM will be processed archivally when the material is accessioned into their collection.

Human Skeletal Remains: None

Status of Curation Funding: Currently no funding is allocated at Davis-Monthan AFB for the curation of their archaeological collections or their written documentation, nor is the base providing funds to ASM for the curation of their collection. Once funding requirements are enumerated, Davis-Monthan personnel can apply to AF Environmental Compliance Program A-106 for the necessary monies.

Recommended Curation Facility: Davis-Monthan AFB does not currently have the staff or facilities to properly curate archaeological collections. ASM is a professionally managed institution that has the staff and facilities to care for archaeological collections. At the present time, the St. Louis District recommends that Davis-Monthan AFB create a formal (short-term) memorandum of understanding with ASM to curate their collections.

Repository 1: Davis-Monthan AFB

Date of Visit: July 22, 1994

Point of Contact: Gwen Lisa, Manager, Natural/Cultural Resources Program

Davis-Monthan AFB was established in 1927 and encompasses 10,763 acres. The base houses several major wing units and the Aerospace Maintenance and Regeneration Center. To date, several archaeological excavations have been conducted on base property in order to expose and evaluate archaeological sites located within the base perimeter. A single pottery sherd and 4 linear inches of administrative records from archaeological projects funded by ACC are stored

Figure 1. Exterior of Building 4300, where archaeological collections are stored.

in two offices on the second floor of Building 4300 on Davis-Monthan AFB. Building 4300, which functions primarily as space for offices, is located at 5285 East Madeira Street at the base (Figure 1). Two of the offices on the second floor house the administrative records for archaeological projects as well as an interpretive display, which includes the only artifact retained from the base collection.

Assessment

Structural Adequacy

Building 4300 was originally constructed in the 1950s as a dormitory, but was then redesigned for offices. It has a concrete foundation, exterior block walls, and a built-up asphalt roof, which has never been replaced completely and is patched as necessary. Neither the foundation nor the roof displayed evidence of water damage. Three floors of Building 4300 are above grade. The first floor was rehabilitated recently, but the second floor has never been renovated. One shaded window is located in each office. All windows are original to the building and measure 64 x 84 inches (w x h). Window frames are steel and tend to leak air. Hallway ceilings are suspended acoustical tile, and office ceilings are concrete. Interior office doors are glass, and exterior office doors are wood and glass.

Building 4300 supports the following utilities/facilities: heat, rest rooms, telephones, air conditioning, and electricity. Primary systems for the building (e.g., plumbing, heating, electrical) are original (i.e., they were installed in the 1950s). A forced-air, electric-heat pump system is used throughout the building. There is no evidence of water damage either to the building or to the collections from plumbing system failure.

Environmental Controls

Independent temperature controls are located in each room of Building 4300. Temperature is monitored and kept at levels comfortable for the staff. Humidity controls are absent. Building 4300 has no asbestos present, and dust is kept to a minimum. Standard dust filters are present on all air-conditioning and heating units and are changed twice a year. Refuse disposal is conducted by a professional company on a regular basis.

Pest Management

Building 4300 is regularly maintained for insect and rodent infestations. No integrated pest-management system has been implemented for the building, although the building is monitored. At

the time of the evaluation, no pest infestation was observed. In the past, however, birds have built nests in some of the rest rooms.

Security

Security measures for Building 4300 include key locks on all interior doors and single-cylinder, dead-bolt locks on all exterior doors. Windows are equipped with basic slide locks; however, because of their size and placement they present few security risks. Intrusion alarms are absent, but the building is inspected regularly by base security during off-duty hours. No accounts of forced entry were provided to the assessment team, though there have been some unexplained occurrences of missing office equipment.

Fire Detection and Suppression

Building 4300 has manual fire alarms throughout the building that are wired into the installation's fire department. There are fire walls between every room and fire doors at the end of each hallway, which may enhance fire containment (Figure 2). Heat sensors are present, but may not be functional. Halon fire extinguishers are in place and were inspected earlier in July, though no inspection tag was present on the second-floor extinguisher. All halon extinguishers will be removed within the next year. Building 4300 is classified by AF regulations as fireproof.

Artifact Storage

Only one artifact is currently located on base. It is a pottery sherd that has been mounted to foamboard backing and incorporated into the interpretive display for the base. All other artifacts in the display are replicas (Figure 3).

Laboratory Processing and Labeling

No laboratory processing or artifact labeling is carried out by Davis-Monthan personnel. However, the artifact held on base has been labeled—in india ink covered with clear nail polish—with the pertinent site number.

Records Storage

Paper Records

Written documents pertaining to base archaeology are stored in a letter-size, four-drawer file cabinet, with the drawer designation "Active Files, 16-20-9." Two manila folders—designated "20-2- Life Along the River"—contain administrative documents (e.g., scopes of work for all phases of Statistical Research, Inc. [SRI], projects; financial records; correspondence; proposals; and contracts) as well as bound reports for various excavations.

No accession information beyond the folder designations is available, and no finding aids have been compiled for the documents at Davis-Monthan AFB. Similarly, no preservation/security copy has been made. In addition, none of

Figure 2. Fire extinguishers, fire doors, and fire walls in the hallway of Building 4300. The motion sensor on the ceiling may be nonfunctional.

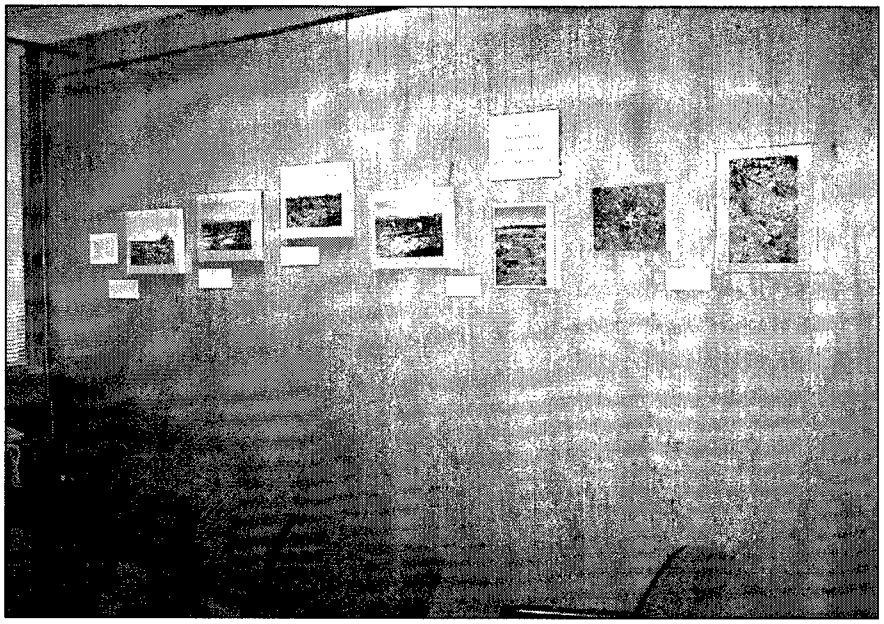

Figure 3. The single artifact stored on base (not shown) is included in an interpretive display located on the wall of a conference room in Building 4300.

the records are being stored according to modern archival practices, and no funding for such stabilization is currently anticipated.

Photographic Records

Photographs of on-base archaeological investigations consist of three sets of identical photographs. Four-by-six-inch black-and-white photographs and color slides are not labeled and are kept in manila folders with the written documentation (Figure 4). Eight-by-ten-inch color photographs, which are part of the interpretive display, have been placed on cardboard backing and enclosed within clear plastic box frames (see Figure 3).

Figure 4. Associated documentation for Davis-Monthan AFB collection showing interspersed photographic materials.

Collections-Management Standards

No official registration procedures, written policies and procedures, or management controls have been established for the documentation or artifacts curated at Davis-Monthan AFB. Any curation guidelines that exist are dictated by individual contractors.

Written documentation has been filed topically and chronologically for office purposes only. Documentation housing is adequate, and the files are readily accessible. Access is restricted until approval to view and/or remove files for photocopying purposes is granted by Gwen Lisa, manager of the Natural/Cultural Resources Program for Davis-Monthan AFB's Environmental Quality Branch. A check-out system is in place, which indicates who authorized the removal of the files, when files were removed, for what reason they were removed (e.g., for photocopying), and by whom. No negative-finding reports for Davis-Monthan AFB archaeological projects are being housed on base.

Curation Financing

Davis-Monthan AFB currently recognizes no financial responsibility to any of its archaeological collections (either curated on base or currently held elsewhere). Written documentation held on base has been processed using funds for normal office expenses. As for artifacts and photographs, beyond initial construction costs, no further monies have been allocated to date for the interpretive display. The staff, however, stated that they would apply for AF Environmental Compliance Program A-106 funds once they determined their financial requirements for curation.

Comments

1. Building 4300 is structurally sound.

2. No heating-ventilating-air conditioning (HVAC) system is installed, but dust filters are in place.

3. Building 4300 is monitored for pests, but an integrated pest-management program is not in effect.

4. Building 4300 does not meet the minimum requirements for security.

5. Halon extinguishers need to be removed, and the heat sensors tested for operability.

6. Paper records and photographs require complete rehabilitation.

7. No collections-management standards exist at this facility.

8. There is no curation funding available at this repository.

Recommendations

1. Test heat sensors throughout Building 4300 to determine their working status. If units do not function, they should be replaced.

2. Replace all halon fire extinguishers located in Building 4300.

3. Update/expand security system to better safeguard those materials used for the interpretive display.

4. Create duplicate/security copies of all pertinent written documents to be filed for office purposes. Turn original documents and all photographs (those not used in display) and negatives over to ASM for archival processing and storage.

5. Establish a formal memorandum of agreement with ASM for the long-term curation of all Davis-Monthan AFB archaeological collections.

Repository 2: Arizona State Museum

Date of Visit: July 25, 1994

Point of Contact: Arthur Vokes, Curator

Approximately 12 ft^3 of prehistoric artifacts and 6.5 linear inches of associated documentation from archaeological investigations on Davis-

Figure 5. Exterior of ASM's South Building.

Monthan AFB are stored at ASM, which is located on the University of Arizona (UA) campus in Tucson.

The Davis-Monthan AFB collection at ASM falls into two main categories: (1) cataloged collections (1%), those removed from the major collection and used for report-illustration and photographic purposes, and (2) research collections (99%), all remaining artifacts from Davis-Monthan AFB excavations. The collection consists exclusively of prehistoric materials. Material classes include lithics (35%), ceramics (33%), flotation samples (7%), faunal remains (6%), soil samples (19%), and ^{14}C samples (>1%). Both cataloged and research collections are fully accessioned by ASM personnel. Cataloged materials do not reenter the main collection, but are instead stored with other cataloged materials in a wooden cabinet in the main artifact study area.

ASM occupies two buildings on the UA campus. Davis-Monthan AFB archaeological collections and associated documents are curated in ASM's South Building—also known as the old library building or University Building Number 26 (Figure 5). The North Building (located across the quadrangle) holds all photographic materials associated with archaeological projects. Both buildings are similarly maintained in terms of janitorial and pest-management services. In addition, they are of similar overall construction, except that the North Building does not have a mezzanine-type collections storage area. Further, the North Building has some added security precautions—its front door is outfitted with an intrusion alarm that is wired to the police department—mainly because of its numerous exhibits.

ASM's South Building is divided into several levels, each devoted to different activities. Research collections are stored in the center of the facility, while cataloged collections occupy space in the main artifact study and processing area. Written documents are stored on the third floor in ASM's archives section.

The South Building includes areas for holding, washing, and processing artifacts; studying artifacts and records; storing supplies and photographic and temporary records; and monitoring security, as well as an exhibit area, a walk-in refrigeration unit, and offices. Most of the materials in the collections area are archaeological materials; however, zooarchaeological and paleobotanical items are also being curated. Approximately 90 percent of the collections storage area is occupied with materials. No overstacking of boxes was noted, and the area is reasonably clear of clutter.

The North Building contains exhibit space, artifact-type and special-collection holding

areas, a conservation laboratory, and a permanent storage area for photographs.

The ASM Archaeological Division Laboratory, in the South Building, uses and stores acetone and muriatic acid. Because the laboratory is not located within the collections area, chemical contamination should not be a problem; however, there is no source of ventilation (e.g., fume hood) other than windows. Because conservation work is conducted in the North Building, the staff indicates that ventilation has not been a major concern for either personnel or for collections.

Assessment

Structural Adequacy

Both the North and South Buildings were originally constructed in the early 1920s. The South Building housed the University of Arizona library until 1974, at which time the Department of Anthropology moved there. The foundation is concrete, the exterior walls are three-foot-thick brick, and the roof is a built-up, asphalt-clay tile conglomerate, which has had many major repair episodes and five major renovations (the most recent in July 1994). At the time of the evaluation, neither the roof nor the foundation leaked.

At the present time, ASM's South Building houses a collections facility, a university classroom and laboratory, and a museum/exhibit hall. Three floors are above grade, and one floor, which is used for general storage, is below grade.

The collections area is further subdivided into nine stacks. Floors in the collections area are concrete and marble. Windows in the facility are of varying shapes and sizes, all have blinds (in some cases windows are completely blocked by sheets of metal), locks, and steel frames. The assessment team noted air passing through the windows in the collections storage area. None of the windows in the building have ever been replaced. There is no asbestos in the repository, and dust is kept to a minimum.

Both the North and South Buildings have heating, air conditioning, plumbing, telephone, and electricity, of which all but the telephones are original systems. None have experienced any major failures. Though rest rooms are present in the South Building collections area, none are used. However, they are checked for failure on a regular basis.

Environmental Controls

Environmental controls exist for the North and South Buildings. Humidity levels are monitored in the collections area of the South Building, but the only control measure is a portable dehumidifier. Target temperature for the collections area is 75°F, and humidity is usually kept at 40 percent. All lighting in the North and South Buildings is fluorescent, and none of the lights have ultraviolet (UV) filters. Dust filters are present on all air-conditioning and heating units. The buildings are maintained daily by University of Arizona building services. Because janitorial staff is restricted from the collections area, the curatorial staff is responsible for its maintenance.

Pest Management

ASM is serviced for rodent and insect infestation on a monthly basis by the UA pest-management division. The pest-management program includes both monitoring and control by the museum conservator. Mouse and rat traps are replaced monthly. To date, only one problem of infestation has occurred in the South Building—moths in some of the textiles. The problem was resolved, and no further incidents have been reported.

Security

Security measures for ASM's North and South Buildings include an intrusion alarm throughout the buildings that is wired directly to the police department. Key locks are used on all office doors, and dead-bolt locks are on the front doors of both buildings. The North Building's front door is equipped with an additional intrusion alarm that is wired directly to the police (Figure 6). Motion detectors are located throughout the facility, and some storage units (e.g., those housing cataloged collections) are padlocked. All windows have basic slip locks, and windows in the collections area are wired into the alarm system. In addition, ASM's grounds are routinely patrolled by campus police.

No evidence of forced entry through any of the windows or doors was noted by the assessment team, and the staff indicated that none had

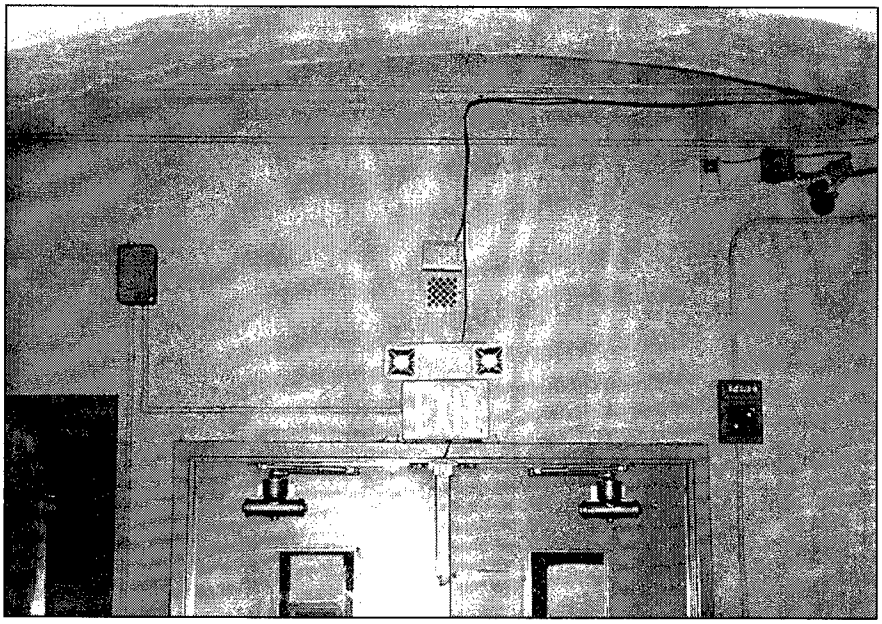

Figure 6. Security measures in ASM's North Building are more stringent than those installed in the South Building.

occurred. In years past there were some problems with missing collections; some were incidents of actual theft, but more recent episodes were cases of misplaced artifacts.

Fire Detection and Suppression

Both the North and South Buildings have manual fire alarm systems as well as alarm systems that are wired into the local fire department. In addition, the South Building has a sprinkler system, smoke detectors, heat sensors, and fire extinguishers (last inspected in July 1994) located throughout the repository. Sprinklers are not located above any boxes in the collections area. Fire doors are located at entryways to the collections area (Figure 7). Fire-proof cabinets

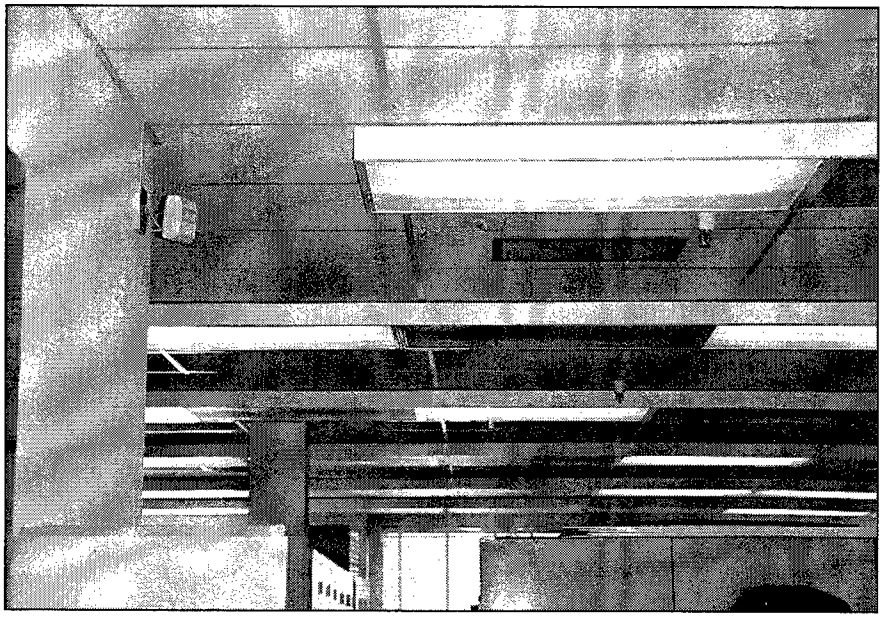

Figure 7. Overhead sprinkler system in the laboratory of ASM's South Building.

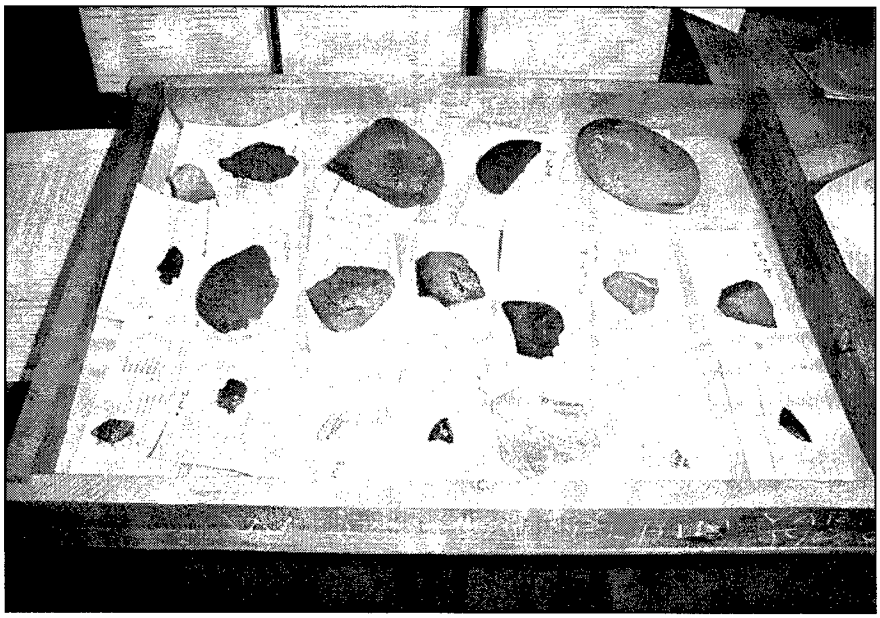

Figure 8. Cataloged collections from Davis-Monthan AFB are appropriately labeled and stored on ethafoam in wooden drawers.

are used for some of the artifacts and paper documents. The North and South Buildings are considered by the ASM staff to be fireproof because of their dense construction.

Artifact Storage

ASM holds collections from eight sites located on Davis-Monthan AFB (AZ:BB:13:385, 386, 387, 388, 389, 390, 391, and 392). As mentioned above, the collections fall into two main categories: catalog collections and research collections. Catalog collections are stored in drawers (one per project) in a large wooden cabinet (Figure 8). Each artifact has a note card that provides information such as site number, project, and ASM accession number. The latter is used to cross-reference the cataloged materials with other artifacts (e.g., those held in research collections) recovered from the same project. Research collections are assigned accession numbers and are stored in the stacks in accordance with the policy outlined by the individual contractor—usually by project and then by site.

Artifacts held in both catalog sections and in the main stacks are easily accessible. Archaeological materials occupy approximately 13,000 ft^2 (Davis-Monthan AFB collections occupy 12 ft^3). Space is considered adequate by museum personnel but not ideal. Plans exist for augmenting existing artifact storage; however, exactly when this will occur is unknown.

Storage Units

Research collections are stored in acidic boxes on metal shelving units that measure 36 x 19 x 84 inches (w x d x h). Several of these units have been placed side by side to form rows in the stacks of the collections storage area. Catalog collections are stored in wooden drawers 19 x 24 x 2.5 inches (w x d x h). Each drawer is labeled with the accession number.

Primary Containers

Three types of primary containers are used for storage of the materials. Two box types (A and B) have the same dimensions (19 x 7.25 x 8 inches [l x w x h]) but use different types of folding flaps for closure. The third box type (C) is smaller (9.25 x 8 x 2 inches) and uses a telescoping lid for closure (Figure 9). Thirteen A and B box types exist in the collection, and three type C occur. Label information on boxes consists of project name, accession number, site number, and box contents (Figure 10).

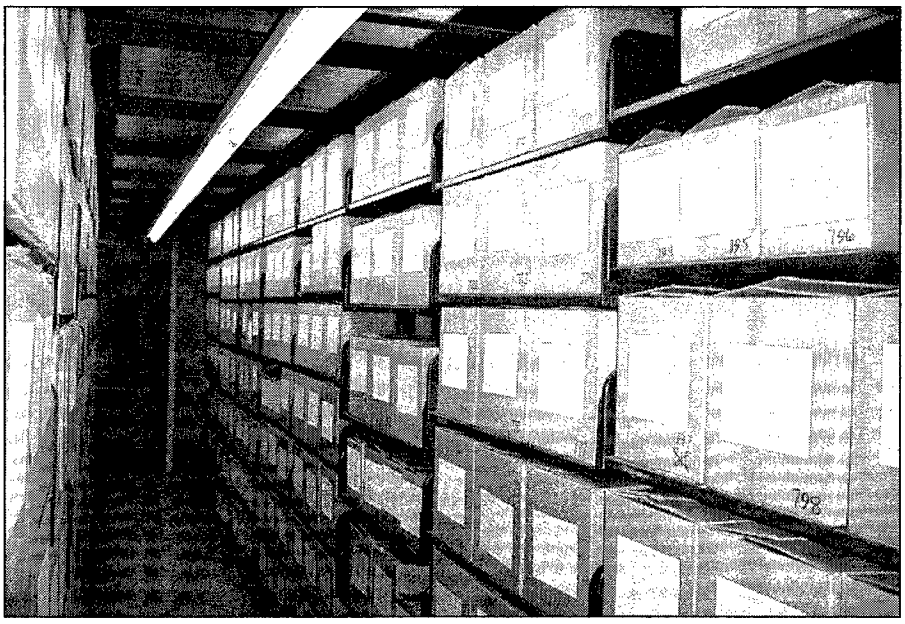

Figure 9. Research collections stored in the stacks of ASM's South Building.

Secondary Containers

Artifacts from Davis-Monthan AFB are stored in several types of secondary containers (Table 4), chiefly plastic bags. For most bags, a field bag or preprinted label with project information (e.g., provenience, project name, site number) is also present, either tied to or inserted in the bag. Some of the plastic bags also contain small manila envelopes with project information. All information is written on label inserts in marker. Plastic bags use three distinct closure methods—twist ties, zip-lock, and string.

Paper bags are used only for one oversized item that did not fit in a plastic bag. The paper bag was affixed to the artifact with a rubber band, and information was recorded directly on the bag in black marker. Cloth bags and garbage bags are also used as secondary containers, primarily for soil and flotation samples. These bags are secured with rubber bands. All cloth bags have cloth labels sewn directly to them. All information listed on paper bags is in marker, pen, or a combination of the two mediums.

Laboratory Processing and Labeling

Collections recovered from Davis-Monthan AFB excavations consist of ceramic materials, lithic materials (ground and flaked stone), faunal remains, and soil samples (Table 5). For the most part, site numbers have been written

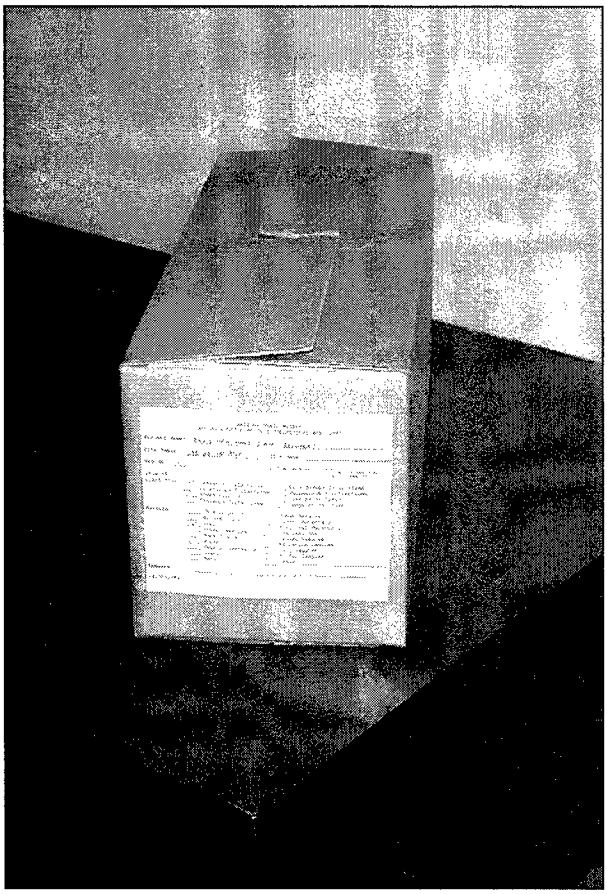

Figure 10. Example of a primary container, with a preprinted label, housing Davis-Monthan AFB materials.

Table 4.
Secondary Containers Used in Davis-Monthan AFB Archaeological Collections at ASM, by Box

Box	Bag Type				Label Type		Closure Method			
	Plastic	Paper	Garbage	Cloth	Tied On	Placed Inside	Tied with String	Rubber Banded	Zip-locked	Twist-Tied
1	x				x	x	x			
2	x				x	x	x			
3	x				x	x	x			
4	x	x	x		x	x	x	x		
5	x					x			x	
6	x					x			x	
7	x					x			x	
8	x	x				x			x	
9	x					x			x	
10	x					x			x	
11	x					x			x	
12	x					x			x	x
13				x	x		x			
14				x	x		x			
15	x				x	x	x			
16	x				x	x	x			

Table 5.
Material Classes in Davis-Monthan AFB Archaeological Collections at ASM, by Box

Box	Material Class (%)					
	Ceramics	Lithics	Faunal Remains	Flotation	Soil	^{14}C
1	100	—	—	—	—	—
2	80	20	—	—	—	—
3	20	80	—	—	—	—
4	80	10	—	5	—	5
5	—	100	—	—	—	—
6	—	100	—	—	—	—
7	—	100	—	—	—	—
8	—	100	—	—	—	—
9	100	—	—	—	—	—
10	—	—	100	—	—	—
11	—	—	—	100	—	—
12	—	—	—	—	100	—
13	—	—	—	—	100	—
14	—	—	—	—	100	—
15	100	—	—	—	—	—
16	50	50	—	—	—	—

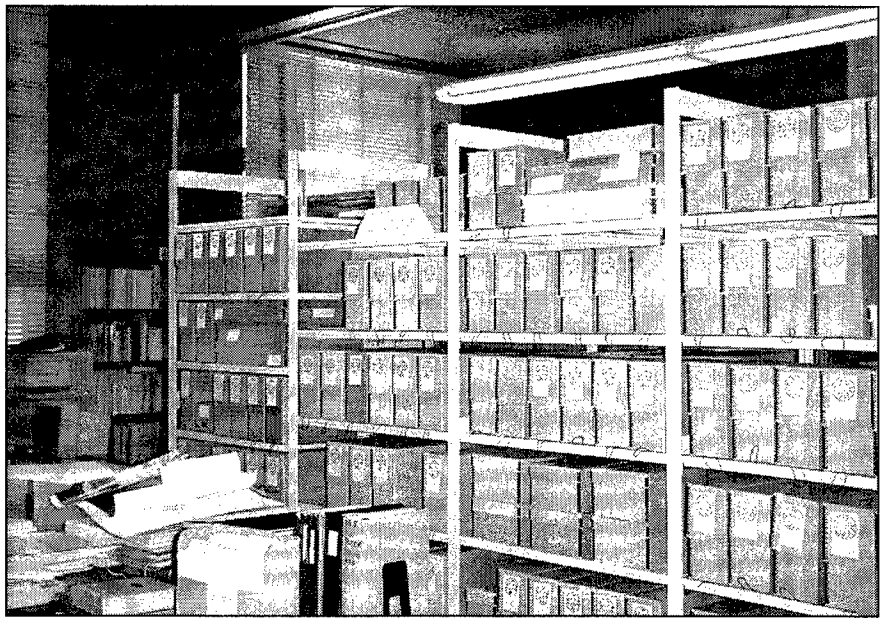

Figure 11. Processed collections are integrated into ASM's archival holdings.

directly on the larger artifacts/fragments in india ink or in white correction fluid.

Human Skeletal Remains

Although ASM curates a large number of human remains, none are from Davis-Monthan AFB.

Records Storage

Photographic and written documents are curated in separate archive areas and are accessible only through their respective archivists (Alan Ferg for written documents; Kathy Hubenschmidt for photographs). No duplicate/security copies or microfiche copies have been made for the written materials. Negatives are stored with photographs. Cultural resource survey reports are stored in a library section within the larger written documents area.

Paper Records

All written documentation associated with accessioned collections—field notes, final reports, and artifact lists—are processed and stored in ASM's archives in manila folders or loose in the box. Materials are arranged by project and are kept in the order in which they are received. In processing, materials are placed in archival-quality folders and boxes (e.g., acid-free folders and Hollinger record boxes [Figure 11]) and arranged by ASM accession number (the same number assigned to the corresponding artifacts and photographs) for easy recovery and cross-referencing. Written documents occupy approximately 300–400 ft^2 (Davis-Monthan AFB collections occupy less than 7 linear inches) (Figure 12).

Photographs and maps are not curated with written records. Maps are stored in the main laboratory area in hanging files, and photographs are stored in the photograph archives in ASM's North Building. Documents are readily accessible; however, space for growth is limited.

Photographic Records

After being separated from other documentation, photographs are stored in archival-quality sleeves and folders and are placed on metal shelves in acid-free boxes (Figures 13–15). All photographs are indexed using their original ASM accession number. The photographic archive is temperature and humidity controlled (a portable dehumidifier is present in the archives area). Photographs are easily accessible; however, present space is near capacity.

Figure 12. Associated documentation for Davis-Monthan AFB archaeological collections stored temporarily in the ASM archives (North Building) prior to permanent curation in the South Building.

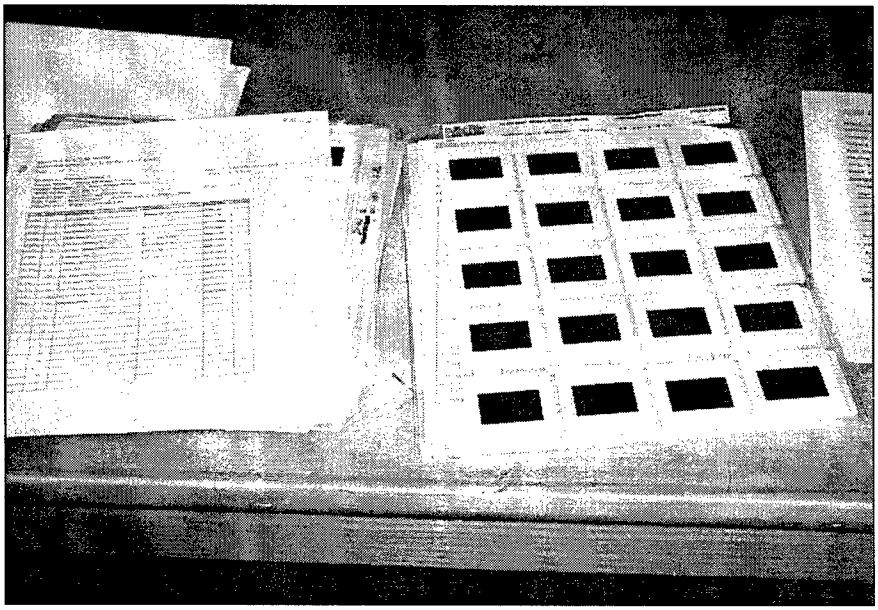

Figure 13. Davis-Monthan AFB photographic documentation awaiting processing (North Building).

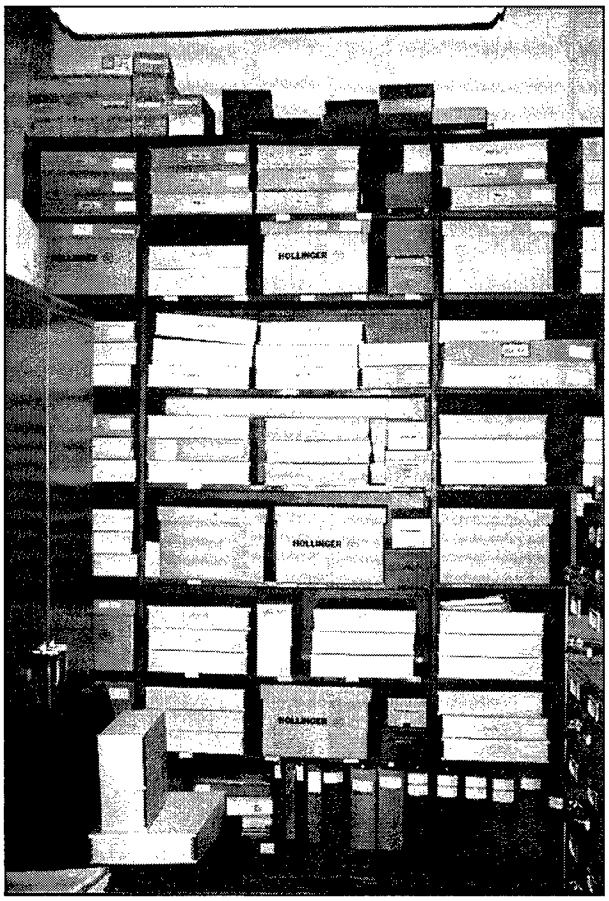

Figure 14. Accessioned but unprocessed photographic records are stored temporarily on metal shelving units in the ASM photographic archive (North Building).

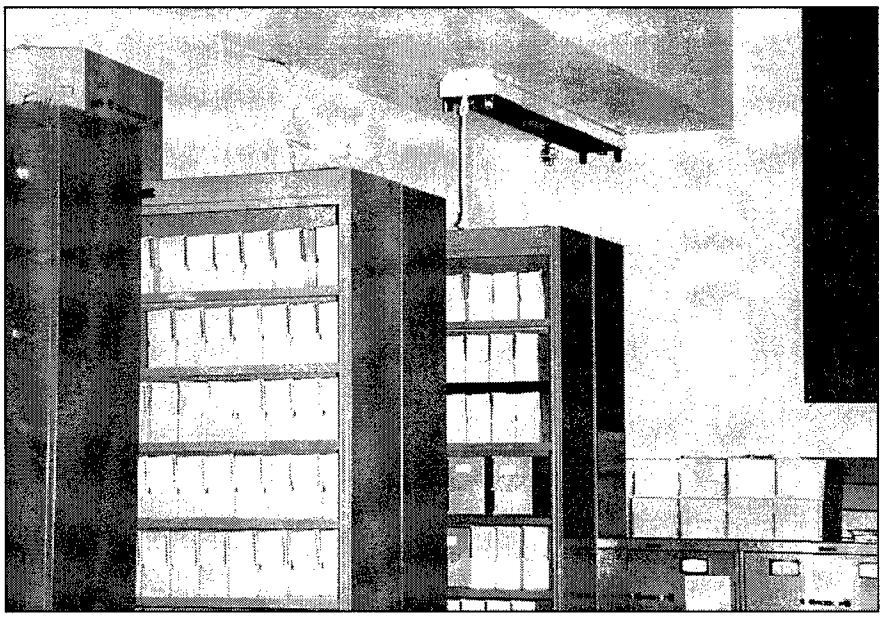

Figure 15. After processing, photographs are integrated into the ASM photographic archive (North Building).

Collections-Management Standards

Registration Procedures

Accession Files. All materials received by ASM are recorded in accession files, and a unique accession number is assigned to each collection. In addition, all accession information is entered into a computer database that is updated on a regular basis.

Location Identification. Locations of all accessioned materials are recorded on computer, and the information is part of the current database system.

Cross-Indexed Files. Materials are cross-referenced by ASM accession number, project, and site number. The accession number is the most important identifier because it is used as the primary reference tool by all sections of the museum. For example, the ASM archives and the photographic materials section use the same accession number to describe a single collection.

Published Guide to Collections. No guide to the collections has been published, but a listing of all holdings can be obtained. In addition, published user guides for the site files and museum are available to contractors.

Site-Record Administration. ASM uses its own unique numbering system for archaeological sites in the state. The number (e.g., AZ:BB:5:929) consists of the state abbreviation (AZ), followed by letters to specify (within 1 degree) the area of the topographic map (e.g., BB), an integer (1–16) to specify the 15-minute area of the map, and the site number. This system is used on sites throughout the state and is accepted by SHPO.

Computerized Database Management. ASM's computer database (REGIS) ensures the accurate cataloging of all collections and site information. Tape backups for all records are stored in a separate facility and are updated weekly. Because the computer system is on a network, access is restricted to those individuals directly responsible for curation. Within the curatorial staff access is controlled using a password system; only certain individuals (curator and curatorial associate) have access to all information.

Written Policies and Procedures

Minimum Standards for Acceptance. ASM asks for collections that are complete in their information content so that they might easily be used for public interpretation and independent research. Complete collections are those that include all written documentation regarding the anthropological project that produced the collection. In addition, any materials collected but later destroyed for analysis purposes are fully documented.

Acquisition Policy. ASM accepts archaeological, photographic, and skeletal collections; sound recordings; and written documents (published and unpublished) from Arizona and surrounding states in the Southwest, as well as some materials from Mexico. The museum also accepts, albeit selectively, materials from other regions that are deemed a benefit to the university. Each section of the museum responsible for curating the different collections outlined above (e.g., photographs, paper documents, artifacts, site forms) maintains a written guide to collection management in order to evaluate and set priorities for future acquisitions.

ASM also has special policies for acquisitions of Native American sacred objects. In summary, the museum recognizes the precedence that religious convictions take over collecting. Therefore, it is the policy of ASM to decline the acquisition of those objects that are considered significant and sacred to Native American groups. Furthermore, ASM will act as an intermediary in the return of such objects to their groups of origin or will use its influence to assist in their return.

Finally, ASM maintains a definitive position toward those archaeological materials that have been unlawfully collected. They only accept such collections in order to (1) prevent the random disposal of artifacts that could be of use in interpreting the archaeological record and (2) preserve archaeological information that could benefit the scientific community and the public.

Curation Policy. Because of its role as the primary state institution for the curation of archaeological collections, ASM acknowledges a responsibility for the preservation of artifacts recovered from anthropological projects in

Arizona. ASM acts as a repository for those collections that have been prepared for curation according to museum standards and must be fully compensated for its services at a predetermined rate (see curation financing). ASM reserves the right to refuse collections if any of its guidelines have not been followed.

ASM accessions all materials it accepts and curates them in perpetuity according to museum standards. After being accessioned, the museum reserves the right to loan and authorize access to the collections under its care.

Loan Policy. All accessioned materials are covered by a written agreement that is incorporated into the records of the museum and is held by the registrar. Further, any loan transactions agreed to following initial accession must be finalized with the registrar, who will then receive the original and all copies of the final loan transaction. If accepted, collection restrictions are documented in writing and periodically reviewed and revised with the collector. Usually, only those collections that are classified as sensitive because of their religious significance are restricted. In addition, materials requested for use in destructive analyses must be approved by the director's administrative staff. In the case of human remains, access to and consent for analysis (destructive or otherwise) must be obtained from the appropriate tribal organization.

Deaccessioning Policy. ASM recognizes the need to deaccession some of its holdings in order to benefit the collections as a whole. The decision to deaccession is made only by the director's administrative staff to (1) permit destructive analysis, provided the information received outweighs the loss of the item; (2) remove materials hazardous to other holdings; (3) negotiate insurance compensation for lost or stolen materials; (4) provide appropriate care of material that has ritual and/or sacred significance; (5) transfer materials to other educational or scientific institutions where they might be more effectively put to use; (6) relieve the museum of its responsibility to those materials that have deteriorated beyond use; (7) carry out beneficial exchanges of materials with other institutions; and/or (8) relieve the museum of its responsibility toward those materials that are not deemed appropriate to its mission or scope of collections.

All material to be deaccessioned, and its associated documentation, is assembled by the museum registrar prior to deaccessioning. Materials are examined by the director's administrative staff and museum personnel. After materials are examined by all concerned parties and any comments assessed, the director's staff makes its final decision.

Restrictions to deaccessioning occur if the title of materials cannot be found to lie with the museum or, if restrictions to deaccessioning were originally placed on the collections, restrictions are subject to review. Employees of the museum and their families cannot acquire any deaccessioned item from ASM holdings, and transactions that violate state, federal, other laws, or university policy are prohibited.

It is the policy of ASM to transfer all deaccessioned items to other educational or scientific institutions. Materials that cannot be exchanged with or sold to other institutions are turned over to UA Surplus Property. Actual destruction of materials, not for analysis purposes, is performed only when no other feasible method of disposal is available. Prehistoric materials and materials recovered from archaeological contexts are not sold, and no private sales, except to other museums, are made. Disposal of hazardous materials is conducted according to established laws and safety guidelines.

Accurate and complete records are kept regarding all deaccessioned materials. Current records are changed to reflect the deaccessioned status of the artifact. Any and all monies received from the sale of deaccessioned materials are used for collections acquisition.

Repatriation Policy. Repatriation requests are addressed to the director of the museum, who examines those materials requested for repatriation. Comments from researchers as well as Native American or other ethnic groups are accepted and considered prior to final disposition. Ownership records and information regarding cultural affiliation and chronological placement of the materials are also reviewed. Museum personnel examine the materials' present and future significance to archaeology and other scholarly

fields and their importance to the group requesting repatriation and to the general public. A written evaluation accompanies all materials to be repatriated. The final evaluations are presented to university attorneys for review, and all interested parties are informed of the final decision. The actual date of the release of materials is dependent on the magnitude of the request and the time needed for documentation.

Inventory Policy. Collections are processed upon receipt and inventoried following the standard regional approach used by Arizona repositories. Inventories of all display items exist and are kept separate from other collection inventories.

Latest Collection Inventory. Inventories for management purposes have been conducted by ASM personnel; however, the date of the last full inventory is unknown. The latest partial inventory fulfilled initial NAGPRA requirements.

Curation Personnel

ASM currently has 10 full-time and four part-time staff members, including a full-time curator for archaeological collections. Primary responsibilities for the curatorial personnel include receiving collections, distributing collections that have been loaned out by the museum, and maintaining the collections currently housed at ASM. All full-time staff have training in archaeology and anthropology and in museum methods.

Curation Financing

ASM curatorial responsibility is financed through fees acquired from individual projects. Curation costs are assessed on the basis of number of person-days spent in the field, thus providing contractors with curation costs before a project begins. To date, this system is working effectively, and there have been no problems from either contractors or museum officials.

Access to Collections

The policy of ASM is to offer wide access to its holdings. The museum does not usually accept collections that have restrictions placed on them regarding access privileges. Restrictions on materials are reviewed when the collections are being considered for acquisition.

Comments

1. ASM is applying for a facilities review to determine whether any funds could be made available for expansion. In addition, several grants have been requested that would provide for reboxing of some materials.

2. Labels on all boxes at ASM are written directly on the front of the boxes, which is not an accepted archival procedure.

3. The buildings are structurally sound.

4. No UV filters are installed on light fixtures.

5. Humidity is monitored but can be controlled only by portable units.

6. Dust filters are present.

7. The storage facility is nearing capacity.

8. The buildings have excellent security, fire-detection, and fire-suppression systems.

9. An integrated pest-management system is in place.

10. Four-mil plastic bags are needed in some cases.

11. Not all artifacts are labeled directly.

12. Boxes are not acid free.

13. The archives area is nearing capacity.

14. The photograph archives has limited space for growth.

15. Associated documentation will be rehabilitated properly.

16. All collections-management standards are in place.

17. ASM is a professionally managed institution that meets most federal requirements for the long-term curation of archaeological collections.

The Davis-Monthan AFB collection stored in this facility should be considered secure.

Recommendations

1. Replace secondary containers with four-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Labels for secondary containers should be made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), labeled in indelible ink, and inserted into the secondary containers.

2. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box contents change, inserts should be replaced. This method reduces the chance of conflicting and confusing information.

3. Create duplicate/security copies of all written documents and store in a separate, fire-safe, secure location.

4. Update and expand humidity controls to include more collections storage areas.

5. Install UV filters for all lighting fixtures.

Findings Summary

Repositories holding Davis-Monthan AFB archaeological collections and associated written and photographic documentation were visited in July 1994 by a St. Louis District assessment team. Two repositories currently curate materials recovered from archaeological investigations conducted on Davis-Monthan AFB property. The Arizona State Museum in Tucson holds the majority of artifacts and paper records for Davis-Monthan AFB archaeological projects—12 ft^3 are devoted to archaeological collections and 6.5 inches to written and photographic holdings. Materials also are located on Davis-Monthan AFB. Most of the holdings on base are written documents and photographs (4 linear inches). Of the artifacts on base, only one is authentic; all others are replicas that are currently part of an interpretive display.

Infrastructure Controls

Both repositories curating Davis-Monthan AFB collections have measures in place to control the environment; ensure cleanliness, security, and fire safety; and manage pests (Table 6).

Staffing for the collection held on base is appropriate given the small amount of material. Collections at ASM, however, especially written and photographic materials, would be better maintained if additional full-time personnel were on staff.

Environmental Controls

At least some elements of proper environmental monitoring and control are present at ASM and at Davis-Monthan AFB. Davis-Monthan regulates the temperature to accommodate the staff and does not regulate the humidity at all. ASM

Table 6.
Presence or Absence of Repository Infrastructure Controls at Repositories Curating Davis-Monthan AFB Archaeological Collections

Repository	Environmental Controls	Pest Management	Security	Fire Detection & Suppression	Full-Time Curator
Davis-Monthan AFB	yes	yes	yes	yes	yes[a]
ASM	yes	yes	yes	yes	yes

[a] Davis-Monthan AFB does not have a full-time curator; however, a full-time technician is responsible for the collection.

regulates temperature and monitors humidity according to American Museum Association (AMA) standards. Neither facility has an HVAC system installed, but ASM is more aware of environmental conditions appropriate for archaeological collections.

Pest Management

Davis-Monthan AFB personnel monitor the building for pest infestation and arrange for spraying, if a problem is detected. ASM contracts with a professional company that monitors and takes measures against pests on a regular basis. The evaluation team noted no sign of pest infestation at either facility.

Security

Security measures on base consist of door locks, window locks, and limited access. Patrols of security police also check the building on a regular basis. Security measures in the ASM collection facility include door locks, a motion detector, an intrusion alarm wired to the campus police, window locks, and limited access. The measures at ASM are more fully in compliance with federal regulations regarding the safeguarding of archaeological collections than those at Davis-Monthan AFB.

Fire Detection and Suppression

Fire safety on base consists only of halon fire extinguishers and manual fire alarms wired to the installation fire department. Heat sensors are present throughout the building, but the staff did not know if they functioned properly. The collection facility at ASM includes an overhead sprinkler system, fire extinguishers, and fire alarms wired to the Tucson Fire Department. The additional measure of a sprinkler system could make the difference between the survival and destruction of the collection in the case of a fire.

Artifact Curation

All archaeological materials from Davis-Monthan AFB that are curated at ASM are well prepared for long-term curation. Only minor rehabilitation needs to be performed on the 16 boxes currently held at the museum. Most important, all acidic boxes should be replaced with acid-free boxes, and the variety of secondary containers (Table 7) should be replaced with archival-quality containers. The single artifact curated on base requires some rehabilitation (e.g., removal from foam-board backing and frame) before it can be curated with the rest of the collections.

All materials recovered from Davis-Monthan AFB are from prehistoric contexts. Material remains consist primarily of ceramics, lithic materials, and soil samples (Table 8).

Table 7.
Secondary Containers Used in Davis-Monthan AFB Archaeological Collections at ASM

Container Type	Percentage Present
Plastic bags	
Tied with string	25
Zip-locked	50
Twist-tied	3
Rubber banded	2
Garbage bags	2
Paper bags	6
Cloth bags	12
Total	100

Table 8.
Summary of Material Classes in Davis-Monthan AFB Archaeological Collections at Both Repositories

Material Class	Percentage Present
Ceramics	33
Lithics	35
Fauna	6
Flotation	7
Soil	18
^{14}C	1
Total	100

Records Management

Paper Records

Paper materials curated at ASM are awaiting archival processing and storage. All contaminants are being removed, and documents are being placed into archival-quality folders and boxes. Documents stored on base are filed for office purposes only, and there are no plans for future archival processing.

Photographic Records

All photographs from Davis-Monthan AFB archaeological projects currently stored at ASM will be processed according to modern archival standards and stored in acid-free sleeves and boxes on metal shelving. Photographs held on base are either filed directly with the paper records or mounted to foam board for display purposes. These conditions will contribute to the deterioration of the paper and photographic documentation.

Collections-Management Standards

Basic collections-management tools—accession records, inventories, and written policies and procedures for curation, records management, and loans—are maintained by ASM. All archaeological materials and associated documentation are accessioned, and their final locations (e.g., photograph archives, paper archives, catalog collections, research collections) are entered into a computer database. Museum staff also print this database at regular intervals and use this finding aid to track collections within the facility. ASM also has developed detailed policies regarding access to the collections, loans, and general curation. Minimal management controls are in place on base, and primarily consist of limiting access to the collection. For the limited amount of materials stored on Davis-Monthan, however, these controls are adequate.

Recommendations

The following are general recommendations for bringing Davis-Monthan AFB collections into compliance with the mandates of 36 CFR Part 79. All recommendations will be discussed at length in Chapters 10 and 11.

1. Inventory and rehabilitate associated records currently housed at Davis-Monthan AFB.

2. Rehabilitate artifacts housed at ASM.

3. Dedicate space for storage of materials and coalesce collections into a single repository.

4. Develop cooperative agreements with other federal agencies and with ASM.

3

California

Beale Air Force Base, Marysville

Installation Summary for Beale AFB, Marysville

Volume of Artifact Collections: 1 ft^3
On Base: 1 ft^3
Off Base: None
Compliance Status: Collection held at Beale AFB Museum requires complete rehabilitation to comply with federal guidelines and standards for curation.

Linear Feet of Records in Two Repositories: 0.24 linear feet
On Base: 0.08 linear feet
Off Base: 0.16 linear feet (PAR Environmental)
Compliance Status: All associated records, held both on base and off, require complete rehabilitation to comply with existing federal regulations and modern archival standards. Records should be duplicated, either on acid-free paper or in archival microformat, and stored in a separate location.

Human Skeletal Remains: None.

Status of Curation Funding: Funding requirements for Beale AFB archaeological collections have not yet been identified completely. (For PAR Environmental, and other contractors, curation usually is financed by a line-item fee in contract budgets.) Once these needs are enumerated, Beale AFB personnel can apply to AF Environmental Compliance Program A-106 for necessary funding.

Recommended Curation Facility: At the present time no appropriate curation facility has been identified. Because of the impending destruction of the museum at Beale, a temporary facility has been identified. Until a permanent curation facility can be identified, the St. Louis District recommends that the Phoebe Apperson Hearst Museum at the University of California, Berkeley, temporarily curate the Beale AFB collection.

Repository 1: Beale AFB

Date of Visit: September 22, 1993

Points of Contact: John Thomson and Ken Moore, Civil Engineering Flight

Approximately 1 ft^3 of artifacts and 1 linear inch of associated documentation resulting from a project conducted by Donald Storm at site YUB-1161 on Beale AFB is stored at the base museum. Although the museum is scheduled for demolition, at the time of assessment a permanent storage facility had not yet been determined.

The collection consists entirely of lithics. No human remains were encountered during the evaluation. One hundred percent of the known Beale AFB collections was examined by the assessment team.

The Beale AFB Museum is located on the base, in Building 2471, which is also occupied

Figure 16. Exterior of Building 2471, location of the Beale AFB Museum.

by the 9th Supply Squadron. The two-story museum encompasses approximately 2,200 ft^2 and occupies the south end of the building. Types of rooms included in the museum are exhibit space, offices, and rest rooms.

Assessment

Structural Adequacy

Building 2471, constructed during World War II, has a concrete foundation and wooden exterior walls. Originally built as a tank repair station, the south end of the building has been renovated to serve as a museum (Figure 16). The museum occupies two floors and has interior plasterboard walls, concrete floors, and suspended, acoustical tile–like ceilings. Plumbing is approximately 40 years old, while the electrical system is only 20 years old. No windows exist in the museum.

At the time of assessment, the collection was stored under a desk in the museum director's office. This windowless 20-ft^2 room has a concrete floor covered with carpet, interior plasterboard walls, and a plaster ceiling. A single wood-panel door on the east wall leads to a hallway. The room contains two desks, a computer, and various office files.

Environmental Controls

Temperature is controlled by central air conditioning and forced-air heat. However, humidity is neither controlled nor monitored. Fluorescent lighting without UV sleeves provides illumination for the building. The building and collections storage area are maintained on an as-needed basis by the curatorial staff.

Pest Management

No integrated pest-management system is in place for the Beale AFB Museum, nor does monitoring for insects or rodents occur.

Security

All exterior doors in the museum are protected from entry by a padlock, a key lock, and an intrusion alarm. Additionally, the door to the collections storage room has a key lock. Keys are held by the director, the assistant director, and the gift-shop manager.

Fire Detection and Suppression

Fire extinguishers provide the only fire-suppression measures and are located throughout the museum. No fire extinguishers are located in the collections storage area; however, one fire

extinguisher is located just outside the office door. No fire-detection system is present.

Artifact Storage

Storage Units

The Beale AFB collections are stored on the floor under a desk until a permanent storage facility can be identified.

Primary Containers

The primary container consists of one acidic, glued cardboard box with a telescoping lid. The box is labeled directly in marker.

Secondary Containers

Beale AFB collections are stored in acidic, folded paper bags. They are labeled directly in marker or pencil and have consistent label information. Additionally, every bag has a color-coded paint marking that corresponds to a code chart.

Laboratory Processing and Labeling

All of the artifacts are labeled, cleaned, and sorted. Labeling consists of color codes painted directly on the artifact. These codes correspond to the secondary container and designated grid square provenience (Figure 17).

Human Skeletal Remains

No human skeletal remains are curated by the Beale AFB Museum.

Records Storage

Approximately 1 linear inch of associated records are stored at Beale AFB. All records are stored in acidic cardboard boxes with the artifacts. Additionally, all records are contained within a single, acidic manila file folder with the contents labeled in marker. Records appear to be in good condition.

Paper Records

Paper records include a copy of a contract, original report records, and original field records.

Photographic Records

Photographic records consist of a single slide labeled in pencil. The slide is enclosed in a glassine envelope with a paper label.

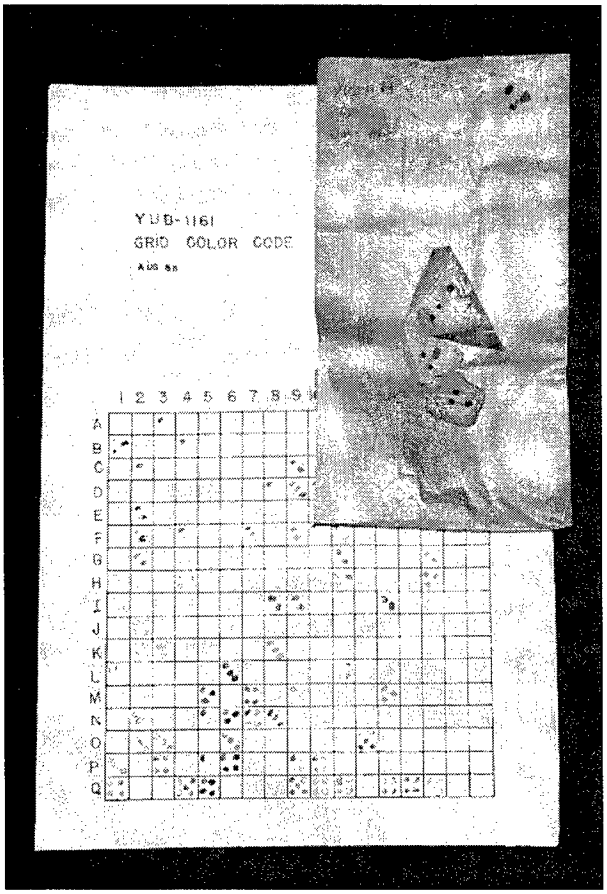

Figure 17. Artifacts and associated secondary container with grid color code for labels.

Maps and Oversized Documents

One folded, large-scale topographic map and two small-scale topographic maps are also included among the associated records.

Collections-Management Standards

In the past, collections-management standards for Beale AFB have dealt only with documentary historical materials, but shortly before the assessment, one box of archaeological materials had been delivered to the museum. The following standards (from AF Regulation 190-4), which are directed toward AF documents and records, will be applied to archaeological materials, if possible. Management standards specifically pertinent to the curation of archaeological collections, however, have not yet been developed by the museum staff.

Registration Procedures

Accession Files. All materials are accessioned upon receipt.

Location Identification. The physical location of the collections within the repository is identified in the accession file.

Cross-Indexed Files. Files are cross-indexed.

Published Guide to Collections. There is no published guide to the collections held at Beale AFB.

Site-Record Administration. There is currently no system for site record administration in place for archaeological collections held at Beale AFB.

Computerized Database Management. Currently there is no computer database-management system in place for archaeological collections.

Written Policies and Procedures

Minimum Standards for Acceptance. There are no written minimum standards for the acceptance of archaeological collections.

Curation Policy. No comprehensive written curation policy exists for archaeological collections. However, one exists for documentary material dating from World War I to the present.

Records-Management Policy. There are no written records-management policies available for archaeological collections.

Field-Curation Procedures. There are no written field-curation procedures for archaeological collections.

Loan Policy. No written loan policy exists for archaeological collections.

Deaccessioning Policy. No written deaccessioning policy exists for archaeological collections.

Inventory Policy. No inventory policy is written specifically for archaeological material; however, a written inventory policy for documentary materials is provided in AF Regulation 190-4. An inventory is required biannually after the initial inventory (within 12 months of the publication date of AF Regulation 190-4) and upon reassignment of custodial responsibility for the collection.

Latest Collection Inventory. The collection was being inventoried at the time of the assessment.

Curation Personnel

There is no full-time curator for archaeological collections at Beale AFB. Sgt. Moore serves as the director of the museum. He is responsible for the administration of the museum and overseeing the professional care of its collections. Sgt. Moore has an M.S. in aeronautical science and management operations.

Curation Financing

No funding requirements for the curation of archaeological collections had been identified at the time of the assessment.

Access to Collections

Researchers must obtain the museum director's permission to use the collection.

Future Plans

Sgt. Moore stated that Building 2471 will be demolished within five years. The disposition of the Beale AFB Museum and its collections is unknown.

Comments

1. The present location of the Beale AFB collections is unsuitable for the curation of archaeological collections.

2. The Beale AFB Museum lacks humidity control. Additionally, humidity and temperature are not monitored.

3. The museum has no pest-management system.

4. The museum lacks a proper fire-suppression system and has no fire-detection devices.

5. Artifacts and records are not stored according to standards listed in 36 CFR Part 79.

6. No human skeletal remains are curated at Beale AFB Museum.

Recommendations

1. Remove Beale AFB archaeological collections from their present location and deposit them in a building with proper fire-detection and fire-suppression devices, pest management, security, and environmental controls. Because Building 2471 is scheduled for demolition, renovations are pointless.

2. Rehabilitate all artifacts and prepare for long-term storage according to federal guidelines and standards and modern curation procedures. Specifically, all artifacts should be (a) labeled legibly with india ink, (b) repackaged in four-mil polyethylene plastic zip-lock bags, and (c) stored in acid-free boxes. Tags made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper) should be labeled in indelible ink and inserted into the plastic bags.

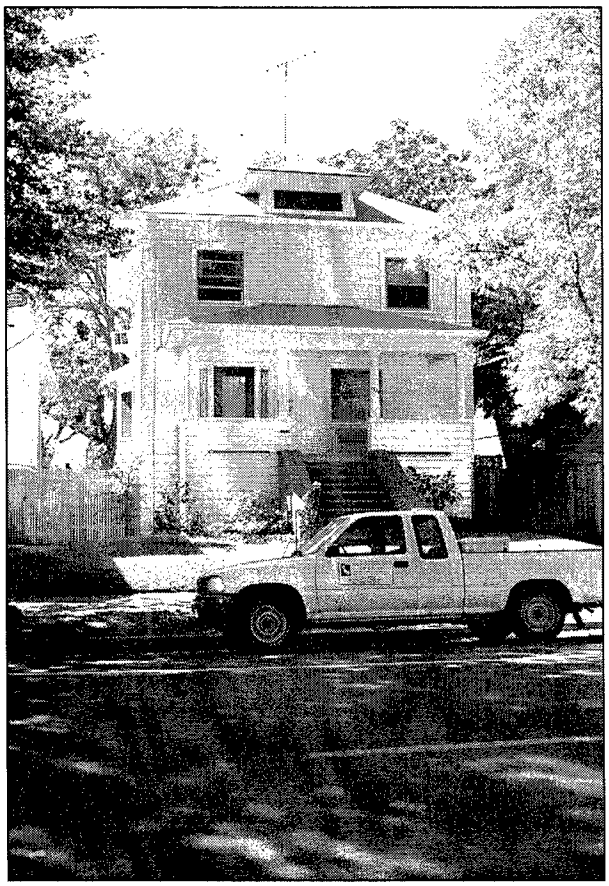

Figure 18. A two-story residence serves as offices for PAR Environmental Services.

3. Prepare all associated records for long-term storage according to federal guidelines and standards and modern archival procedures. Minimally, the following procedures should be implemented to protect and preserve these records: (a) all paper records should be duplicated on acid-free paper, stored in acid-free folders, and the duplicated copy stored in a separate, fire-safe, secure location; (b) all photographic records should be identified, duplicated, and filed in inert plastic sleeves or other approved archival storage containers, and a security copy should be made; (c) large-scale maps should be conserved, duplicated, and stored flat in an archival manner.

4. Store records in a climate-controlled, secure, fire-safe location.

5. Initiate planning for consolidating all collections from this installation into a central curation facility that can provide the professional staff, institutional commitment, and financial support necessary for the level of professional archaeological curation mandated by current federal regulations. For temporary curation, the Phoebe Apperson Hearst Museum at the University of California, Berkeley, is acceptable until a more appropriate facility is identified.

Repository 2: PAR Environmental Services

Date of Visit: September 21, 1993

Point of Contact: Mary Maniery, Contractor

Approximately 2 linear inches of documentation resulting from projects conducted on Beale AFB are stored in two buildings in the PAR Environmental Services complex. No artifacts from Beale AFB, including human skeletal remains, were found at PAR, which is located in two multistory residential buildings (2116 and 2118 T Street) in Sacramento, California (Figure 18). Because such a small amount of documentation was examined (Figure 19), it is not necessary to detail management controls employed, storage procedures followed, and structural adequacy of

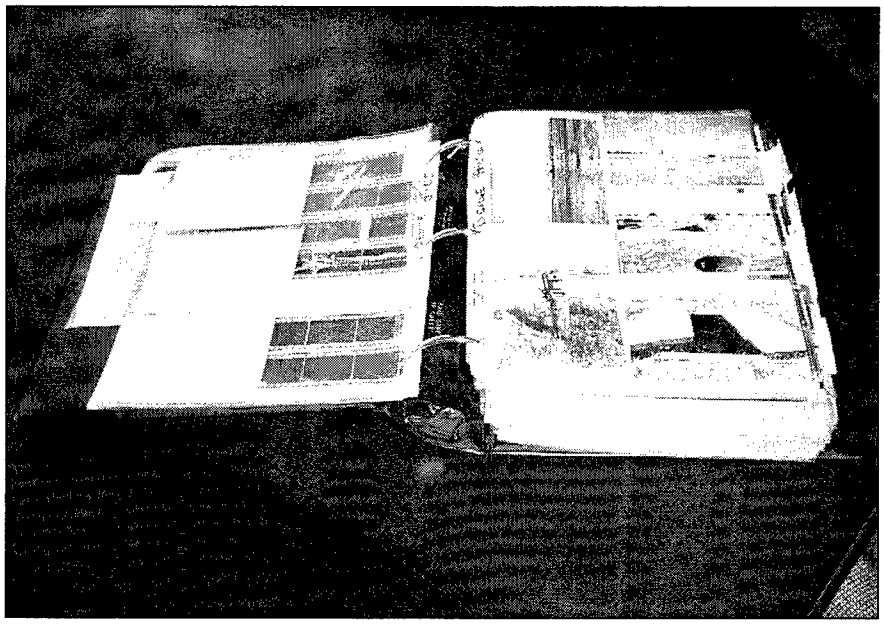

Figure 19. Photographic documentation from Beale AFB.

the buildings themselves. However, this information is on file at the St. Louis District.

Recommendations

1. Arrange the transfer of the Beale AFB collection to a more suitable repository for long-term curation. As dictated in 36 CFR Part 79, arrangements should include a formal memorandum of agreement.

2. Arrange associated documentation according to modern archival procedures, and create a finding aid for the collection.

3. Remove all contaminants (e.g., staples, paper clips, and rubber bands) from the documents.

4. Duplicate all paper records onto acid-free paper, and place in acid-free folders labeled in indelible ink. Place all folders in acid-free cardboard boxes, and apply adhesive, polyethylene plastic label holders, with acid-free inserts, to the boxes.

5. Place all photographic materials in archival-quality polypropylene sleeves, and place sleeves in acid-free, three-ring photograph binders. Photograph logs should be on acid-free paper in indelible ink.

6. Store photographic records in a stable environment equipped to monitor and control humidity and temperature.

7. Flatten oversized material and place in flat map-storage cases for long-term curation.

8. Make a duplicate copy of all associated documentation, and store these materials in a separate, fire-safe, secure location.

Findings Summary

Repositories holding Beale AFB collections and associated written and photographic documentation were visited in September 1993 by a St. Louis District assessment team. The Beale AFB Museum currently houses all identified archaeological materials from the base. The collection comprises approximately 1 ft^3 of lithic artifacts recovered from the installation and 1 linear inch of associated documentation. An additional 2 linear inches of documentation is housed by PAR Environmental in Sacramento. Arrangements to transfer this material to the museum at Beale should be made as soon as possible. Because PAR houses so little material, a full building evaluation was not warranted. At

Table 9.
Presence or Absence of Repository Infrastructure Controls at the Beale AFB Museum

Repository	Environmental Controls	Pest Management	Security	Fire Detection & Suppression	Full-Time Curator
Beale AFB Museum	minimal	none	minimal	none	none

the time of the evaluation an appropriate curation facility had not been identified; therefore, only the Beale AFB Museum is discussed below.

Infrastructure Controls

The Beale AFB Museum is located in part of Building 2471, a World War II–era structure that had been partially renovated to serve as a museum. Because the building was not originally designed as a curation facility, many of the controls necessary to meet minimum standards for curation facilities are lacking (Table 9).

All of the controls listed in Table 9 require some upgrading to meet minimum federal standards for the curation of archaeological collections. ACC would be better served to find a temporary or long-term off-base curation facility. Not only are many of the repository infrastructure controls lacking, but museum staff stated that Building 2471 is scheduled for demolition in the next few years. They were uncertain what the disposition of the museum and its collections would be.

Artifact Curation

All artifacts have been cleaned, sorted, and labeled. They are currently kept in acidic paper bags labeled in marker or pencil. All bags have then been placed in an acidic primary container that has been labeled directly in marker. The collection requires complete rehabilitation prior to long-term curation.

Records Management

A copy of the contract, the report, original field records, one oversized map, and a single slide comprise the associated documentation for the Beale AFB collection. All records have been placed in an acidic manila folder labeled in marker. The map has been creased, folded, and placed in the folder. These records are kept in the box with the artifact collection. All associated documentation requires complete rehabilitation prior to long-term curation.

Additional records were found in the offices of PAR Environmental. Records from Beale AFB include site records, oversized maps and drawings, original reports, administrative records, and black-and-white prints and negatives. These records also require complete rehabilitation. Arrangements should be made immediately to transfer these materials to Beale AFB so that all collections from the base will be in a single location.

Collections-Management Standards

Beale AFB Museum personnel maintain an accession system, a location system, and a cross-index file, but other management tools are absent. The museum does not have any system for site-record administration; curation or records-management policy; field-curation procedures; or loan, inventory or deaccessioning policy; nor is there any full-time staff devoted to the curation of archaeological materials. While the size of the collection does not warrant full-time staffing, absence of these basic management tools significantly reduces the chances for the long-term survival of the collection.

Recommendations

The following are general recommendations for bringing Beale AFB collections into compliance with the mandates of 36 CFR Part 79. All recommendations will be discussed at length in Chapters 10 and 11.

1. Develop cooperative agreements with other federal agencies and with the Phoebe Apperson Hearst Museum.

2. Inventory and rehabilitate the artifact collection currently housed at Beale AFB Museum.

3. Inventory and rehabilitate all associated records, both those housed at the museum and at PAR Environmental.

4. Dedicate space for storage of materials, and coalesce collections into a single repository.

4

Florida

Avon Park Air Force Range, Avon Park, and MacDill Air Force Base, Tampa

Installation Summary for Avon Park AFR and MacDill AFB

Volume of Artifact Collections:
- Avon Park AFR: 60 ft^3
  - On Base: 4 ft^3
  - Off Base: 56 ft^3 (JANUS Research)
- MacDill AFB: 1.5 ft^3
  - On Base: None
  - Off Base: 1.5 ft^3 (USF–Tampa)

Compliance Status: All collections require at least partial rehabilitation to comply with federal regulations governing the long-term curation of archaeological materials.

Linear Feet of Records:
- Avon Park AFR: 1.92 linear feet
  - On Base: 0.08 linear feet
  - Off Base: 1.84 linear feet (JANUS Research)
- MacDill AFB: 0.24 linear feet
  - On Base: None
  - Off Base: 0.16 linear feet (JANUS Research); 0.08 linear feet (USF–Tampa)

Compliance Status: All collections of associated documentation require complete rehabilitation to comply with federal regulations and modern archival practices.

Human Skeletal Remains: No human remains have been recovered from Avon Park AFR; however, skeletal remains from at least three individuals recovered from MacDill AFB are currently housed at the University of South Florida (USF–Tampa).

Status of Curation Funding: Little to no funding is allocated for curation at either MacDill AFB or Avon Park AFR. (For JANUS Research, and other contractors, curation usually is financed by a line-item fee in contract budgets.) MacDill AFB personnel were unaware of the collection curated at USF–Tampa, for which the USF–Tampa Department of Anthropology provides minimal funding; therefore, no curation funds had been requested from the AF. Until this evaluation, funding requirements for Avon Park AFR collections were unknown. Once these have been identified, each installation may apply to AF Environmental Compliance Program A-106 for funding to rehabilitate, stabilize, and maintain their collections.

Recommended Curation Facility: Paul Ebersbach, natural resource manager at Avon Park AFR, has made several attempts to find a repository in Florida willing to curate their collections. Unfortunately, none of the repositories he has contacted is willing or able to curate ACC collections. Until a repository can be identified, ACC has decided to curate collections at Avon Park AFR indefinitely and update the facility according to the recommendations made in this report.

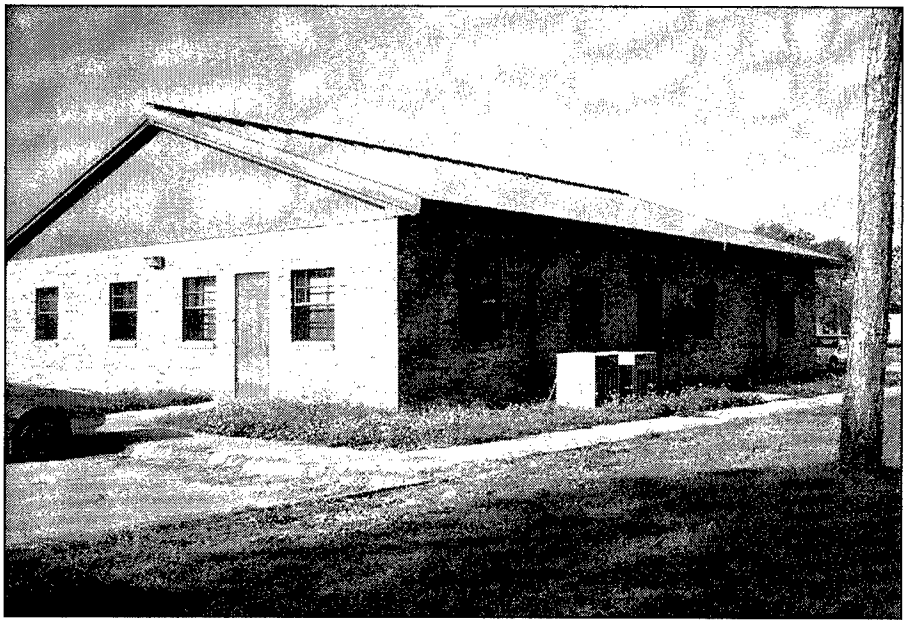

Figure 20. Exterior of Building 475. The entrance to the collections storage area is on the opposite side of the building. Note the heat pumps used for environmental control.

Repository 1: Avon Park AFR

Date of Visit: January 11, 1995

Points of Contact: Paul Ebersbach and Kurt Olsen, Natural Resource Managers

Four boxes of artifacts (4 ft^3) and a five-page catalog (0.08 linear feet) from Avon Park AFR are currently curated in the Environmental Flight Annex (Building 475). The collection consists primarily of historical-period materials, with a few artifacts from prehistoric contexts. Of the total, prehistoric material classes include lithics (13.75%), ceramics (6.25%), faunal remains (0.25%), and shell (1.25%), whereas historical-period material classes include ceramics (20%), metal (25%), glass (18.5%), and brick (15%).

Prior to the evaluation, Mr. Ebersbach contacted several repositories in Florida in an attempt to find a long-term curation facility for the Avon Park collections. None of those contacted, however, could curate the collections. Therefore, ACC HQ decided that Avon Park should curate their own collections until an appropriate repository was identified. With this fact in mind, the St. Louis District assessment team evaluated the Environmental Flight Annex (Building 475), and noted measures that would be required for the facility to meet the minimum federal standards for curation facilities.

The Environmental Flight Annex consists predominantly of offices and storage rooms. The room that currently houses the collection, and will house future collections, was once a testing room but has been converted to storage space. Utilities and facilities located in the building include electricity, plumbing, heating, air conditioning, telephones, and rest rooms.

Assessment

Structural Adequacy

Building 475 was originally constructed in 1987 as office space for the housing, billeting, and recreation services on Avon Park AFR. The 2,436-ft^2, single-story structure has brick and aluminum-siding walls erected on a poured-concrete foundation (Figure 20). The roof, also erected in 1987, is constructed of corrugated metal. No signs of leaks or cracks in the foundation were noted by the assessment team, but some of the acoustical tiles in the collections area had been damaged by water from leaks in the roof that have since been repaired. Both

air-conditioning and heating systems are electric, and the systems are central, not zoned. Heating, plumbing, and electrical systems are original to the building.

Few interior renovations have been implemented. Interior walls are constructed of concrete blocks, and in some rooms, plasterboard. The floors are concrete, and the ceiling is constructed of suspended acoustical tiles. Fourteen windows are installed in the building: two on the north wall and four on each of the other three walls. Windows are framed with aluminum, shaded with vertical blinds, and each measure 4 x 4 feet. The assessment team noted no overhead pipes. Building 475 is considered structurally sound.

Environmental Controls

A central HVAC system is installed in Building 475, with no individual zones for different environmental conditions. Both humidity and temperature can be controlled, but neither is monitored. Humidity and temperature are maintained at levels comfortable to the staff. Lighting is installed in the acoustical ceiling tiles and consists of fluorescent tubes without UV filters. Dust filters are not installed in the collections storage area, and considerable dust has accumulated there. Cleaning in the collections storage room is the responsibility of the Environmental Flight.

Pest Management

No integrated pest-management plan encompassing both monitoring and control is in place. The assessment team noted spiderwebs in the windows, and silverfish were found in the primary containers. If Environmental Flight staff detect signs of pest infestation, however, they may call an entomologist to address the problem.

Security

Security measures are located on all doors, both interior and exterior, and windows. Two windows are located in the collections storage room. Both are accessible from the outside and equipped with basic, slide-type window locks. The entrance to the collections storage area, located on the north wall, consists of a set of double metal doors equipped with double-cylinder, dead-bolt locks. These doors lock automatically when they close. Two metal panel doors that lead to other parts of the building are located in the collections storage area. Both are equipped with key locks. Access to both the collections storage area and the range property itself is limited. A state corrections guard is stationed at the entrance to the range during normal business hours. Volunteers staff the guard shack during the weekends. A state prison is located at Avon Park AFR, and only authorized personnel are allowed on the property. Staff indicated that no episodes of unauthorized entry had occurred in the past.

Fire Detection and Suppression

Fire-safety measures in the collections storage area are insufficient. The area is equipped with heat sensors and fire alarms wired into the local fire department, but the fire-suppression system consists solely of a halon fire extinguisher that had no inspection tag. Should a fire break out in the collections storage area, very little could be done to control it.

Artifact Storage

Storage Units

The collection currently housed at Avon Park AFR is stored in a metal storage cabinet that measures 18 x 18 x 78 inches (w x d x h) (Figure 21). The cabinet is secured with a hasp and padlock. The boxes are stored on top of one another in the cabinet. Next to the cabinet is a series of shelves that hold jars containing various biological specimens in solution. The room itself is cluttered with old exhibits and several boxes stored there by Environmental Flight personnel. Shelves are available, but some rearranging will be necessary as other collections are moved into the collections storage area (Figure 22).

Primary Containers

Primary containers consist of four boxes constructed of glued acidic cardboard with folded flap lids. Tape has been used to secure and reinforce the bottoms of the boxes, which measure 12.5 x 12 x 12 inches (l x w x h; approximately 1 ft^3 each). Because of the way the boxes are stored, some have begun to show compression

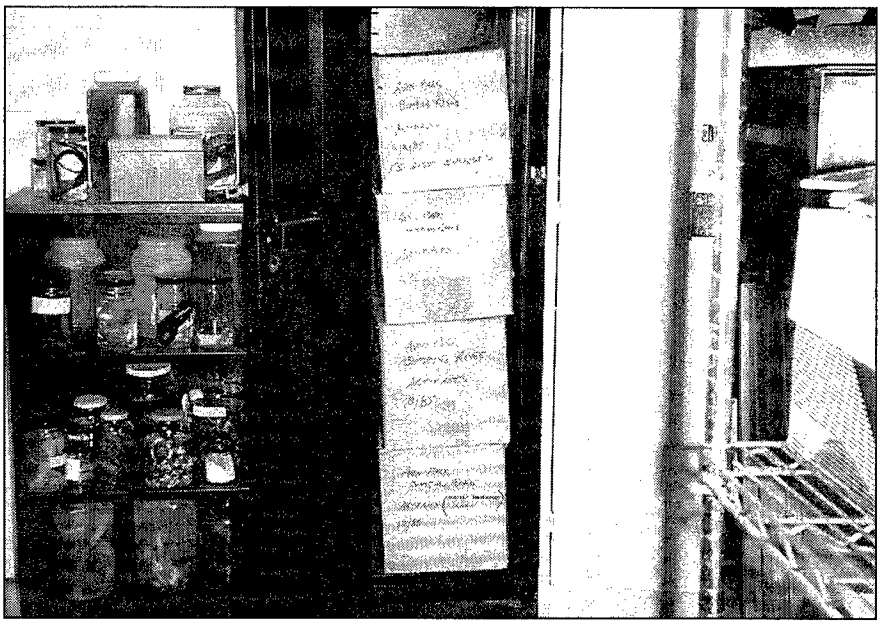

Figure 21. The Avon Park AFR collection is stored in metal cabinets next to biological specimens. Note the damage to primary containers due to stacking.

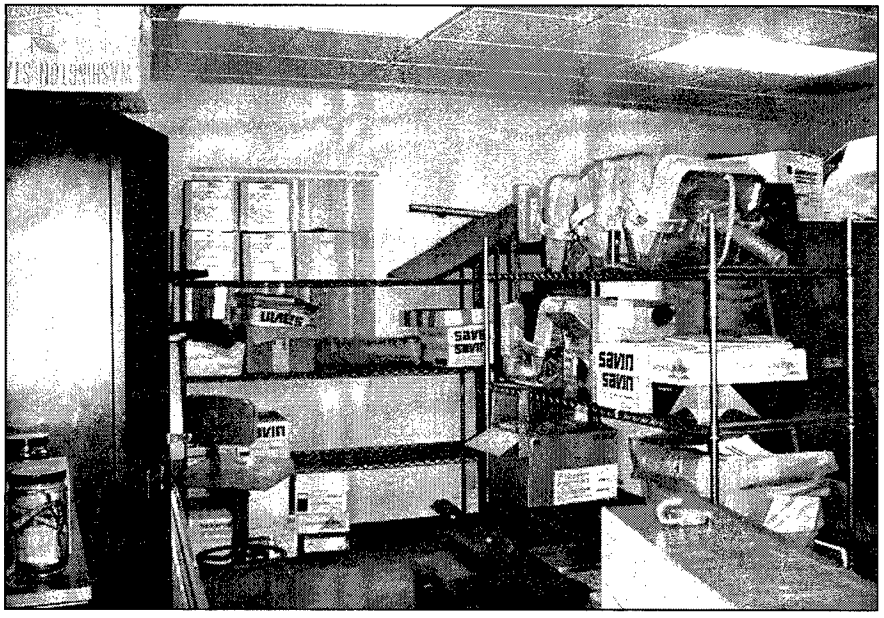

Figure 22. Collection storage area in the Environmental Flight Annex.

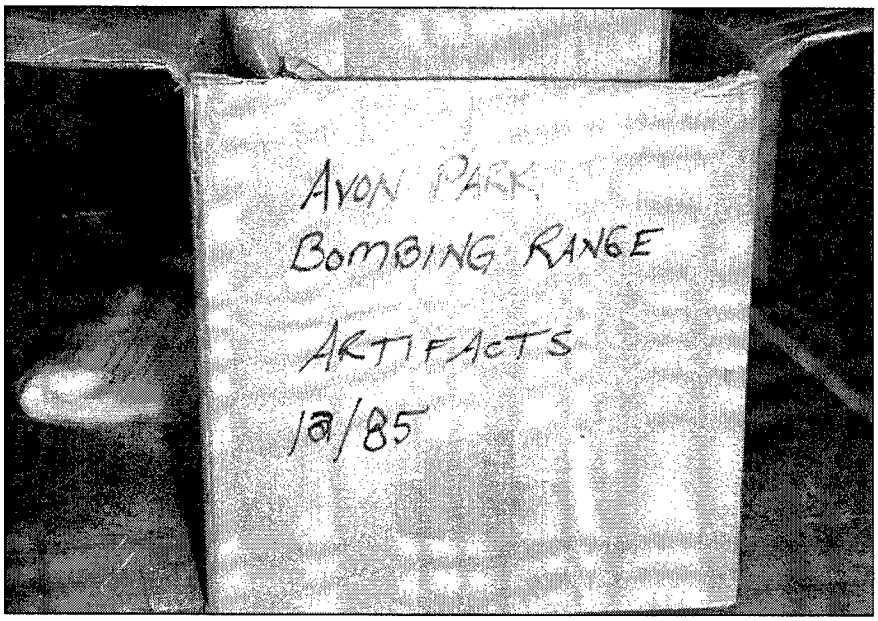

Figure 23. Damaged primary container. Note the direct labeling in marker.

damage. Each box is labeled directly in marker on the exterior with the following information: "Avon Park Bombing Range Artifacts, 12/85" (Figure 23). Two of the boxes have additional information recorded on them. Labels are legible and consistent. All boxes are covered with dust, and two boxes contained evidence of silverfish infestation.

Secondary Containers

Material remains are packed in three ways—in paper bags, loose in the box, and in polyvinyl chloride (PVC) bags (Table 10). Seventy-five percent (75%) of the artifacts are housed in PVC bags that have been secured with twist ties. PVC bags outgas and are an unacceptable storage medium. Paper bags are open and unsecured. All bags, both paper and PVC, are labeled on the exterior with black marker. Labels, consisting of provenience information, are consistent and legible. Paper bags show tears, but PVC bags show no significant damage (Figure 24).

Table 10.
Secondary Containers Used in the Avon Park AFR Collection at Avon Park AFR, by Box

Box Number	Paper (%)	PVC (%)	Loose (%)
1	25	70	5
2	10	90	—
3	10	90	—
4	50	50	—

Laboratory Processing and Labeling

None of the artifacts have been cleaned, directly labeled, or sorted by material class. All artifacts are sorted by provenience only. The lack of direct labels is a potential problem, particularly those housed in unsecured paper bags. If these artifacts fall out of the bags, there is no way to identify their provenience.

Human Skeletal Remains

No human skeletal remains are curated at Avon Park AFR.

Records Storage

Associated documentation for this collection consists of an artifact inventory that was placed in the first box of artifacts (see Figure 24).

Paper Records

A five-page artifact inventory has been folded and stored in Box 1 with the artifacts. The paper is of acidic stock and has suffered from some type of insect infestation. The last page is

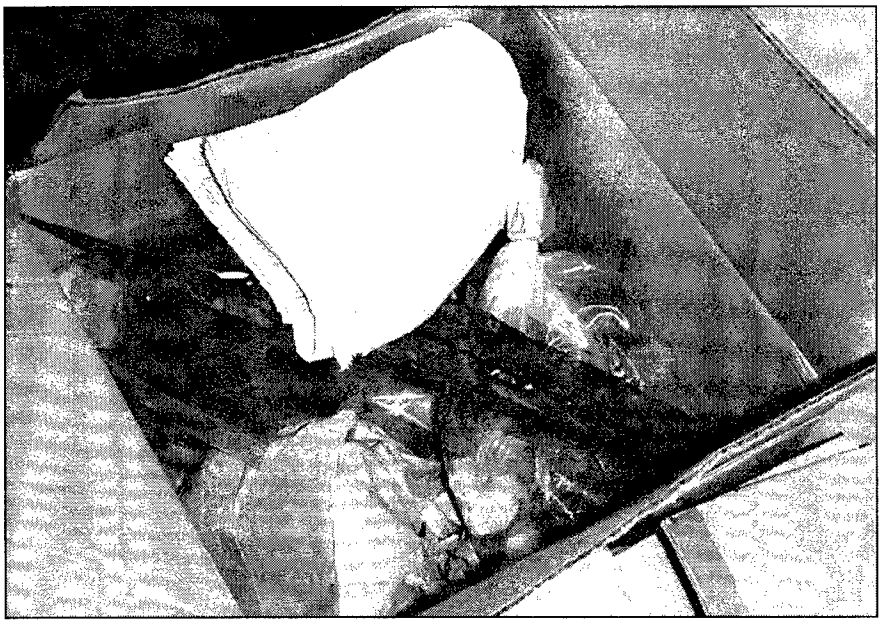

Figure 24. A variety of secondary containers packed together with the box inventory.

virtually illegible because of holes chewed into the paper (Figure 25). If this problem is not rectified immediately, the information will be lost.

Collections-Management Standards

Avon Park AFR has not established any collections-management standards, nor do they have any written policies and procedures. Mr. Ebersbach tried to find a suitable repository to curate the material but was unsuccessful. Because of these circumstances, he will curate the collection, and a more recent collection, in Building 475. In order to properly curate the collections from Avon Park AFR, the staff must develop appropriate collections-management tools such as accession files, location information, a system of site-record administration, a curation policy, a deaccessioning policy, a loan policy, and an inventory policy.

Comments

1. Building 475 is structurally sound.

2. No standard pest-management system has been implemented in the building.

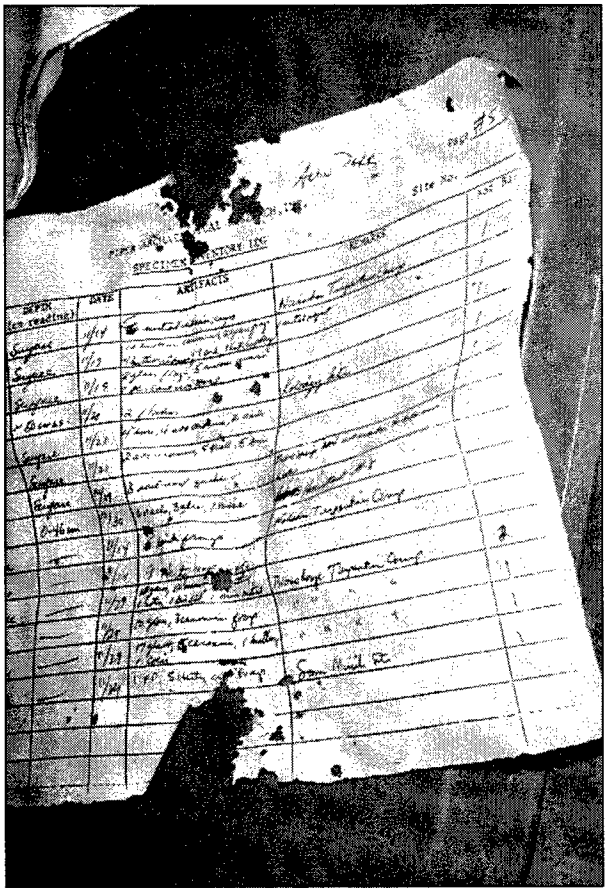

Figure 25. Box-inventory page rendered virtually unintelligible by insect damage.

3. Intrusion detection and deterrent measures for the facility do not meet the guidelines established in 36 CFR Part 79.

4. Adequate and appropriate fire-suppression devices are lacking.

5. All artifacts are housed in acidic cardboard boxes; secondary containers consist of acidic paper bags and PVC plastic bags.

6. Label information on primary and secondary containers is consistent.

7. None of the artifacts have been labeled directly in india ink.

8. Collections-management tools are not in use at Avon Park AFR.

9. Storage of associated documentation does not meet modern archival standards.

10. Lighting in the collections storage area does not have UV sleeves.

11. Temperature and humidity are not monitored, and neither can be controlled in the collections storage area.

12. Storage units are inappropriate for the long-term curation of archaeological collections.

13. Dust is ubiquitous throughout the collections storage area.

14. There is evidence of spider and silverfish infestation in the primary containers and the collections storage area.

Recommendations

1. Implement a professional pest-management system for the facility. Address the current spider and silverfish infestations.

2. Install smoke detectors and an overhead sprinkler system in the collections storage area.

3. Clean the collections storage area, remove the clutter, and maintain the cleanliness of the facility.

4. Monitor the humidity and temperature. Install a zoned HVAC system and a permanent or portable humidifier/dehumidifier in the collections storage area.

5. Place UV filters on fluorescent lights in the collections storage area.

6. Label all artifacts with india ink to prevent information loss if artifacts are separated from provenience data.

7. Replace secondary containers with four-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Labels for secondary containers should be made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), labeled in indelible ink, and inserted into the secondary containers.

8. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box contents change, inserts should be replaced. This method reduces the chance of conflicting and confusing information.

9. Place primary containers on baked-enamel, metal shelving units.

10. Develop and implement, minimally, the following policies and procedures: accessioning and deaccessioning policies, loan policy, inventory policy, a system of site-record administration, a curation policy, and a records-management policy.

11. Make two copies of the artifact inventory on acid-free paper. Store one copy off-site in a separate, fire-safe, secure location. Accession the second copy, place it in an acid-free folder labeled directly in indelible ink, and place in an acid-free primary container.

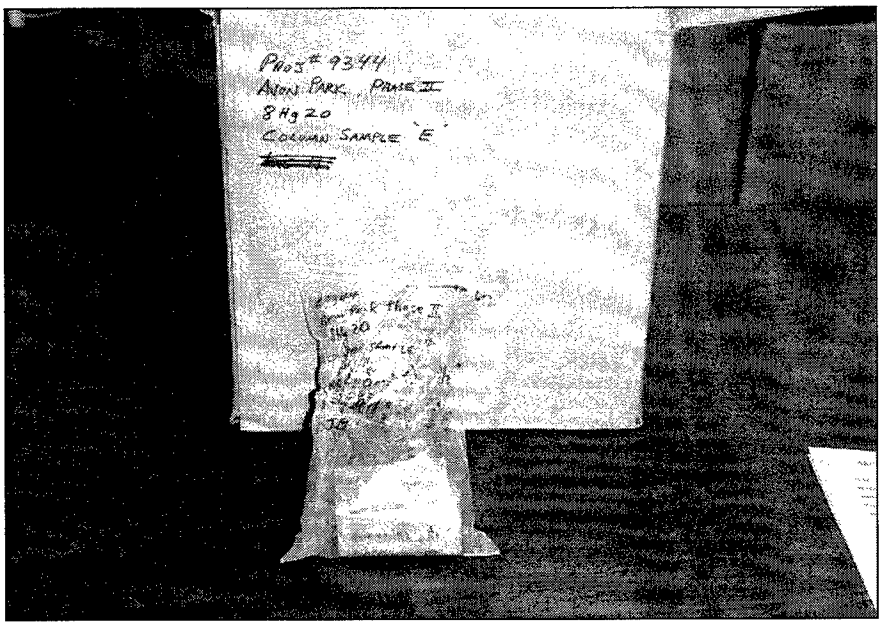

Figure 26. Two boxes are stored in the laboratory at JANUS Research. Primary and secondary containers are labeled directly in marker.

12. Hire a full-time curator, at least until the collections storage facility is upgraded and all collections are stabilized properly.

Repository 2: JANUS Research

Date of Visit: January 12, 1995

Point of Contact: Bob Austin, Archaeologist

JANUS Research completed an archaeological investigation on Avon Park AFR in late 1994. A total of 56 ft^3 of artifacts and 1.84 linear feet of associated documentation resulted from this work and is being stored by JANUS Research until the report is finalized. The collection consists of both prehistoric and historical-period items. Several material classes are present, but unanalyzed soil samples dominate the collection.

Because JANUS is not keeping the collection beyond the completion of the report, a repository evaluation was not performed. Additionally, JANUS has associated documentation from a survey conducted at MacDill AFB and an earlier survey at Avon Park. These records are also discussed below.

Assessment

Artifact Storage

Storage Units

Two boxes of materials from the most recent work conducted by JANUS Research at Avon Park AFR are stored in the processing laboratory in their office space (Figure 26). The remaining 54 boxes are stored on plastic stackable shelves in a rented storage unit located across town (Figure 27). The complete unit measures 36 x 24 x 71 inches (w x d x h). In the processing laboratory, the boxes are stored on a table.

Primary Containers

All primary containers are constructed of glued, acidic cardboard with folded-flap lids. Each box measures 12.5 x 12 x 12 inches (l x w x h; approximately 1 ft^3 each). Approximately 25 percent of the boxes have been damaged by overstacking. Some boxes have been taped on the top and bottom to provide extra strength and security to the box. All primary containers are labeled directly in marker. Labels consist of the JANUS-assigned project number and provenience information. Some also have catalog numbers written on the exterior of the box. Label information is legible and consistent.

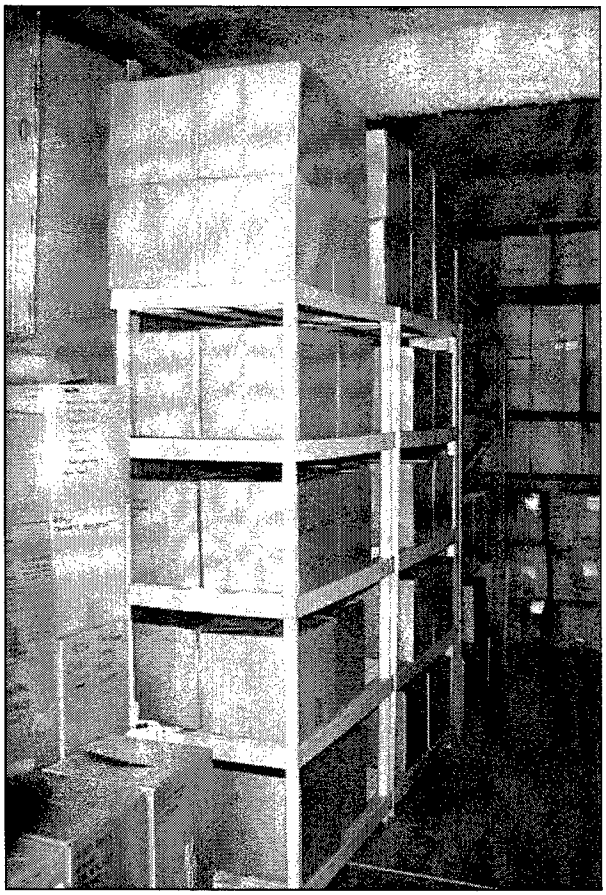

Figure 27. The bulk of the Avon Park AFR collection (54 boxes) is stored on plastic sectional shelves in a rented storage space.

Secondary Containers

Thirty-seven of the primary containers contain exclusively unanalyzed soil samples, which are in plastic garbage bags that have been tied shut with a piece of survey tape. Provenience information is written directly on the survey tape in indelible marker. In the remaining boxes, other material classes are packaged in two-mil-thick, polyethylene plastic zip-lock bags. These secondary containers are labeled on the exterior of the bag, recorded directly in marker. Paper label inserts are absent. Provenience data recorded on the secondary containers is legible and consistent (Figure 28).

Laboratory Processing and Labeling

At the time of the evaluation, the collection had not been processed. None of the materials have been cleaned or labeled directly in india ink. All materials have been sorted by material class and provenience.

Human Skeletal Remains

No human skeletal remains recovered from either Avon Park AFR or MacDill AFB are curated at JANUS Research.

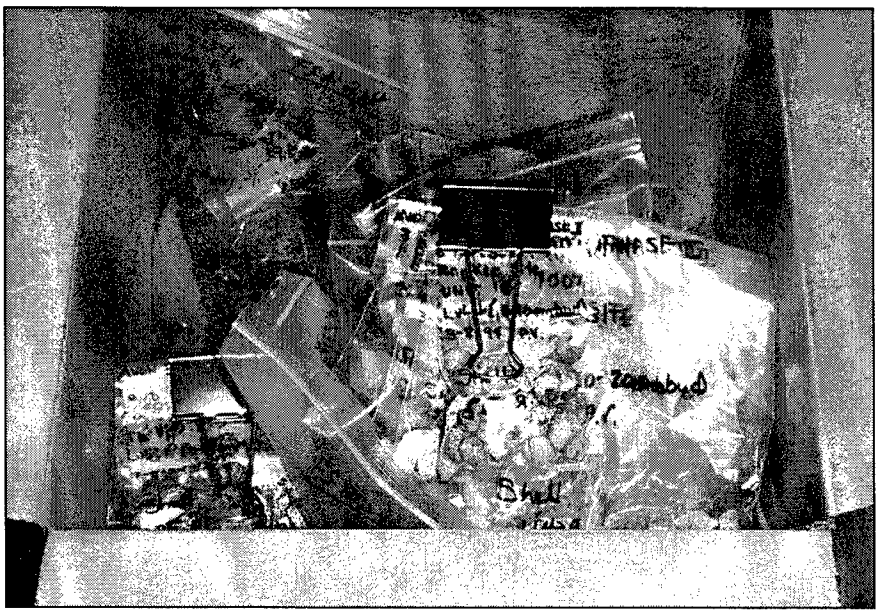

Figure 28. Two-mil, zip-lock bags are used to store materials from Avon Park AFR. Bags are labeled directly in marker; interior labels are absent.

Records Storage

JANUS Research currently houses three collections of associated documentation—one from MacDill AFB and two from Avon Park AFR. No artifacts were recovered in the survey conducted at MacDill AFB. One collection of artifacts from Avon Park AFR is already curated at the range (see above), and the other documentation resulted from the current project at the range. Associated documentation from the two previous surveys has been retired and is stored in acidic, "business archives" boxes that are located in the same rented storage space as the artifacts (Figure 29). Documentation from the current survey is located in Bob Austin's office, where it will remain for reference use until the report has been completed.

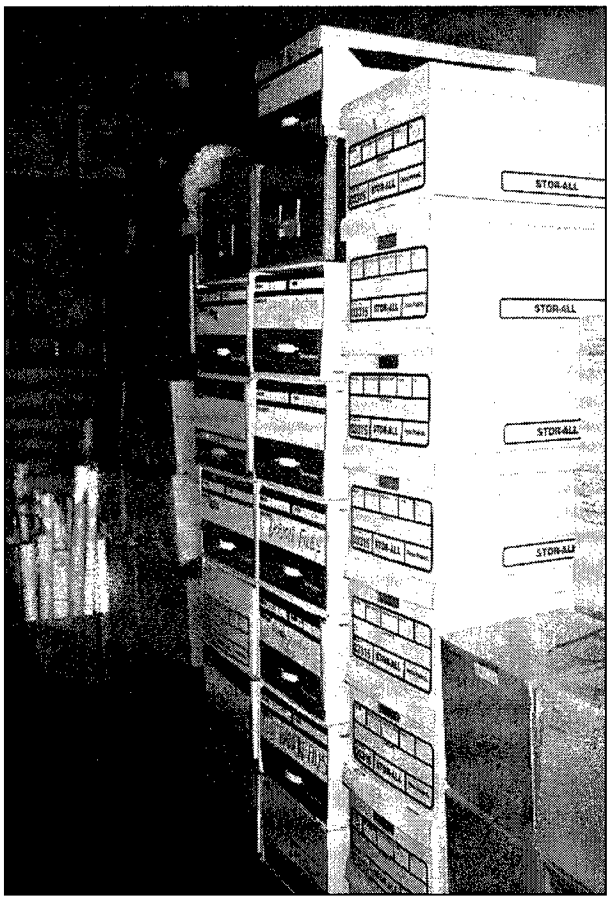

Figure 29. Retired records are stored in a rented storage space along with bulk collections.

Paper Records

Avon Park AFR, 1994 Survey. Documentation from the current survey on Avon Park encompasses approximately 15 linear inches of material. Types of paper documentation include administrative records (5%), background records (4%), field records (53%), analysis records (10%), photographic records (23%), and oversized materials (5%). All material is housed in one of two ways—either in three-ring notebooks or in manila folders that have been placed in acidic, legal-size, accordion-type folders. Most manila folders are labeled directly in a variety of media—pencil, pen, and marker. A few labels are typewritten on nonarchival adhesive labels. All paper and folders are of acidic stock and contain contaminants such as staples and paper clips (Figure 30).

Avon Park AFR, 1983 and 1985 Surveys. Approximately 9 linear inches from a previous survey at Avon Park are stored at JANUS Research in their retired project files. Types of documentation in this collection include administrative records (42%), background materials (16%), field records (26%), and report drafts (16%). All documentation is on acidic paper stock and is stored in acidic manila folders that have been placed in acidic, legal-size, accordion-type folders. Manila folders are predominantly labeled with nonarchival adhesive labels that have been filled out in a variety of media—pen, pencil, marker, and by typewriter. A few maps are included in one of the folders.

MacDill AFB Survey. In 1983 JANUS Research conducted a survey for MacDill AFB on the area where the golf course was constructed. No collections were made, but approximately 2 linear inches of associated documentation were generated. Documentation types in the collection include administrative records (20%), background materials (7%), photographic records (6.5%), oversized materials (6.5%), field records (40%), and report drafts (20%). Materials are packaged the same way as the Avon Park AFR documentation collections described above.

Photographic Records

Avon Park AFR, 1994 Survey. Photographic records in this collection include black-and-white prints, negatives, and contact sheets. Both

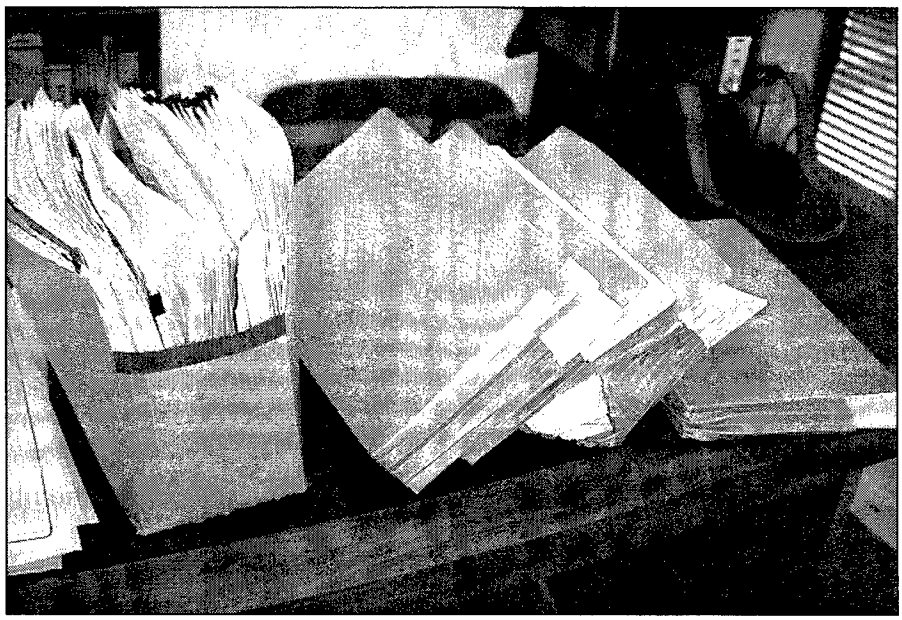

Figure 30. Avon Park AFR associated documentation held by JANUS Research.

35-mm and 120-mm negatives have been placed in nonarchival sleeves that are labeled directly in pen with roll and project numbers. Photograph logs have been typed or handwritten on acidic paper and interleaved with the photographic documentation. A few 120-mm negative strips have been placed in archival sleeves and labeled. Prints are labeled directly in indelible ink with the roll number and the project number. Contact sheets have been labeled directly in pen on the front of the page. Several contact sheets have been placed in a single archival sleeve. Labels on all photographic materials are consistent, but minimal information is recorded. All photographic documentation has been placed in a single acidic manila folder and is stored with the remaining documentation in accordion files.

Avon Park AFR, 1983 and 1985 Surveys. This collection does not include any photographic records.

MacDill AFB Survey. This collection contains 3.5-x-5-inch, black-and-white prints and 35-mm negatives. All are in nonarchival sleeves, and none of the material has been labeled. Photographic materials have been placed in an acidic manila folder and stored with the remaining documentation in accordion files.

Maps and Oversized Documents

Avon Park AFR, 1994 Survey. Oversized maps have been folded, creased, and stored in manila folders that have then been placed with the rest of the documentation. Other oversized materials include camera-ready, blue-line pages for the report. These have been placed in acidic manila folders also, but they are much too large and do not fit in the folders. Camera-ready pages have not been placed in the accordion files (Figure 31).

Avon Park AFR, 1983 and 1985 Surveys. Oversized maps have been folded, creased, and stored in manila folders that have then been placed with the rest of the documentation in accordion files. All elements of the collection are stored with the retired files.

MacDill AFB Survey. Oversized maps are folded, creased, and stored in manila folders. These folders have been placed in accordion files and stored with the rest of the retired files.

Reports

Avon Park AFR, 1994 Survey. The report for this survey had not been completed at the time of the assessment.

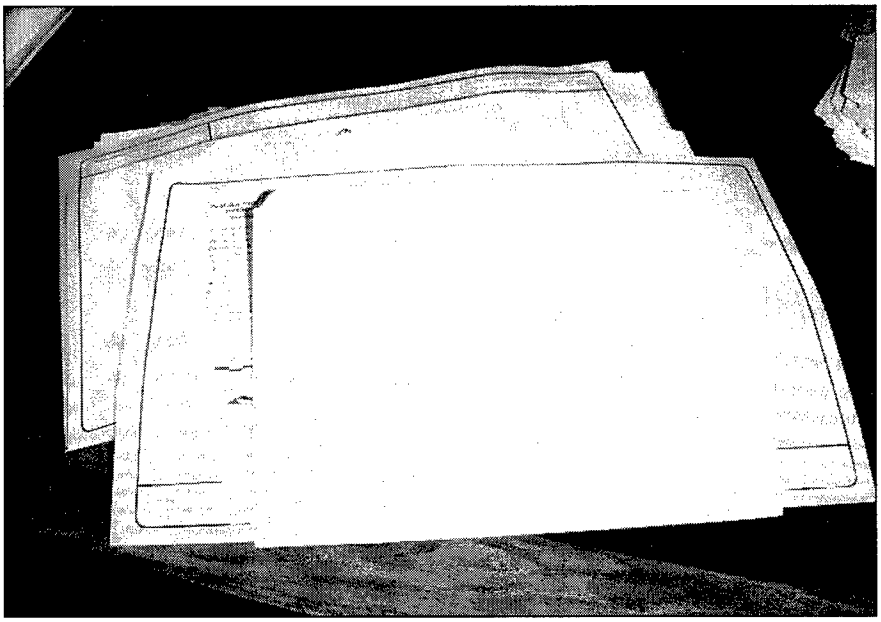

Figure 31. Camera-ready report pages are stored improperly in manila file folders.

Avon Park AFR, 1983 and 1985 Surveys. Copies of the 1985 draft report are kept in a manila folder that is in an accordion file. The final report was delivered to Avon Park AFR personnel.

MacDill AFB Survey. Copies of the draft report are housed with the rest of the documentation from this collection. A final copy of this report was delivered to the Florida state site files and to MacDill AFB personnel.

Collections-Management Standards

Because JANUS research will transfer the collection to Avon Park AFR upon completion of the project, a full evaluation of JANUS Research was not conducted.

Comments

1. JANUS Research will transfer the collection to Avon Park AFR upon completion of the project. Avon Park AFR staff will then be responsible for the long-term curation of the collection.

Recommendations

1. Ensure that all zip-lock bags are of four-mil thickness and are labeled directly in indelible ink.

2. Ensure that all artifacts are cleaned and labeled directly, when appropriate, in india ink.

3. Place all secondary containers in acid-free primary containers.

4. Make acid-free paper inserts for the secondary containers and label them in indelible ink.

5. Copy all associated documentation onto acid-free paper, and store in acid-free folders labeled directly in indelible ink. All records should be archivally processed and stored in acid-free primary containers, and a finding aid for the collection created.

6. Make duplicate copies of all associated documentation, and store them in a separate, fire-safe, secure location.

7. Transfer both copies of associated documentation to either Avon Park AFR or MacDill AFB, wherever the work was conducted.

8. Place all photographic materials in archival-quality polypropylene sleeves, and place sleeves in acid-free, three-ring photograph binders. Photograph logs should be on acid-free paper in indelible ink.

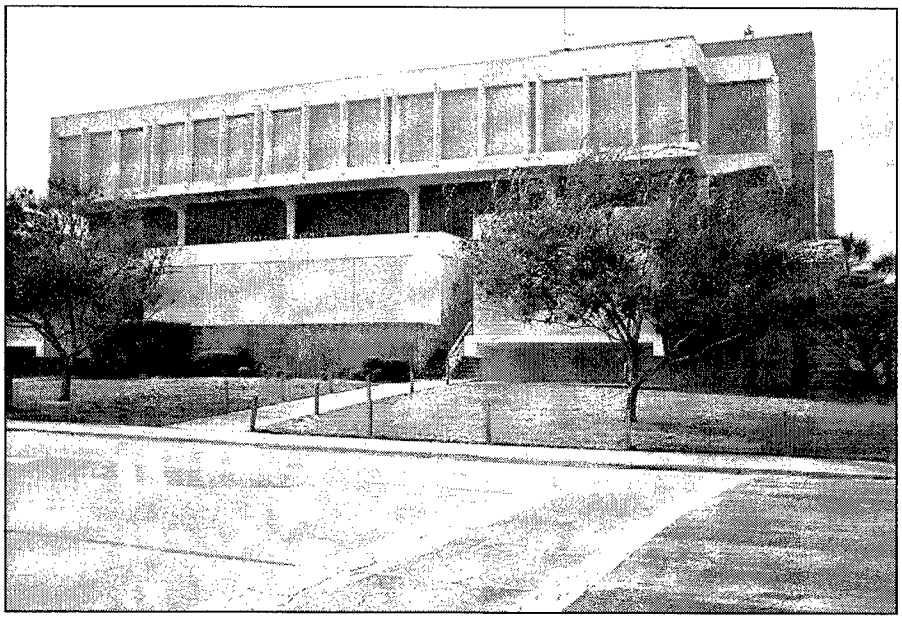

Figure 32. Social Sciences Building on the USF–Tampa campus.

9. Store photographic records in a stable environment equipped to monitor and control humidity and temperature.

10. Flatten oversized material and place in map-storage cases for long-term curation.

Repository 3: USF–Tampa

Date of Visit: January 13, 1995

Point of Contact: Nancy White, Professor of Anthropology

A single box of artifacts (approximately 1.5 ft^3) recovered from MacDill AFB between 1952 and 1965 is curated at the USF–Tampa. Associated documentation is incomplete and does not indicate the exact date of recovery. All archaeological materials are from prehistoric contexts, and the collection consists predominantly of human skeletal remains. Material classes include human skeletal remains (85%), lithics (5%), faunal remains (5%), and shell (5%).

The Department of Anthropology is located in the Social Sciences Building on the campus of USF–Tampa. The building is a large structure built as a series of classrooms, offices, and laboratories. In addition, the structure contains mechanical/tool rooms; an artifact-holding, -washing, and -processing laboratory; an artifact conservation laboratory; a records storage and study room; a storage area for hazardous materials; an exhibit area; and a small room with two refrigerators and one freezer for scientific specimens. Functioning utilities and facilities in the building include heating, air-conditioning, running water, rest rooms, electricity, telephone, and humidity-control units. The MacDill AFB collection is housed in one of the Department of Anthropology laboratories.

Assessment

Structural Adequacy

The Social Sciences Building is a concrete and brick structure that is approximately 35 years old (Figure 32). The roof is flat, and Dr. White did not know either the construction materials or age. Staff reported no leaks in the roof or foundation, and the assessment team noted no signs of cracks in either. Dr. White was unaware of the total area of the building, but the building has four floors above grade and one below.

Several interior renovations have occurred since the building was originally constructed. Most walls are constructed of concrete blocks,

and the ceiling is made of suspended acoustical tiles. The building contains several windows, but none are located on the first floor, nor are any considered accessible from the exterior of the building. Window frames are constructed of steel, and some have been replaced since their original installation. The Social Sciences Building is considered structurally sound.

Environmental Controls

An HVAC unit is installed in the building. Both heating and air-conditioning are zoned, but the master controls for the building target the temperature between 68 and 70°F. Humidity is controlled through the master controls and is maintained at levels comfortable for the staff and students in the building. Heat is supplied by a zoned, forced-air system, but the air-conditioning is centralized. Dust filters are installed on the environmental systems. The assessment team noted no signs of excessive dust or dirt in the building. University janitorial staff clean the offices, labs, and classrooms every other day. Physical facilities staff are responsible for maintaining the HVAC system. The collections storage room is lighted by overhead fluorescent lights with UV filters.

Pest Management

An integrated pest-management plan, consisting of both monitoring and control measures, is in place and maintained by university personnel. The university has contracted this task to a professional pest-management company that regularly sprays the facility and performs spot checks for infestation. No signs of pest infestation were noted by the assessment team.

Security

Security measures installed in the Social Sciences Building meet approximately half of the minimum federal standards for safeguarding archaeological collections. Dead-bolt locks are located on all exterior doors, and key locks are located on all interior doors. Basic slide locks are installed on all windows, and there are no windows located on the first floor of the building. Access to the collections storage area is limited to the staff of the Department of Anthropology and select USF–Tampa personnel. There is considerable market value associated with the archaeological collections, and special artifacts and type collections are stored in locking cabinets located in the conservation laboratory. Dr. White stated that there had been instances of theft in the building (of computers and office equipment), but none had occurred in the collections storage areas. Campus police regularly patrol the campus grounds.

Fire Detection and Suppression

The Social Sciences Building is equipped only with manual fire alarms and fire extinguishers located throughout the building. No other detection or suppression measures are installed in the building. All fire extinguishers are inspected annually by university personnel. Fire doors are installed throughout the building, and the concrete walls also serve as a fire retardant. These measures, however, are insufficient for the safeguarding of archaeological collections from fire.

Artifact Storage

The collections are stored in the conservation laboratory, which measures 28.5 x 23 feet. A smaller room is located to the side of the laboratory. The staff refer to this room as the "fumigation room." This room is used for storage of expensive equipment such as cameras. Both rooms are free from clutter, and Dr. White mentioned that asbestos had recently been removed from the entire building. No windows are present in the collections storage area, but it does contain four metal-panel doors. All doors have a small glass window that has been reinforced with wire. The collections storage room has reached 100 percent capacity.

Storage Units

Two types of units are used to store collections. Along one wall there are several locking, wooden cabinets stacked two high (Figure 33). Along the opposite wall are homemade wooden shelves. Each shelf measures 47 x 19.5 x 15 inches (w x d x h). Seven shelves are stacked to create a rack. The wall is covered by five racks of wooden shelving units (Figure 34). The

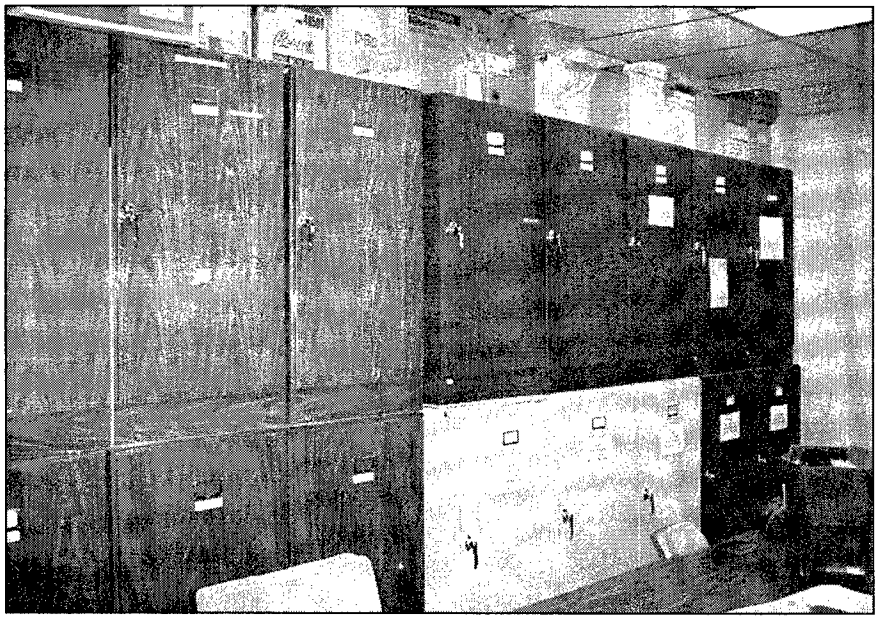

Figure 33. Type and special collections are stored in locking wooden cabinets.

MacDill AFB collection is stored on one of these shelves. Additional cabinets are located along a third wall, and the fourth wall is occupied by a large sink for artifact washing.

Primary Containers

The primary container housing the MacDill AFB collection is an acidic, Xerox paper box measuring 17.5 x 12 x 9 inches (l x w x h). The box is made of folded and glued cardboard with a telescoping lid of similar construction. The box is suffering from minor compression damage and some tears. Label information is recorded on an adhesive label in black marker. Information recorded is: "Box 13, Human Remains and Assoc. Artifacts." The site number is recorded directly on the box in black marker. No other information is recorded.

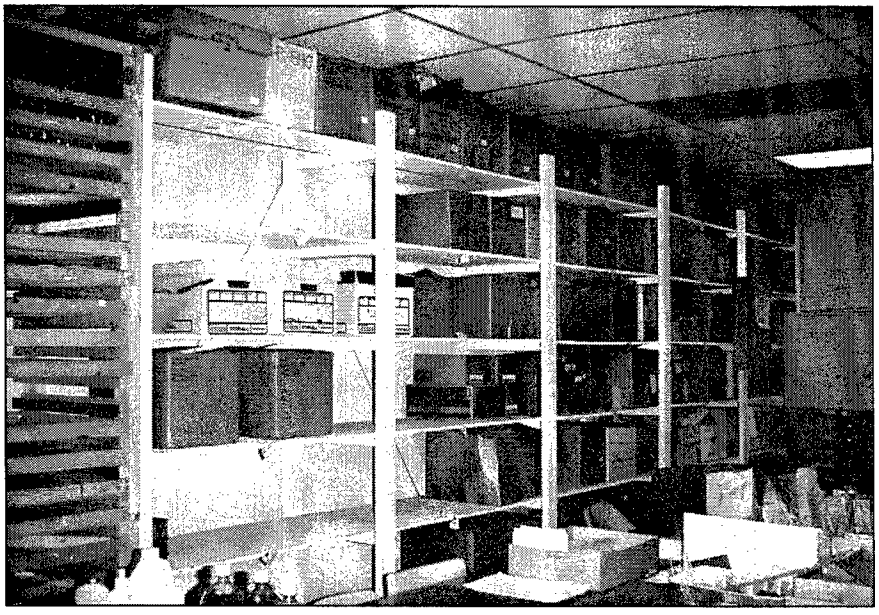

Figure 34. Bulk collections are stored on homemade wooden shelves.

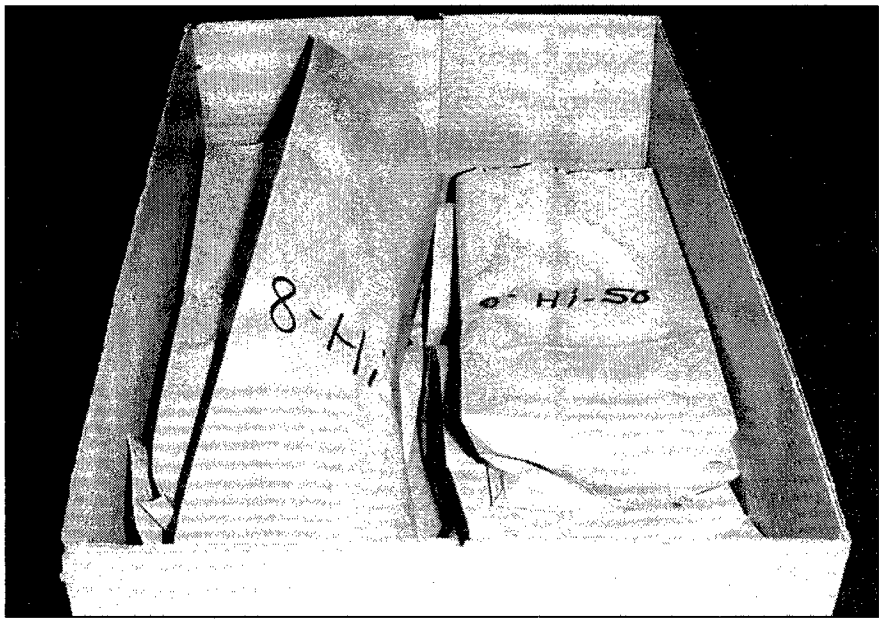

Figure 35. Acidic paper bags, labeled directly in marker, are used as secondary containers.

Secondary Containers

All secondary containers are acidic paper bags that have been labeled directly in black marker (Figure 35). Label information consists of the site number; a few bags have additional provenience information recorded. Bag security is provided by folding the tops of the bags. A few bags contain small acidic cardboard boxes that hold the artifacts (Figure 36). Lithic materials are stored in a separate bag and labeled with the site number unit. Projectile points from this collection are housed in a small cardboard box that has been placed in an acidic paper bag. All lithics were being displayed at the time of the assessment.

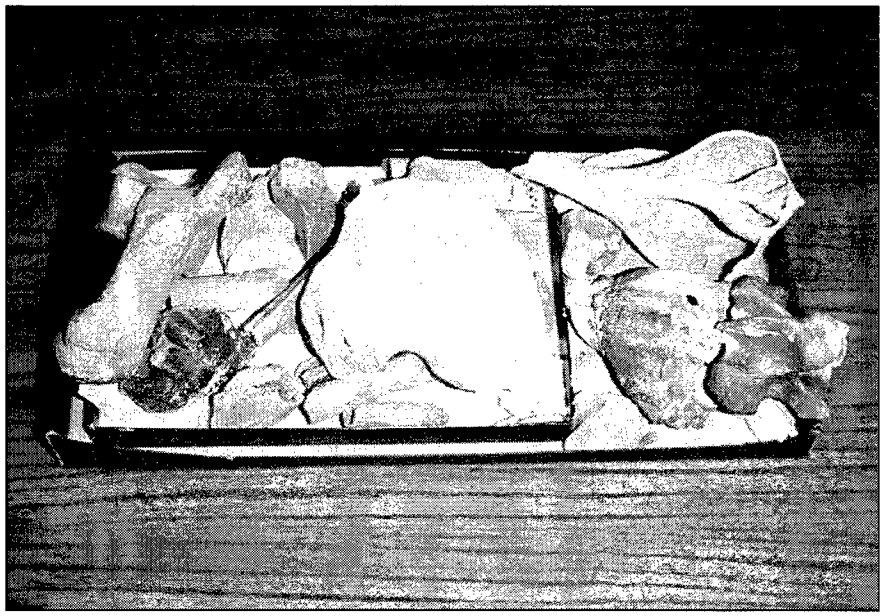

Figure 36. Some secondary containers contain acidic cardboard boxes within which the artifacts are stored.

Table 11.
Human Skeletal Remains in the MacDill AFB Collection at USF–Tampa

Bag Number	Contents
1	21 adult skull fragments, 3 juvenile skull fragments, 1 rib fragment
2	1 adult fibula, 1 adult humerus fragment
3	2 adult rib fragments, 1 long-bone fragment, 2 femur heads (both left), 1 fragment of adult parietal
4	1 adult pelvis fragment (ilium mainly—male)
5	fragmented mandible (encased in matrix), teeth present and in situ—2 molars, 2 premolars, all worn flat (at least 12 years of age)
6	16 loose teeth—molars, premolars, canines, incisors
7	15 mandible fragments with teeth in place (at least 3 individuals present)
8	1 tibia fragment—adult (left)
9	1 skull fragment, 1 adult temporal bone
10	15 pieces of invertebrate fauna
11	1 fragment of juvenile crania, 1 adult skull fragment, 1 juvenile ilium fragment, several invertebrate and vertebrate faunal fragments, small bag with 7 long-bone fragments

Laboratory Processing and Labeling

All artifacts have been cleaned. None, however, are sorted by material class. Only large bones are labeled directly in black marker. Other material classes are not labeled. Existing labels are consistent and legible.

Human Skeletal Remains

Eleven secondary containers hold human skeletal remains. Elements from at least three individuals are present—two adults and one juvenile. The contents of each bag are itemized in Table 11. Some bones have what appears to be caliche attached to the remains, and most are severely fragmented. Overall the remains are in excellent condition.

Records Storage

Associated documentation for this collection consists of a single, acidic manila folder housed in a letter-size metal file cabinet. All associated documentation curated by USF–Tampa is kept in this cabinet and is arranged by site number.

Paper Records

Records from MacDill AFB encompass less than 1 linear inch and include administrative records, survey records, and photographic records. Administrative records consist of several site forms for site 8HI50, dating from 1952 to 1965. Survey records consist of a single, undated sketch map showing the site location. The final piece of paper documentation is a 1960 newspaper clipping reporting the discovery of skeletons at MacDill AFB. The clipping is highly acidic, discolored, and brittle, and this acidity will migrate to the other documents in the file if not rehabilitated. All documentation is kept in a single, acidic, manila folder that has been labeled with a nonarchival adhesive label. Information on the label consists of the site number typed on the adhesive label.

Photographic Records

Photographic documentation consists of three black-and-white prints measuring 3 x 4.5 inches. No label information remains for these records. All photographs document the remains in situ. These photographs are filed loose in the file along with the paper documentation (Figure 37).

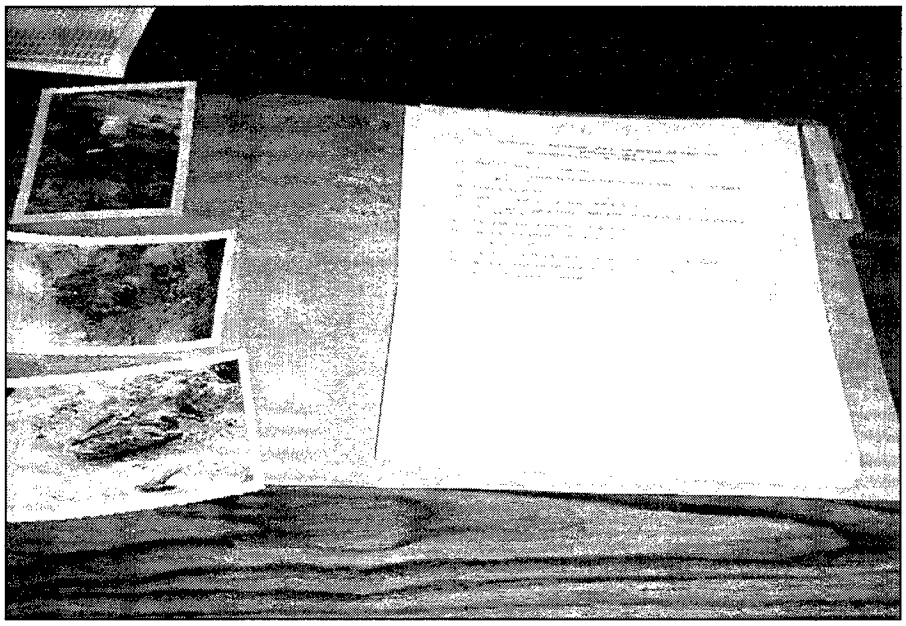

Figure 37. No special arrangements are made for photographic materials, which are stored improperly.

Collections-Management Standards

Registration Procedures

Accession Files. All materials are accessioned as quickly as possible upon receipt.

Location Information. The physical location of each collection is recorded in the accession files, which are kept both on hard copy and in a computerized form.

Cross-Indexed Files. No cross-indexed files existed at the time of the assessment, but the staff is working toward computerizing and cross-indexing all administrative records.

Published Guide to Collections. There is no published guide to the collections at USF–Tampa.

Site-Record Administration. Sites are recorded in the Florida state site files, using the Smithsonian trinomial site-numbering system.

Computerized Database Management. A rudimentary database system has been developed on dBase software. Staff members are attempting to enter all administrative records on the system, as time and money become available.

Written Policies and Procedures

Minimum Standards for Acceptance. USF–Tampa follows the standards published by the Florida Bureau of Archaeological Research (FBAR).

Curation Policy. USF–Tampa is not primarily a curation facility and, therefore, has no written curation policy. USF staff, however, follow FBAR standards for the curation of artifacts.

Records-Management Policy. USF–Tampa staff follow FBAR standards for the management of records, but the university has no written policy of its own.

Field-Curation Procedures. There are no written field-curation procedures for archaeological collections.

Loan Policy. Dr. White stated that although a standardized loan form was available for use, it was rarely used.

Deaccessioning Policy. USF–Tampa has never deaccessioned any material and, therefore, has no policy regarding the process.

Inventory Policy. No written policy exists, but all inventories are performed according to department standards that are related verbally to students.

Last Collection Inventory. In 1990 all human skeletal remains and other NAGPRA items were inventoried. The MacDill AFB collection was included in this inventory.

Curation Personnel

USF–Tampa employs no full-time curator. Department of Anthropology staff members and students perform curation duties as time and funding permit.

Curation Financing

Curation financing at USF–Tampa is virtually nonexistent. The Department of Anthropology provides most of the funds used for the minimal curation performed by the department. Additional monies are periodically provided through grant funds.

Access to Collections

Access to the collections is limited to the staff of the Department of Anthropology—approximately 15 people. Access also is provided to supervised students in the department.

Comments

1. The Social Sciences Building is structurally sound.

2. The collections storage area has reached 100 percent capacity.

3. An HVAC system is installed in the building, but humidity cannot be controlled in the collections storage area.

4. Humidity is not monitored in the collections storage area.

5. An integrated pest-management system is maintained in the Social Sciences Building.

6. Security measures do not meet minimum federal standards.

7. Fire-suppression and fire-detection systems do not meet minimum federal standards.

8. Shelving units are inappropriate for the long-term storage of archaeological collections.

9. Curation of material remains and associated documentation does not meet federal requirements.

10. Lighting is filtered against UV light.

11. All proper policies and procedures have not been established by USF–Tampa.

Recommendations

1. ACC should arrange to transfer this collection to Avon Park AFR and upgrade that facility as an appropriate curation facility for archaeological collections. See discussion above for measures required to upgrade the Avon Park facility.

2. Begin consultation with federally recognized Native American tribes in order to fulfill the mandates of NAGPRA regarding human skeletal remains.

3. Label all artifacts with india ink to prevent information loss if artifacts are separated from provenience data.

4. Replace secondary containers with four-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Labels for secondary containers should be made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), labeled in indelible ink, and inserted into the secondary containers.

5. Replace the acidic cardboard box with an acid-free box. Apply an adhesive polyethylene plastic label holder, with acid-free insert, to the box. Labels should no longer be applied directly to boxes. When label information or box contents change, inserts should be replaced. This method reduces the chance of conflicting and confusing information.

6. Arrange associated documentation according to modern archival procedures, and create a finding aid for the documentation collection.

7. Duplicate all paper records onto acid-free paper, and place in acid-free folders labeled in indelible ink. Place the folders in an acid-free cardboard box, and apply an adhesive, polyethylene plastic label holder, with an acid-free insert, to the box.

8. Place all photographic materials in archival-quality polypropylene sleeves, and place sleeves in a acid-free, three-ring photograph binder. Create a photograph log on acid-free paper.

9. Store photographic records in a stable environment equipped to monitor and control humidity and temperature.

10. Make a duplicate copy of all associated documentation, and store these materials in a separate, fire-safe, secure location.

Findings Summary

Two ACC installations are located in the state of Florida—Avon Park AFR and MacDill AFB. Three archaeological collections from these installations are located at three different facilities: Avon Park AFR, JANUS Research, and USF–Tampa (Tables 12 and 13 contain summary information by material class for the Avon Park AFR and MacDill AFB collections, respectively). The latter collection contains human skeletal remains. ACC personnel have attempted to find a facility within the state of Florida to curate ACC archaeological collections. These attempts have been unsuccessful, so it is the recommendation of the St. Louis District that both ACC installations curate their collections at Avon Park AFR. Both installations may apply for AF funds for curation and thereby considerably lessen each installation's expense for upgrading the facility to meet minimum federal standards.

For Avon Park AFR's Building 475 to meet the minimum federal standards for the proper long-term curation of archaeological collections, the following measures are necessary:

1. Implement a professional pest-management plan that includes both monitoring and control measures.

Table 12.
Percentage (by Count) of Material Classes in Avon Park AFR Collections, by Repository

Material Class	Avon Park AFR	JANUS Research
Prehistoric		
Ceramics	6.25	3.0
Lithics	13.75	0.75
Faunal remains	0.25	8.0
Shell	1.25	3.25
Botanical	—	0.5
Soil	—	81.0
Charcoal	—	1.0
Concretions	—	0.5
Historical-period		
Ceramics	20.0	—
Glass	18.5	0.75
Metal	25.0	0.75
Wood	—	0.25
Brick	15.0	—
Faunal remains	—	0.25
Total	100.0	100.0

Table 13.
Percentage (by Count) of Material Classes in the MacDill AFB Collection at USF–Tampa

Material Class	Percentage Present
Prehistoric	
Lithics	5
Human skeletal remains	85
Faunal remains	5
Shell	5
Total	100

2. Install smoke detectors and an overhead sprinkler system in the collections storage area.

3. Clean the collections storage area, remove the clutter, and implement a regular cleaning regimen.

4. Install measures that will enable the staff to monitor as well as control both the humidity and the temperature.

5. Install UV filters on all fluorescent lights.

6. Rehabilitate all collections of material remains according to the recommendations made here.

7. Rehabilitate all associated documentation according to the recommendations made here.

8. Install baked-enamel, steel shelving units for storing collections.

9. Hire a full-time curator to rehabilitate, stabilize, and maintain collections.

10. Develop and implement, minimally, the following policies and procedures: accessioning and deaccessioning policies; loan policy, inventory policy, a system of site-record administration, a curation policy, and a records-management policy.

11. Make two copies of all associated documentation on acid-free paper and store one copy offsite in a separate, fire-safe, secure location.

Recommendations

General recommendations are discussed in Chapters 10 and 11.

5

Louisiana

Barksdale Air Force Base, Bossier City

Installation Summary for Barksdale AFB

Volume of Artifact Collections: Approximately 3 ft^3

On Base: None

Off Base: Approximately 3 ft^3 (SCIAA)

Compliance Status: The collection held by the South Carolina Institute of Archaeology and Anthropology (SCIAA) will be packaged according to Louisiana curation standards. Only minor rehabilitation will be required to comply with federal regulations governing the long-term curation of archaeological materials.

Linear Feet of Records: Approximately 0.75 linear feet

On Base: None

Off Base: 0.75 linear feet (SCIAA)

Compliance Status: Associated documentation located at SCIAA requires partial rehabilitation to comply with federal regulations and modern archival standards.

Human Skeletal Remains: No human remains have been recovered from Barksdale AFB.

Status of Curation Funding: The 8th AF Museum is funded by Barksdale AFB and grant funds. (For SCIAA, funding for curation and the level of curation performed is dictated in the original contract.) Once funding requirements for the curation of their collection are enumerated, Barksdale personnel can apply to AF Environmental Compliance Program A-106 for additional funds.

Recommended Curation Facility: Although the 8th AF Museum is currently not suitable for the curation of archaeological materials, the museum's five-year plan addresses many problems identified in the evaluation. The St. Louis District recommends that the collection remain at the 8th AF Museum and that the future plans listed by the curator be implemented.

Repository 1: 8th AF Museum, Barksdale AFB

Date of Visit: December 7, 1994

Point of Contact: Harold "Buck" Rigg, Curator

At the time of the evaluation, the 8th AF Museum at Barksdale AFB was not curating any archaeological collections. The single collection of artifacts recovered from the installation was located at SCIAA. After the project is complete, however, the collection will be transferred to the 8th AF Museum for long-term curation; therefore the museum was evaluated. The 8th AF Museum occupied one-half of Building 5088 (Field Training Detachment) at the time of the original assessment. In January 1995, the museum expanded into the other half of the building and assumed full control of the structure. Facilities and functioning utilities in the

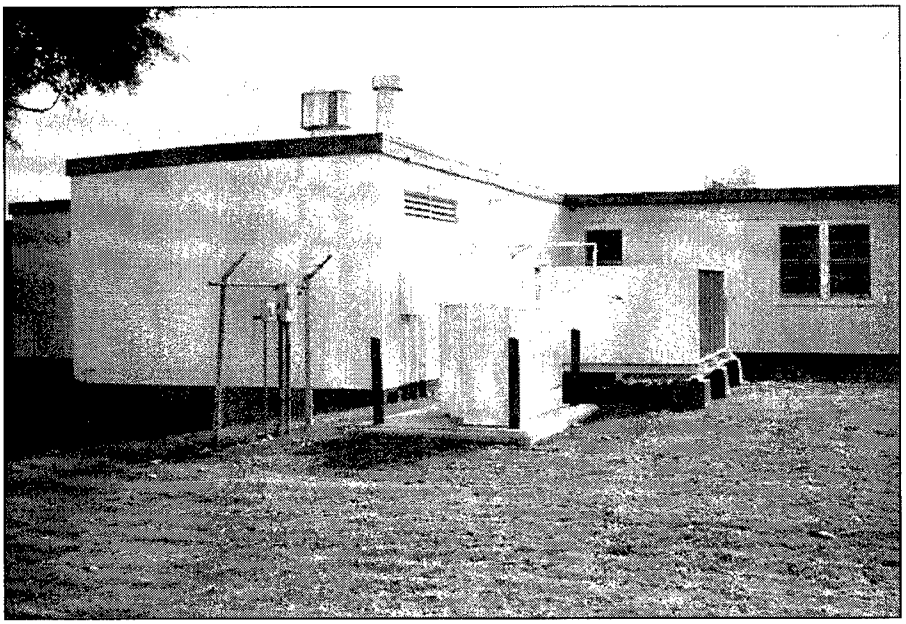

Figure 38. The boiler for Building 5088 is located in a connected, adjacent building.

building include running water, electricity, plumbing, telephones, rest rooms, air conditioning, and heating. At the time of the evaluation, the building contained four galleries used for the museum, a gift shop, offices, and a briefing room. The museum plans to expand the gallery space, create two collections storage rooms, a theater, a supply and tool room, a conservation laboratory, and a documents storage room, while maintaining some offices, the gift shop, and the exhibit space they currently utilize.

Assessment

Structural Adequacy

The building is a single-story structure that was originally constructed in the mid-1950s. It has a concrete foundation and exterior walls made of cinder block. The roof is a flat wood-truss superstructure covered with tar and gravel. Leaks have been a problem, but the roof is patched as needed. Additionally, plans were being made to replace the roof, which was as old as the building, with a pitched roof in an attempt to stop these leaks. Internal renovations have been made as the museum expanded—walls were removed or added according to museum plans. Floors are constructed of poured concrete covered with tile. Interior walls are constructed of plasterboard over 2-x-4-inch studs, and all walls have been painted. The ceiling is covered with fibrous tiles and shows water damage from past leaks in the roof. The building has 19 windows measuring 36 x 60 inches (w x h): 10 along the north wall and 9 along the south wall. All windows located in the museum galleries have been blocked with plywood to prevent UV light from damaging museum displays. All other windows in the building are constructed of wooden frames with aluminum storm windows. Windows located in offices and hallways are curtained but not shaded. None of the windows have ever been replaced.

The boiler, which was replaced in the 1970s, is located in an interconnecting, adjacent building off the south side of the museum (Figure 38). The heating system is original to the building, but some of the electrical work has been updated. A smaller building, used for storage of hazardous materials, is located to the northwest of the museum building. Asbestos is present in the mechanical/tool room and also in some floor tiles. Barksdale AFB has an asbestos-removal unit on base, and the curator plans to have this unit remove the asbestos in the building in June 1995. The assessment team noted no indication of cracks or leaks in the foundation, walls, or around any of the windows. The building is considered structurally sound.

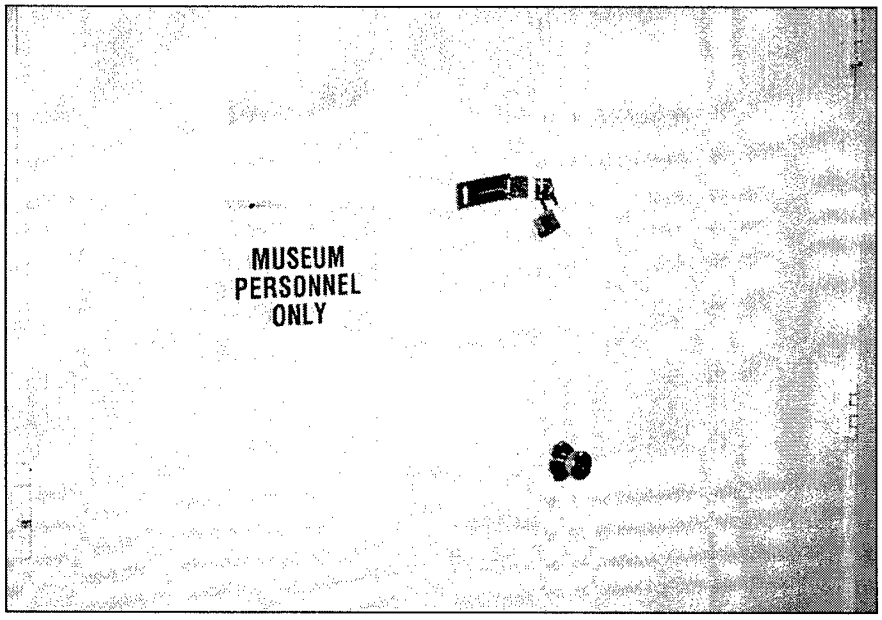

Figure 39. Hasps and padlocks are installed on all interior doors of the 8th AF Museum.

Environmental Controls

Building 5088 does not have an HVAC system. Air conditioning and heating are both zoned; each room has a functioning thermostat control. Hygrometers are present in each room, but there was no effective way to control the humidity. The curator stated that he planned to buy portable humidifiers and dehumidifiers for the collections storage rooms and the records storage room. Until these are purchased, however, the humidity can be minimally controlled by closely monitoring the air-conditioning unit in the collections storage areas. Dust filters are in place on the heating system, and the assessment team noted no evidence of dust. Lighting is provided by unfiltered, overhead fluorescent units located throughout the building. According to Mr. Rigg, UV sleeves have been installed in the collections storage and archival areas since the evaluation. At the time of the assessment, the building was maintained by the curator on an as-needed basis, but he spoke about obtaining a professional cleaning service once the museum assumed control of the entire building.

Pest Management

A pest-control system, in the form of quarterly inspection and spraying by the base entomologist, is in place at the 8th AF Museum. While the assessment team did not see any signs of pest infestation, the curator noted that fire ants have been an ongoing problem. This problem, however, actually existed outside the building. Mr. Rigg stated that the base entomologist was aware of the problem and had taken measures to eradicate the ants. He also indicated that there has been an occasional moth problem, probably due to the storage of textiles within the museum. Neither of these pests has damaged the collections.

Security

Building 5088 is located across the street from the installation's main entrance, which is manned by base security police around the clock. Additionally, even though the museum expanded throughout the building in January 1995, a single room was allocated for use by the security police. This action has, in effect, established a 24-hour guard in the building. In addition, access is controlled by limiting the number of available keys. All windows are considered accessible from the exterior of the building, but all have basic window locks, and some have been inadvertently painted shut. Key locks or hasps with padlocks are located on all interior doors in the museum (Figure 39). Two rooms in the building have steel vault doors with combination locks for security (Figure 40). Mr. Rigg informed the assessment team that these rooms were going to be

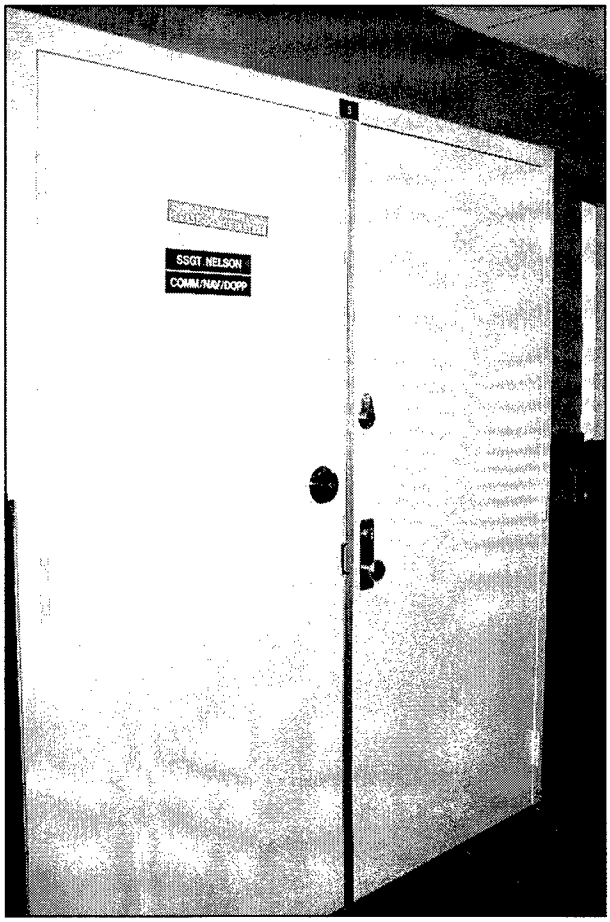

Figure 40. Once the museum expands, two vault doors, with combination locks, will provide security to the collections storage area.

the collections storage rooms once the museum expanded. Two main entrances are constructed of glass doors; one is constructed of double doors made of steel and glass (Figure 41). All entrances are secured with double-cylinder, deadbolt locks. Additionally, security police make regular patrols of the base property.

Fire Detection and Suppression

Building 5088 has manual fire alarms, fire extinguishers, and heat sensors located throughout the facility. Fire extinguishers are checked annually by qualified personnel. All fire alarms are wired directly to the Barksdale AFB Fire Department. A sprinkler system is not currently installed, but installation of one has been requested in the museum's five-year plan. Additional fire control is provided by fire walls. Fire doors are located in several of the rooms in the building. These measures, however, are not consistently placed throughout the facility. Since the evaluation was conducted, Mr. Rigg has reported that these systems are scheduled for installation in the late summer of 1995.

Artifact Storage

The 8th AF Museum was not curating any archaeological collections or associated documentation at the time of the assessment. The museum is used primarily for the storage and display of military artifacts, although the curator is adapting storage facilities to accommodate archaeological collections. Artifacts currently held by the museum are stored in a room adjacent to the gift shop. The storage room is cluttered, and old displays are kept with some of the exhibit material on wire shelving units (Figure 42). Mr. Rigg stated that two different rooms would be renovated and used for artifact storage and conservation after January 1995, and since the evaluation, he has reported that these renovations were completed and the collections moved to these areas as of January 31, 1995.

Many of the exhibits in the galleries were kept in "homemade" display cases constructed of plywood and plexiglass and lighted by incandescent lights without UV filters. The curator is aware that these are unacceptable conditions for the display and storage of archaeological collections but is awaiting the requisite funding. Funding constraints, as always, present the largest obstacle to compliance.

Records Storage

At the time of the evaluation, the 8th AF Museum was not curating any associated documentation from archaeological investigations conducted on base property. However, the curator has plans to renovate a 400-ft^2 room as an archives and library. Tentative plans were also being made to hire a part-time archivist. Mr. Rigg informed the assessment team that a DoD Legacy–funded program was underway to inventory and catalog all documentation concerning the museum's holdings. These funds provided the salary for a single individual who functions as both archivist and collections manager. At the time of the assessment, Mr. Rigg estimated this project was 80 percent complete, but funding for

Figure 41. The main entrance to the museum has doors secured with double-cylinder, dead-bolt locks.

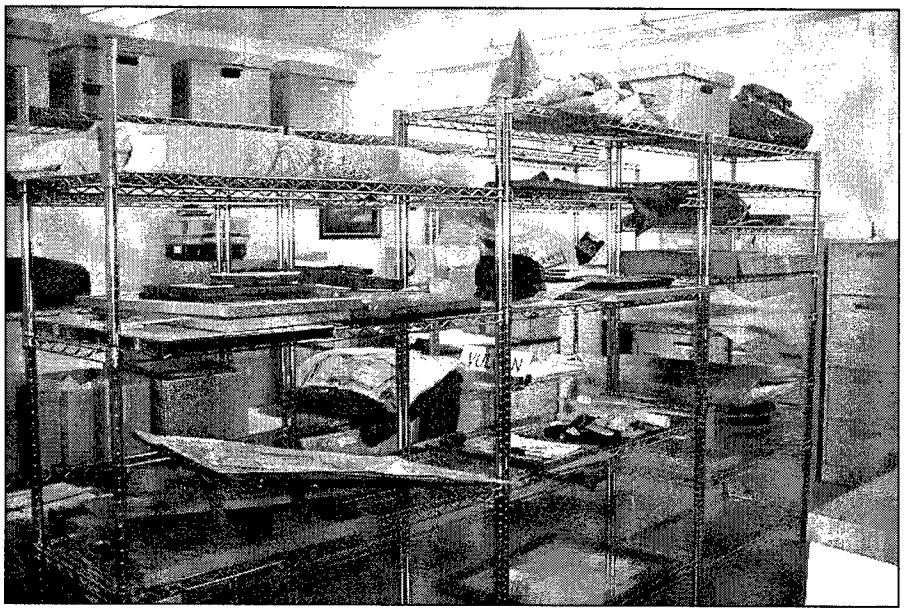

Figure 42. Collections storage area at the time of the evaluation.

the program was due to expire on September 30, 1995.

Collections-Management Standards

The 8th AF Museum is an AF Field Museum (AFFM) and follows the registration procedures and policies established by the U.S. AF National Museum at Wright-Patterson AFB in Dayton, Ohio (AF Instruction [AFI] 84-103, July 22, 1994). This AFI does not refer to real property of historical interest such as archaeological sites, cemeteries, and buildings. The curator, however, follows this instruction and adapts it as necessary to include archaeological collections. Because the museum is not yet curating archaeological collections, the discussion below

pertains to all museum property held by the 8th AF Museum.

Registration Procedures

Accession Files. AFI 84-103 lists procedures for accessioning all museum properties, and these procedures are followed by the 8th AF Museum staff.

Location Identification. The physical location of each item is noted in the accession file, along with the inventory, catalog, any correspondence pertaining to the item, and the deed of gift.

Cross-Indexed Files. At the time of the evaluation, the project to catalog and inventory all collections had not yet been completed. This project, which also includes cross-indexing of files, is approximately 80 percent complete.

Published Guide to Collections. No published guide to the collections exists.

Site-Record Administration. No archaeological collections were curated at the museum at the time of the assessment, but the curator indicated they would follow the system used by the Louisiana Division of Archaeology—the Smithsonian trinomial site-numbering system.

Computerized Database Management. Plans to develop a computerized database system were mentioned by the curator. The U.S. AF Museum material has been entered into a computerized database that was developed locally, but the 8th AF Museum is awaiting additional equipment to continue these efforts.

Written Policies and Procedures

Minimum Standards for Acceptance. The 8th AF Museum does not have a policy on minimum standards for the acceptance of archaeological collections.

Curation Policy. No comprehensive plan for the curation of archaeological collections has been written for Barksdale AFB.

Records-Management Policy. Policies regarding the management of records from AF field museums are outlined in AFI 84-103.

Field-Curation Procedures. Field-curation procedures for Barksdale AFB have not been developed.

Loan Policy. Loan procedures are outlined in AFI 84-103. However, the 8th AF Museum does not own the artifacts it houses—the AF Museum System owns all artifacts; field museums have the material on long-term loans.

Deaccessioning Policy. Deaccessioning museum property is the responsibility of the AF Museum System and is outlined in AFI 84-103.

Inventory Policy. A formal inventory policy is presented in AFI 84-103.

Latest Collection Inventory. At the time of the evaluation, the museum was not curating archaeological collections. However, the curator was performing an inventory of the museum's holdings, which was approximately 80 percent complete.

Curation Personnel

The 8th AF Museum employs only a single full-time staff member, Mr. Rigg. He serves as curator, and he does everything else necessary to maintain the museum. At the time of the evaluation, one individual was working as collections manager and archivist through a DoD Legacy Program grant. This position, however, was funded by grant monies that expire on September 30, 1995. Volunteers assist with the day-to-day activities of the museum.

Curation Financing

Curation is funded through monies received from Barksdale AFB and grants. Mr. Rigg stated that approximately $200,000 per year was necessary to upgrade and maintain museum facilities.

Access to the Collections

Access to the collections is controlled entirely by the curator and collections manager. Any arrangements to view the Barksdale AFB archaeological collections or associated documentation must be arranged with him, once the collection is transferred to the museum.

Comments

1. Building 5088 is structurally sound.

2. Temperature is monitored and controlled; however, humidity is monitored but cannot be

controlled other than by careful manipulation of the air-conditioning and heating systems.

3. Lights throughout the building are unfiltered against UV light. Filters have been installed in the collections storage area and archives.

4. Some asbestos is present in the building, but the asbestos flooring was scheduled to be removed in June 1995.

5. A sprinkler system is not installed in the building nor are smoke detectors present. Again, these measures were planned for installation in August 1995.

6. Policies specifically regarding the curation of archaeological collections have not been established at the 8th AF Museum.

7. An HVAC system is not present in the building, though all of these elements are present. The heating system is equipped with dust filters.

Recommendations

1. Provide a method of controlling the humidity in the galleries and in the collections storage rooms.

2. Place UV sleeves on fluorescent lights where they are absent.

3. Remove the asbestos from the facility as soon as possible.

4. Continue plans to move collections storage areas to the two rooms with vault doors.

5. Continue plans to install a sprinkler system in the building. Also install smoke detectors.

6. Adapt current policies or develop new policies specific to the long-term curation of archaeological collections and associated documentation.

7. Ensure that all zip-lock bags are of four-mil thickness.

8. Ensure that all artifacts are labeled directly in india ink.

9. Place all secondary containers in acid-free primary containers.

10. Ensure that all paper inserts for the secondary containers are made of acid-free paper and labeled in indelible ink.

11. Copy all associated documentation onto acid-free paper, and store them in acid-free folders labeled directly in indelible ink. All records should then be archivally processed and stored in acid-free primary containers, and a finding aid for the collection should be created.

12. Make a duplicate copy of all associated documentation, and store these materials in a separate, fire-safe, secure location.

7. Ensure that maps, photographs, and machine-readable records are stored according to the individual needs of the items using archival-quality supplies.

Repository 2: SCIAA

Date of Visit: November 28, 1994

Points of Contact: Steve Smith, Ramona Grunden, and Christopher Clement, Archaeologists

Approximately 3 ft^3 of artifacts and 0.75 linear feet of associated documentation from Barksdale AFB are temporarily housed in Columbia, South Carolina, at (SCIAA). At the time of the evaluation, the field crew had just returned to SCIAA, and the recovered artifacts were still being washed and sorted in the laboratory. The collection consists primarily of historical-period materials with a few artifacts from prehistoric contexts. Of the total, prehistoric material classes include lithics (1%), wood (1%), and shell (1%), whereas historical-period material classes comprise metal (40%), glass (25%), ceramics (23%), bricks/masonry (5%), faunal remains (1%), leather (1%), teeth (1%), and other (1%). A repository evaluation was not

conducted at SCIAA because the collection will be transferred to the 8th AF Museum at Barksdale AFB upon completion of the project.

The contract between Barksdale AFB and SCIAA states that the collection be prepared for curation according to the Louisiana Standards for Curation (see Appendix 13). Both a description of the temporary conditions at SCIAA and how the collection will be processed are discussed below.

Assessment

Artifact Storage

When the St. Louis District evaluation team arrived at SCIAA, the crew had just completed the fieldwork for the project. Recovered artifacts were in the conservation laboratory and were being cleaned and labeled for long-term storage (Figure 43). As noted above, the collection consists of both prehistoric and historical-period materials, but most of the artifacts recovered are from the latter context. Approximately 80 percent of the collection has been sorted by material class (Figure 44).

The Louisiana Standards for Curation require that all artifacts be cleaned and placed in polyethylene zip-lock bags. Each bag should be labeled on the exterior in indelible ink and have the label information also recorded on a piece of paper inserted into the bag. All glass artifacts must be double bagged. Louisiana standards require acid-free paper inserts only in bags containing metal or organic artifacts. All diagnostic artifacts and artifacts used for display are to be labeled directly in india ink. Only a representative sample (10% is sufficient) of each material class from each provenience need be labeled directly. Primary containers must be of standard

Figure 43. Artifacts recovered from Barksdale AFB await processing in SCIAA's laboratory.

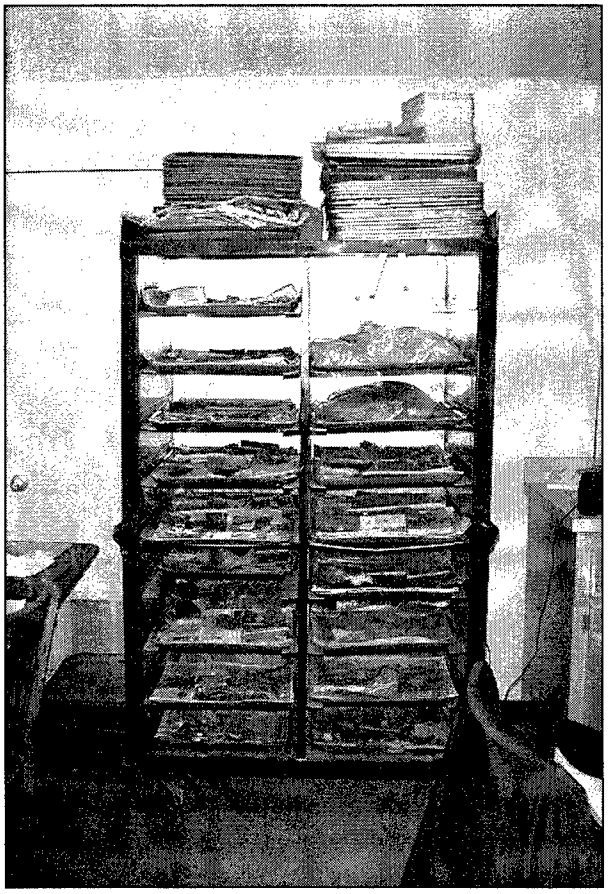

Figure 44. As the collection is cleaned and sorted, it is transferred to trays prior to final packaging in polyethylene, zip-lock bags.

sizes, but they do not have to be constructed of acid-free materials. Each box must contain an inventory sheet, and the box exterior must be labeled with the site number, site name, catalog numbers of artifacts included in the box, name of the archaeologist or organization, and the date the artifacts were boxed (see Appendix 13).

Records Storage

Once all associated documentation has been generated and the project is complete, the collection will be transferred to Barksdale AFB. The staff at SCIAA indicated that all of the documentation would be packaged and shipped according to the dictates of the Louisiana Division of Archaeology. The associated documentation that must be transferred includes: one typed copy of a site form; two typed copies of the catalog for the collection; copies of all field notes, site diaries, unit forms, profiles, maps, and other field documents; two copies of the final project report, and inventory sheets (see Appendix 13). The Louisiana Division of Archaeology, however, does not specify that these documents be on acid-free paper and housed in acid-free secondary and primary containers. Nor do the Curation Standards for the state of Louisiana indicate what type of labels should be used or in what media.

Paper Records

SCIAA is currently storing approximately 0.75 linear feet of associated documentation from Barksdale AFB. Eighty percent of the associated documentation consists of field notebooks and catalog and inventory records. These materials were stored in the processing laboratory with the artifacts. The field books have been secured together with a rubber band, but no other storage arrangements have been made. Each field book is labeled directly in either pencil or pen on the front cover with the name of the investigator and the project name (Figure 45). Inventories and catalogs were temporarily housed in acidic accordion-type folders in the processing laboratory. The remaining 20 percent of associated documentation comprise administrative records including correspondence, a copy of the proposal and scope of work, and miscellaneous notes concerning the administration of the project. At the time of the evaluation, these documents were located in Chris Clement's desk, because he was using them for reference purposes. Administrative records were kept in three acidic manila folders, one labeled directly in ink and two unlabeled. In actuality, the associated documentation was incomplete at the time of the evaluation. Catalogs, inventories, machine-readable records, photographs, and the report have not been completely created.

Photographic Records

Photographic records had not been processed at the time of the evaluation.

Maps and Oversized Documents

At the time of the evaluation, the maps and oversized drawings from Barksdale AFB were stacked on a table in Chris Clement's office (Figure 46). He was using them for reference while

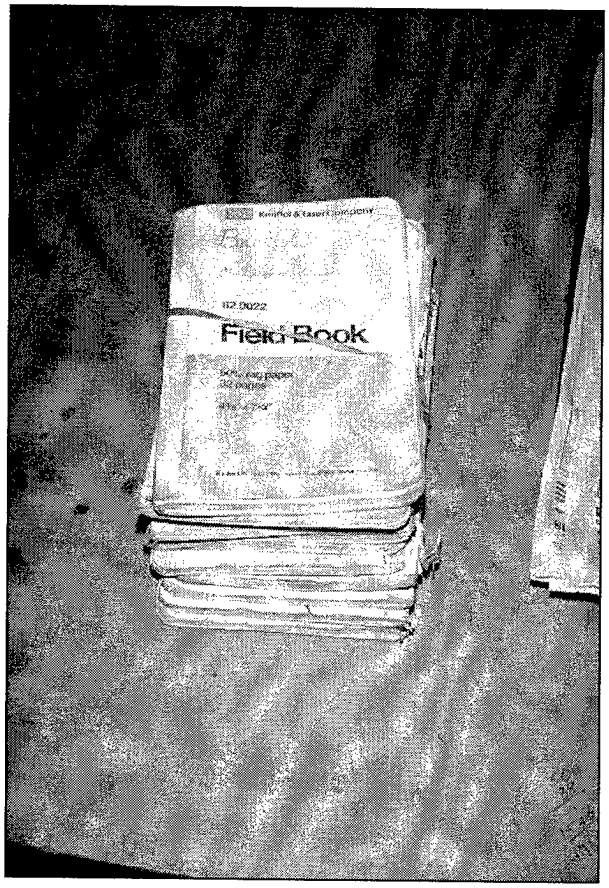

Figure 45. Field books from the archaeological work at Barksdale AFB are stored temporarily in the processing laboratory.

he drafted the report, so they had not been arranged or archivally processed in any manner.

Reports

The report had not been completed at the time of the evaluation and, therefore, was unavailable for review.

Machine-Readable Records

The report will be saved on machine-readable format in addition to the hard-copy format.

Collections-Management Standards

Because the Barksdale AFB collection will be transferred to the base upon the project's completion, a full evaluation of SCIAA was not conducted. This information, however, is available in the discussion of collections from Shaw AFB and Poinsett AFR in Chapter 7.

Comments

1. SCIAA will transfer the collection to Barksdale AFB when the contract has been fulfilled. Barksdale AFB staff will then be responsible for the long-term curation of the collection.

Recommendations

1. Ensure that all zip-lock bags are of four-mil thickness and labeled directly in indelible ink.

2. Ensure that all artifacts are labeled directly in india ink.

3. Place all secondary containers in acid-free primary containers.

4. Ensure that all paper inserts for the secondary containers are made of acid-free paper and are labeled in indelible ink.

5. Copy all associated documentation onto acid-free paper, and store the copies in acid-free folders labeled directly in indelible ink. All records should then be archivally processed and stored in acid-free primary containers, and a finding aid for the collection should be created.

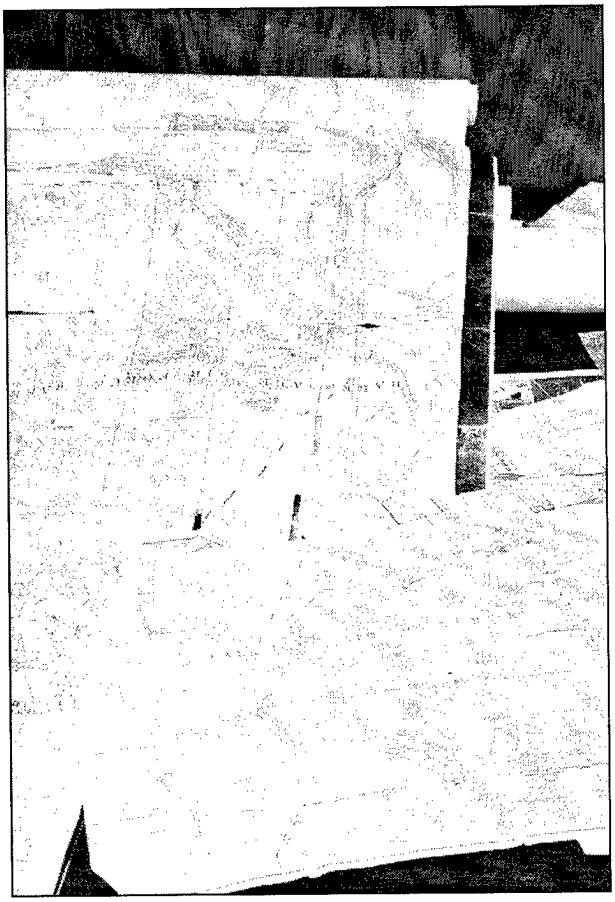

Figure 46. Oversized maps are stored haphazardly on a table in Chris Clement's office.

6. Make a duplicate copy of all associated documentation, and store these materials in a separate, fire-safe, secure location.

7. Ensure that maps, photographs, and machine-readable records are stored according to the individual needs of the items using archival-quality supplies.

Findings Summary

Only one collection of artifacts has been recovered from Barksdale AFB property (Table 14 contains summary information by material class). This collection is currently being prepared for long-term curation by staff members at SCIAA. Once the project is complete, the collection will be transferred to the 8th AF Museum at Barksdale AFB for permanent curation. Because

of this situation, a full evaluation was not conducted at SCIAA, and only the 8th AF Museum is discussed below.

Infrastructure Controls

The 8th AF Museum, although not specifically designed for the curation of archaeological materials, meets some of the minimum federal standards for repository infrastructure controls (Table 15). If everything goes as the curator plans, the 8th AF Museum will be an acceptable repository for the curation of archaeological collections and associated documentation.

Environmental Controls

An HVAC system is not installed in the 8th AF Museum. All these elements, however, exist in the building. The heating and air conditioning is zoned room by room, and dust filters are in place. Humidity is monitored by hygrometers located in each room but cannot be controlled effectively.

Pest Management

The base entomologist sprays the facility for pest infestation on a quarterly basis. Problems have been noted in the past, but these were being addressed at the time of the evaluation. Additional monitoring is conducted by the curator. No signs of pest infestation were noted by the assessment team.

Security

Security consists of door locks or padlocks on all interior doors and windows, and double-cylinder dead-bolt locks on all exterior doors. If plans to move the collections storage rooms are followed, additional security will be provided by vault doors with combination locks. Motion detectors and intrusion alarms are not installed, but the security police in the building (and at the main gate) provide additional security.

Table 14.
Percentage (by Count) of Material Classes in the Barksdale AFB Collection Temporarily Stored at SCIAA

Material Class	Percentage Present
Prehistoric	
Lithics	1
Shell	1
Wood	1
Historical-period	
Ceramics	23
Glass	25
Metal	40
Brick/masonry	5
Faunal remains	1
Leather	1
Teeth	1
Other	1
Total	100

Fire Detection and Suppression

Fire alarms wired to the base fire department, fire extinguishers, and heat sensors are located throughout the facility. Smoke detectors and an overhead sprinkler system are not in place. If plans to install a sprinkler system are followed, the minimum standards for fire suppression in an archaeological curation facility will be met.

Artifact Curation

The artifacts recovered from Barksdale AFB will be prepared for curation according to the

Table 15.
Presence or Absence of Repository Infrastructure Controls at the 8th AF Museum

Repository	Environmental Controls	Pest Management	Security	Fire Detection & Suppression	Full-Time Curator
8th AF Museum	partial	yes	yes	partial	no

Louisiana Curation Standards of the Division of Archaeology. All artifacts are cleaned and sorted, but only a representative sample is labeled directly. Secondary containers must be polyethylene zip-lock bags, but four-mil thickness is not specified. All secondary containers are to be labeled on the exterior in indelible ink, and also on paper inserts, but the paper does not have to be acid-free stock for all artifact classes. Standard-size boxes must be used, but again, acid-free stock is not specified. All boxes must be consistently labeled with specific information in indelible ink. Some upgrading of materials will be required for full compliance with 36 CFR Part 79, but generally the collection will be well prepared for long-term curation.

Records Management

Associated documentation generated from the archaeological investigation on Barksdale AFB will be transferred to the 8th AF Museum upon completion of the project. The museum curator plans to copy all associated documentation onto acid-free paper and archivally process the collection. He hopes to have a second copy made on preservation microfilm. If these plans are followed and archival supplies are used, the associated documentation will be well prepared for long-term curation.

Collections-Management Standards

Basic collections-management tools—accession records, inventories, and written policies and procedures for curation and loans—are maintained by the 8th AF Museum. The policies and procedures outlined in AFI 84-103 do not specifically address archaeological collections and associated documentation and should be adapted, when necessary, to accommodate the specific needs of archaeological materials. Generally all materials and documentation are inventoried and cataloged, and their physical location within the repository is noted. Implementation of a cross-indexing system is in progress, and the curator hopes to computerize their finding aids as soon as possible. The most pressing problem is staffing. Mr. Rigg is responsible for all the work done in the museum, so there is, in fact, no full-time curator.

Recommendations

The following are general recommendations for bringing the Barksdale AFB collection into compliance with the mandates of 36 CFR Part 79. All recommendations will be discussed at length in Chapters 10 and 11.

1. Take the minor steps needed to rehabilitate the associated documentation.

2. Upgrade the supplies used to package the archaeological artifacts to ensure compliance.

3. Employ more staff to rehabilitate, maintain, and manage the collections.

4. Develop cooperative agreements with other federal agencies to help defray the costs of rehabilitation and long-term curation of archaeological collections.

6

New Mexico

Cannon Air Force Base and Melrose Air Force Range, Clovis, and Holloman Air Force Base, Alamogordo

Installation Summary for Cannon AFB, Melrose AFR, and Holloman AFB

Volume of Artifact Collections:
- Cannon AFB: None
- Melrose AFR: 8.5 ft^3
  - On Base: None
  - Off Base: 7.5 ft^3 (MIAC/LOA); 1.0 ft^3 (ACA warehouse)
- Holloman AFB: 5.5 ft^3
  - On Base: 0.5 ft^3
  - Off Base: 4.0 ft^3 (Maxwell Museum); 1.0 ft^3 (HSR)

Compliance Status: All collections require partial rehabilitation to comply with federal regulations governing the long-term curation of archaeological materials.

Linear Feet of Records:
- Cannon AFB: 0.08 linear feet
  - On Base: None
  - Off Base: 0.08 linear feet (NMARMS)
- Melrose AFR: 2.16 linear feet
  - On Base: None
  - Off Base: 1.0 linear foot (NMARMS); 0.83 linear feet (Albuquerque District); 0.25 linear feet (OCA); 0.08 linear feet (ACA warehouse)
- Holloman AFB: 5.59 linear feet
  - On Base: 1.5 linear feet
  - Off Base: 2.0 linear feet (HSR); 1.17 linear feet (Albuquerque District); 0.75 linear feet (OCA); 0.17 linear feet (NMARMS)

Compliance Status: All collections of associated documentation require at least partial rehabilitation to comply with federal regulations and modern archival practices.

Human Skeletal Remains: No known human skeletal remains were recovered from any of the three ACC installations evaluated.

Status of Curation Funding: Currently little to no funding is allocated at either Cannon (or its subinstallation, Melrose Range) or Holloman. Up to the time of the evaluation, funding requirements were unknown. Once these have been identified, each of the installations may apply to AF Environmental Compliance Program A-106 for the necessary funding. Other institutions holding collections from these installations receive funding from a variety of sources.

The Archaeological Records Management Section of the New Mexico Historic Preservation Division (NMARMS) receives funding from federal and state agencies and through grants, though other funding for curation is minimal. Curation is funded through a one-time, per-box fee charged to the agencies storing archaeological materials at the Museum of Indian Arts and Culture/Laboratory of Anthropology (MIAC/LOA). Additional funds are obtained through contracts with agencies to upgrade storage conditions of their collections and from a cooperative agreement with one federal agency for

annual maintenance as required under 36 CFR Part 79. Draft cooperative agreements for annual maintenance fees have been sent to five other agencies, but to date, none has budgeted for collection maintenance. The Albuquerque District currently holds 2 linear feet of records from Holloman AFB and Melrose AFR, but no funding for curation of these materials is provided. Curation activities of the Maxwell Museum are funded primarily through box fees and annual maintenance fees. Some additional funds are provided by the University of New Mexico (UNM) at Albuquerque and grants. At the Agency for Conservation Archaeology (ACA) warehouse, curation is funded through a one-time, per-box fee charged to the agencies storing archaeological materials there. Storage of the collections in proper environmental conditions is covered by an annual maintenance fee. Additional funds for curation are minimal. For Human Systems Research, Inc. (HSR), and the Office for Contract Archaeology (OCA) at UNM, Albuquerque, funding for curation and the level of curation to be performed is dictated in each individual contract.

Recommended Curation Facility: None of the facilities evaluated were fully in compliance with federal regulations governing the care and curation of archaeological collections and their associated documentation. However, MIAC/LOA and the Maxwell Museum of Anthropology are both professionally managed institutions that meet most of the federal regulations for safeguarding archaeological collections. ACC should designate one of these institutions and coalesce their collections there. Part of this arrangement should include a formal memorandum of agreement and some compensation for professional curation services.

Repository 1: NMARMS

Date of Visit: March 21–22, 1994

Point of Contact: Lou Haecker, Cultural Resource Specialist I

Approximately 1.25 linear feet of documentation from Holloman AFB, Cannon AFB, and Melrose AFR are stored in Santa Fe at NMARMS and the Museum of New Mexico (MNM).This documentation includes New Mexico site forms, correspondence, and original documentation submitted by contractors after the completion of archaeological investigations.

NMARMS is not responsible for the curation of artifacts, but instead works in conjunction with MIAC/LOA Archaeological Research Collections (ARC), the official clearinghouse for archaeological data in New Mexico. The NMARMS offices are located in the LOA building (Figure 47), thus facilitating research efforts. The database system used by NMARMS is the New Mexico Cultural Resource Information System (NMCRIS), and reports and associated data may be retrieved through this system.

Assessment

Structural Adequacy

The LOA building was constructed between 1927 and 1931. Offices were added at the back of the building during the 1950s to accommodate the need for more space, and renovations were made as need and funds arose. The building is a bilevel structure constructed of brick and concrete blocks on a cement foundation. The roof is covered with built-up asphalt of indeterminate age that has been patched with a rubber membrane. Interior office walls are plastered.

The building is devoted primarily to records and artifact storage. Also present are staff offices, a loading dock, a materials and supply storage area, a report storage area, an artifact-holding area, an artifact-processing area, an exhibit area, an auditorium, a library, and an archive. Rest rooms are available for public use, and research is conducted in a small area reserved for patrons.

To avoid confusion, only the NMARMS facilities will be discussed here. The ARC offices and the collections storage areas are discussed in the next section of this report.

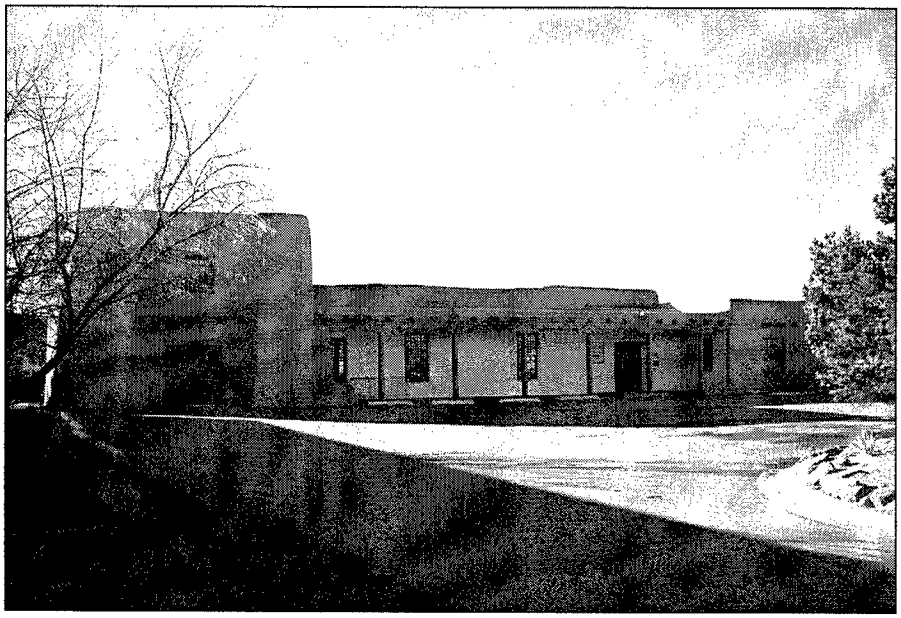

Figure 47. Exterior of the Laboratory of Anthropology building, which houses both NMARMS and ARC.

NMARMS occupies approximately 2,082 ft^2 of offices in the section added in the 1950s. Several renovations of the interior have been made since the original construction. Electrical, security, lighting, and fire-suppression and -detection systems have been updated. Additionally, the walls have been recently painted and the facility recarpeted. Finally, compact storage has been installed to increase the amount of storage space devoted to reports and associated documentation.

Windows measure 29.5 x 51.5 inches (w x h). Twelve windows are located on the east wall, four along the south wall, and one on the west wall. All window frames are constructed of wood, and only a few have been replaced. No evidence of leakage was noted by the evaluation team, and all windows were shaded. There are three interior doors: two made of wood panels; the third constructed of wood with a glass window. There are two exits to the exterior of the building from the NMARMS offices. The building is structurally sound; however, many of the pipes in the building are insulated with asbestos. While the asbestos has been judged contained, future renovations could alter this situation.

Environmental Controls

The NMARMS offices lack an HVAC system. The building is equipped with steam heat. Dust filters are not in place, but the evaluation team noted no dust in the records storage area. Temperature and humidity cannot be controlled in the records storage area, although the staff regularly monitor both with hygrothermographs. In the desert Southwest, humidity is not a particular problem. Humidity is targeted to 35–40 percent, and the staff strives to keep temperatures within two degrees of 68°F. Lighting consists of fluorescent bulbs and desk lamps without UV sleeves. Regular maintenance of the utilities is the responsibility of MIAC/LOA. The NMARMS offices and storage areas are cleaned on a daily basis.

Pest Management

An integrated pest-management plan consisting of both monitoring and control measures has been implemented. The staff monitors for any pest infestations, and a professional pest-management company sprays the facility once a month. The nature and chemical content of the pesticide used is beyond the scope of this report. No evidence of pest infestation was noted by the assessment team.

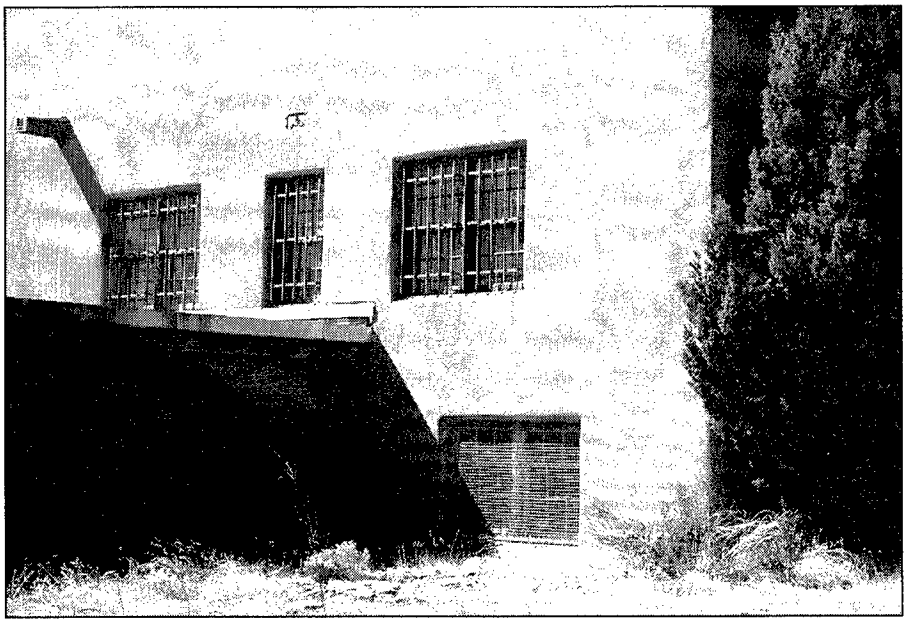

Figure 48. All windows in the NMARMS areas have steel bars on the exterior and slide locks on the interior.

Security

NMARMS meets most of the federal requirements for safeguarding archaeological collections and associated documentation. The building is protected with intrusion alarms, motion detectors, controlled access, and locks, which are installed on all doors and windows. Although all windows are considered accessible from the exterior, each has been secured with bars on the exterior and window locks on the interior (Figure 48). Motion detectors are located throughout the facility. The front entrance to the building is secured with a double-cylinder, deadbolt lock and a key-pad security code. The intrusion alarm and motion detectors are all wired directly to a private security company. The evaluation team noted no evidence of unauthorized entry, and staff indicated that no past episodes of this type have occurred.

Fire Detection and Suppression

The entire building is protected by manual fire alarms that are wired to the local fire department. An overhead sprinkler system also serves to protect the collections storage room and the offices. Additionally, smoke detectors, heat sensors, and fire extinguishers are installed throughout the building. Fire extinguishers are checked regularly by qualified personnel.

Artifact Storage

NMARMS is not responsible for the curation of artifacts and has not allocated space to this function. MIAC/LOA ARC is responsible for artifact storage, and it is discussed below.

Records Storage

Associated documentation from Cannon AFB, Holloman AFB, and Melrose AFR comprises approximately 1.25 linear feet in five distinct collections. These collections are stored in three separate places in the records storage area. Reports are stored on compact storage shelving units. Some oversized maps are stored in vertical map-storage cases. All other associated documentation, including state site forms, are housed in legal-size, four-drawer metal file cabinets.

Paper Records

Paper records from the three ACC properties in New Mexico are kept in five separate collections corresponding to five archaeological investigations. These collections range in extent from one linear foot to less that one linear inch. Each collection is discussed separately below.

Collection 1. This collection consists of eight acidic, manila, legal-size envelopes containing documentation from the 1986 Mariah Associates investigation at Melrose AFR. Documentation includes permits, analysis records, field records, site maps, photographs, interview records, chronology notes, and master title plats and historical indexes. Each envelope is labeled directly in either marker or pen. The contents of each envelope vary considerably (Figure 49). Some material is in acidic file folders, which may or may not have labels, and other materials are loose in the envelope. All types of documentation are stored together. No special arrangements have been made for photographic or oversized material. The overall appearance of the collection is fair: contaminants such as staples, rubber bands, and paper clips have not been removed, and paper documents show signs of dirt and tears from the field.

Collection 2. This collection is in a single acidic, manila, legal-size envelope containing documentation from the 1987 investigation at Cannon AFB. Documentation includes a copy of the title page of the report, field notes, and administrative records. All material is loose in the envelope, which has been labeled directly in marker. The overall appearance of the collection is good, but contaminants are still present.

Collection 3. This collection consists only of the MNM survey form from the 1981 investigation conducted by Geoscientific Systems and Consulting on Melrose Bombing Range. All material is loose in the envelope, which is labeled directly in marker. No other documentation was found concerning this investigation. According to information in the survey form, collections were made at this site 50 years prior to the Geoscientific investigation, and the collection was purportedly placed at Eastern New Mexico University (ENMU) but then later disposed of. The evaluation team was unable to find any additional information on the disposition of this particular collection.

Collection 4. This collection is in a single acidic, manila, legal-size envelope containing documentation from the 1989 investigation of the Holloman Test Track conducted by OCA. Types of documentation in the collection include USGS topographic maps, survey records such as site forms and field logs, and artifact inventories and tables. The material is housed loose in the envelope, which is labeled both directly in marker and with a preprinted, computer-generated, adhesive label. Overall condition of the collection is good, but the presence of contaminants in the collection presents a danger to the paper documentation.

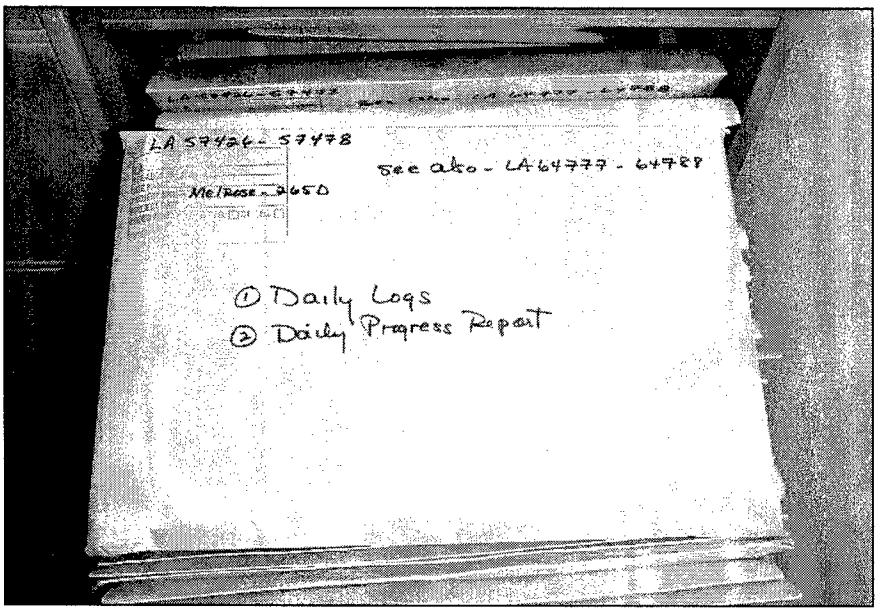

Figure 49. Melrose AFR documentation is housed in acidic manila envelopes that are labeled directly in marker and with a customized stamp.

Collection 5. This collection consists of a single acidic, manila, legal-size envelope containing documentation from the 1992 investigation at Holloman AFB, also conducted by OCA. Documentation includes administrative records, survey records, and three 4-x-6-inch color photographs. Label information consists of the site number and year recorded directly on the envelope in marker. Overall condition of the collection is good, although contaminants remain.

None of the collections have been archivally arranged or described in finding aids. Researchers can access the information, however, through the NMCRIS database. The collections are in fairly good condition, but the contaminants should be removed, and the photographic and oversized materials should be stored according to their special requirements.

Since the evaluation was conducted, NMARMS has applied for and received a grant to rehabilitate the older collections. A trained archivist was hired for this rehabilitation project and has begun placing new collections in acid-free folders.

Photographic Records

Only Collections 1 and 5 contain any photographic materials. Two envelopes from Collection 1 contain photographic materials including negatives, contact sheets, and slides. None of these materials have been properly prepared for long-term storage. All materials are clipped together with paper clips. Photograph logs are filed at the beginning of the material they describe. Logs are on acidic paper that has been filled out with ballpoint pen. The ink has begun to smear and is becoming illegible. Slides are placed in nonarchival plastic sleeves that have been labeled in ballpoint ink. Once again, the ink is beginning to seriously deteriorate. Some individual slides are labeled directly, but most are not. Finally, the sleeves are beginning to adhere to the slides because of deterioration. If this situation is not corrected soon, the potential for the loss of this information is greatly increased. The photographic documentation in Collection 5 consists of three color prints that have been attached to other documents. Each print has a preprinted, typed, adhesive label on the back. No attempt has been made to properly prepare these prints for long-term storage. All photographic materials in both collections have been stored with the paper documentation in improper conditions.

Maps and Oversized Documents

Only Collection 1 contains oversized documentation. This collection contains oversized maps that have been creased, folded, and stored with the rest of the associated documentation in a legal-size, acidic, manila envelope.

Reports

All reports are stored in a room separate from the associated documentation. None of the reports have been copied on acid-free paper, nor have the nonarchival bindings been removed. Reports are systematically numbered upon receipt and are added to the NMCRIS database for information retrieval. All reports are housed in acidic cardboard magazine holders, which have been labeled directly in pencil. Labels are consistent throughout the collection and are simply the report numbers contained in each individual storage unit. All of these magazine holders have been placed on compact shelving installed specifically for the storage of these reports (Figure 50). These shelving units have reached approximately 60 percent capacity.

Collections-Management Standards

Registration Procedures

Accession Files. All materials are accessioned upon receipt. Additionally, all information is immediately entered into the NMCRIS database to facilitate researcher access.

Location Identification. The physical location of all documentation is specified in the NMCRIS database. All information added to the database system (as of October 1993) automatically includes this information.

Cross-Indexed Files. The database not only serves as a master catalog for the NMARMS holdings but also enables researchers to search several fields, all of which are cross-indexed.

Published Guide to Collections. Although no published guide exists, the staff has developed an annotated guide for internal use. This guide

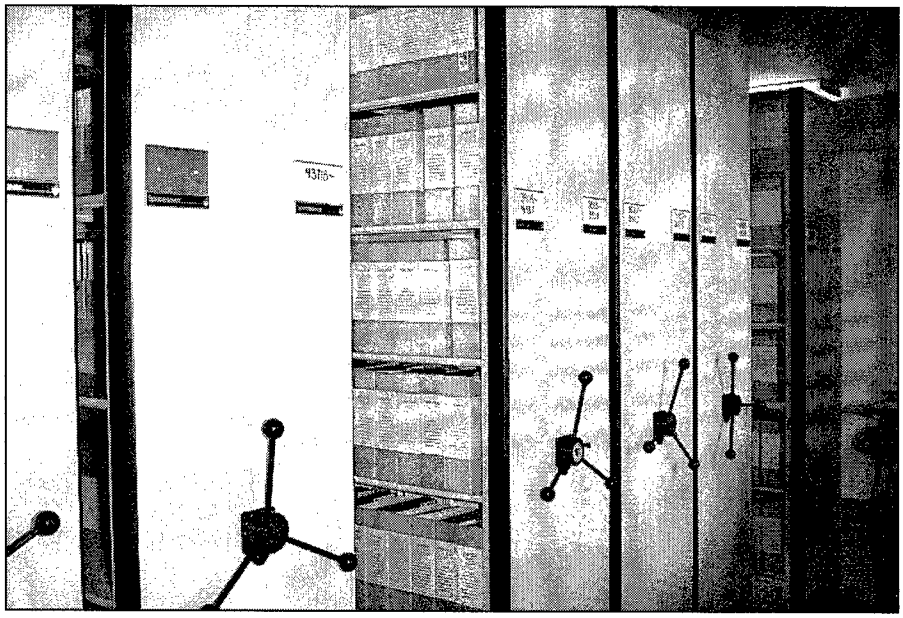

Figure 50. Reports are stored on compact shelving units at NMARMS.

was originally developed in 1990 and is updated as new collections arrive.

Site-Record Administration. MIAC/LOA has established a sequential numbering system for the state that has been in use for several years. These numbers are cross-referenced with the report numbers and the site files maintained by NMARMS.

Computerized Database Management. All information on associated documentation, state site-recording forms, reports, and artifacts housed in LOA are entered into NMCRIS upon receipt. The database is regularly maintained and augmented by NMARMS staff. The NMCRIS database serves as the repository's finding aid. Additionally, a complete copy of the database is generated on a monthly basis and the copy is stored off-site.

Written Policies and Procedures

Minimum Standards for Acceptance. Minimum standards for the acceptance of archaeological records are outlined in the NMCRIS User's Guide (see Appendix 14).

Curation Policy. A written curation policy is being developed by the NMARMS staff. Until this document is completed, however, recommendations for submission of associated documentation is outlined in the *NMCRIS User's Guide* (see Appendix 14).

Records-Management Policy. A written records-management policy is being developed by the NMARMS staff. Until this document is completed, some basic guidelines are outlined in the *NMCRIS User's Guide* (see Appendix 14).

Field-Curation Procedures. NMARMS does not accept artifacts for curation; therefore, no field-curation procedures are necessary.

Loan Policy. Materials curated by NMARMS are not available for loan. The staff will copy any information requested by researchers at no cost.

Deaccessioning Policy. To date, the repository has not deaccessioned any material.

Inventory Policy. All materials are inventoried upon receipt.

Latest Collection Inventory. The last collection inventory was conducted in October 1993 in order to input all pertinent information into the new NMCRIS database system.

Curation Personnel

There are four full-time curatorial positions, one full-time computer specialist, and one full-time manager employed by NMARMS. None of the

four curation staff have formal archival training, although the MNM employs a full-time archivist who is available for consultation. The four curators are responsible for ensuring that the documentation is housed in a way that keeps it accessible to researchers while minimizing damage to the documentation.

Curation Financing

Curation activities are funded through federal agencies, state agencies, and grants. The amount allocated for meeting current, much less future, curation responsibilities is inadequate. In order to meet present curation responsibilities, the current budget needs to be at least doubled.

Access to Collections

Access to the collection is controlled by the curatorial personnel. The collection is open for use by qualified archaeologists, land-managing-agency representatives, municipal planners, and students with the proper credentials. Written requests and appointments are necessary for use of the collection.

Future Plans

Both NMARMS and MIAC/LOA ARC are fast running out of space for storage. Soon after the evaluation, the state government allocated $150,000 for the initial planning of an addition to the LOA building for New Mexico archaeological collections and associated documentation.

Comments

1. The LOA building is structurally sound.

2. Neither a proper HVAC system nor dust filters have been installed at NMARMS.

3. Lights have no UV filters.

4. Asbestos is present in the building.

5. An integrated pest-management system is in force at NMARMS.

6. The security measures installed in the building meet minimum federal standards for safeguarding archaeological collections and associated documentation.

7. Both fire-suppression and fire-detection systems in the NMARMS offices meet minimum federal standards.

8. Storage of associated records from Holloman AFB, Melrose AFR, and Cannon AFB does not meet modern archival standards.

9. All required registration procedures are developed and in place.

10. All proper written policies and procedures are in place.

11. Space allocated for the storage of associated documentation is approaching 100 percent capacity.

12. The NMARMS professional staff is dedicated to the safeguarding and care of the materials curated at their facility; however, funding is insufficient for proper curation.

13. NMARMS is a professionally managed institution that meets most federal requirements for the long-term curation of associated documentation. ACC materials stored at this facility should be considered secure.

Recommendations

1. Provide more dedicated space for records storage.

2. Install an HVAC system, with proper dust filters, to control the temperature and humidity in the facility.

3. Place UV filters on fluorescent lights in the documents storage area.

4. Arrange associated documentation according to modern archival procedures and create a finding aid for the documentation collections.

5. Remove all contaminants (e.g., staples, paper clips, and rubber bands) from the documents.

6. Duplicate all paper records onto acid-free paper, and place in acid-free folders labeled in indelible ink. Place all folders in acid-free cardboard boxes, and apply adhesive, polyethylene plastic label holders, with acid-free inserts, to the boxes.

7. Place all photographic materials in archival-quality polypropylene sleeves, and place sleeves in acid-free, three-ring photographic binders. Photograph logs should be on acid-free paper in indelible ink.

8. Store photographic records in a stable environment equipped to monitor and control humidity and temperature.

9. Flatten oversized material and place in flat map-storage cases for long-term curation.

10. Make a duplicate copy of all associated documentation, and store these materials in a separate, fire-safe, secure location.

Repository 2: MIAC/LOA ARC, MNM

Date of Visit: March 22–24, 1994

Point of Contact: Dr. Patricia Nietfeld, Curator, ARC

Approximately 7.5 ft^3 of artifacts recovered from Melrose AFR are curated in Santa Fe by ARC at MIAC/LOA, a unit of MNM. The collection consists primarily of prehistoric materials, with small amounts of historical-period items. Of the total, prehistoric material classes include lithics (62.5%), caliche (18.5%), soil samples (5%), botanical remains (1%), flotation samples (1%), ceramics (0.5%), and faunal remains (0.5%), whereas historical-period material classes include metal (10%), ceramics (0.5%), and glass (0.5%). ARC currently does not curate collections from Holloman AFB or Cannon AFB. Associated records for the Melrose AFR collection, though part of the MIAC/LOA collection, are stored in the adjacent offices of NMARMS (see previous discussion).

MIAC/LOA ARC is the official clearinghouse for archaeological data in the state of New Mexico and works in conjunction with NMARMS. The database system used by NMARMS for site and report data is cross-indexed to the separate ARC database to facilitate research use.

ARC materials are housed in three locations: MIAC, LOA, and the La Villa Rivera (LVR) Building. ACC collections are stored only in LOA and the LVR Building.

LOA was originally constructed as one of the nation's first anthropological research centers and officially opened on September 1, 1931. Offices added to the back of the building in the 1950s now house NMARMS (see previous discussion), adjacent to the offices of ARC. The building is devoted primarily to records and artifact storage. Also present are offices, a loading dock, a materials and supply storage area, a report storage area, an artifact-holding area, an artifact-washing area, an artifact-processing area, an exhibit area, an auditorium, a library, and an archive. Rest rooms are available for public use, and research is conducted in part of one of the artifact storage areas. A small portion of the Melrose AFR collection is housed in LOA.

Additional storage space is located in the basement of the LVR Building in downtown Santa Fe. Formerly St. Vincent's Hospital, the LVR Building was purchased by the state government to provide additional office space for state employees. A large portion of the basement was designated a storage area for ARC materials, and the bulk of the Melrose AFR collection is located there.

Assessment

Structural Adequacy

LOA

The LOA building was constructed between 1927 and 1931. Offices were added at the back of the building during the 1950s to accommodate the need for more space, and renovations were made as need and funds arose. ARC occupies 3,191 ft^2 of the building, which is a bilevel

Figure 51. ARC stores their bulk collections in the basement of the LVR building.

structure constructed of brick and concrete blocks on a cement foundation (see Figure 47). The roof is covered with built-up asphalt of indeterminate age that has been patched with a rubber membrane. Interior office walls are plastered. Electrical, security, lighting, fire-suppression, and fire-detection systems have all been updated. Additionally, the walls have been painted, and parts of the facility have been recarpeted.

Windows in the ARC areas measure 29.5 x 51.5 inches (w x h). There are only four windows in the ARC areas of LOA, none accessible from the outside. All windows are framed with wood and are shaded. No evidence of leaking was noted by the evaluation team, but ARC staff noted that one window in Room 201 had allowed water through in the past during heavy rains. Recent repairs appear to have rectified this problem. Additionally, the corner ceiling of Room 106 (processing room) was reported to leak, and there was evidence of past water damage. There are three wooden doors in the interior of the ARC area, and one wooden door and three metal doors leading to the exterior of the building from ARC areas. The building is structurally sound, but many of the pipes in the building are insulated with asbestos. ARC staff indicated that the asbestos in the LOA building had been examined by state inspectors and judged to be contained.

LVR Building

This building was constructed in the 1930s of painted brick on a concrete foundation and originally served as the St. Vincent Hospital. It was designed with two wings—one, four stories; the other, five. A built-up roof covers both wings (Figure 51). There are no problems with leaks in the roof, but the ARC collections storage area, which is located in the basement, has developed some leaks between the wall and the foundation. When the building was converted from a hospital to an office building, several interior renovations were made, but very few of these were in the collections storage area. The collections storage area used by ARC occupies 4,560 ft^2 of the basement.

Interior basement walls are constructed of cinder blocks, and the floor in the basement is exposed concrete. The collections storage area occupies two large rooms and the hallway between them. In the rooms, there are metal and pressed plywood shelving units. Oversized ground stone is stacked on wooden pallets and housed in wooden crates that are situated in the hallway (Figure 52). Exposed pipes from the heating and plumbing systems run along the ceiling in both rooms used for collections storage and in the hallway that separates them. Many of these pipes are insulated with asbestos. The only functioning utility in the basement is electricity.

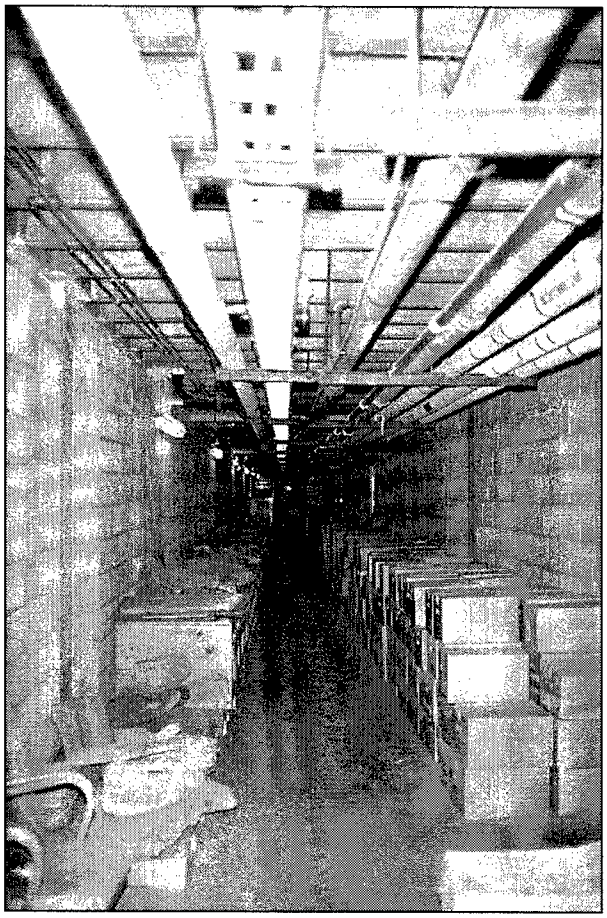

Figure 52. Ground stone is stored in the hallway between the two collections storage rooms in the basement of the LVR building.

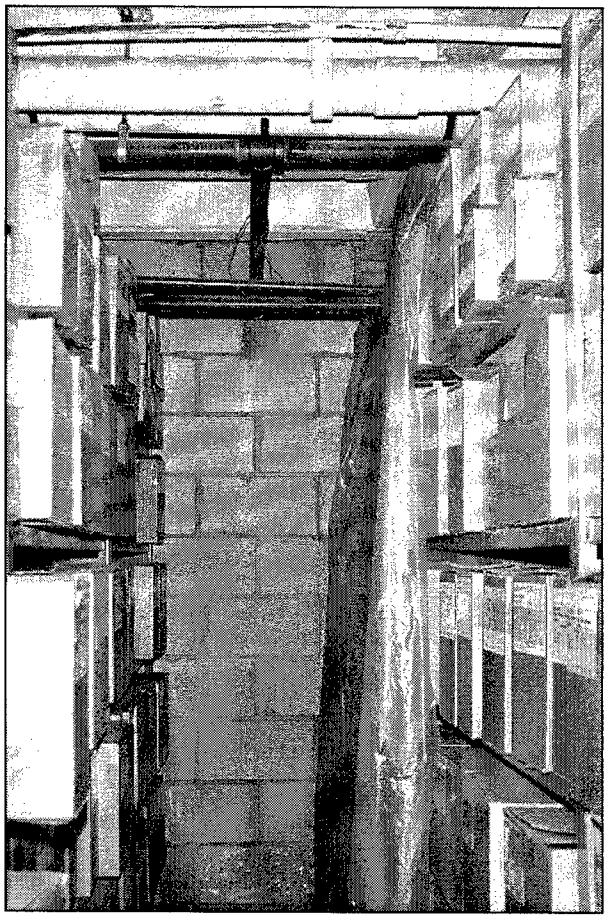

Figure 53. Plastic has been placed over the shelves and primary containers to prevent water damage from leaking overhead pipes.

No windows are present on the basement level of the building. There have been past episodes of overhead pipes leaking, and plastic has been placed over collections in one part of the storage area to prevent damage to the collections (Figure 53). Several holes are visible in the concrete ceiling in the collections storage rooms. Both storage rooms and the hallway have reached capacity. The hallway also serves as a storage area for excess furniture from other departments. The building is structurally sound, but it is not appropriate as a collections storage facility.

Environmental Controls

LOA

The building does not have an HVAC system. It is equipped, however, with steam heat, delivered by radiators. There is no air conditioning. No dust filters are in place, but the evaluation team noted little dust in the ARC collections storage area. There was a small amount of dust in the processing lab from artifact cleaning and washing (Figure 54). Temperature and humidity cannot be controlled in the collections storage area, although the staff regularly monitors both with hygrothermographs. Humidity is not a particular problem in the desert Southwest. Humidity is targeted at 35 to 40 percent. Lighting consists of fluorescent bulbs, incandescent bulbs, natural light, and desk lamps. UV sleeves are not in place on any of these light sources. The plumbing and electrical systems are maintained on an as-needed basis, with regular checks on each.

LVR Building

No controls over humidity or temperature exist in the collections storage areas. Heating is provided from excess heat that emanates from the steam heat pipes that run along the ceiling.

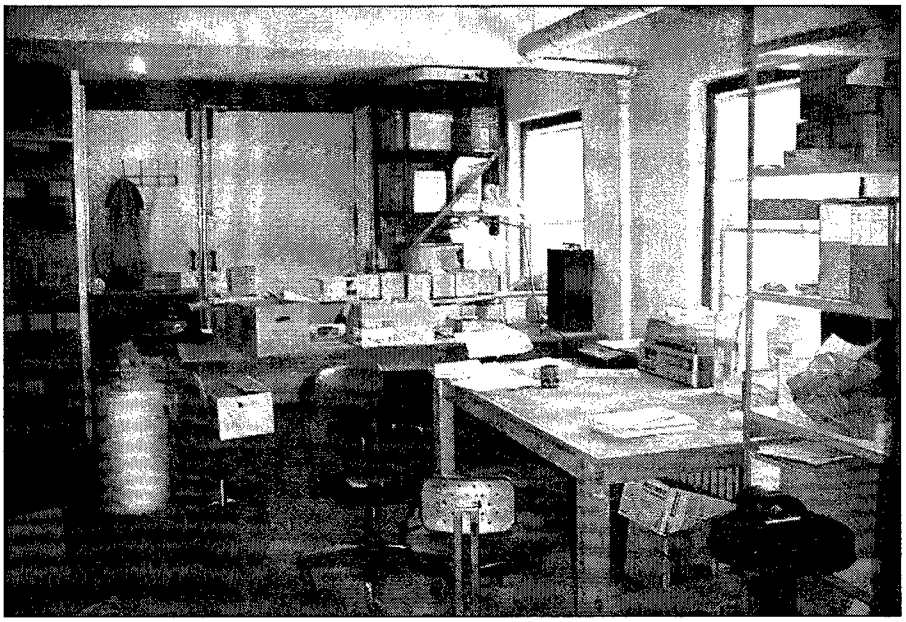

Figure 54. Processing laboratory in the LVR building.

No air conditioning is installed in this area, although the facility's underground location helps to keep the area cool. Humidity and temperature are monitored by a hygrothermograph in each of the storage rooms, but neither can be controlled (Figure 55). Lighting is provided by fluorescent light tubes, but no UV screens are in place. The offices in the building are regularly maintained by a professional janitorial service, but the collections storage areas are maintained by the curatorial staff on an as-needed basis.

Pest Management

LOA

An integrated pest-management plan consisting of both monitoring and control is implemented. A professional entomologist monitors the area for signs of infestation, as do curatorial staff. Traps are changed monthly, and infestations are treated on an as-needed basis.

LVR Building

The same pest-management plan is established for the ARC basement storage areas as for LOA. Curatorial staff stated that there were occasional problems with silverfish, and the evaluation team noted several indications of spiders.

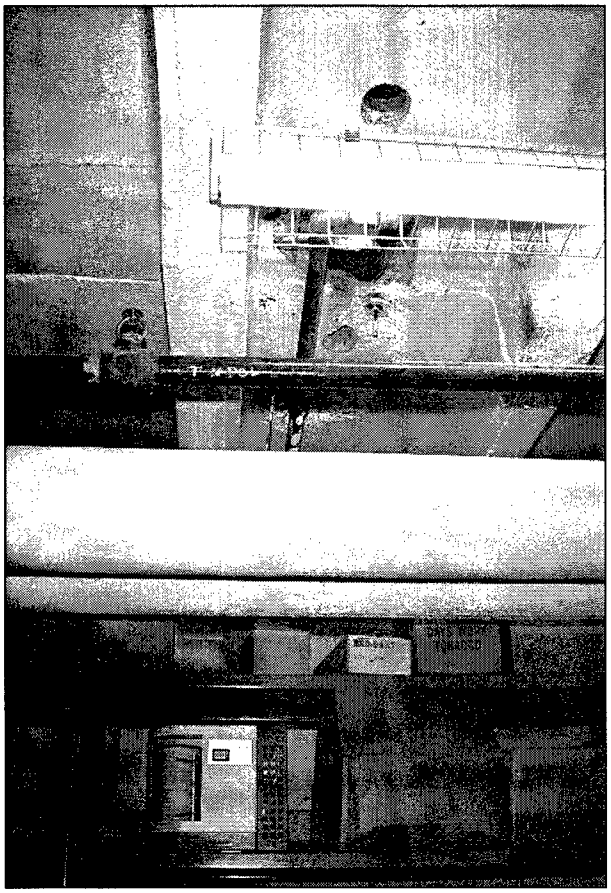

Figure 55. Hygrothermographs are located in each of the collections storage rooms in the LVR building. Also note the sprinkler system, unfiltered fluorescent lights, and holes in the concrete ceiling.

Security

LOA

LOA meets the minimum federal requirements for safeguarding archaeological collections and associated documentation. The building is protected with intrusion alarms, motion detectors, controlled access, and locks on all doors and windows. Only four windows in the ARC areas of the building are considered accessible from the exterior, and these have been secured with bars on the exterior and window locks on the interior. Motion detectors are located throughout the building. The front entrance to the building is secured with a double-cylinder, dead-bolt lock and a key-pad security code. The intrusion alarm and motion detectors are wired directly to a private security company. The evaluation team noted no evidence of unauthorized entry, and curatorial staff indicated that no past episodes of this nature had occurred.

LVR Building

All doors leading to the basement are constructed of metal with double-cylinder, dead-bolt locks. There are also dead-bolt locks on the four doors leading directly to the ARC storage rooms. Only a limited number of people have access to the basement storage rooms, but it is not limited to curatorial staff. Maintenance people have access, as do other individuals who are responsible for the LVR facility. No intrusion alarms or motion detectors are in place. In addition to the ground stone stored in the hallway, excess furniture from other departments is also stored in this building. Curatorial staff noted that some of this material had been subject to theft, but there had been no episodes of unauthorized entry in the collections storage areas since the installation of dead-bolt locks.

Fire Detection and Suppression

LOA

The entire building is protected by manual fire alarms that are wired to the local fire department. Smoke detectors, heat sensors, and fire extinguishers also are installed in the building. Fire extinguishers are checked regularly by qualified personnel.

LVR Building

A water-sprinkler system runs throughout the collections storage rooms and the hallway. Fire alarms wired into the local fire department are located at either end of the hallway near the exits. Smoke detectors are located throughout the collections storage area. Three fire extinguishers are located in the hallway in the basement of the building. Two are mounted below the fire alarms near each exit; the third is in the hallway just outside one of the collections storage rooms. Fire extinguishers are checked on an infrequent basis, and the inspection tags were two years out of date.

Artifact Storage

Storage Units

LOA. Part of the Melrose AFR collection is stored in metal museum cabinets with wooden drawers (Figure 56). The ARC storage area in

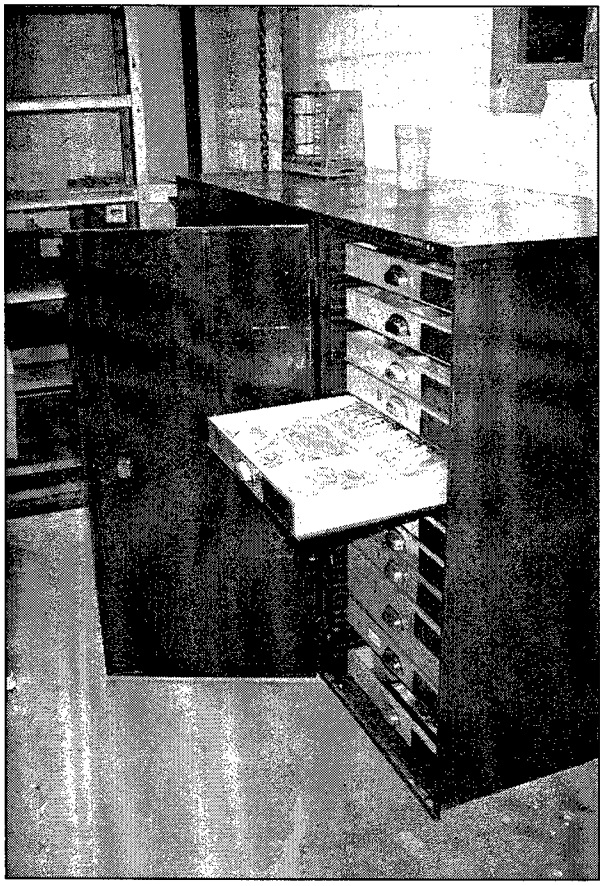

Figure 56. A few artifacts from Melrose AFR are stored in wooden drawers within a metal cabinet in the LVR building.

Figure 57. Primary containers used for collections storage in the LVR building.

LOA has reached 80 percent capacity, and some overstacking of boxes is apparent in the holding area. Without additional space, this situation will only worsen.

LVR Building. In both storage rooms, collections are stored on shelves constructed of painted metal rods and compressed plywood. Most units measure 36 x 20 x 72 inches (w x d x h). Several of these units are placed side by side to form rows. In the hallway, however, shelves are not set up. Ground stone and oversized artifacts are stored in cardboard boxes that have been stacked against one wall and on wooden pallets and in wooden crates lined along the opposite wall. None of the Melrose AFR collection is stored in the hallway. At one end of the hall, excess furniture and equipment from other departments are stacked along the walls.

Primary Containers

LOA. No primary containers are used in the curation of the artifacts recovered from the Melrose Bombing Range Survey. Secondary containers are placed inside a drawer in a metal museum cabinet.

LVR Building. All artifacts from Melrose AFR that are housed in this facility are curated in acidic cardboard boxes. The boxes are of varying standard sizes, ranging in volume from 0.25 to 1 ft^3. All have folded flap lids that have been taped shut in an attempt to prevent the entry of dust. The exterior of the boxes were dusty, but none had suffered any compression or water damage. Each box has a preprinted label taped to the front of the box with nonarchival tape. Additional information on the label is filled out directly in marker. Label information is concise, legible, and consistent (Figure 57).

Secondary Containers

LOA. The Melrose AFR artifacts housed in this building are in two four-mil, zip-lock bags stored in a drawer of a metal museum cabinet. Each of these bags has been labeled directly in marker in a consistent and legible manner. Smaller two-mil, zip-lock bags have been nested in each of the larger, heavier-grade bags. Each of the two-mil bags has also been labeled directly in marker (Figure 58). Some of the smaller bags have suffered from minor puncture damage. In two cases, additional labels are inserted into bags. These additional labels are pieces of a manila envelope that have been filled out directly in marker.

LVR Building. Ninety-eight percent of the secondary containers housing Melrose AFR artifacts in this building are zip-lock bags of either four- or two-mil grade. In most cases, the

Figure 58. Artifacts from Melrose AFR that are kept in the LVR building have been packaged in internested, two-mil, zip-lock plastic bags, labeled directly in indelible ink.

artifacts are packaged in two-mil bags, which have been nested inside larger four-mil bags. Both types of bags are labeled directly with marker. The final two percent of secondary containers are manila envelopes, which also have been labeled directly in marker. Envelopes are secured with rubber bands. Many of the two-mil bags have suffered damage from sharp artifacts puncturing the plastic.

Laboratory Processing and Labeling

LOA. All Melrose AFR artifacts housed at this facility have been cleaned and sorted by material class. None, however, have been labeled directly (Figure 59). This could create identification problems if the artifact should inadvertently be separated from its accompanying provenience information.

LVR Building. Ninety-six percent of the Melrose AFR artifacts housed at the LVR Building have been cleaned. All artifacts have been sorted by material class, but none have been labeled directly. Again, this could create problems with identification if artifacts were to be separated from their labels.

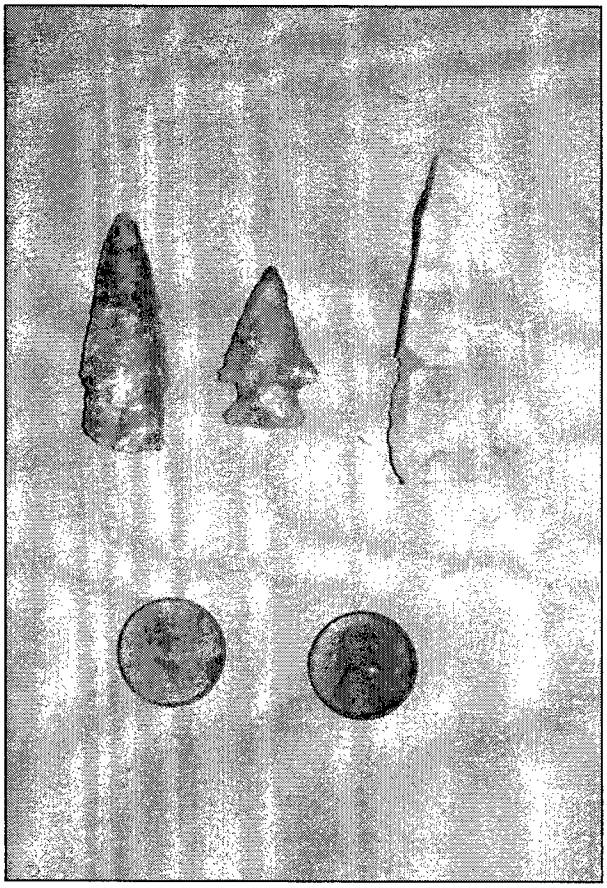

Figure 59. Artifacts from Melrose AFR have been cleaned and sorted, but none have been labeled directly in india ink.

Human Skeletal Remains

No known skeletal remains were recovered from Holloman AFB, Cannon AFB, or Melrose AFR.

Records Storage

ARC does not curate associated documentation, although the documentation is part of the MIAC/LOA collections. Curation of records is performed by NMARMS (see previous discussion).

Collections-Management Standards

Registration Procedures

Accession Files. All artifacts and associated documentation are accessioned upon receipt into the MIAC/LOA collections by the MIAC/LOA registrar. Federally owned collections are accessioned as long-term loans from each agency. Artifact collections are entered into the ARC database and cross-indexed with the NMCRIS database, which is maintained by NMARMS and contains site, report, and project information.

Location Identification. Information on the physical location of collections is not kept in the MIAC/LOA accession file, but it is entered into the ARC database.

Cross-Indexed Files. Holdings in ARC are entered into the ARC database, and several fields are cross-indexed with the NMCRIS database to facilitate researcher use.

Published Guide to Collections. No published guide to the collections exists.

Site-Record Administration. LOA established a sequential numbering system for the state of New Mexico that has been in use since the 1930s. These numbers are cross-referenced with the report numbers and the site files maintained by NMARMS and with the artifact collections curated by ARC.

Computerized Database Management. All information on associated documentation, state site-recording forms, and reports are entered into the NMCRIS database upon receipt. Information on artifact collections is entered into the ARC database and cross-referenced to the NMCRIS database. The ARC database is maintained by ARC staff, while the NMCRIS database is maintained by the New Mexico SHPO and the staff of NMARMS.

Written Policies and Procedures

Minimum Standards for Acceptance. Minimum standards for the acceptance of collections and associated documentation are outlined in the "Procedures for Submission of Collections to the State Archaeological Repository" (see Appendix 15).

Curation Policy. MIAC/LOA has a written curation policy that addresses processing, labeling, cataloging, inventorying, and proper documentation of incoming collections.

Records-Management Policy. While all associated documentation is part of MIAC/LOA's collections, it is curated by NMARMS.

Field-Curation Procedures. Field-curation procedures are outlined in the "Procedures for Submission of Collections to the State Archaeological Repository" (see Appendix 15).

Loan Policy. The MNM, of which MIAC/LOA is a unit, has very specific guidelines on loaning material, both as loaner and loanee. The state of New Mexico also has passed legislation governing the loan of museum materials (1989, Chapter 211, Senate Bill 332, as amended).

Deaccessioning Policy. State-owned archaeological collections are never deaccessioned. Federally owned collections are maintained by MIAC/LOA as long-term loans from each agency, and each agency determines the disposition of its collections. Private collections deeded to the MNM can be deaccessioned, but all items must first be appraised and then a written request to deaccession an item must be made to the associate director of the MNM. If the item in question is appraised at $500 dollars or more, additional approval from the MNM Board of Regents must be obtained before deaccessioning can be completed.

Inventory Policy. All incoming collections accepted by ARC are inventoried upon receipt. Old ARC collections that have never been properly inventoried are inventoried as funds and staff time allow.

Last Collection Inventory. The last collection inventory in ARC began in 1989 and has been ongoing since that time.

Curation Personnel

ARC has one full-time curator, two full-time assistant curators, one half-time data-entry clerk, and two quarter-time student workers. The curator is responsible for curating collections, controlling access to the collections, assisting researchers, developing additional control measures as needed, and supervising the rest of the curatorial staff. The curator has a Ph.D. in Anthropology with an emphasis in museum studies; one assistant curator has an M.A. in Anthropology, and the other has a B.A.

Curation Financing

Curation is financed in part through a one-time, per-box fee charged to the agencies storing archaeological collections and data at MIAC/LOA. Additional funds are obtained through contracts with agencies to upgrade storage conditions and perform inventories of their collections and from a cooperative agreement with one federal agency for annual maintenance as required under 36 CFR Part 79. Draft cooperative agreements for annual maintenance fees have been sent to five other federal agencies, but, to date, none have budgeted for annual maintenance of their collections. Current funding is insufficient to meet current curation responsibilities. The curator estimated that MIAC/LOA needs $6 million for an addition to LOA, funding for four full-time curators, and approximately $205,000 annually to fully meet curatorial responsibilities.

Access to Collections

Access to the collections is restricted to the staff of the MNM. Any other requests for access to the collections must be made in advance, in writing, to the curator. Legitimate researchers may use the collection, if approved by the curator.

Future Plans

Recognizing the need for a new facility to replace the ARC storage areas in the LVR Building basement, the 1994 New Mexico Legislature appropriated $150,000 for the initial design and planning of a 40,000-ft^2 addition to the LOA building, which would house both the ARC artifact collections and the documentation collections curated by NMARMS. A Request for Proposal (RFP) has been advertised, and architect selection is underway. The 1995 and 1996 State Legislatures will be asked for the funds necessary to complete the design and construction of this facility. ARC staff also hope to receive funds to maintain four full-time curation positions.

Comments

1. Asbestos is present in both LOA and the LVR Building. While currently judged as "contained," additional renovations may require its removal.

2. Both buildings are structurally sound.

3. The ARC storage areas in the LVR Building have reached capacity, while ARC areas in LOA have reached 80 percent capacity. Additional storage space is needed as soon as possible, and ARC staff hopes the plannned addition to the LOA building will alleviate this problem.

4. Neither collections storage facility has dust filters in place, nor does either facility have an HVAC system installed. In essence, humidity and temperature cannot be controlled in either storage area, but ARC staff regularly monitor both with hygrothermographs.

5. The LVR Building has no environmental controls—heat is provided by overhead steam pipes, and air conditioning is absent. Temperature and humidity cannot be controlled, but ARC staff regularly monitor both with hygrothermographs.

6. UV filters are not in place at either facility.

7. A pest-management system is in place in both ARC storage areas in LOA and the LVR Building.

8. LOA meets all the federal requirements for the proper safeguarding of archaeological collections and associated documentation.

9. Security in the LVR Building does not meet the minimum standards as described in federal regulations.

10. Both fire-suppression and fire-detection systems in LOA meet the federal requirements.

11. Fire-detection and fire-suppression measures are in place in the LVR Building; however, heat sensors are not installed, and fire extinguishers are not checked regularly.

12. The foundation in the LVR Building is cracked and allows water seepage. Additionally, some of the pipes above the collections leak.

13. Storage units used for curation of ACC collections in the LVR Building are not constructed of materials treated to prevent outgassing.

14. Artifacts are not labeled individually.

15. Primary containers housing Melrose AFR artifacts are constructed of acidic materials.

16. Labels inserted into secondary containers holding the Melrose AFR artifacts are not printed in indelible ink on acid-free paper.

17. All proper registration procedures have been developed, implemented, and consistently maintained.

18. All required written policies and procedures are in use by ARC at MIAC/LOA.

19. MIAC/LOA ARC is a professionally managed institution that meets most federal requirements for the long-term curation of archaeological collections. The ACC collection housed at this facility should be considered secure.

20. ARC staff is dedicated to the safeguarding and care of the materials curated at their facility; however, funding constraints have an adverse effect upon their ability to curate their collections up to federal standards.

21. No human skeletal remains from Holloman AFB, Melrose AFR, or Cannon AFB are curated by ARC.

Recommendations

1. Allocate additional space for collections storage as soon as possible. Continue pursuing a program to build an addition onto the LOA building.

2. Install proper environmental control devices in both facilities.

3. Install UV sleeves on the fluorescent lights in both collections storage areas.

4. Install additional security measures in the LVR Building—motion detectors, intrusion alarms, and additional locks, if the planned addition is not constructed.

5. Install enameled steel shelving units in collections storage areas currently lacking such units.

6. Fix the overhead pipes and the foundation in the LVR Building so that water leaks will no longer threaten the collections. Again, this measure is necessary only if collections remain in the building.

7. Install heat sensors and have fire extinguishers checked by qualified personnel in the LVR Building, if collections remain there.

8. Label all artifacts with india ink to prevent information loss if artifacts are separated from provenience data.

9. Ensure that all secondary containers are four-mil, zip-lock, polyethylene plastic bags labeled in indelible ink. Labels inside secondary containers should be made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), labeled in indelible ink, and inserted into the secondary containers.

10. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box contents change, inserts should be replaced. This method reduces the chance of conflicting and confusing information.

11. If ACC decides to curate their collection at this facility, they should make a formal arrangement with MIAC/LOA. Part of this arrangement should be an annual maintenance fee to ARC for its professional services.

Repository 3: U.S. Army Corps of Engineers, Albuquerque District

Date of Visit: March 24, 1994

Points of Contact: Dr. John Schelberg and Ronald Kneebone, Archaeologists

Approximately 2 linear feet of documentation from Holloman AFB and Melrose AFR are stored at the Albuquerque District office. This documentation includes correspondence, administrative files, financial records, scopes of work, finished reports, photographs, slides, oversized maps, and data compendiums.

District offices are located on the seventh floor of the Federal Building in downtown Albuquerque. The building occupies a full city block and accommodates the offices of several federal agencies. The total area of the building is approximately 42,500 ft^2. Rest rooms, offices, storage rooms, mechanical rooms, and a loading dock are all located in the eight-story structure. Telephone services, electricity, air conditioning, heating, and running water are available throughout the building.

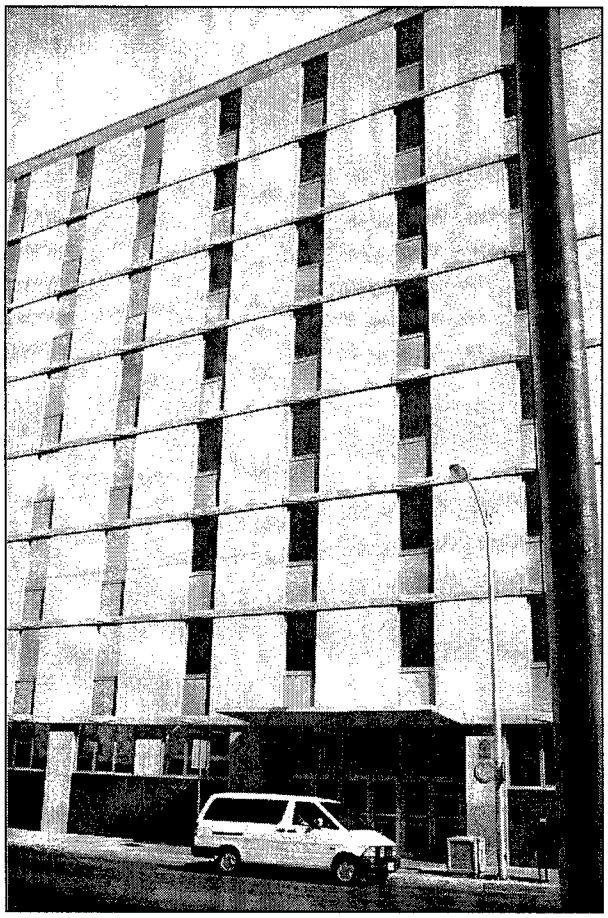

Figure 60. Exterior of the Federal Building in Albuquerque, which is considered structurally unsound.

Assessment

Structural Adequacy

The eight-story Federal Building was originally constructed in 1959 to provide office space for a variety of federal agencies. In addition to the eight stories above grade, the building also contains a basement and a subbasement. The building is constructed of concrete blocks with a brick facade situated on a concrete foundation (Figure 60). A new roof, constructed of built-up tar and gravel, was erected in 1993. The plumbing and electrical systems have never been updated, but the phone systems have been updated as needs of staff members change.

Associated documentation is housed in the Environmental Section, which occupies 800 ft^2 on the seventh floor (Figure 61). Interior walls are constructed of plasterboard, and the floor is made of concrete that has been carpeted. The ceiling is made of suspended acoustical tiles. Several interior renovations were performed in the past, but the building is now considered structurally unsound and further renovations are difficult, if not impossible. Although there are several windows throughout the building (none of which open), none are located in the Environmental Section.

Environmental Controls

The building does not have an HVAC system. It is, however, equipped, with a gas forced-air

heating system and central air conditioning. Dust filters are in place on the heating system and are changed regularly by General Services Administration (GSA) personnel. Temperature can be controlled in the Environmental Section, but it is kept at a level that is comfortable for the staff. Humidity is neither monitored nor controlled. Lighting consists of fluorescent bulbs and desk lamps with no UV filters. Regular maintenance of the plumbing and electrical systems, as well as cleaning, is performed by GSA personnel.

Pest Management

An integrated pest-management system is not in force in the building. Preventive spraying, however, is performed on a regular basis by GSA personnel. The assessment team noted no signs of pest infestation during the evaluation.

Security

The Federal Building meets most federal requirements for safeguarding archaeological collections and associated documentation. The building is protected with intrusion alarms, controlled access, a 24-hour security guard, and locks on all interior and exterior doors. Additional security is provided by keypad security systems on the interior doors of the offices. None of the windows open, and all windows on the first and second floors have basic window locks. The evaluation team noted no evidence of unauthorized entry, but the staff did not know if there had been past episodes of this nature.

Fire Detection and Suppression

Manual fire alarms are installed throughout the building. A wet sprinkler system is installed in offices and hallways. Fire extinguishers are located at regular intervals in the hallways. Extinguishers are checked regularly by qualified personnel. Fire doors are located between offices, but the facility cannot be considered fireproof.

Artifact Storage

No artifacts are currently being curated by the Environmental Section.

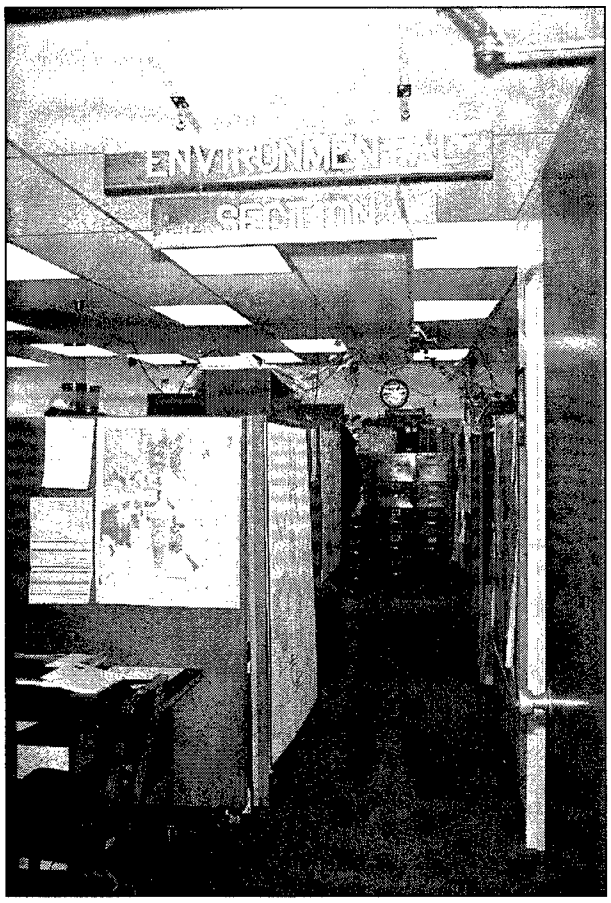

Figure 61. Entrance to the Albuquerque District, Environmental Section. File cabinets shown at the end of the aisle house most of the ACC associated documentation housed by the Corps.

Records Storage

Associated documentation from Holloman AFB and Melrose AFR consists of approximately 2 linear feet in three separate locations in the office area. One linear foot of documentation is kept in a four-drawer metal file cabinet that is located against the back wall of the Environmental Section (see Figure 61). Oversized maps are kept in a metal, vertical map cabinet in Ron Kneebone's office (Figure 62). Finally, all reports, photographic material, and data compendiums are kept on metal, enclosed bookshelves located in John Schelberg's office cubicle (Figure 63).

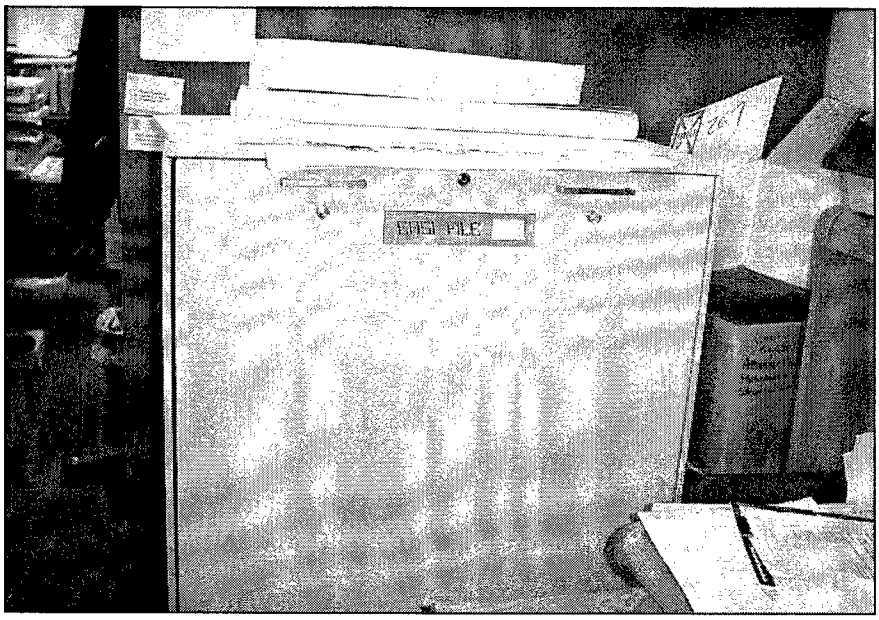

Figure 62. Maps are curated in a vertical map cabinet located in Ron Kneebone's cubicle.

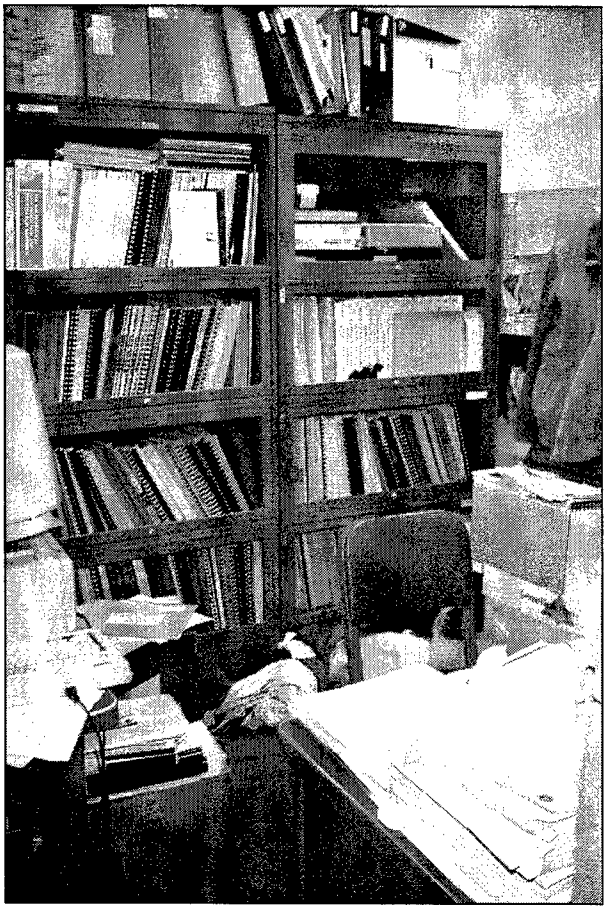

Figure 63. Reports, photographs, and compendiums are kept on enclosed metal shelves located in John Schelberg's office.

Paper Records

Approximately one-half of the associated documentation held by the Albuquerque District consist of paper records. Paper documentation is housed in a four-drawer metal file cabinet and in three three-ring binders. Types of documentation in the collection include the following: administrative records (approximately 47% of the collection), report records (44%), survey records (3%), and oversized material (6%). The material in the file cabinet is housed in acidic manila folders labeled in various media. Approximately 68 percent of the labels are handwritten in pen, marker, or pencil. The remaining 32 percent are computer-generated, nonarchival, adhesive labels. The material stored in three-ring binders is almost exclusively administrative records such as financial records, monthly progress reports, correspondence, and scopes of work (Figure 64). All this material is on acidic paper, and the material is divided with acidic paper dividers. All dividers are labeled, and approximately 75 percent of the labels are typewritten. The remaining 25 percent have been directly labeled in marker.

Photographic Records

Five notebooks containing photographic material are currently housed by the Environmental Section. Two notebooks contain information from investigations conducted on Holloman

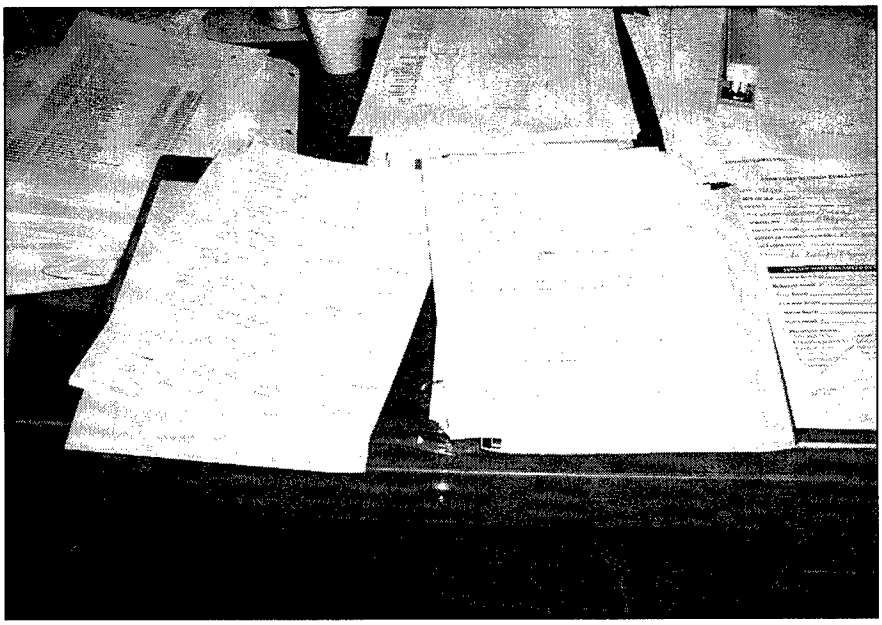

Figure 64. Associated documentation housed in a nonarchival-quality three-ring binder.

AFB; the last three contain photographic materials from investigations conducted on Melrose AFR. Photographic records include black-and-white negatives, prints, contact sheets, and slides, and color negatives, prints, and slides (Figure 65).

Notebook 1. This 3-inch notebook is an undated photographic representation from the Holloman Test Track investigation. It contains black-and-white prints, negatives, contact prints, and slides, and color slides. The notebook is constructed of vinyl and is not considered archival quality. Photograph logs on acidic paper are interleaved in the notebook, and none of the sleeves are of archival quality. Photographs are numbered on the back in nonarchival ink that is beginning to discolor. Slides are numbered with nonarchival adhesive labels that have been filled out in nonarchival ink. Contact sheets were previously stapled to other pages, and the staples are still present.

Notebook 2. This 1-inch notebook is a photographic representation of the Boles Well Annex investigation conducted on Holloman AFB in 1992. Again, neither the notebook nor the sleeves are of archival quality. The nonarchival sleeves are starting to degrade and damage the emulsion of the photographs. All photograph logs have been typed on acidic paper and

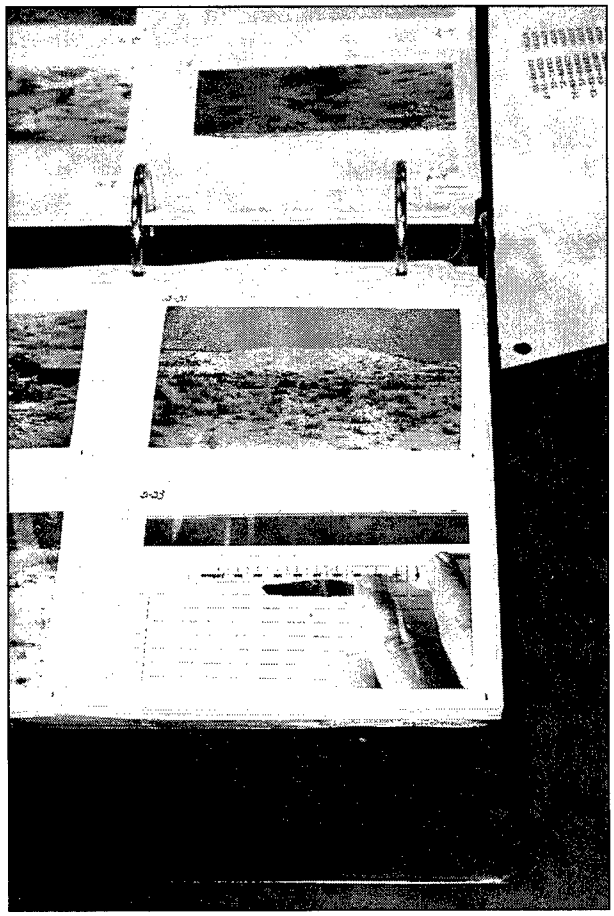

Figure 65. Photographic records are stored in nonarchival-quality sleeves that have begun to adhere to film emulsion.

interleaved. None of the negatives or slides have any identifying information recorded on them. Each photograph is numbered on the back in soft-lead pencil that has begun to smear.

Notebook 3. This 1-inch, nonarchival notebook contains contact sheets from a 1987 investigation conducted on Melrose AFR. Photograph logs are recorded on acidic paper and filed in the front of the notebook. Contact sheets are not in sleeves; they have had holes punched in them and were then placed in the notebook. None of the contact sheets are labeled. Negatives have been placed in archival sleeves of the wrong size, allowing the negatives to move around and increasing the possibility of damage to the emulsion. Slides are housed in archival slide preservers that have been labeled in nonarchival ink that is beginning to smear and discolor.

Notebook 4. This 1-inch notebook contains negatives, contact sheets, and slides taken during a 1991 investigation conducted on Melrose AFR. Neither notebook nor sleeves are constructed of archival-quality material. Photograph logs have been typed on acidic paper and interleaved in the notebook. Contact sheets have not been placed in sleeves and have been labeled on nonarchival adhesive labels. All slides have been labeled properly in archival ink. All labels are legible, concise, and consistent.

Notebook 5. This 1-inch notebook contains a slide presentation prepared by Mariah Associates that documents work conducted on Melrose AFR in 1988. The log has been typewritten on acidic paper. Neither the notebook nor sleeves are of archival quality. Ink used to label the slides is nonarchival, and label information is inconsistent.

Maps and Oversized Documents

Most of the maps have been placed in vertical, metal map cases. In a few cases, however, oversized maps are folded and placed in manila folders along with paper documentation. All maps have been labeled in a consistent manner, but none of the labels are in archival ink.

Reports

Reports are stored on metal shelves in John Schelberg's office. These shelves have glass doors, but the reports are too large to allow the doors to close. None of the reports have been copied onto acid-free paper, and the spiral bindings are made of nonarchival plastic.

Collections-Management Standards

The Albuquerque District office is not a curation facility, nor is its primary mission the recovery and curation of archaeological collections. Therefore, the office has neither staff nor financing for such curation, nor has the Albuquerque District established registration procedures and written policies that address the acceptance and curation of archaeological collections. Accession files, location information, cross-indexed files, a published guide, and a computerized database-management system are not in use. Formal policies have not been established in regard to minimum standards for acceptance, curation, records management, field curation, loans, deaccessioning, or inventorying, but the Albuquerque District office does follow the site-numbering system developed by LOA.

Comments

1. The Albuquerque Federal Building is structurally unsound.

2. The building does not have an HVAC system.

3. Humidity is neither monitored nor controlled.

4. UV sleeves are not in place on the fluorescent lights.

5. Security measures in the Federal Building meet the minimum federal standards for safeguarding archaeological collections and associated documentation.

6. None of the required registration procedures or written policies are maintained at this facility.

7. Fire-suppression and -detection systems meet the minimum standards required for the safeguarding of federal archaeological collections and associated documentation.

8. Documents have not been processed archivally, and finding aids are absent.

Recommendations

1. Transfer either the originals, or acid-free copies, of all associated documentation to the ACC installation where the investigations were conducted.

2. Each ACC installation should make formal arrangements with an appropriate repository for the long-term curation of all associated documentation.

3. Arrange all associated documentation according to modern archival procedures and create a finding aid for each collection.

4. Remove all contaminants (e.g., staples, paper clips, and rubber bands) from the documents.

5. Duplicate all paper records onto acid-free paper, and place in acid-free folders labeled in indelible ink. Place all folders in acid-free cardboard boxes, and apply adhesive, polyethylene plastic label holders, with acid-free inserts, to the boxes.

6. Place all photographic materials in archival-quality polypropylene sleeves, and place sleeves in three-ring photographic binders. Photograph logs should be on acid-free paper in indelible ink.

7. Store photographic records in a stable environment equipped to monitor and control humidity and temperature.

8. Flatten oversized material, and place in flat map-storage cases for long-term curation.

9. Make a duplicate copy of all associated documentation, and store these materials in a separate, fire-safe, secure location.

Repository 4: Maxwell Museum of Anthropology Warehouse, UNM

Date of Visit: March 25, 1994

Point of Contact: Brenda Dorr, Curator

Approximately 4 ft^3 of artifacts from Holloman AFB are currently being curated by the Maxwell Museum of Anthropology in Albuquerque. The collection consists of both prehistoric and historical-period elements. Of the total, prehistoric material classes include ^{14}C samples (35%), flotation samples (25%), lithics (23%), and other (15%), whereas historical-period material classes include glass (2%). The Maxwell Museum does not hold any of the documentation associated with the collection.

The Maxwell Museum of Anthropology is located on the UNM campus. The museum occupies at least 25 percent of the building that also houses the UNM Anthropology Department. In addition to this space (which is primarily exhibit, collections storage, and laboratory space), the Maxwell Museum also stores collections in a warehouse located elsewhere on the campus. Although the assessment team evaluated only the Holloman AFB collection that is stored in the warehouse, a building evaluation was conducted for both facilities, and the results are reported below.

Assessment

Structural Adequacy

Maxwell Museum

The building that houses the Department of Anthropology at UNM was originally constructed during the 1930s and 1940s. It originally functioned as office space and classrooms. In 1972, the Maxwell Museum of Anthropology was established. The museum was designed as an addition to the Anthropology building and was constructed specifically for museum exhibits. The addition provided much-needed space for the museum, but eventually many rooms of the

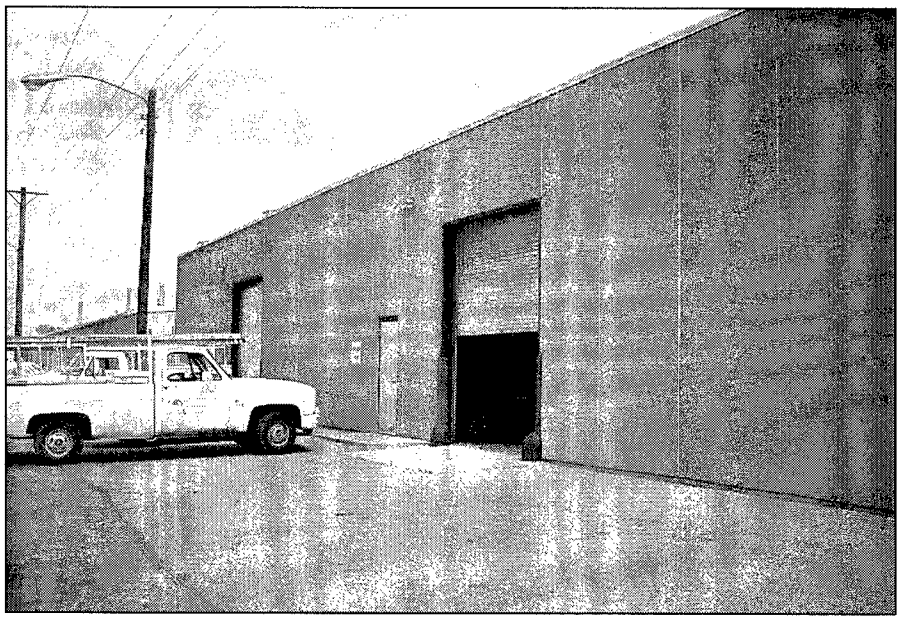

Figure 66. Warehouse used by the Maxwell Museum to house bulk archaeological collections.

Anthropology building were converted to serve museum space requirements. In 1990, a permanent gallery was constructed, and in 1992, the gift shop was expanded. Activity areas located in the museum include a receiving dock, an artifact-holding area, an artifact-washing area, an artifact-processing and conservation laboratory, a temporary artifact storage area, a supply storage area, a hazardous-materials storage area, exhibit space, an artifact study room, a records study room, a records storage room, a photograph storage room, a refrigeration unit, offices, osteology laboratories, a library, and a utility room.

The Anthropology building has two floors above grade and one floor below, occupying approximately 7,290 ft^2. Exterior walls are constructed of concrete blocks, some of which have adobe or stucco facing. The foundation is poured concrete and is considered structurally sound. The roof is made of tar and gravel and was completely replaced early in 1994. Other than the construction of the museum, there have been no exterior renovations. All windows have the original aluminum frames and are shaded. No evidence of leakage, of either air or water, was noted by the assessment team. Utilities and facilities in the museum include running water, rest rooms, heat, air conditioning, telephones, and electricity. The plumbing, electrical, and heating systems all date from the 1970s when the museum was completed. To the best of the staff's knowledge, there have been no major failures of any of these systems.

Warehouse

The warehouse used by the Maxwell Museum for storage of archaeological collections occupies 2,070 ft^2 and was originally constructed as a warehouse in the 1960s. It is a single-story, windowless structure constructed almost exclusively of concrete. The foundation and exterior walls are constructed of concrete, and exterior walls have a stucco finish. The roof is made of corrugated metal and concrete blocks and is original to the building. The warehouse has a receiving/loading dock, and the entire space is used to store bulk archaeological materials. Electricity and telephone service are the only functioning utilities in the building. The building does not have heat, air conditioning, plumbing, or humidity controls. No interior or exterior renovations have been made to the building (Figure 66).

Environmental Controls

Maxwell Museum

The building does not have an HVAC system, but it is equipped with an electric air-condition-

ing system and a gas forced-air heating system, both of which are zoned. Temperature and humidity are monitored in all collections storage areas. The temperature is controlled in these areas through the zoned heating system, and humidity is controlled though the use of portable humidifiers and dehumidifiers. Dust filters are present on the heating system and are changed regularly by university personnel. There is no asbestos present in the building. Janitorial services are provided daily by university personnel in all areas but the collections storage areas. Curatorial personnel clean collections storage areas on an as-needed basis. UV sleeves are in place on all overhead fluorescent lights.

Warehouse

There are no environmental controls present in the warehouse. It is equipped with neither heat nor air conditioning. Dust filters are not present, but the curatorial staff sweep the warehouse regularly. Light is provided by a portable fluorescent light that does not have UV protection.

Pest Management

Maxwell Museum

An integrated pest-management system is maintained by UNM. This system includes both monitoring and control activities. Curatorial staff monitor the facility and report any signs of pest infestation to the university. In addition, the facility is sprayed every three months by a professional pest-management company. The assessment team noted no signs of pest infestation during the evaluation.

Warehouse

A pest-management system is also in force at the storage warehouse. The curatorial staff are responsible for monitoring the area for pest infestation and for placing rat and mouse traps in the warehouse (Figure 67). Additionally, a professional pest-management company sprays the warehouse with a pesticide twice a year.

Security

Maxwell Museum

The Maxwell Museum meets the minimum federal requirements for safeguarding archaeological collections and associated documentation. The building is protected with intrusion alarms, controlled access, motion detectors, and locks (either key locks or dead-bolts locks) on all interior and exterior doors. Each of the storage areas in the building is opened by a different key, and all keys are located in a separate, locked room.

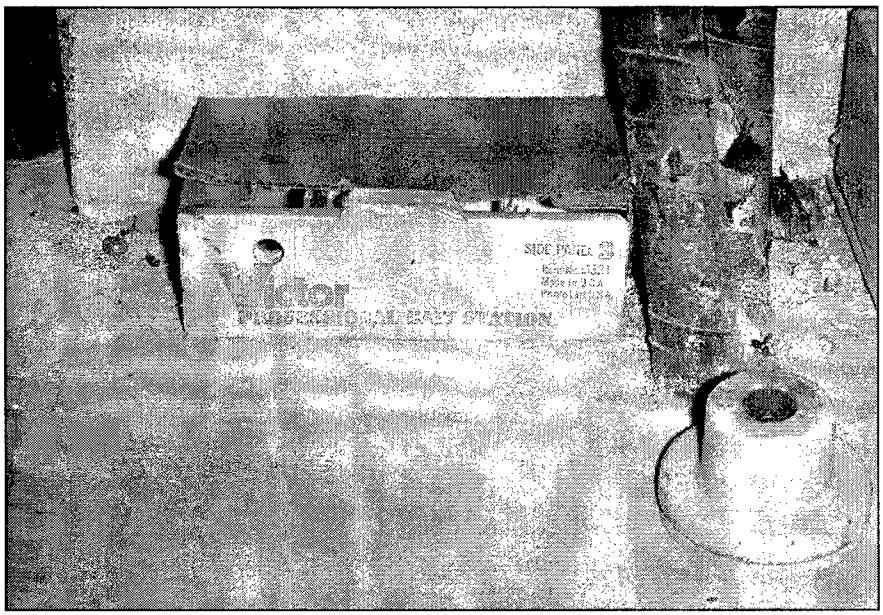

Figure 67. Baited traps are used as the primary deterrent against pests in the Maxwell warehouse.

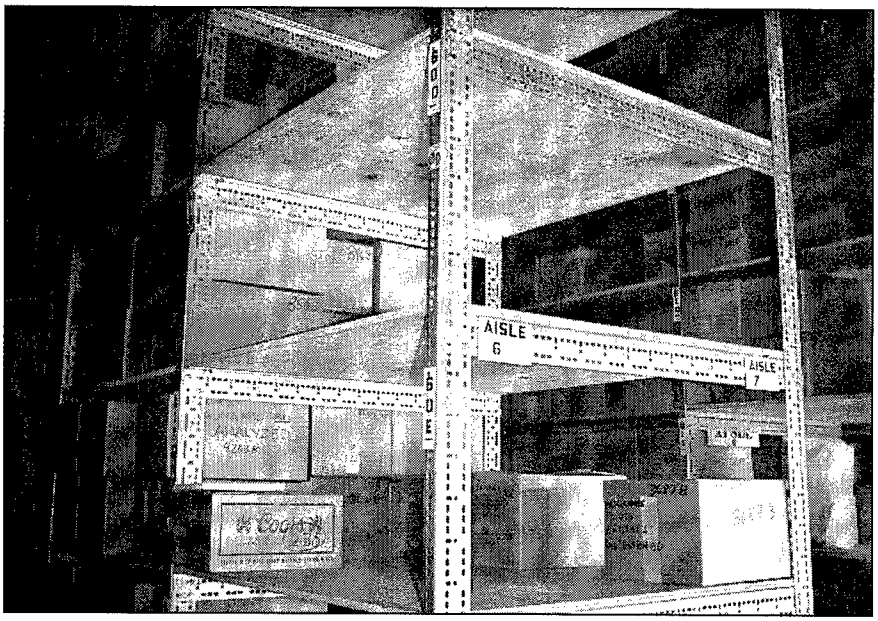

Figure 68. Metal-and-plywood shelves are the primary shelving units used in the warehouse.

Keys must be checked out and returned promptly after use. Two locked safes are used to store special collections. The primary storage area and processing laboratory is located in a secured area, and access is controlled by a keypad security system. The evaluation team noted no evidence of unauthorized entry, and the staff knew of only one case of theft, in 1975.

Warehouse

Security at the warehouse consists solely of a key lock located on the door. The loading dock door can be opened only from the inside of the building, so no additional security is used. University police also patrol the area on their rounds.

Fire Detection and Suppression

Maxwell Museum

Fire-safety measures include fire extinguishers, a sprinkler system, smoke detectors, and fire alarms wired directly into the local fire department. Fire extinguishers are located in each room used by the Maxwell Museum, and in most rooms there are two. Some of the fire extinguishers are halon, and some have outdated inspection tags. Most were inspected in 1993, but one was last inspected in 1987 and yet another in 1985. All are scheduled for annual inspection by qualified personnel. In addition, flood detectors are located in the main collections storage area. At one time, a water pipe broke, and there was a minor flood in this area. Although damage to the collection was minimal, flood detectors were installed to prevent any similar incidents.

Warehouse

The only fire-suppression devices in the warehouse are two fire extinguishers (one by the entrance and one on the opposite wall). Both were last inspected in October 1993. No fire-detection devices are installed in the warehouse.

Artifact Storage

Storage Units

Maxwell Museum. Artifacts curated in the Anthropology building are housed in a variety of storage units. Some are on shelving units, constructed of wood, metal, or a combination of the two. Other artifacts are housed in wooden cabinets with locking doors. Still others are kept in metal file cabinets with combination locks. None of the collections from Holloman AFB are curated in this facility.

Warehouse. All artifacts in the warehouse are stored on shelving units constructed of metal beams with plywood shelves (Figure 68). Each shelving unit measures 5 x 4 x 13 feet (w x d x h).

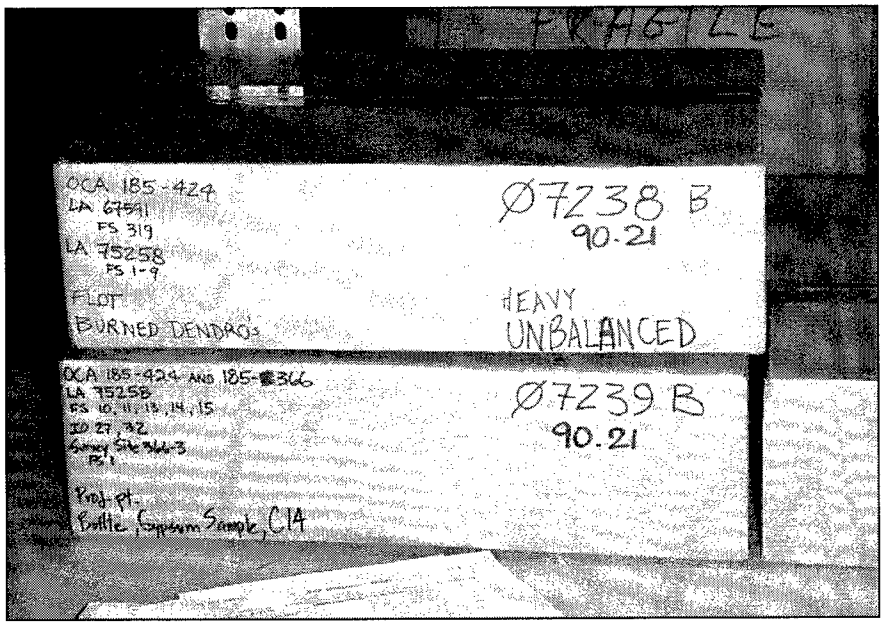

Figure 69. Labeled primary containers housing Holloman AFB collections.

Several of these units have been placed side by side to make rows. All told, there are seven long rows of shelving and two short rows of shelving. There are two tables set up at the end of two rows to provide space for researchers. Two metal cabinets are also used for storage.

Primary Containers

Maxwell Museum. Collections from Holloman AFB are not curated at this facility.

Warehouse. Primary containers containing Holloman AFB artifacts consist of acidic cardboard boxes, each secured with a folding flap lid that has been taped shut. The bottom of each box has also been reinforced with nonarchival tape. Holloman AFB material is housed in four boxes that each measures 18 x 12 x 6 inches (l x w x h). Label information includes accession number, original site numbers, LOA numbers, catalog numbers, and location information. All this information is recorded directly on the boxes in marker. Labels are nonarchival, but the information is consistent and legible (Figure 69).

Secondary Containers

Maxwell Museum. Collections from Holloman AFB are not curated at this facility.

Warehouse. Most secondary containers are two-mil, plastic, zip-lock bags. Other types of containers include manila envelopes, paper bags, open-mouth plastic bags, and small cardboard boxes (Table 16). All open plastic bags have been secured with wax string (Figure 70). All secondary containers have been labeled directly in nonarchival marker. Label information is consistent and legible.

Laboratory Processing and Labeling

Maxwell Museum. Collections from Holloman AFB are not curated at this facility.

Table 16.
Secondary Containers Used in Holloman AFB Collections at the Maxwell Museum of Anthropology

Container Type	Percentage Present
Two-mil, zip-lock bags	85
Plastic bags secured with wax string	6
Paper bags	5
Manila envelopes	2
Cardboard boxes	2
Total	100

Warehouse. All artifacts in the Holloman AFB collection have been sorted by material class. The bulk of the artifacts, however, are flotation samples, dendrochronology samples, and ^{14}C samples. These materials occupy three of the four boxes of the collection. The last box contains lithics. None of the artifacts have been labeled directly, but all the material has been cleaned.

Human Skeletal Remains

There are no human skeletal remains from Holloman AFB curated at the Maxwell Museum or at the warehouse.

Records Storage

The Maxwell Museum is not curating any associated documentation from Holloman AFB.

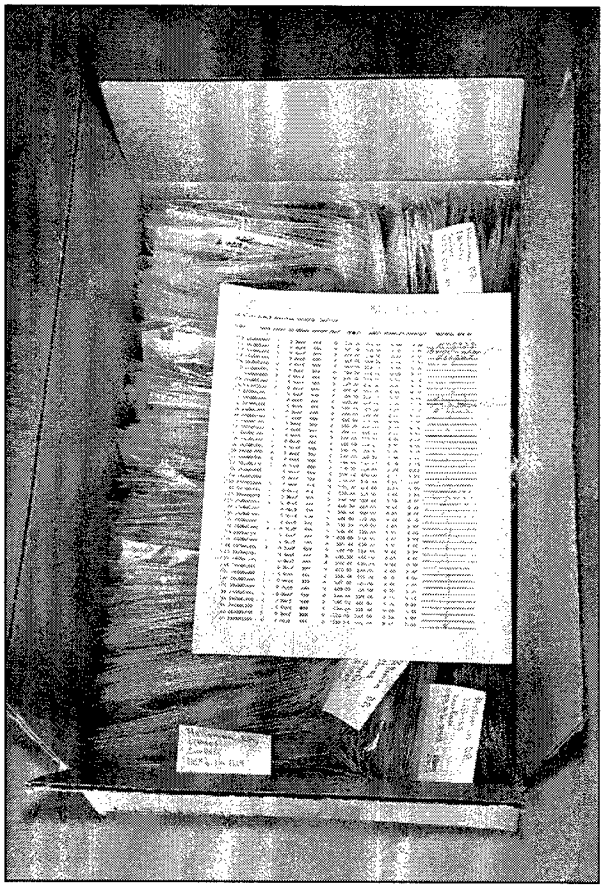

Figure 70. Secondary containers used to house Holloman AFB collections.

Collections-Management Standards

Registration Procedures

Accession Files. All materials are accessioned upon receipt. The information is kept on a paper copy and is also entered into the ARGUS computer system used by the Maxwell Museum.

Location Information. Information on the physical location of each collection is kept on the ARGUS computer system along with the accession files.

Cross-Indexed Files. All information that is kept on the ARGUS computer system is cross-indexed electronically and can be searched using several different fields.

Published Guide to Collections. A published guide to the entire holdings of the Maxwell Museum does not exist; however, this information can be printed out using the ARGUS database system.

Site-Record Administration. The Maxwell Museum of Anthropology follows the site numbers established by LOA.

Computerized Database Management. All information on the holdings of the Maxwell Museum and any associated documentation is entered into the ARGUS database. This database is regularly maintained and augmented by curatorial staff.

Written Policies and Procedures

Minimum Standards for Acceptance. The Maxwell Museum fully describes the minimum standards for acceptance of collections in "Requirements for Submitting Archaeological Collections to the Maxwell Museum of Anthropology," written by Kathryn Mauer Trinkaus in 1989. Sections 2 and 3 of this document discuss the preparation necessary for documents, archaeological artifacts, and human skeletal remains before submission to the museum (see Appendix 16).

Curation Policy. The curation policy of the Maxwell Museum is also described in "Requirements for Submitting Archaeological Collections to the Museum of Anthropology." Section 7 discusses the museum's curation responsibilities and the proper forms used by the museum

(see Appendix 16). The Maxwell Museum is also governed by Collections and Repatriation Policies.

Records-Management Policy. Sections 4–6 of "Requirements for Submitting Archaeological Collections to the Maxwell Museum of Anthropology" address the records-management policy of the museum (see Appendix 16).

Field-Curation Procedures. Preparation in the field is addressed in Section 2 of "Requirements for Submitting Archaeological Collections to the Maxwell Museum of Anthropology" (see Appendix 16).

Loan Policy. Procedures for requesting the loan of museum material, care for the loaned material, and return of the material are addressed in the "Maxwell Museum of Anthropology Archaeology Collection Loan Policy" (see Appendix 16).

Deaccessioning Policy. The Maxwell Museum is currently revising the deaccessioning policy in order to better address issues raised by NAGPRA.

Inventory Policy. The inventory policy of the Maxwell Museum is described in a standardized repository agreement between the museum and depositors. This document also specifies that collections will be inventoried every five years.

Latest Collection Inventory. The inventory process is ongoing, because the repository agreement states that each collection will be inventoried every five years.

Curation Personnel

The Maxwell Museum employs two curators of archaeology, one part-time and one full-time. These individuals are responsible for the care of bulk archaeological collections (both artifacts and documentation), acceptance of new collections, and other collections-management activities, maintenance of both electronic and manual catalogs, supervision of student workers, and collaboration with other staff members in developing long-term plans. There is also a director of the museum, a photograph archivist, a chief curator, a research coordinator, a curator of osteology, a curator of southwestern ethnology, a collection conservator, and a curator of collections, among other museum support staff. Most curatorial staff have at least an M.A., and some staff members have Ph.D.s.

Curation Financing

The Maxwell Museum is owned by UNM. Funding is provided for incoming federal collections and contract projects through a negotiated repository agreement (box fees) and annual maintenance fees. Additional funding is provided by UNM and grants.

Access to Collections

Legitimate uses of the collections include scholarly and educational use, commercial use, and inspections and inventories. Each individual must submit requests to the curator for approval. Each request is considered on its own merit. The process generally takes one to two months before approval is granted.

Comments

1. Both the Maxwell Museum and its warehouse are structurally sound.

2. Neither building has an HVAC system.

3. Humidity and temperature are monitored and controlled (by portable humidifiers and dehumidifiers) in the museum building. Neither are monitored or controlled in the warehouse.

4. Dust filters are in place in the museum but not in the warehouse.

5. UV sleeves are in place in the museum building but not in the warehouse.

6. An integrated pest-management system is maintained in both the museum and the warehouse.

7. Security in the museum meets federal requirements for safeguarding archaeological collections.

8. Security in the warehouse does not meet the minimum federal requirements.

9. Both fire-suppression and fire-detection systems in the museum meet the minimum federal requirements; however, halon extinguishers should be replaced, and all extinguishers should be inspected regularly.

10. No fire-detection measures are installed in the warehouse, and the only fire-suppression measures are two fire extinguishers.

11. Flood-detection measures are located in the museum.

12. Some storage units in the museum collections storage areas are inappropriate, and none of the storage units in the warehouse are constructed of baked-enamel, metal shelving.

13. The Holloman AFB collection is housed in acidic boxes.

14. All proper registration procedures and policies have been developed and implemented by the Maxwell Museum.

15. Both funding and storage space are insufficient for the Maxwell Museum's current and anticipated needs.

16. The Maxwell Museum is a professionally managed institution that meets most federal requirements for the long-term curation of archaeological collections. The Holloman AFB collection stored in this facility should be considered secure.

Recommendations

1. If possible, find a storage area with a more stable environment for the collections currently housed in the warehouse.

2. Replace storage units, where necessary, with baked-enamel, metal shelves.

3. Update both security and fire-detection systems in the warehouse to meet minimum federal standards.

4. Label all lithic materials directly in india ink.

5. Replace secondary containers with four-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Labels for secondary containers should be made from spun-bonded polyethylene paper (e.g., Nalgene polypaper), labeled in indelible ink, and inserted into the secondary containers.

6. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should not be applied directly to the boxes. When label information or box contents change, inserts should be replaced. This method reduces the chance of conflicting and confusing information.

7. If ACC decides to curate their collections at this facility, they should make a formal arrangement with the Maxwell Museum of Anthropology. This arrangement should include some sort of financial recompense for the Maxwell Museum's professional services.

Repository 5: ACA Warehouse, ENMU

Date of Visit: March 28, 1994

Point of Contract: Steve Kittelson, Graduate Assistant

A total of 1 ft^3 of artifacts from Melrose AFR is curated at the ACA warehouse. The collection consists exclusively of lithic materials collected from the surface during a 1983 survey. The only documentation is a nine-page catalog of the artifacts and a cover letter from Geoscientific Systems and Consulting, the contractor who conducted the survey.

ACA's offices are located in Quay Hall on the ENMU campus in Portales. Collections are temporarily stored in a small office until they can be rehabilitated and moved to an off-campus warehouse. ACA established the warehouse as a storage facility for archaeological collections and associated documentation. The facility is not a museum or even technically a curation facility. They do not provide access to the

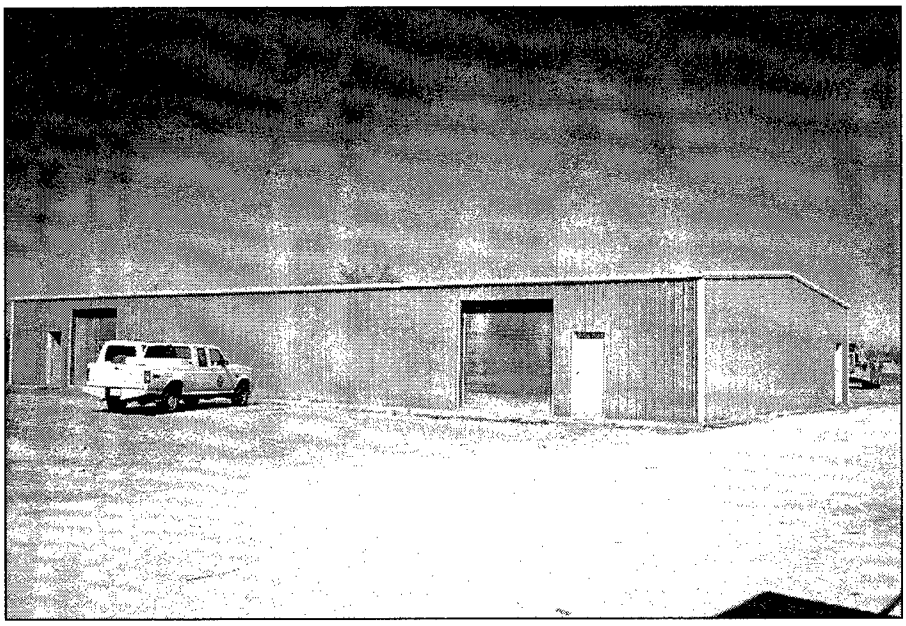

Figure 71. Exterior of the ACA warehouse.

collections for research, nor do they accept ownership of the collections. Staff members at ACA properly package artifacts and documentation and then store these materials in an acceptable environment for long-term preservation. In essence, the owners of the collections are merely renting space. Because the collections will not be housed in Quay Hall permanently, it was not evaluated by the assessment team.

Assessment

Structural Adequacy

Collections stored by ACA are kept in a single-story warehouse constructed of corrugated metal on a concrete foundation. The warehouse was constructed approximately 15 years ago by the university and was used for storage of grounds-keeping equipment. In 1993 the university allocated the entire warehouse for use by ACA. The roof is original to the building and also is constructed of corrugated metal (Figure 71). ACA has conducted some internal renovations such as removing partitions and installing insulation and plasterboard. The warehouse floor has also been treated and sealed to prevent any leaks in the foundation. Plastic-backed insulation has been placed in the ceiling and on the walls. Two small rooms have been created for storage of records and osteological collections. No windows exist in the building. Electrical and plumbing systems are present, but the water has been turned off until the rest room can be renovated. The warehouse, although in a state of renovation, is considered structurally sound and provides 5,000 ft^3 of storage space.

Environmental Controls

At the time of the evaluation, no environmental controls were present in the warehouse. A gas forced-air heating unit was located in the room reserved for documentation, but it was not functioning. ACA has plans to establish measures to monitor and control both humidity and temperature in the future. Dust filters and UV sleeves were not in place, but these measures are planned for later installation. Some dust was apparent, but the warehouse is currently cleaned only on an as-need basis by curatorial staff. Once an HVAC system is installed, targeted temperature and humidity levels will be 65° and 50 percent, respectively.

Pest Management

ENMU is responsible for the pest-management system in place at the warehouse. Measures include both monitoring and control activities. The university employs a professional

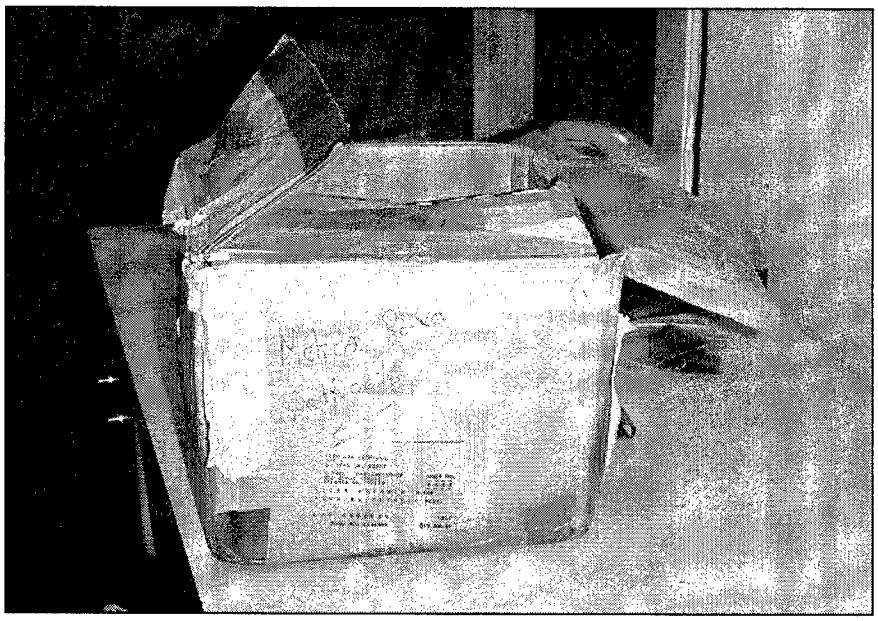

Figure 72. Damaged primary container housing Melrose AFR collection at the time of evaluation.

pest-management company that sprays quarterly. If curatorial staff discover pest infestation, the pest-management company will spray on an as-needed basis. The assessment team noted no signs of pest infestation at the time of the evaluation.

Security

Security is provided by key locks on the entrance to the warehouse and on the loading-dock door. No additional security was present at the time; however, a safe and museum specimen cabinets have been ordered. The lack of windows in the facility also provides some security. There have been no episodes of unauthorized entry into the warehouse.

Fire Detection and Suppression

The only fire-suppression devices in the warehouse are two fire extinguishers. Both extinguishers were last inspected in December 1993. No detection measures are in place, nor is there any other fire-suppression system. It may be that measures are planned for the warehouse but were not mentioned to the assessment team.

Artifact Storage

Storage Units

At the time of the evaluation, ACA was awaiting the arrival of 18-gauge, baked-enamel, metal shelving units. Because these had not yet arrived, some collections in the warehouse were stacked on pallets and wrapped in plastic, some were stacked on tables, and others were placed on wooden shelving units of various sizes. Once the metal units have been installed, the warehouse will look much less cluttered and will be at approximately 20 percent capacity.

Primary Containers

The artifacts collected from Melrose AFR are awaiting rehabilitation. Currently the collection is in a crushed, acidic cardboard box. The box is torn, and the folded flap lid has been creased and is covered in dust. Label information is recorded on the exterior of the box, written directly in marker. Although the label is legible, it consists only of the caption "Melrose Range Artifacts" (Figure 72). Once the material has been rehabilitated by ACA, the primary container will be a standard-size, acid-free box with a preprinted label filled out in indelible ink (Figure 73).

Secondary Containers

The primary container is packed with bubble wrap and styrofoam peanuts. Nested within these materials are plastic bags. Some of these bags are zip-lock, and some have merely been knotted to prevent the artifacts from falling out. None of these bags are of four-mil thickness, and many have been split open or have been punctured by the artifacts. None of the secondary containers have been labeled in any manner (Figure 74). During the rehabilitation, ACA will put each artifact in a four-mil, plastic zip-lock bag and label each in indelible ink (Figure 75).

Laboratory Processing and Labeling

All the artifacts from the Melrose AFR collection have been cleaned and labeled directly in india ink. The artifacts are sorted by provenience rather than material class.

Human Skeletal Remains

No human skeletal remains from either Melrose AFR or Cannon AFB are curated at ACA.

Records Storage

A small room in the warehouse has been created for the storage of associated documentation. This material will be stored on metal shelving

Figure 73. Unprocessed collections in the ACA warehouse.

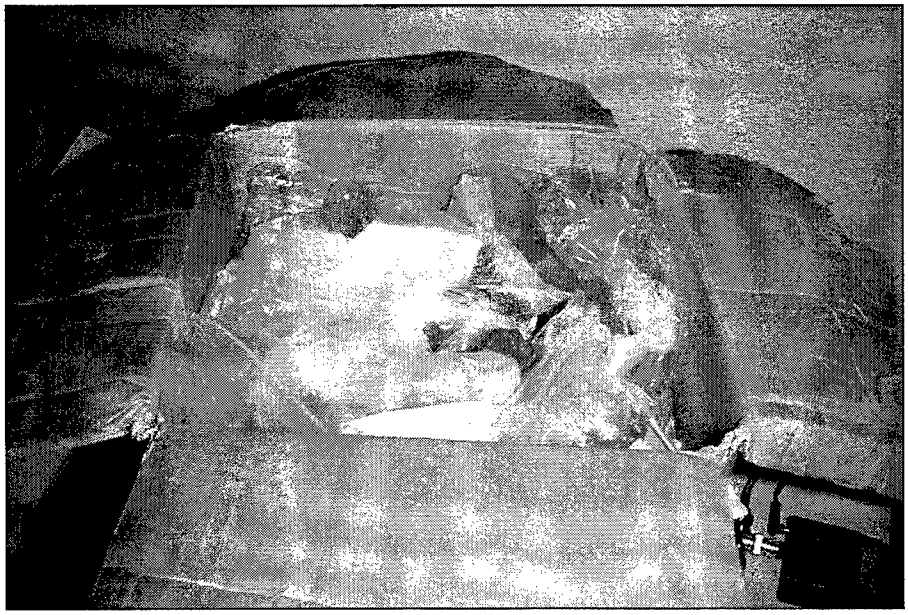

Figure 74. Unlabeled plastic bags were the secondary containers housing the Melrose AFR collection at the time of evaluation.

Figure 75. Example of secondary containers and labels used in a collection processed by ACA.

units when they are transferred to the warehouse. At the time of the evaluation, however, renovations were incomplete.

Paper Records

The only associated documentation from Melrose AFR is a nine-page catalog and a cover letter that currently is stored in the box with the artifacts. Once the associated documentation is rehabilitated, this catalog will be copied on acid-free paper, housed in acid-free folders that are labeled in indelible ink, and placed in acid-free boxes (Figure 76). All boxes will be labeled with archival-quality adhesive labels that have been filled out in indelible ink. These boxes will be stored in the records storage room in the warehouse for long-term storage. A second copy of all documentation, on acid-free paper, is stored in metal file cabinets in the ACA offices in Quay Hall.

Collections-Management Standards

Registration Procedures and Written Policies and Procedures

ACA maintains very few registration procedures because it is only a storage facility. They accept collections, process the materials according to federal regulations and guidelines, and store the

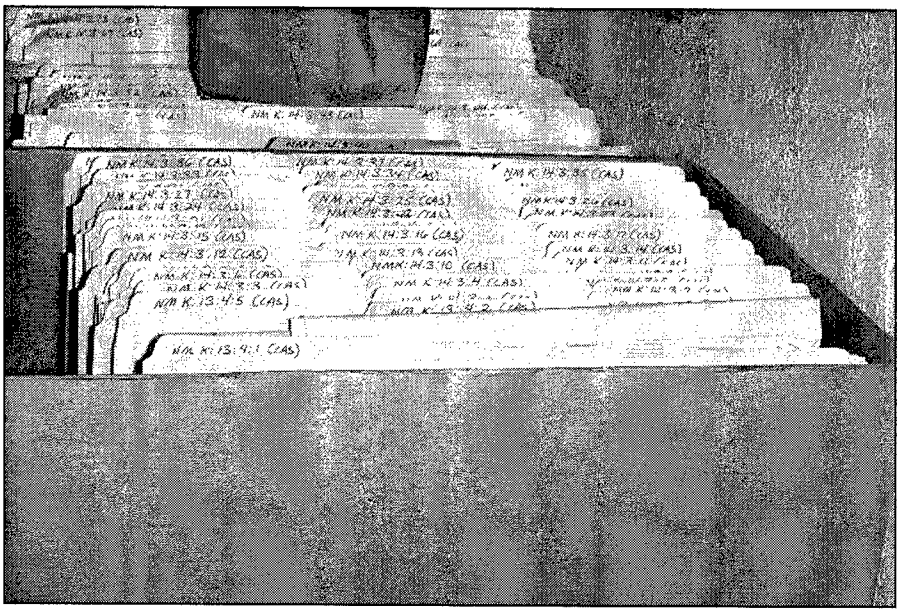

Figure 76. Properly processed associated documentation, which has been placed in acid-free folders labeled in indelible ink.

collections in a stable environment for as long as the owner wishes. ACA does not maintain an in-house catalog or inventory, per se. They do not deaccession material, loan material, or make the collections accessible for research. The material is rehabilitated and stored. The only records ACA maintains are for their own use (e.g., a database that lists the physical location and the contents of the collections they store). None of the guidelines or standards are currently in formal written form, but the staff is developing these standards.

Curation Personnel and Financing

ACA employs no full-time personnel. Rehabilitation activities are conducted by students under the supervision of the director, Dr. John Montgomery. Financing for collection rehabilitation and for maintenance of the facility comes directly from box fees charged for these activities. Additional funding is minimal.

Comments

1. The warehouse is structurally sound.

2. The warehouse is currently undergoing rehabilitation. Once rehabilitation is completed, the warehouse will have proper environmental controls, security measures, and shelving units.

3. An integrated pest-management system is in force.

4. Artifacts from the Melrose AFR collection require complete rehabilitation to meet current federal regulations.

5. Documentation from the Melrose AFR collection requires complete rehabilitation to meet current federal regulations and modern archival standards.

6. Registration procedures and policies are not in effect at the ACA warehouse, but the facility is a storage facility, not a repository.

7. Once all rehabilitation is completed, the ACA warehouse will be in compliance with the minimum standards for safeguarding federal archaeological collections.

Recommendations

1. If all rehabilitation goes as planned, ACA will be an appropriate storage facility. However, researchers will not have access to the collection. If ACC decides to keep the Melrose AFR collection here, they need to establish a formal, written memorandum of agreement with the repository for the long-term curation of these and any additional artifacts.

2. Replace secondary containers with four-mil, zip-lock, polyethylene bags, and label with indelible ink. Labels for secondary containers should be made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), labeled in indelible ink, and inserted into the secondary containers.

3. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box contents change, inserts should be replaced. This method reduces the chance of conflicting and confusing information.

4. Arrange associated documentation according to modern archival procedures and create a finding aid for the documentation collection.

5. Duplicate all paper records onto acid-free paper, and place in acid-free folders labeled in indelible ink. Place all folders in acid-free cardboard boxes, and apply adhesive, polyethylene plastic label holders, with acid-free inserts, to the boxes.

Repository 6: Holloman AFB

Date of Visit: March 30, 1994

Point of Contact: Martyn D. Tagg, Base Archaeologist

Approximately 0.5 ft^3 of artifacts are currently housed at Holloman AFB. The collection consists of both prehistoric and historical-period elements. Of the total, prehistoric material classes

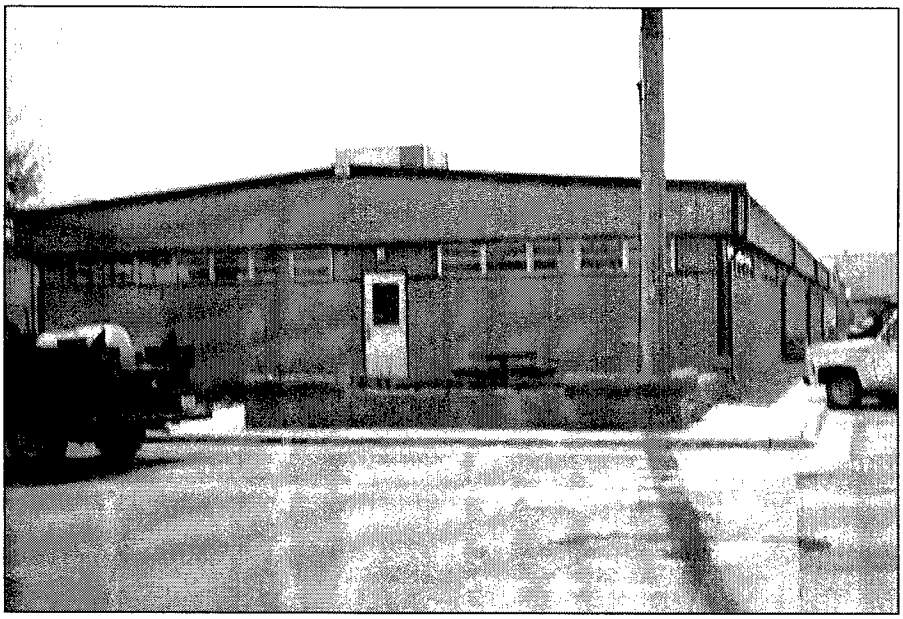

Figure 77. Exterior of the Civil Engineering Building addition housing the Environmental Flight offices.

include ceramics (35%) and lithics (15%), whereas historical-period material classes comprise metal (40%) and glass (10%). Associated documentation encompasses 1.5 linear feet and includes reports, administrative records, photographic records, and oversized maps.

The offices of the Environmental Flight are located in the Civil Engineering Building (550). This space is actually an addition that was built onto the existing Civil Engineering Building in 1971 (Figure 77). It contains office cubicles and a conference room but has no space allotted for the curation of archaeological collections. Utilities available in this facility include heat, air conditioning, electricity, and telephones. Rest rooms are located in the main portion of the building. After the March 1994 evaluation, the Environmental Flight offices were moved two offices down in the same building. Curation facilities and records are stored in the same manner as during the initial assessment but in a different location.

Assessment

Structural Adequacy

Collections from Holloman AFB are currently kept in a locked, two-drawer file cabinet in the office of base archaeologist Martyn Tagg. The building is constructed of corrugated metal walls erected on a concrete foundation. The roof is constructed of corrugated metal and is approximately two years old. The main portion of Building 550 is a two-story structure, but the Environmental Flight addition is only a single story. Windows are aluminum framed, but none are shaded. The windows show no leakage of air or water. The interior floor is carpet that has been installed over the concrete foundation. Interior walls are constructed of plasterboard, and the ceiling consists of suspended acoustical tiles. Offices are constructed of sectional furniture that form cubicles as individual offices. The assessment team noted no indication of cracks or leaks in the foundation walls. The building is considered structurally sound.

Environmental Controls

An HVAC system is installed in the Environmental Flight offices and was operating properly at the time of the assessment. Air conditioning is centralized, and heat is provided by a forced-air system. Temperature is maintained at levels dictated by AF Regulations and is concerned primarily with the comfort of the staff. Dust filters are in place in the HVAC system, but the assessment team noted the presence of dust on some

surfaces. Humidity is neither monitored nor controlled. Lighting is provided by overhead fluorescent lighting that has no UV sleeves in place. The offices and conference room are maintained on a regular basis by a professional janitorial service.

Pest Management

An integrated pest-management system is not in place. The Environmental Flight staff, however, monitor for any sign of pest infestation. If infestation is noted, the base entomologist is contacted, and control measures are taken. Staff members had previously noted a minor problem with cockroaches, but that has since been rectified.

Security

Security is provided primarily by key locks located on both doors to the Environmental Flight offices. Both doors are constructed of glass. One leads to the exterior of the building, and one leads to the office of the Mapping Section. All windows have basic slide locks and are located high off the ground, accessible only by ladder. Access to the Environmental Flight offices, and to the base itself, is controlled. Additionally, Holloman AFB security police regularly patrol the area and check the building during off hours.

One note on security should be made, however. The adjoining offices of the Mapping Section have a separate walk-in vault used for map storage. Many of these maps, while not directly the responsibility of the base archaeologist, are historic maps or historic architectural drawings of Holloman AFB and its buildings. These oversized materials are in the vault, and most are housed in flat, metal map cases. The vault itself has a security keypad that requires a code for entrance. There is another security keypad located directly outside the room that holds the vault. These materials are valuable resources, and Mr. Tagg informed the assessment team that Holloman AFB was investigating the possibility of having these materials conserved, cataloged, and stored in a more appropriate manner.

Fire Detection and Suppression

Fire-detection measures located in the Environmental Flight offices include smoke detectors and heat sensors. Fire suppression is provided by an overhead, wet-pipe sprinkler system; fire alarms wired directly to the base fire department; and halon fire extinguishers located in the room. Fire extinguishers are checked regularly by qualified personnel. The last inspection date was March 1994. Fire doors and fire walls are absent in the facility, and the building cannot be considered fireproof.

Artifact Storage

Storage Units

Holloman AFB does not presently have a large number of collections, and no special arrangements have been made for their storage. At the time of the evaluation the artifacts were kept in the bottom drawer of a locking cabinet (Figure 78). The base archaeologist hopes to eventually have a room dedicated to the long-term storage of archaeological materials.

Primary Containers

There are no primary containers for the Holloman AFB collection. Secondary containers are stored in a file cabinet drawer.

Secondary Containers

All artifacts in the Holloman AFB collections have been placed in plastic, zip-lock bags. Some artifacts also have been placed in paper bags or film vials and then placed in plastic bags. The bags show puncture damage and general wear and tear. Not all the bags have been closed or otherwise secured. Labels are provided for each artifact on acidic paper inserts that have been filled out in ballpoint pen. Information recorded on the labels is legible but inconsistent. Label information consists minimally of site number and project name.

Laboratory Processing and Labeling

All artifacts have been cleaned, but none have been labeled directly. The collections are sorted by provenience rather than material class.

Human Skeletal Remains

No known human skeletal remains from Holloman AFB are curated at the base repository.

Records Storage

The base archaeologist at Holloman AFB is also responsible for associated documentation generated by archaeological work conducted on base property. These records include administrative records, reports, photographs, and oversized records. Most of this material is kept in a series of three-ring binders that are stored in a metal, enclosed bookshelf (Figure 79). All site numbers and site information, however, are kept in the top drawer of the locking file cabinet that also houses the artifacts. Oversized material is currently kept stacked on a desk, but map cases are available for use.

The base archaeologist informed the St. Louis District of several changes that had occurred after the evaluation was conducted. New conditions are noted below, but the bulk of the discussion relates to conditions at the time of the evaluation.

Paper Records

Paper records from Holloman AFB archaeological work encompass approximately 6 inches of site forms. Information on each site is kept in an individual manila folder that has a typed, nonarchival adhesive label. Label information is legible and consistent. Information included on each label consists merely of the Holloman Report number associated with the site and with the LOA-assigned number. Mr. Tagg told the assessment team that there are 81 sites on the base (as of March 30, 1994). Only 18 of these, however, have been completely processed. The remaining numbers have not yet been filed by the individual contractors conducting surveys. Once this information is returned to the base, it will be integrated into the current filing system.

Photographic Records

Photographic records for Holloman AFB collections are stored in a nonarchival, three-ring binder. Records include color photographs and negatives and contact sheets. Negatives are stored in nonarchival sleeves. Contact sheets have had holes punched in each sheet so they could be interleaved in the notebook. All photographs have been placed into homemade "pockets" made by securing a smaller piece of paper to a letter-size page that is then interleaved in the notebook. The weight of the photographs have pulled the paper and ripped the punched holes, so that the paper is no longer in the notebook securely. Neither the contact sheets nor negatives are labeled.

Figure 78. Collections stored in the bottom drawer of a locking file cabinet in Martyn Tagg's office.

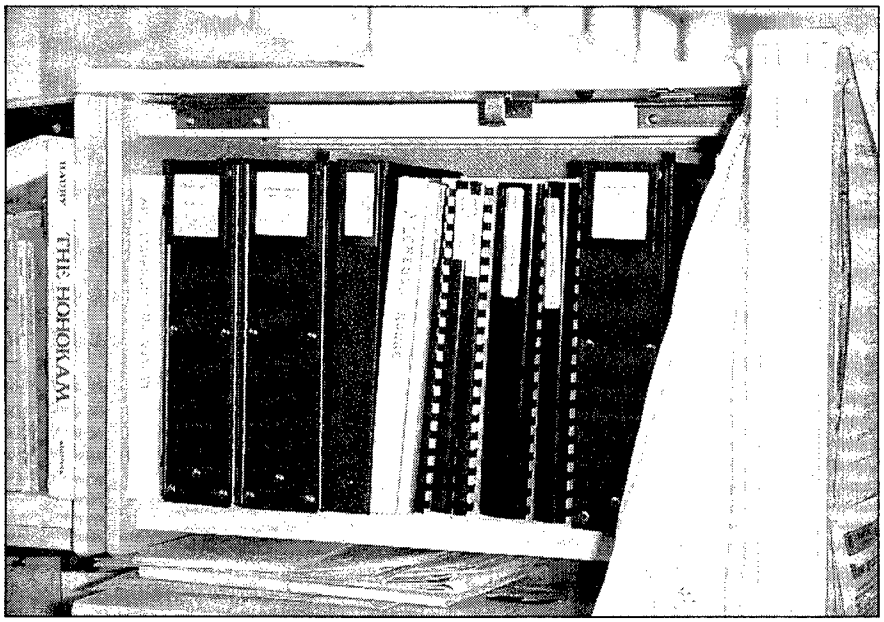

Figure 79. Associated documentation stored on metal shelves in Martyn Tagg's office.

Each photograph is given an exposure number but not a roll number. These numbers have been written directly on the back of each photograph in nonarchival marker. Each roll of photographs has a photograph log describing each image and typed in a clear, concise manner. Unfortunately, the log itself is on acidic paper, and the notebook holding the photographic records is inappropriate for storage of this type of material. Since the evaluation, the photographic documentation was removed from the notebooks, and placed in acidic accordion-type manila folders. The folders are arranged by roll number, and all folders have been placed in a locking metal file cabinet.

Maps and Oversized Documents

There are seven maps that fall into the category of associated documentation. All maps are 7.5-minute USGS quadrangle maps with site locations and numbers that have been drawn on transparencies in a color-coded format. At the time of the assessment, these maps and transparencies were lying loose on the base archaeologist's desk.

In the adjoining office, the Mapping Section, there is a walk-in vault used for storage of architectural drawings. There are several flat, metal map-storage cases in the vault, and the oversized material has been placed in drawers (Figure 80).

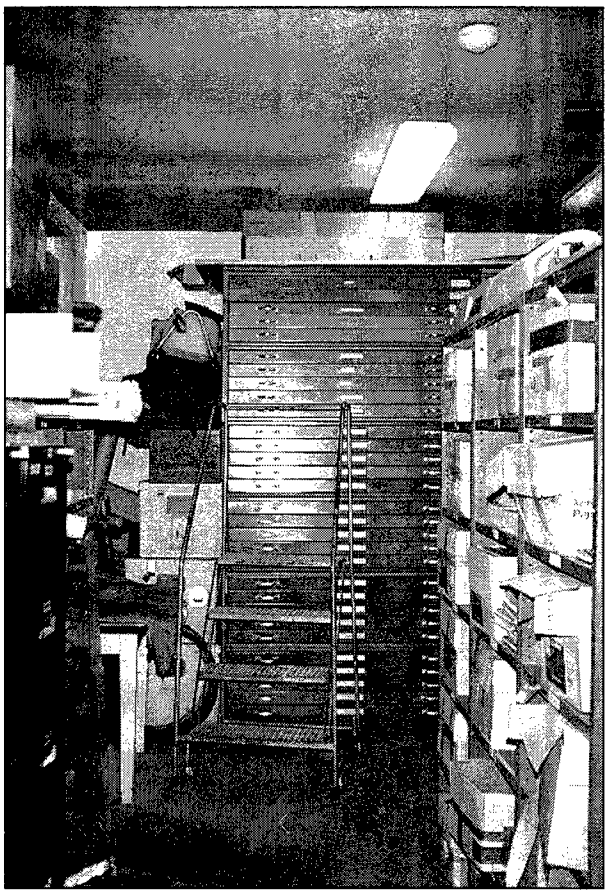

Figure 80. Historical maps and drawings are stored in a secure room in the Civil Engineering Building.

There is no cataloging system for this material, although each drawer contains a fairly accurate label on the exterior. Most of this material could be considered historical documentation, and Martyn Tagg informed the assessment team that rehabilitation for this material was planned.

Reports

All reports, including five negative-findings reports, are kept in three three-ring binders that are stored in an enclosed metal bookshelf in the base archaeologist's office. Each notebook has the inclusive dates typed on an acidic paper label that is placed in an adhesive plastic sleeve on the binding. Additionally, each notebook begins with a table of contents typed on acidic paper. Each report has been assigned a Holloman AFB number that is recorded in pencil or typewritten on the right corner of the title page. The report-numbering system was developed by the current base archaeologist, Martyn Tagg. He retroactively imposed the numbering system on reports that had been printed prior to his tenure on base. Current projects and reports are assigned a number as they are completed, and the Holloman AFB number appears on the title page. Each report has had holes punched in it for storage in a three-ring binder, and none of the reports are on acid-free paper. Since the assessment was conducted, all reports have been removed from the three-ring binders and transferred into individual, acidic manila folders. These folders are stored in a locking, metal file cabinet.

Collections-Management Standards

Registration Procedures

Accession Files. There are no accession files at this repository, although all materials are cataloged upon arrival.

Location Identification. Information on location of the collections is not really necessary at this time, because the collections are so small and stored in the same place.

Cross-Indexed Files. The base archaeologist has entered the Holloman numbering system and the corresponding LOA number, as well as other site information, into a database system that is cross-indexed.

Published Guide to Collections. A published guide to the collection does not exist.

Site-Record Administration. All sites are assigned a unique Holloman AFB number in addition to the LOA number assigned by the state.

Computerized Database Management. The only database that is currently in operation at Holloman AFB is one that Martyn Tagg designed and implemented for his own management use.

Written Policies and Procedures

Minimum Standards for Acceptance. Although no written policy exists for Holloman AFB, the base archaeologist follows the guidelines listed in the *NMCRIS User's Guide.*

Curation Policy. No curation policy currently exists.

Records-Management Policy. No records-management policy has been implemented.

Field-Curation Procedures. The base archaeologist follows the guidelines listed in the *NMCRIS User's Guide.*

Loan Policy. No loan policy currently exists.

Deaccessioning Policy. No deaccessioning policy has been written.

Inventory Policy. All materials are cataloged and site information is entered into the database upon recovery.

Last Collection Inventory. Not applicable.

Curation Personnel

There is no full-time curator employed by Holloman AFB. Martyn Tagg, the base archaeologist, performs minor curation tasks, but even those are not part of his formal job description. No one on the base is responsible for the long-term curation of archaeological collections and associated documentation.

Curation Financing

Curation financing is provided through ACC, and these funds must be specifically requested by base personnel. Other than these specific requests, funding for the curation of archaeological collections and associated documentation is minimal.

Access to Collections

Access to the collection is controlled entirely by the base archaeologist. He must approve any requests to view the Holloman AFB archaeological collection or associated documentation.

Comments

1. Building 550 is structurally sound.

2. An HVAC system, with dust filters, is in use in the building.

3. UV sleeves are not in place on the fluorescent lights.

4. An integrated pest-management system is not in force for the building.

5. Temperature is maintained at a level that is comfortable for the staff. Humidity is neither monitored nor controlled.

6. Security measures in the building do not meet federal guidelines for safeguarding archaeological collections.

7. Storage units used to house the archaeological collections and associated documentation are inappropriate.

8. Documentation requires complete rehabilitation to meet modern archival practices and federal regulations.

9. The artifact collections are stored in secondary containers that have been punctured. Some have not been secured, and label information is inconsistent. Artifacts also require complete rehabilitation to meet federal guidelines.

10. Full registration procedures and written policies have not been developed for Holloman AFB.

11. Fire-detection and -suppression measures meet minimum federal guidelines.

Recommendations

1. The facilities at Holloman AFB are inappropriate for the safeguarding of federal archaeological collections; therefore, arrangements should be made to have the material curated at an appropriate repository.

2. Label all artifacts with india ink to prevent information loss if artifacts are separated from provenience data.

3. Replace secondary containers with four-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Labels should be made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), labeled in indelible ink, and inserted into the secondary containers.

4. Place proper secondary containers in acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should not be applied directly to the boxes. When label information or box contents change, inserts should be replaced. This method reduces the chance of conflicting and confusing information.

5. Place primary containers on baked-enamel, metal shelving units.

6. Arrange associated documentation according to modern archival procedures and create a finding aid for the documentation collection.

7. Remove all contaminants (e.g., staples, paper clips, and rubber bands) from the documents.

8. Duplicate all paper records onto acid-free paper, and place in acid-free folders labeled in indelible ink. Place all folders in acid-free cardboard boxes, and apply adhesive, polyethylene plastic label holders, with acid-free inserts, to the boxes.

9. Place all photographic materials in archival-quality polypropylene sleeves, and place sleeves in acid-free, three-ring photograph binders. Photograph logs should be on acid-free paper in indelible ink.

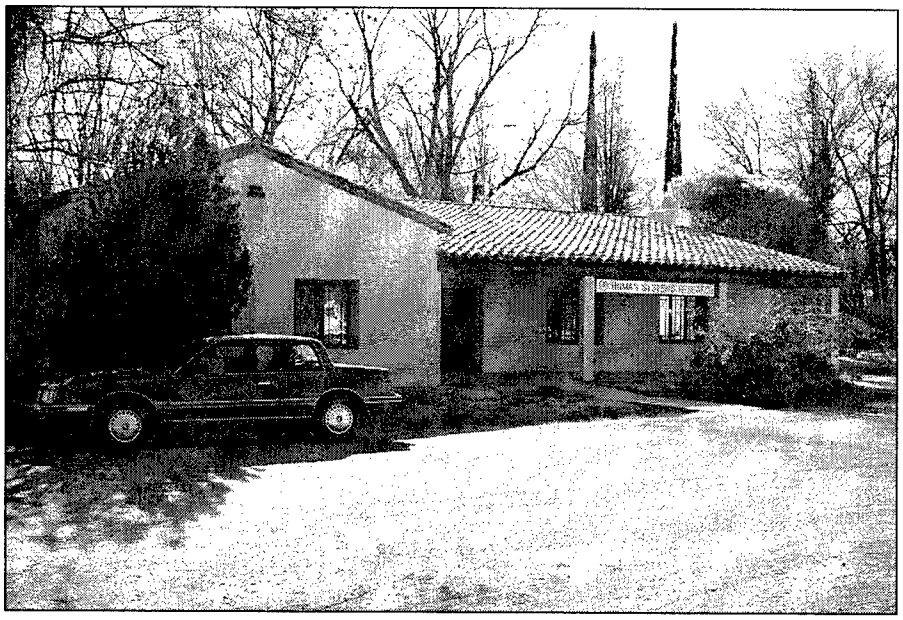

Figure 81. Exterior of the HSR office.

10. Store photographic records in a stable environment equipped to monitor and control humidity and temperature.

11. Place oversized material in flat map-storage cases for long-term curation.

12. Make a duplicate copy of all associated documentation, and store these materials in a separate, fire-safe, secure location.

Repository 7: Human Systems Research

Date of Visit: March 30, 1994

Points of Contact: Peter and Sarah Eidenbach, Contractors

Approximately 1 ft^3 of artifacts and 2 linear feet of associated documentation from Holloman AFB are housed at the HSR office in Tularosa, New Mexico. The collection consists primarily of prehistoric materials, although historical-period materials are also present. In total, prehistoric materials include lithics (20%), flotation samples (20%), ceramics (10%), soil samples (10%), ^{14}C samples (10%), faunal remains (1%), shell (1%), and other (8%); historical-period materials include glass (10%) and metal (10%). Associated documentation consists of survey records, excavation records, and analysis records. At the time of the evaluation, both artifacts and documentation were in temporary storage containers awaiting full processing. Both the temporary storage conditions and the processing planned for the collection are described below.

HSR is a nonprofit archaeological contracting firm. Their office building was donated to the group only recently. Originally a church, the building was constructed at the turn of the century. Staff members could not provide a specific construction date. Evidently the structure served as a church for several years until it was purchased by a group that established the Tularosa Women's Club (Figure 81). Again, the staff of HSR was uncertain how many years the building was used in that capacity. Recently, the Tularosa Women's Club donated the building and much of the furnishings to HSR. Staff members have done some minor maintenance work, such as patching cracks in walls and some minor repair work on the roof, but for the most part the building is much the same as when it was first built.

Assessment

Structural Adequacy

The building housing HSR is approximately 80 years old. The exterior walls are constructed of adobe with a stucco finish. The foundation is concrete, and the roof is constructed of clay tiles and shingles. The roof was completely replaced at some point during the 1930s, but only annual maintenance and minor repairs have been performed since that time. The building is a single-story structure that occupies 2,150 ft^2. The interior space is divided into rooms, but the majority of the work conducted by HSR is performed in two large rooms at the front of the building. A processing and conservation laboratory, a collections storage area, and a few desks are situated in the first room. The second room contains several desks for staff members and a conference table, and the library is situated along three walls. A kitchen and two bathrooms are located directly behind these two large rooms. The final room, located at the back of the house, is used for equipment and documentation storage. Most of the artifact washing is done in the back yard.

Interior doors are solid wood except for the French doors (constructed of glass) that separate the lab and offices. The ceiling and interior walls are plaster that was applied directly on the adobe used for exterior walls. There are 12 windows in the building—two on the north wall, four on the east wall, one on the south wall, and five on the west wall. All windows are wood framed, and many allow air through the frames. Evidently water does not leak through the windows. Windows are one of four sizes: 49 x 54 inches, 24 x 30 inches, 36 x 36 inches, or 65 x 78 inches. All windows on the east wall measure 65 x 78 inches. Only the smallest windows in the building have been shaded; all others are protected only by curtains. The heating system is approximately two years old. All electrical wiring in the house was completely renovated according to local building codes in 1993. The plumbing was being renovated at the time of the evaluation. All lighting is provided by incandescent bulbs, none of which are filtered against UV light.

Environmental Controls

This building has no HVAC system and no air-conditioning. Heat is provided by two large, gas forced-air heating units, one in the lab and the other in the large room used for offices. Each of these units operates independently. Other than these units and ceiling fans, there is no way to control the temperature of the building, which is kept at a level that is comfortable for the staff. Neither temperature nor humidity is monitored or controlled. The staff is responsible for cleaning the offices and storage spaces on an as-needed basis. The assessment team noted a minor amount of dust and a few cobwebs during the evaluation.

Pest Management

HSR employs a professional pest-management company to spray the facility once a month. The staff did not know what pesticide is used. No past incidents of pest infestation were mentioned, but the assessment team noted the presence of spiders in some of the windows.

Security

Security measures for the HSR building do not meet minimum federal requirements. The staff controls access to the building during regular business hours. During off hours, a neighborhood-watch program is in effect. Key locks are located on all exterior doors, and all windows have hook-and-eye latches to keep them closed. Fortunately, all type collections and special artifacts are housed in another building that is more secure. None of the Holloman AFB collection, however, are considered to be type or special specimens. The staff knew of no previous instances of unauthorized entry.

Fire Detection and Suppression

Fire-safety measures in the building consist exclusively of three fire extinguishers. One is located in the lab, the second is kept in the offices, and the third is near the collections storage areas. No other fire-detection or -suppression measures are present in the building.

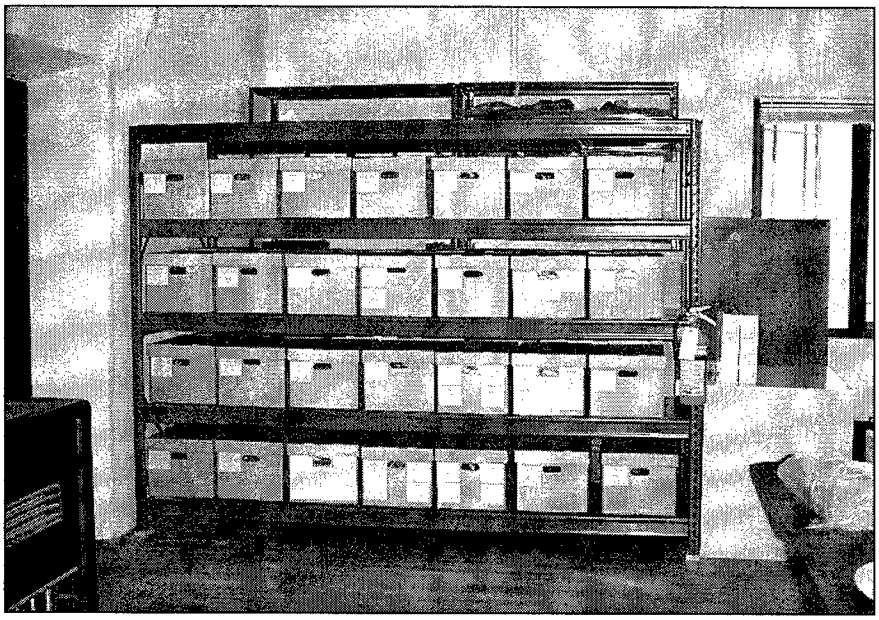

Figure 82. View of HSR collections storage area.

Artifact Storage

Storage Units

At the time of the evaluation, the artifacts had not yet been processed. They were being stored temporarily on a wooden table in the processing laboratory. Once the material is processed, it will be placed on metal shelving units measuring 8 x 3 x 6 feet (w x d x h). Two rows of these shelving units in the corner of the processing laboratory are used for the storage of collections (Figure 82). These units provide approximately 80 ft^3 of storage space. Eventually, the Holloman AFB collection will be transferred to the base. Upon completion of the contract, the collection, associated documentation, and the final report will become the responsibility of Holloman AFB.

Primary Containers

The artifacts from Holloman AFB are temporarily stored in an acidic cardboard box until the collection is processed. No label information is recorded on the box (Figure 83). Once the collection has been processed, the artifacts will be placed in an acid-free box with a telescoping lid. A computer-generated, adhesive label will be placed on the box with the HSR project number and the LOA site numbers of the artifacts housed in the box.

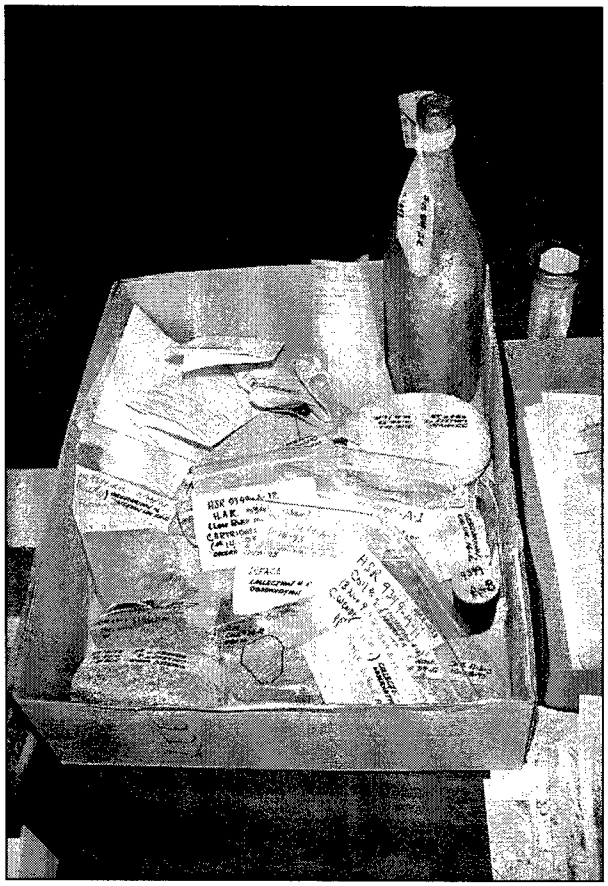

Figure 83. The collection from Holloman AFB was unprocessed at the time of this evaluation, and was stored temporarily in a variety of primary and secondary containers.

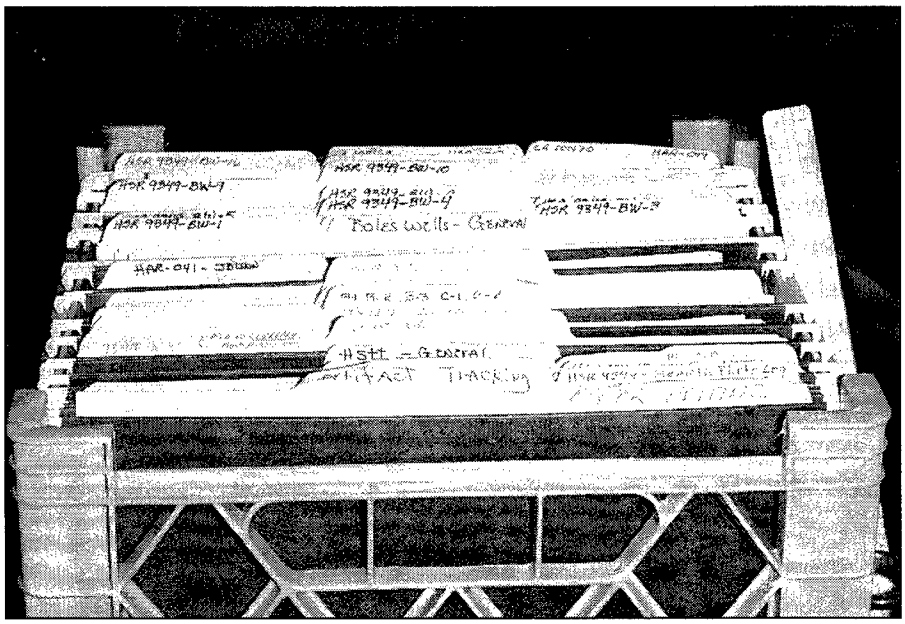

Figure 84. Associated documentation from Holloman AFB temporarily stored in a plastic milk crate.

Secondary Containers

A variety of temporary secondary containers are currently housing the artifacts, including plastic zip-lock bags, paper bags, and small cardboard boxes. Some of the artifacts are loose in the primary container. Many of the plastic bags have suffered minor puncture damage. All artifacts have labels associated with them. Labels are written directly on acidic paper in marker. Label information is consistent, but on some of the labels, the marker is smeared, making them difficult to read. Once the artifacts have been processed, they will all be placed in two-mil, plastic, zip-lock bags. In each bag there will be a paper insert label written in marker. All labels will be clear, concise, and consistent.

Laboratory Processing and Labeling

Only 30 percent of the Holloman AFB artifacts have been cleaned, and none have been labeled directly. The material is not sorted. Once the collection has been processed; however, all artifacts will be cleaned and sorted by provenience and site. HSR will not label each artifact directly.

Human Skeletal Remains

No human skeletal remains from Holloman AFB are curated at HSR.

Records Storage

HSR has a small storeroom in the rear portion of the building where 10 letter-size, metal file cabinets are arranged. All associated documentation is stored here once it is processed. Additional storage space is provided at the HSR office in Las Cruces, New Mexico. This second office also stores a safety copy of all associated documentation generated by the Tularosa office. No special arrangements, in terms of either storage units or environment, have been made for oversized material or photographic records.

Paper Records

The associated documentation for the Holloman AFB collection is also in temporary storage and has not yet been processed. Approximately 1.5 linear feet of documentation is being kept in a plastic milk crate (Figure 84). Documents have been placed in manila folders and then placed into hanging files in the crate. Labels for these documents contain inconsistent information and are in a variety of media including pencil, ink, and marker. Part of the associated documentation is kept in two three-ring notebooks (Figure 85). Each notebook contains acidic dividers that have been labeled in marker. A few manila folders are loose in one of the notebooks. Oversized maps have been folded

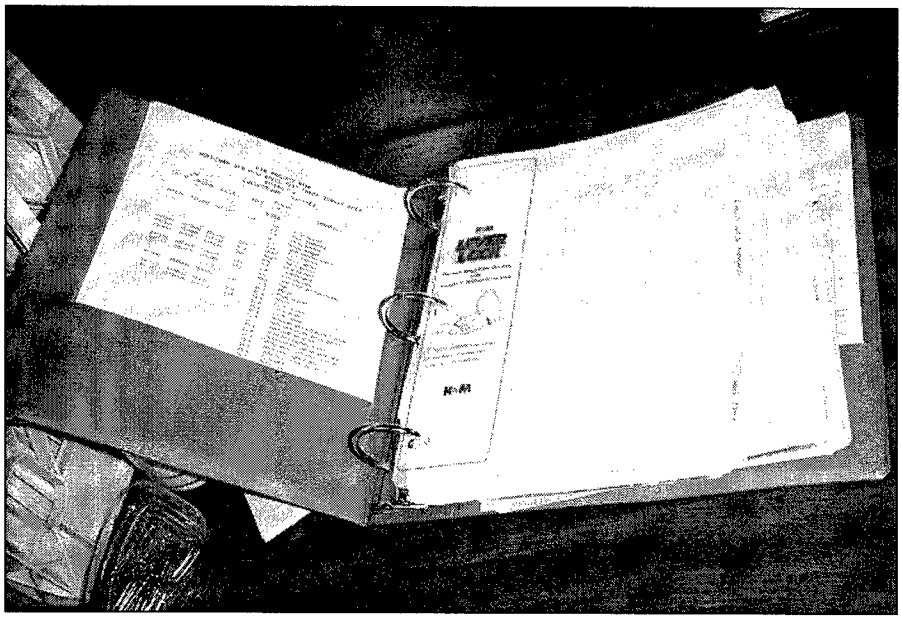

Figure 85. Administrative records for the Holloman AFB collection temporarily stored in nonarchival-quality three-ring binders.

and creased and then placed loose in one notebook.

Once the collection is processed, the folders will be placed in the file cabinets in the back room. Eventually, when the project is complete, all associated documentation will be transferred, with the artifacts, to Holloman AFB. HSR policy dictates that any historical documentation must have two copies made on acid-free paper. One copy is kept at the Tularosa office, and the other is transferred to the Las Cruces office as a safety copy. No other curation or archival rehabilitation is performed by HSR.

Maps and Oversized Documents

No special arrangements are made for oversized documentation. The few maps in the Holloman AFB collection are folded, creased, and then placed loose in one of the notebooks. Once the associated documentation is processed, these materials will remain folded but will be placed in manila folders and labeled.

Reports

The report for the Holloman AFB survey is as yet incomplete. Once it has been completed and copies are furnished to Holloman AFB, a copy will be placed in the HSR library. The library consists of three wooden bookshelves that line three different walls in the large room used for offices (Figure 86). No special arrangements are made for these reports.

Collections-Management Standards

Registration Procedures

Accession Files. All materials are accessioned by project number only.

Location Information. This information is not recorded, because all material will eventually be turned over to the owner. HSR does not store collections permanently.

Cross-Indexed Files. Because there are no permanent collections at HSR, no overall cataloging system exists, nor are any of the collections cross-indexed.

Published Guide to Collections. No published guide to the collections exists.

Site-Record Administration. HSR uses the LOA numbering system.

Computerized Database Management. HSR has not established a collection-wide computerized database-management program. Each collection and project catalog is maintained on FileMaker Pro software.

Written Policies and Procedures

Minimum Standards for Acceptance. Because HSR is a contracting firm, they do not accept other collections for curation and, therefore, do not have minimum standards for the acceptance of collections.

Curation Policy. HSR is currently developing curation standards. At the time of the evaluation, most of the curation duties performed by HSR were dictated in each individual contract.

Records-Management Policy. Management of associated documentation is performed on a collection-by-collection or project-by-project basis. There is no formal records-management policy that addresses HSR's complete holdings.

Field-Curation Procedures. Field-curation procedures are addressed in the employee manual written by HSR staff. Curation, however, is not specifically outlined in the manual. On larger projects, field-curation procedures are dictated in the contract, and additional information is provided to the field crew.

Loan Policy. No loan policy exists.

Deaccessioning Policy. Nothing is ever deaccessioned, thus a deaccessioning policy is not needed.

Inventory Policy. The only inventory protocols used by HSR are the site forms and the LOA isolated-occurrence forms. All finalized forms are included in each individual report as a separate appendix.

Latest Collection Inventory. Not applicable.

Curation Personnel

Three individuals work part-time on curation. The level of curation to be performed on a particular collection is generally dictated in each contract, and these three staff members are responsible for ensuring that these tasks are completed.

Curation Financing

Curation is financed as a part of each contract. Most contracts provide for washing, cataloging, and basic stabilization procedures.

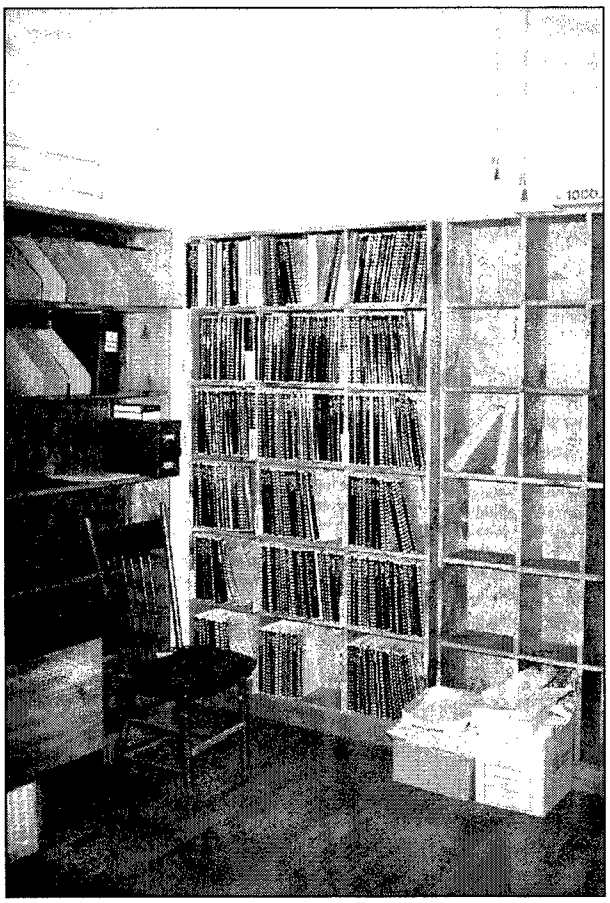

Figure 86. Report library at HSR.

Access to Collections

Access to collections is controlled by HSR staff. Only individuals with a legitimate request and the permission of the individual client may have access to a collection. All staff members of HSR, however, have access to all collections.

Comments

1. The building is structurally sound.

2. An HVAC system is not in place in the building.

3. Neither temperature nor humidity is monitored or controlled.

4. UV sleeves are not installed on the incandescent lights in the facility.

5. Some windows are not shaded, and all windows have poor security measures.

6. Fire-detection measures are absent, and fire-suppression measures consists of three fire extinguishers.

7. Some evidence of spider infestation was noted by the assessment team.

8. Building security does not meet the minimum federal standards for safeguarding of archaeological collections.

9. HSR does not have all the recommended registration procedures and written policies in place. This absence is not surprising considering that the contractor does not intend to curate this material in perpetuity.

10. Associated documentation requires complete rehabilitation to meet modern archival standards and federal guidelines.

11. Artifacts require partial rehabilitation to meet federal guidelines.

12. HSR will transfer the collection to Holloman AFB upon fulfillment of the contract. Holloman staff will then be responsible for arranging the long-term curation of this material in an appropriate facility.

Recommendations

1. Label all artifacts with india ink to prevent information loss if artifacts are separated from provenience data.

2. Replace secondary containers with four-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Additional labels should be made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), labeled in indelible ink, and inserted into the secondary containers.

3. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should not be applied directly to the boxes. When label information or box contents change, inserts should be replaced. This method reduces the chance of conflicting and confusing information.

4. Place primary containers on baked-enamel, metal shelving units.

5. Arrange associated documentation according to modern archival procedures, and create a finding aid for the documentation collection.

6. Remove all contaminants (e.g., staples, paper clips, and rubber bands) from the documents.

7. Duplicate all paper records onto acid-free paper, and place in acid-free folders labeled in indelible ink. Place all folders in acid-free cardboard boxes, and apply adhesive, polyethylene plastic label holders, with acid-free inserts, to the boxes.

8. Place all photographic materials in archive-quality polypropylene sleeves, and place sleeves in acid-free, three-ring photographic binders. Photograph logs should be on acid-free paper in indelible ink.

9. Store all photographic materials in a stable environment equipped to monitor and control humidity and temperature.

10. Flatten oversized material and place in flat storage cases for long-term curation.

11. Make copies of the final report on acid-free paper.

12. Make a duplicate copy of all associated documentation, and store these materials in a separate, fire-safe, secure location.

13. Arrange to have both the artifacts and the associated documentation placed in an appropriate repository for long-term curation.

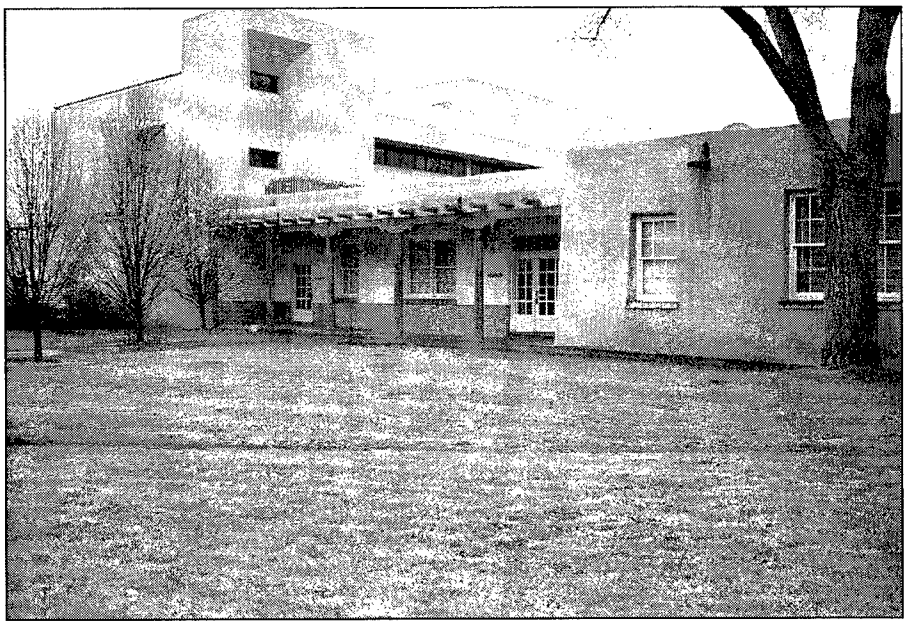

Figure 87. Anthropology Annex on the UNM campus at Albuquerque.

Repository 8: Office of Contract Archaeology, UNM

Date of Visit: March 1, 1995

Persons Contacted: Joseph Winter, Director, and Richard Chapman, Associate Director, OCA

Approximately 1 linear foot of documentation from Holloman AFB and Melrose AFR is stored in Albuquerque at OCA on the UNM campus. This documentation consists primarily of administrative records from archaeological investigations conducted by OCA on ACC installations.

OCA is not responsible for the curation of artifacts, but instead works in conjunction with the Maxwell Museum of Anthropology, also on the UNM campus. Artifacts recovered from investigations conducted for ACC bases were turned over either to the installation or to the Maxwell Museum for long-term curation. See the previous discussion for a description of the Maxwell Museum.

OCA is located in the UNM Anthropology Annex (Figure 87). Because OCA is scheduled to move to a different facility early in the summer of 1995, only a perfunctory building evaluation was conducted. The new facility was unavailable for assessment at the time of the evaluation. The Anthropology Annex is a single-story, 10,000-ft^2 structure with a full basement. The floor above grade is occupied by offices and a library, while a processing laboratory and additional offices are located in the basement. The building also houses an artifact-holding area, an artifact-washing area, an artifact-processing and conservation laboratory, temporary artifact storage areas, and a mechanical/utility room. Functioning utilities/facilities in the building include rest rooms, telephones, heating, and electricity.

Assessment

Structural Adequacy

The Anthropology Annex was originally constructed as a science lab in the 1920s or 1930s. Exterior walls are constructed of concrete blocks situated upon a concrete foundation. A built up roof of tar paper and gravel was installed on an unknown date. The roof is solid and free from leaks, but the foundation has several cracks running through the basement laboratory. In 1980 the building was internally renovated and redesignated the Anthropology Annex. Windows are constructed of the original wooden frames, and they show no evidence of leaking either air or water. All windows are shaded and measure

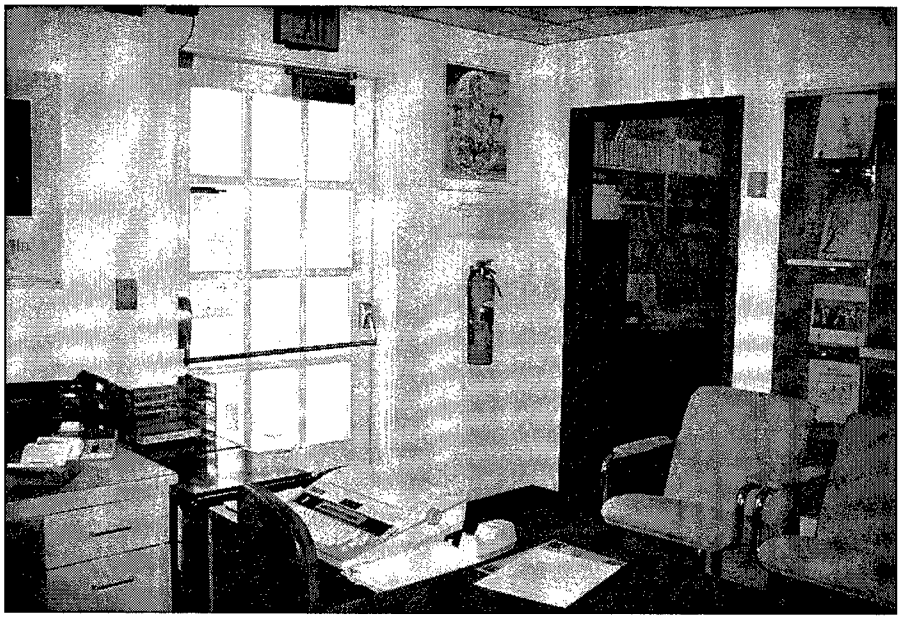

Figure 88. Contact-point intrusion alarms are installed on all doors leading to the exterior. Also note the fire alarm and extinguisher.

40 x 80 inches. The building is considered structurally sound.

Environmental Controls

An HVAC system is not installed in the Anthropology Annex. The building is cooled by an evaporative cooling system, or "swamp cooler." Heat is provided through gas-fueled hot water radiators located in each office. Temperature can be controlled in each office and is kept at a level that is comfortable for the staff. The basement laboratory has its own duct system, and dust filters are in place on the ducts. Humidity, though not a significant problem in the desert Southwest, is neither monitored nor controlled. Lighting consists of fluorescent bulbs that are not filtered against UV radiation. Regular maintenance of the utilities is the responsibility of the UNM physical plant. Offices and storage areas are cleaned by the university's custodial staff.

Pest Management

UNM is responsible for the pest-management system in place in the Anthropology Annex. Dr. Chapman was not aware of just what these measures were, but the assessment team noted no evidence of pest infestation.

Security

Security measures are located on all exterior doors and all windows. Additionally, some of the office doors have key locks. Exterior doors are equipped with dead-bolt locks and contact-point intrusion alarms. Motion detectors are installed throughout the facility (Figure 88). Campus police routinely patrol the campus grounds including those around the Anthropology Annex. No past episodes of unauthorized entry were reported to the assessment team.

Fire Detection and Suppression

Fire safety in the Anthropology Annex consists of manual fire alarms wired into the local fire department and fire extinguishers located throughout the building (see Figure 88). Fire extinguishers are checked annually by qualified personnel. No other fire-detection or -suppression measures are present in the building.

Artifact Storage

OCA does not curate artifacts and has no space allocated for this function.

Records Storage

OCA has conducted three different projects on Holloman AFB and one project at Melrose AFR. Associated documentation from the Melrose AFR survey and one of the projects at Holloman are stored in two offices at OCA. Documentation from one other Holloman survey is located at the NMARMS offices in Santa Fe; documentation from the other survey has not been located. OCA does not consider these documents part of the associated documentation, and these records are kept as part of their permanent project files.

Paper Records

Associated documentation from Holloman AFB is housed in letter-size metal file cabinets in Dr. Joseph Winter's office. Cabinet drawers are arranged according to an internal filing system, and none of the drawers are labeled. This collection comprises approximately 0.75 linear feet and includes administrative records, maps and drawings, analysis records, and an initial draft of the report. Dates range from 1991 to 1993. Documents are filed in acidic manila folders that have been labeled in a variety of media (Figure 89). Administrative records make up 67 percent of the collection; analysis records, 10 percent; report records, 17 percent; and cartographic records, 6 percent. Some folders are labeled directly in pencil, pen, or marker. Still others are labeled on nonarchival adhesive labels filled out in pencil, pen, or marker. Several documents are still attached with staples or paper clips.

Associated documentation from Melrose AFR is housed in letter-size metal file cabinets in Dr. Richard Chapman's office. Again, the records are arranged according to an internal filing system, and the cabinet drawers are unlabeled. This collection consists solely of approximately 0.25 linear feet of administrative records dating from 1990 to 1995. Documents are filed in acidic manila folders that are labeled either directly in pen or on adhesive labels in pen or typed. Metal contaminants have not been removed from the collection.

Collections-Management Standards

Registration Procedures

Accession Files. No accession file exists.

Location Identification. No formal system is in use. Generally, each project manager keeps his or her own project files.

Cross-Indexed Files. Files are not cross-indexed.

Figure 89. Documentation from investigations conducted on ACC installations is housed in acidic manila folders labeled in a variety of media.

Published Guide to Collections. Not applicable.

Site-Record Administration. OCA assigns field numbers to specimens initially, but follows the MIAC/LOA numbering system once site numbers are assigned by the state.

Computerized Database Management. Each individual project is kept on computer disk, kept up to date, and backed up regularly.

Written Policies and Procedures

Minimum Standards for Acceptance. All artifacts are curated by the Maxwell Museum of Anthropology.

Curation Policy. All artifacts are curated by the Maxwell Museum of Anthropology.

Records-Management Policy. Each project manager is responsible for maintaining the records of his or her project, both during the project and after completion.

Field-Curation Procedures. Not applicable.

Loan Policy. Not applicable.

Deaccessioning Policy. Not applicable.

Inventory Policy. No inventory policy exists.

Latest Collection Inventory. Not applicable.

Curation Personnel and Financing

OCA does not have personnel or financing specifically for curation. These items are written into each individual contract as a line item.

Access to Collections

Records and associated documentation are kept by OCA for future reference. Each principal investigator is responsible for his or her own project records. These records are accessible to all OCA staff, and there is no formal checkout system for the records. The library, however, has a formal checkout policy and system.

Future Plans

OCA will be moving in the summer of 1995 to a different building. At the time of the evaluation, this building was being renovated according to OCA specifications.

Comments

1. OCA does not view the records as associated documentation and, therefore, little effort is made to curate these documents in perpetuity.

2. Fire-suppression and -detection systems do not meet minimum federal standards for safeguarding archaeological collections and associated documentation.

3. OCA does not employ any curation personnel.

4. Few policies and procedures dedicated to the preservation of these documents are in place at OCA.

Recommendations

1. Because OCA does not view project records as part of the ACC collections, arrangements should be made to have copies made on acid-free paper and placed with the artifacts so that each collection will be complete.

Findings Summary

Three ACC installations are located in the state of New Mexico—Holloman AFB, Cannon AFB, and its subinstallation, Melrose AFR. Because many of the repositories evaluated in New Mexico hold materials from more than one ACC installation, all collections at a single repository were evaluated simultaneously. In summary, eight repositories in New Mexico are currently holding archaeological collections and/or associated documentation from ACC bases (Table 17). Of these, three repositories are curating only associated documentation. Two repositories, each with two storage facilities, are currently curating artifacts only. The remaining three repositories store both archaeological materials and associated documentation from ACC installations. Cannon AFB materials are located at a single repository. Materials from Holloman AFB are housed at six separate facilities across the state; materials from Melrose AFR, at five separate locations.

Infrastructure Controls

With the exception of the Federal Building in Albuquerque, where the Albuquerque District offices are located, all buildings are considered structurally sound. Both OCA and HSR are contracting agencies, and the collections will not remain at their offices for long-term storage. Both of these agencies, however, maintain associated documentation from the projects, as does the Albuquerque District. Copies of these documents should be transferred to the installation where the investigation occurred. The Maxwell Museum of Anthropology, NMARMS, and MIAC/LOA are all professionally managed curation facilities, but each of these facilities is suffering from a serious shortage of space. The ACA warehouse, although it packages collections properly and has available space, is a storage facility and does not offer researchers access to the collections.

Environmental Controls

Most repositories evaluated in New Mexico have at least minimal environmental controls installed. Seven (70%) have heat available, but only four (40%) of these can control the heat in their collections storage areas. Four (40%) repositories monitor the humidity, but none have any way to control it. Humidity, however, does not present an overwhelming problem in the desert Southwest. Only three (30%) of the New Mexico repositories have air conditioning, and only one (10%) has a full HVAC system. None of the repositories have measures in place to filter UV light from overhead fluorescent bulbs. See Table 18 for a synopsis of environmental controls.

Pest Management

All 10 facilities are monitored for pest infestation on a regular basis by a professional company. At six of these facilities, the staff is responsible for monitoring the repository between inspections. Eight (80%) of the facilities are sprayed by a professional company on a regular basis as a preventive measure against pests. Only three (30%) of the repositories use sticky traps as a measure to control pests. The insecticides used by the professional pest-management companies are beyond the scope of the current discussion.

Table 17.
Location of ACC Collections in New Mexico

Repository	Records (linear feet)	Artifacts (ft^3)	Installation
ACA warehouse	0.08	1.0	Melrose AFB
Albuquerque District	1.17	—	Holloman AFB
	0.83	—	Melrose AFB
Holloman AFB	1.5	0.5	Holloman AFB
HSR	2.0	1.0	Holloman AFB
Maxwell Museum	—	—	—
Warehouse	—	4.0	Holloman AFB
MIAC/LOA ARC			
LOA	—	0.5	Melrose AFB
LVR Building	—	7.0	Melrose AFB
NMARMS	0.16	—	Holloman AFB
	1.0	—	Melrose AFB
	0.08	—	Cannon AFB
OCA	0.75	—	Holloman AFB
	0.25	—	Melrose AFB

Security

Security measures used in New Mexico repositories vary widely. All 10 repositories are equipped with door locks. Six of the 10 have basic window locks installed, and three have no windows in the collections storage area. Four (40%) repositories have motion detectors installed in their facilities. Five (50%) have intrusion alarms that are wired into local police departments. Nine (90%) have limited access policies to the collections storage area. See Table 19 for a breakdown of security measures installed in New Mexico repositories.

Fire Detection and Suppression

Fire presents the single greatest threat of destruction to archaeological collections. Proper fire-suppression and -detection systems are therefore

Table 18.
Environmental-Control Measures Present in New Mexico Repositories

Repository	HVAC	AC	Heat	Temperature		Humidity	
				Monitor	Control	Monitor	Control
ACA warehouse							
Albuquerque District		x	x		x		
Holloman AFB	x	x	x	x	x		
HSR			x				
Maxwell Museum		x	x	x	x	x	x
Warehouse							
MIAC/LOA ARC							
LOA			x	x		x	
LVR Building				x		x	
NMARMS			x	x		x	
OCA			x		x		

Table 19.
Security Measures Present in New Mexico Repositories

Repository	Motion Detectors	Intrusion Alarms	Window Lock	Limited Access
ACA warehouse[a]				
Albuquerque District		x	x	x
Holloman AFB			x	x
HSR				x
Maxwell Museum	x	x	x	x
Warehouse[a]				x
MIAC/LOA ARC				
LOA	x	x	x	x
LVR Building[a]				x
NMARMS	x	x	x	x
OCA	x	x	x	x

[a] No windows are located in the collections storage area.

an integral element in the long-term curation of these materials. Fire-detection measures include smoke detectors, heat sensors, alarm systems, and other methods of early warning. Fire-suppression systems include overhead sprinkler systems, fire extinguishers, halon systems, and fire doors and walls. Halon systems have been judged a hazard to human life, and must be removed by the year 2000. Fire extinguishers work well for small fires but are of little use against major conflagrations. Although water damage to the collections is a risk, overhead sprinkler systems are the accepted fire-suppression system in use for archaeological curation facilities.

All New Mexico repositories evaluated have at least one fire extinguisher located in the collections storage area. Only five (50%), however, have a sprinkler system installed. Seven (70%) have manual fire alarms, six of which are wired into local fire departments. Five (50%) have installed smoke detectors, but only three (30%) have heat sensors installed. Only one repository (MIAC) has a halon fire-suppression system installed, and ACC collections were not stored in the collections storage area protected by it. See Table 20 for a breakdown of fire-safety measures in New Mexico repositories.

Artifact Curation

Only partial rehabilitation is required for any of the artifact collections held by New Mexico repositories. For the most part, the material remains held in New Mexico are well prepared for long-term curation. A full 97 percent of the artifacts are bagged in polyethylene zip-lock bags and labeled. Additional label information is needed on some secondary containers, acid-free paper inserts are needed for all secondary containers, and some bags should be upgraded to four-mil thickness. All secondary containers have been placed in acidic primary containers, and these should be replaced by ones constructed of acid-free material.

No material remains have been recovered from Cannon AFB. Three collections of material remains were recovered from Holloman AFB, and two were recovered from Melrose AFR. All collections from Holloman and one from Melrose are from both prehistoric and historical-period contexts. The remaining collections from Melrose AFR consists exclusively of prehistoric lithic materials (Tables 21 and 22 summarize the percentages of material classes from each installation).

Table 20.
Fire-Detection and -Suppression Measures Installed in New Mexico Repositories

Repository	Smoke Detectors	Heat Sensors	Alarms	Wired to Fire Dept.	Sprinklers
ACA					
Albuquerque District			x		x
Holloman AFB	x	x	x	x	x
HSR					
Maxwell Museum	x		x	x	x
Warehouse					
MIAC/LOA ARC					
LOA	x	x	x	x	
LVR Building	x		x	x	x
NMARMS	x	x	x	x	x
OCA			x	x	

Table 21.
Material Classes in Holloman AFB Collections, by Repository

Material Class	HSR (%)	Maxwell Museum (%)	Holloman AFB (%)	Total (%)
Prehistoric				
Ceramics	10	—	35	15.0
Lithics	20	25	15	20.0
Faunal remains	1	—	—	0.33
Shell	1	—	—	0.33
Flotation	20	25	—	15.0
Soil	10	—	—	3.3
^{14}C	10	35	—	15.0
Other	8	14	—	7.0
Historical-period				
Glass	10	1	10	7.0
Metal	10	—	40	17.0
Total	100	100	100	100

Table 22.
Material Classes in Melrose AFR Collections, by Repository

Material Class	ACA Warehouse (%)	MIAC/LOA ARC (%)	Total (%)
Prehistoric			
Ceramics	—	0.5	0.25
Lithics	100	62.5	81.25
Faunal remains	—	0.5	0.25
Shell	—	1.0	0.5
Flotation	—	1.0	0.5
^{14}C	—	5.0	2.5
Other	—	18.5	9.25
Historical-period			
Ceramics	—	0.5	0.25
Glass	—	0.5	0.25
Metal	—	10.0	5.0
Total	100	100	100

Records Management

Six repositories currently hold associated documentation from ACC installations in New Mexico. Because some repositories are curating documentation from more then one installation, all evaluations were conducted simultaneously when feasible. Two of these collections require partial rehabilitation to meet federal standards. The remaining four require complete rehabilitation. The documentation collection from each installation will be discussed individually below (Table 23).

Paper Records

NMARMS curates paper documents from all three ACC installations in New Mexico. All paper records curated by NMARMS require complete rehabilitation. Paper records from both Holloman and Melrose are also housed by both OCA and the Albuquerque District. Again, all paper records at these two repositories require complete rehabilitation. The 10-page inventory from an investigation conducted at Melrose AFR that is housed at the ACA warehouse requires only partial rehabilitation. HSR and Holloman materials require complete rehabilitation.

Photographic Records

Three repositories hold photographic records from Holloman AFB; two of these also hold photographic records from Melrose AFR. All photographic documentation curated by NMARMS, Holloman AFB, and the Albuquerque District requires complete rehabilitation to meet minimum federal standards.

Maps and Oversized Documents

NMARMS and the Albuquerque District are curating maps and other oversized material for both Holloman and Melrose. With few exceptions, the maps housed by the Corps are well curated; a few need to be flattened and stored properly. Holloman AFB and HSR are also curating maps from investigations conducted on Holloman AFB. The maps at Holloman are well prepared, but the maps at HSR require flattening and proper storage.

Reports

NMARMS has an extensive library of reports for archaeological investigations in New Mexico. Reports from Holloman and Melrose are housed there, but some copies are also housed by the Albuquerque District. Martyn Tagg at Holloman AFB maintains copies of reports concerning Holloman, and HSR is still writing the report for their archaeological survey of Holloman AFB. None of the reports at any of the repositories are on acid-free paper.

Collections-Management Standards

Basic management tools—written registration procedures and policies—are difficult to assess for the eight repositories evaluated in New

Table 23.
Location of Associated Documentation from ACC Installations in New Mexico

Repository	Paper	Photographs	Maps/Oversized	Reports
ACA warehouse	M	—	—	—
Albuquerque District	H/M	H/M	H/M	H/M
Holloman AFB	H	—	H	H
HSR	H	—	H	H
NMARMS	H/M/C	H/M	H/M	H/M
OCA	H/M	—	—	—

Note: H = Holloman AFB collections, C = Cannon AFB collections, M = Melrose AFR collections.

Mexico. Three repositories curate only records—NMARMS, OCA, and the Albuquerque District. Because these facilities do not curate artifacts, they do not have management tools for the curation of artifacts in place. On the opposite side, two repositories, each with two storage facilities, curate only artifacts—MIAC/LOA, at LOA and the LVR Building, and the Maxwell Museum of Anthropology, at the museum and its warehouse. Of the remaining three repositories evaluated, HSR is a contracting firm and therefore does not curate artifacts or records, and the ACA warehouse is a storage facility with no established procedures or policies.

MIAC/LOA and the Maxwell Museum (and their additional facilities) are professionally managed institutions that have all basic registration procedures and written policies established. NMARMS also has basic procedures in place. ACA has established guidelines for rehabilitating material remains and associated documentation, and it tracks the location and status of their collections in a computerized database. These elements are sufficient for what ACA is attempting to do—store the materials—but does not provide for access for research. Holloman AFB has approximately half of the basic management tools needed, but it is not really a curation facility. If ACC decides to curate materials at Holloman, additional policies and procedures must be created. OCA does not view their project files as associated documentation; therefore, copies of these documents should be produced and stored in a proper curation facility. HSR does not attempt to curate collections in perpetuity, and therefore has no need to make many policies and procedures. The Albuquerque District has no policies and procedures established. As with OCA, copies should be produced on acid-free paper stock and stored in a proper curation facility.

Recommendations

The following are general recommendations for bringing Holloman AFB, Cannon AFB, and Melrose AFR collections into compliance with the mandates of 36 CFR Part 79. All recommendations will be discussed at length in Chapters 10 and 11, below.

1. Inventory and rehabilitate collection of associated records housed at all repositories discussed in this evaluation.

2. Inventory and rehabilitate artifact collections housed at all repositories discussed in this evaluation.

3. Dedicate space for storage of materials and place collections in a single repository.

4. Develop cooperative agreements with other federal agencies and with the repository chosen to house all ACC collections in New Mexico.

7

South Carolina

Shaw Air Force Base and Poinsett Air Force Range, Sumter

Installation Summary for Shaw AFB and Poinsett AFR

Volume of Artifact Collections: Approximately 4 ft^3

On Base: None

Off Base: <1 ft^3 (SCIAA); 3–4 ft^3 (CHRS)

Compliance Status: One small box housed at the South Carolina Institute of Archaeology and Anthropology (SCIAA) (from an excavation conducted by New South Associates) requires partial rehabilitation to comply with federal regulations governing the curation of archaeological collections. Another collection of approximately 3–4 ft^3 is still held by CHRS, the contractor in Pennsylvania that conducted the survey. The contractor informed the assessment team that he would transfer the collection to SCIAA. It had not yet arrived when the evaluation was done; therefore, the rehabilitation needs are unknown. If the materials do not arrive at SCIAA, ACC should take steps to ensure the transfer of the collection.

Linear Feet of Records: 0.16 linear feet

On Base: 0.08 linear feet

Off Base: 0.08 linear feet (SCIAA)

Compliance Status: All associated documentation requires complete rehabilitation to comply with federal regulations and modern archival practices. The assessment team did not evaluate the associated documentation held by CHRS, nor is the extent of the records precisely known. ACC and Shaw AFB should immediately arrange for the transfer of this material to SCIAA.

Human Skeletal Remains: No human skeletal remains were recovered from Shaw AFB or from its subinstallation, Poinsett AFR.

Status of Curation Funding: Up to the time of the evaluation, Shaw AFB was unaware of the location of most of their collections and so had not applied for funding to curate these collections. For contractors working on these installations, curation is initially funded through individual contracts. SCIAA is supported by the University of South Carolina (USC) and curation fees. Currently Shaw AFB has no formal agreement with SCIAA for the curation of their material, nor is there any compensation being provided for curation services.

Recommended Curation Facility: Shaw AFB should place all of their collections at SCIAA for long-term curation. A memorandum of agreement should be made between the two parties and adequate funding provided to SCIAA for the curation of Shaw AFB archaeological materials.

Repository 1: Shaw AFB

Date of Visit: September 29, 1994

Points of Contact: Randy Adams and Terry Madewell, Natural/Cultural Resource Managers

Approximately 1 linear inch of documentation from archaeological projects conducted on Shaw AFB and its subinstallation, Poinsett AFR, is stored in the Environmental Offices at Shaw AFB (345 Cullen Street, Sumter, South Carolina). The material consists of a single, bound report, which includes the scope of work for the project, prepared by CHRS in 1983 for select areas of Shaw AFB and Poinsett AFR. Because of the lack of any other materials pertaining to archaeological investigations at Shaw AFB, it was determined as unnecessary by the assessment team to detail such points as the structural adequacy of the building or any of the points associated with collections management and storage.

Recommendations

1. Make a copy of the report currently held on base on acid-free paper and place it in an acid-free folder for use by base personnel.

2. Create a duplicate, security copy, also on acid-free paper, and store it in a separate facility.

3. Send the original copy of the 1983 report to SCIAA for permanent archival curation.

Repository 2: SCIAA

Date of Visit: September 28, 1994

Points of Contact: Sharon Pekrul, Curator, and Keith Derting, Information Management Division Head

For more than 25 years, and through two name changes, SCIAA has been investigating, interpreting, conserving, and preserving archaeological materials from the state of South Carolina. Originally established by the South Carolina General Assembly as the South Carolina Department of Archaeology, its name was changed in 1967 by Governor Robert E. McNair to the Institute of Archaeology and Anthropology. In 1984, when the present director, Dr. Bruce E. Rippeteau, was appointed director and state archaeologist, the Institute was renamed SCIAA.

SCIAA has four divisions—Administrative, the Office of the State Archaeologist, Underwater Archaeology, and Research. The Office of the State Archaeologist Division manages four programs. The Information Management Program, headed by Keith Derting, administers the Statewide Archaeological Site Inventory. The Curation Program manages the artifacts and associated documentation from archaeological investigations in South Carolina; Sharon Pekrul has been the curator of this program since November 1986. The Conservation Program operates the Conservation Laboratory Facility, which houses a 5,600-ft^3 conservation tank and other equipment, and the Publications Program provides technical and popular printed information.

SCIAA's offices and collections are located in four buildings neighboring the USC campus in Columbia. Archaeological collections are curated in the Collections Facility on College Street. Offices for the four divisions, and all the associated documentation and records from archaeological investigations, are located and curated in the Pendleton Building, 1321 Pendleton Street. The Conservation Laboratory Facility is located on Assembly Street, and all human skeletal materials are curated in Room 114 of the Hamilton College building on the USC campus. Dr. Ted Rathbun is the supervisor/director of the human skeletal collection.

Archaeological materials (<1 ft^3) and associated documentation (less than 1 linear inch) from a survey of Poinsett Range (a subinstallation of Shaw AFB) done by New South Associates, Columbia, will be curated by SCIAA (see Artifact Storage section). Although the project was not complete and the report not finalized at the time of the evaluation, New South Associates sent the materials to SCIAA for the evaluation. None of the documentation was evaluated because the material had not yet been compiled. SCIAA will receive the collection for long-term

curation once the report is finalized and the contract completely fulfilled. This collection consists of artifacts from prehistoric contexts and includes the following material classes: ceramics (43%), lithics (55%), and fire-cracked rock (2%).

Archaeological collections, associated documentation, and the South Carolina state archaeological site files are housed in two repositories: the Pendleton Building curates project records, special archaeological collections, artifacts undergoing analysis, and the state site files, and the Collections Facility curates archaeological materials. Archaeological materials from Poinsett AFR will be curated in the Collections Facility, and the associated documentation from these projects will be filed in Suite 1 of the Pendleton Building.

Assessment

Structural Adequacy

Both the Pendleton Building, which is a two-story structure that was built in the 1940s or 1950s, and the Collections Facility, which has an unknown construction date, are structurally sound buildings. However, neither was built specifically for the long-term curation of archaeological materials. Both buildings have undergone internal renovations, and the Pendleton Building also has undergone external renovations.

Pendleton Building, Suite 1

Numerous offices, laboratories, and storage areas are located in the 11,926-ft^2 Pendleton Building, which has a cement slab foundation, brick exterior walls, and the original, flat, tar-and-gravel roof. Vinyl, double-pane windows were added in 1991, interior vinyl base boards were added in 1990, telephones were rewired in 1985, and a dark room and wet laboratory (including plumbing) were added in 1987 or 1988. Other activity areas or rooms in the Pendleton Building include an artifact-holding area, an artifact-washing area (the wet laboratory), an artifact-processing laboratory, a temporary-storage area for artifacts, a materials and supplies area, an artifact study room, a records study room, a mechanical and utility room, and a library.

Thirty-six windows—14 facing west, 4 facing north, and 18 facing east—allow external light into the building. Twelve double-pane windows and one display window allow external light into the front (south) of the building. Six windows on the east and the 12 windows on the south measure 2 x 3 feet; all other windows are 2 x 5 feet. All windows are shaded with either wooden shutters or plastic blinds. Internal doors include hollow-core wood-panel doors and metal-panel doors, some with reinforced-glass windows. Interior wall construction consists of plasterboard over insulated 2-x-4-inch stud framework. Ceilings on both floors consist of 12-x-12-inch acoustical tiles in a suspended framework.

Records are stored in a 149-ft^2 room in Suite 1, the curator's office, of the Pendleton Building. Other rooms in the 678-ft^2 suite include a work room, a records-processing and access room, and a 105-ft^2 special archaeological collections lockup room/vault. As is the case with the rest of the Pendleton Building, floors are concrete and covered with carpet, interior plasterboard walls cover an insulated stud wall, and the ceiling consists of suspended acoustical tiles. Two 2-x-3-foot, vinyl, double-pane windows face east. No evidence of water or air leakage or unauthorized entry was noted around the windows, which were added in 1990. Two west-facing, interior, metal doors with 2.5-x-3-foot, wire-reinforced glass inserts and dead-bolt locks open to the main hallway on the first floor. One interior, south-facing, metal door with a dead-bolt lock provides access to the vault, and two west-facing, interior, hollow-core wood doors provide access to the records storage room and to the curator's office. No asbestos is present in Suite 1.

Activities in Suite 1 include a temporary storage area for artifacts, a supply storage room, and an artifact and records study area. Some ethnographic collections are stored in the vault. Suite 1 is filled with empty boxes, curation supplies, office furniture, books and reports, analysis equipment, and full artifact boxes. The records storage area has reached capacity, despite recent efforts to clean up the clutter.

Collections Facility

Archaeological and paleontological collections and offices are housed in the one-story,

4,750-ft^2 Collections Facility on College Street. Age of the building could not be determined by any SCIAA staff members or building supervisors; however, it appears to be no more than 25–30 years old. No external renovations have been made. Exterior, corrugated-metal siding (top) and bricks (bottom) have been placed over a metal superstructure. The foundation is a poured concrete slab, and the roof is corrugated metal. Underwater Archaeology Division equipment and woodworking equipment is stored in the storage space on the west side of the partition wall, and USC equipment is stored on the east side of the concrete-block wall.

Activity areas in the Collection Facility include an artifact-holding area, a temporary storage area for artifacts, a materials and supplies storage area, artifact-study rooms, offices, and a rest room. Interior walls of the Collections Facility are composed of concrete blocks (east wall), plastic-backed insulation over the metal superstructure (south and north walls), and 2-x-4-inch studs covered with wire mesh on one side and plywood on the other (west wall). Rooms that abut the north wall have interior walls made of 2-x-4-inch walls covered with plasterboard. The exterior walls of these rooms are unfinished, unpainted plywood. Some concrete blocks in the east interior wall had been replaced, and an overhead loading door on the east wall is no longer operational.

Entry to the Collections Facility is through a dead-bolted metal door on the north side. Three interior, hollow-core wooden doors—one east-side door and two west-side doors—open to the interior rooms, which hold special archaeological and paleontological collections on enameled-metal shelves and on the floor. Overstacking of boxes is not apparent, and the collections storage area is clean. Asbestos is not present in the Collections Facility, which has reached over 90 percent capacity.

Environmental Controls

Pendleton Building, Suite 1

Internal temperatures in the Pendleton Building are thermostatically controlled by an HVAC system. Air temperature in the summer is targeted at 74–78°F and in the winter at 68–72°F. Central, forced-air heat is used in the winter. Humidity is not monitored, and dust filters are not present in the environmental-control system. Internal lighting is provided by fluorescent bulbs without UV filters. USC custodians clean the Pendleton Building and Suite 1 on a daily basis. Overhead pipes are not present in Suite 1.

Collections Facility

Other than one large heater and one large exhaust fan, there are no environmental control or monitoring devices in the Collections Facility. Temperatures in the summer reach the low 90s (°F), and normally approach 80°F. Humidity is not monitored; therefore, it fluctuates with the exterior conditions. Dust filters are not present on the heater. Interior lighting is provided by overhead fluorescent bulbs without UV filters. Curatorial staff clean the Collections Facility every three months and when a problem is noted.

Functional water pipes are located below the ceiling; however, there has never been a structural failure of the system. Archaeological collections are located under the water pipes. Moisture has leaked through the ceiling, and it is presently a problem. A vent in the west wall allows sawdust and toxic vapors to enter the Collections Facility from the adjoining room, which houses equipment and supplies for the Underwater Archaeology Division. One rest room and one telephone are located in the Collections Facility.

Pest Management

Pendleton Building, Suite 1

Pest management in the Pendleton Building and Suite 1 consists of monitoring and spraying for insects and rodents. According to the curator, field mice were a problem in the past; however, no signs of rodents or other pests were noted. Precautions such as spraying occur on an as-needed basis.

Collections Facility

Pest management in the Collections Facility consists of quarterly, and as-needed, visits by a professional pest-management company. No mice, spiders, or other pests were noted during the evaluation.

Security

Pendleton Building, Suite 1

Security measures for the Pendleton Building include intrusion alarms and dead-bolt locks. Intrusion alarms wired into the USC Police Department are located on the two exterior doors. The back (north) wood-panel door is key set, battery operated, and dead bolted. The two front glass doors are key locked and chained together at night. Campus police patrol the area at night.

According to the curator, there has never been an unauthorized entry through the windows or doors of SCIAA. On the first floor, 23 windows are accessible from the ground, and on the second floor, 27 are accessible by a ladder or similar device. Interior doors to offices, including Suite 1, are secured with dead-bolt locks. The walk-in vault in Suite 1 also is dead bolted. According to the curator, there has been no unauthorized entry through the windows or doors into Suite 1. Two ground-level windows are accessible from the exterior.

Collections Facility

Security measures for the Collections Facility consists of an outside locked chain-link fence, an intrusion alarm wired to the campus police department, key-pad access into the facility, and motion detectors, which are wired into the alarm system and are located on the front door, on the internal doors, and down the center of the ceiling. The outside chain-link fence is locked by campus police from 4:00 p.m. to 7:00 a.m., Monday–Friday, and all weekend. According to SCIAA personnel, there has never been an unauthorized entry into the repository; however, access to the Collections Facility is possible through a hole in the west wall and through the overhead loading door, if it became operational.

Fire Detection and Suppression

Pendleton Building, Suite 1

Suite 1 has no fire-detection or fire-suppression devices; however, fire extinguishers are located on the southeast wall of the first and second floors of the Pendleton Building. Fire extinguishers are checked regularly by USC personnel. No other fire-detection or fire-suppression devices are located in the Pendleton Building.

Collections Facility

The Collections Facility has smoke detectors throughout the facility as well as an alarm system that is connected to the local fire department. In addition, fire-suppression devices include two fire extinguishers and an overhead, wet-pipe system. The fire extinguishers are located near the (north) entrance of the Collections Facility and were last inspected in 1988.

Artifact Storage

All of the ACC—Shaw AFB–Poinsett AFR—collections (<1 ft^3) will eventually be housed in the Collections Facility. As of September 1994, the collections from the New South project are in one box at the Columbia offices of New South. They were examined by the assessment team at SCIAA, but were then returned to New South for final processing. They will eventually be returned to SCIAA for permanent curation.

Storage Units

Archaeological collections held at SCIAA are permanently housed on enameled-metal shelving units. Each six-shelf unit measures 4 x 2 x 7 feet (w x d x h). Rows have been formed by attaching five or six individual units together.

Primary Containers

All artifacts recovered from the 1992 New South survey of Poinsett AFR are located in one acidic-cardboard box that measures 15 x 5.5 x 8 inches (l x w x h). The box is labeled directly with a preprinted label taped to the box exterior that contains site numbers, project title, and the address of the investigation firm (Figure 90).

Secondary Containers

Secondary containers used for the Poinsett Range collections are plastic, four-mil, zip-lock bags (Figure 91). Each contains a preprinted insert, labeled in marker, with site information (e.g., project, provenience).

Laboratory Processing and Labeling

Materials from the 1992 New South survey of Poinsett Range include artifacts from eight sites (33SU45, -52, -53, -58, -104, -105, -106, -107). All materials recovered from Poinsett AFR are prehistoric and include: ceramics (60%) and

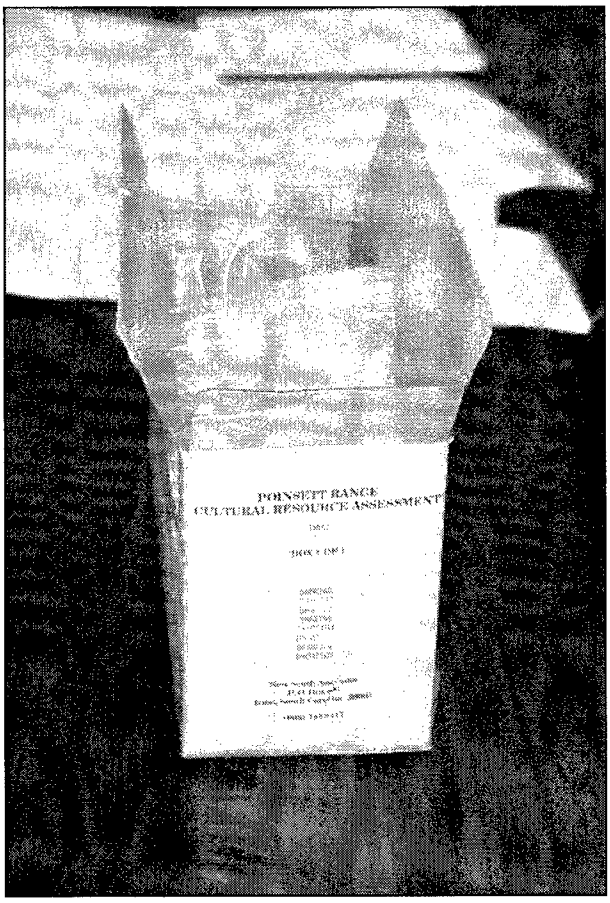

Figure 90. Primary container temporarily housing the Poinsett AFR collection held by New South.

lithics (40%). All ACC collections have been cleaned and labeled in india ink or with white correction fluid. Materials are sorted by site number.

Human Skeletal Remains

No human skeletal materials from Poinsett Range or any other ACC installations are curated at SCIAA.

Records Storage

Associated documentation for Shaw AFB and Poinsett AFR are stored in the Institute's Pendleton Street facility. The single report has not yet been officially processed by SCIAA personnel.

Paper Records

Less than 1 linear inch of associated documentation is available for Poinsett AFR. This consists of the final report prepared in 1992 by New South Associates. Other documentation exists for Shaw AFB, but was not at SCIAA at the time of the assessment.

Collections-Management Standards

The South Carolina SHPO has published Guidelines and Standards for Archaeological Investigations that outline federal and state legislation

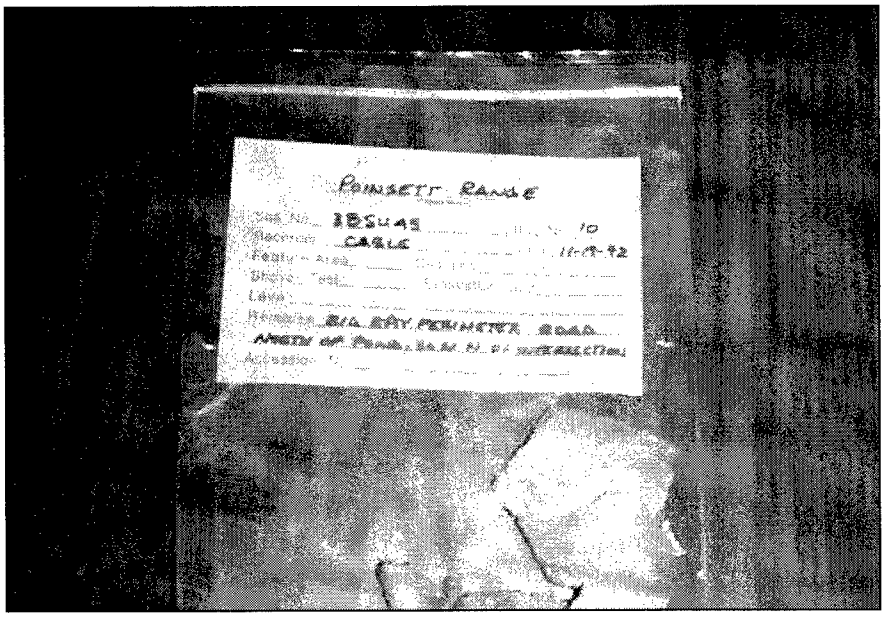

Figure 91. Secondary container and inserted label used to package the Poinsett AFR collection.

pertinent for archaeological survey and data recovery. This 39-page document also addresses issues pertinent to the performance of archaeological investigations in South Carolina—project review; the treatment of archaeological properties; research designs; field methods for survey, site testing, and data recovery; laboratory methods; reports; report evaluation; and personnel guidelines. SCIAA also has established a number of standards and guidelines for collections management (see Appendix 17).

Registration Procedures

Accession Files. Archaeological materials and associated documentation are not accessioned upon receipt; however, SCIAA maintains a receipt log for materials organized by site number and project. Collections are inventoried upon receipt.

Location Identification. Personnel can locate materials by site number and project.

Cross-Indexed Files. Files are cross-indexed by site number. A master catalog is maintained for the collections, and a copy of the initial inventory and the file of documented property receipts is readily accessible in the curator's office. The SCIAA filing system also includes individual files for loans, donations, transfers, correspondence, site, catalog, analysis, conservation, photographs, maps and drawings, projects, research, and reports.

Published Guide to Collections. To date, SCIAA has not published a guide to the collections. They have, however, produced an invaluable bibliography: *A Comprehensive Bibliography of South Carolina Archaeology,* compiled by Keith M. Derting, Sharon L. Pekrul, and Charles J. Rinehart in 1991.

Site-Record Administration. Official South Carolina archaeological site records are maintained by the Statewide Archaeological Site Inventory in the Information Management Program. Site File Procedures (October 1993) were written for individuals and investigators wanting to record and report archaeological sites. The *Handbook to the Site Inventory Record* was published in April 1985. Sites are recorded using the Smithsonian trinomial site-numbering system.

Computerized Database Management. Archaeological collections are entered into a database upon receipt. Data fields include site number, project name, investigator, year, number of boxes, and location within the repository.

Written Policies and Procedures

Minimum Standards for Acceptance. A draft of SCIAA's acceptance standards is being written; however, SCIAA's curation standards are noted in a form letter used by the curator informing persons and agencies of their curation fees and policies. In summary, in order to be accepted for curation, (1) the collection must be appropriately cleaned, cataloged, conserved, packaged, and labeled, and (2) the collection must be accompanied by appropriate records and documentation (see Appendix 17 for the complete curation standards).

Curation Policy. No long-term curation policy has been written; however, at present, the draft Curation Standards (see Appendix 17) is being used.

Records-Management Policy. No records-management policy has been written. Associated documentation is addressed in the Site File Procedures and the draft Curation Standards, but a comprehensive policy document has not been completed by SCIAA.

Field-Curation Procedures. Field-curation procedures have not been established at SCIAA.

Loan Policy. An internal 10-point policy guides the loan procedures. Written procedures will be included in the finished Curation Standards. No loans are made for research, but loans are made to museums for displays. In summary, loans are made for one year and may be renewed annually. Borrowers are responsible for providing transportation, security, protection, and environmental-control arrangements. No alterations—cleaning, repairing, conserving—can be performed without the curator's consent. Borrowed objects must be used specifically for the purpose for which the loan was requested. Objects displayed or exhibited must be mounted using nondestructive techniques. Finally, loan agreements may be terminated by both parties.

Deaccessioning Policy. SCIAA does not have a written deaccessioning policy, but investigators are advised to sample the shell, brick, and soapstone from a site. A deaccessioning policy will be added to the draft Curation Standards.

Inventory Policy. Collections are inventoried upon receipt. The master catalog includes building location, site number, site/project name, investigator, year, and number of boxes. No other periodic inventories are performed.

Latest Collection Inventory. SCIAA has not conducted an inventory of the collections housed at the Collections Facility and the Pendleton Building. All human remains, however, have been inventoried as part of a National Science Foundation grant.

Curation Personnel

One person, a curator, is responsible for the archaeological collections and associated documentation. Sharon Pekrul, curator since November 1986, received her B.A. in archaeology and anthropology from Cornell University and her M.A. from USC. The curator's responsibilities include:

1. managing the archaeological collections of South Carolina, including the operation of the Collections Facility and collections inventory, documentation, organization, long-term maintenance, and security;

2. overseeing all artifact transactions;

3. responding to requests for information pertaining to the collections and/or curation procedures;

4. providing research access to the collections and associated records;

5. developing and maintaining curation policies, procedures, and guidelines;

6. supporting Information Management Division staff in the curation of site records, maps, and photographs; in the development and implementation of joint policy; and in office staffing; and

7. managing SCIAA's archaeological laboratories, including coordinating access; overseeing the use of space, equipment, and supplies; maintaining laboratory organization, set up, and cleanliness; and advising and assisting with laboratory preparation of materials and curation.

Curation Financing

Curation activities are supported by USC and the curation fees. USC provides funding for operation of the four SCIAA buildings, and a one-time curation fee of $\$68/ft^3$ covers curation supplies and initial processing. Present funding is inadequate for proper curation.

Access to Collections

Access to the archaeological collections in the Collections Facility and the associated records in Suite 1 is limited to qualified researchers and students. Permission must be received from, and logistical arrangements must be made with, the curator. Permission to review the Statewide Archaeological Site Files must be received from the head of the Information Management Division, Keith Derting.

Future Plans

SCIAA is currently negotiating with USC for new buildings for offices and curation.

Comments

1. The Pendleton Building and the Collections Facility are structurally sound.

2. The records storage area in the Pendleton Building has reached capacity.

3. Environmental controls are absent in the Collections Facility—interior temperatures and humidity levels fluctuate in concert with the exterior conditions.

4. A vent in the west wall of the Collections Facility allows dust and toxic fumes to enter the collections storage area.

5. Unauthorized access to the Collections Facility may be achieved through the vent in the west wall.

6. Intrusion detection and deterrent measures for the Pendleton Building and the Collections Facility meet the guidelines established in 36 CFR Part 79.

7. The Poinsett AFR collection is housed in acidic cardboard boxes; secondary containers consist of four-mil, zip-lock, plastic bags.

8. ACC archaeological materials have been labeled directly in india ink.

9. No human skeletal remains were recovered from archaeological investigations on Shaw AFB or Poinsett AFR.

10. Storage of all associated records from the Poinsett AFR project does not meet modern archival standards.

11. Accession data are unavailable, documents have not been processed archivally, and finding aids are absent.

12. Collections-management standards and practices, which are in draft form at the present time, are in the process of being codified by SCIAA.

13. When appropriate, SCIAA also adheres to the South Carolina SHPO's Guidelines and Standards for Archaeological Investigations.

14. SCIAA has a full-time curator for archaeological collections and associated records.

15. SCIAA's professional staff is dedicated to the safeguarding and care of the materials curated at their facility; however, funding is inappropriate for proper curation.

16. Lighting in the collections storage area does not have UV sleeves in place.

Recommendations

1. Provide more dedicated space for records storage.

2. Install an environmental system (e.g., HVAC) to control the temperature and humidity, monitor the humidity, and install a dust-filtration system in the Collections Facility.

3. Close the hole in the west wall of the Collections Facility, and seal the west wall to prevent dust and fumes from entering.

4. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box contents change, inserts should be replaced. This method reduces the chance of conflicting and confusing information.

5. Labels for secondary containers should be made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), labeled in indelible ink, and inserted into the secondary containers.

6. Remove all contaminants (e.g., staples, paper clips, and rubber bands) from the documents.

7. Duplicate all paper records onto acid-free paper and place in acid-free folders labeled in indelible ink. Place all folders in acid-free cardboard boxes, and apply adhesive polyethylene plastic label holders, with acid-free paper inserts, to the boxes.

8. Arrange associated documentation according to modern archival procedures and create a finding aid for the documentation collection.

9. Make a duplicate copy of all the associated documentation, either on acid-free paper or archival microformat, and store these materials in a separate, fire-safe, secure location.

10. Place UV filters on fluorescent lights in collections storage and documentation storage areas.

Findings Summary

Only one repository currently houses archaeological collections recovered from Shaw AFB. SCIAA was evaluated by an assessment team

from the St. Louis District in August 1994. The collection consists of approximately 0.5 ft^3 recovered from a survey conducted early in 1994 by New South Associates. Only one other survey on the base was identified. Finally, after several phone attempts, the assessment team located the collection at the office of CHRS, the Pennsylvania contractor who conducted the survey in 1983. The contractor agreed to transfer the material to SCIAA for curation. At the time of the evaluation, however, this collection had not yet arrived at SCIAA and therefore was not evaluated. The following discussion concerns only the designated repository, SCIAA.

Infrastructure Controls

SCIAA meets most of the minimum federal standards for repository infrastructure controls (Table 24). Currently the most pressing problem is a lack of space. Although SCIAA has four buildings allocated for its use, the sheer volume of material they are curating, along with continuous additions, is overwhelming. More space for curation is needed immediately, and an increase in curation personnel would greatly enhance SCIAA's ability to curate current and future collections.

Environmental Controls

An HVAC system is installed in the Pendleton Building, where the documentation is stored. The College Street facility, where artifacts are stored, however, has no humidity or temperature controls.

Pest Management

An integrated pest-management system consisting of monitoring and control measures is in place in both the Pendleton Building and the College Street facility. The assessment team noted no signs of pest infestation at the time of the evaluation.

Security

Security measures in both buildings meet the minimum federal standards for the safeguarding of archaeological collections. Security measures include door locks, intrusion alarms, motion detectors, key-pad access locks, and a locked fence and gate around the collections storage facility. The only potential problem is the hole in the west wall in the College Street building. According to SCIAA staff, no incidents of unauthorized entry have occurred.

Fire Detection and Suppression

Fire extinguishers are the only fire-control measures located in the room where the associated documentation is stored. Alarms, however, are located throughout the Pendleton Building. The College Street building contains fire extinguishers, smoke detectors, an alarm system wired into the local fire department, and an overhead, wet-pipe sprinkler system.

Artifact Curation

Archaeological materials from the New South Associates investigation are well prepared for long-term curation. Each artifact has been cleaned, sorted, and directly labeled. Secondary containers consist of four-mil, polyethylene, zip-lock bags that have been labeled with a preprinted insert filled out in marker. The single primary container is an acidic cardboard box with a computer-generated label taped to the exterior. For rehabilitation, inserted labels should be copied onto acid-free paper and all secondary containers placed in an acid-free box.

Table 24.
Presence or Absence of Repository Infrastructure Controls at SCIAA

Repository	Environmental Controls	Pest Management	Security	Fire Detection & Suppression	Full-Time Curator
SCIAA	partial	yes	yes	yes	yes

Records Management

The only associated records from Shaw AFB currently curated at SCIAA include a draft of the New South Associates report. At the time of the evaluation, the report had not yet been integrated into the report library. SCIAA maintains associated documentation at the Pendleton Building in standard, metal, letter-size file cabinets. The material is arranged according to county and site number, as are the South Carolina state site files that are maintained by the Information Management Division. Duplicate copies are not made, nor is the material archivally processed. SCIAA's two full-time curation staff are aware of these deficiencies, but lack the time and additional staff to rectify the situation. Despite problems, however, the material is maintained and can be easily located by SCIAA's staff for research requests.

Collections-Management Standards

Basic collections-management tools—accession records, inventories, and written policies and procedures for curation and loans—are maintained by SCIAA. All materials and associated documentation are acknowledged by receipt, are inventoried, and their physical location within the facility noted. Artifact collections are added to the database system and cross-indexed. SCIAA maintains a system for site-record administration and has established minimum standards for the acceptance of collections. Again, the most apparent problem concerns the associated documentation. SCIAA does not have a records-management policy, nor do they anticipate its development in the near future, given the limited number of curation personnel. Aware of their limitations, SCIAA's staff have placed their emphasis on accessibility to researchers, rather than formal records-management policies.

Recommendations

The following are general recommendations for bringing Shaw AFB collections into compliance with the mandates of 36 CFR Part 79. All recommendations will be discussed at length in Chapters 10 and 11.

1. Make arrangements to bring together all archaeological collections from Shaw AFB and Poinsett AFR at SCIAA.

2. Inventory and rehabilitate all associated documentation.

3. Dedicate space for the storage of materials at SCIAA.

4. Employ more full-time and part-time staff to manage collections at SCIAA.

5. Develop cooperative agreements between SCIAA and other federal agencies.

8

Virginia

Langley Air Force Base, Newport News

Installation Summary for Langley AFB

Volume of Artifact Collections: 5.4 ft^3
On Base: 5.4 ft^3
Off Base: None
Compliance Status: Collection requires complete rehabilitation to comply with existing federal guidelines and standards for curation.

Linear Feet of Records: 0.8 linear feet
On Base: 0.67 linear feet
Off Base: 0.13 linear feet (WMCAR)
Compliance Status: Associated records, both on and off base, require complete rehabilitation to comply with existing federal guidelines and standards for modern archival preservation.

Human Skeletal Remains: No human remains have been recovered from Langley AFB.

Status of Curation Funding: Funding requirements for Langley AFB archaeological collections have not yet been identified completely. Once these needs are enumerated, Langley AFB personnel can apply to AF Environmental Compliance Program A-106 for the necessary funding. Curation at the William and Mary Center for Archaeological Research (WMCAR) is financed through cultural resource management contracts. Overall, staff feel that financing is adequate.

Recommended Curation Facility: At the present time, an appropriate permanent facility has not been identified. Until a permanent curation facility is identified, Langley AFB personnel will keep the collection on base. Recommendations below address the Command Historian's offices.

Repository 1: Langley AFB

Date of Visit: September 26, 1994

Points of Contact: Tom Wittkamp, Environmental Coordinator, and Suzanne Allan, Base Community Planner

Approximately 5.4 ft^3 of artifacts recovered from Langley AFB are curated on base in the offices of the Command Historian. Associated documentation comprises approximately 6 linear inches of paper records housed in the Community Planner's office. The collection is composed primarily of historical-period elements; the only prehistoric element of the collection consists of a single lithic artifact. Of the total collection, prehistoric material classes include lithics (1%), whereas historical-period material classes include ceramics (29%), glass (9%), metal (2%), brick (22%), faunal remains (9%), shell (22%), mixed/indeterminate (3%), and other (3%).

The artifact collection is housed in a vault in the Command Historian's building, located at 162 Dodd Boulevard, Facility 546. Because the vault also contained classified documentation,

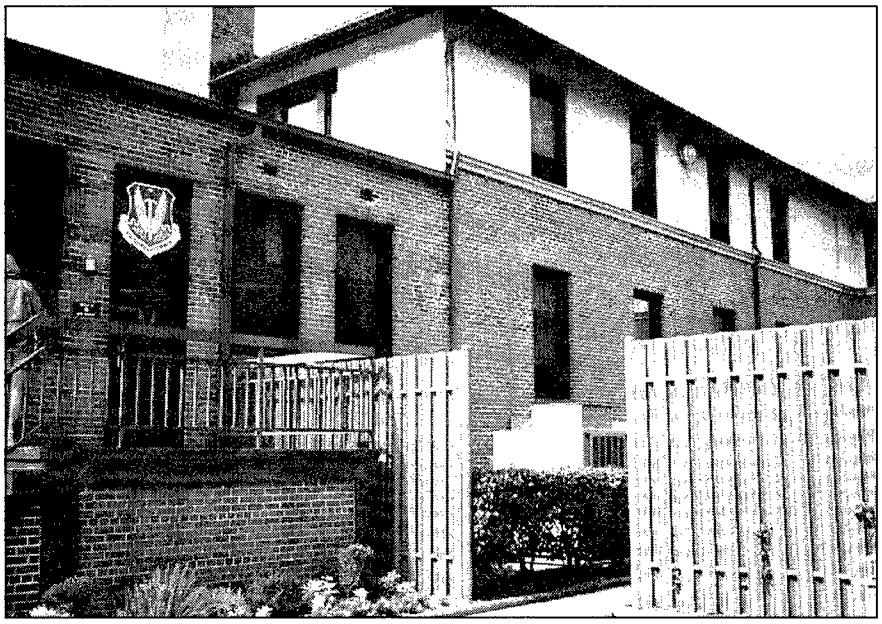

Figure 92. Exterior of the building housing the Command Historian's office.

taking photographs of the storage conditions was prohibited. The associated records are kept in a standard, metal file cabinet in Ms. Allan's office. They are not kept with the artifacts because she uses these documents frequently. A building evaluation of Ms. Allan's office was not conducted, but the assessment team performed a building evaluation of the Command Historian's building.

The Command Historian's building was originally constructed in 1924 as a barracks for servicemen. It was later converted into offices and now serves primarily as office space for the Command Historian's staff. The building has two floors above grade and a basement below. There are offices, lavatories, conference rooms, vaults for classified documents storage, a mechanical and utility room, and a space that has been allocated for security monitoring. The vault where the archaeological collection from Langley AFB is stored occupies approximately 200 ft^2 in the basement of the building (Figure 92).

Assessment

Structural Adequacy

The building was originally constructed in 1924 as a barracks. The staff was unsure when it was renovated and made into offices. The building is constructed of brick walls erected upon a concrete foundation. The roof, which is made of clay tile, was completely replaced in 1985 or 1986. The assessment team noted some evidence of water damage on ceiling tiles, but the staff stated that although leaks were not a frequent problem, sump pumps and drains had been set up in the vaults as an added safety measure to protect the collection and documentation stored there.

Interior walls are insulated and covered with plasterboard. Some offices have permanent walls; others are formed using interlocking sectional furniture. Ceilings are made of suspended acoustical tiles. Lighting is fluorescent, and UV sleeves are not in use. The floor is the concrete foundation, over which carpet has been installed. All windows in the building have been replaced with double-sash, aluminum windows, and all are shaded with small venetian blinds. The assessment team did not note any leakage around the window frames. The building has several entrances, most of which are glass doors. Interior doors are constructed of different materials. Leading to the basement is a vault door constructed of reinforced steel. Most interior doors, however, are hollow-core, wooden doors. Doors between different sections are metal and have mounted directly on the door frame a keypad requiring an access code.

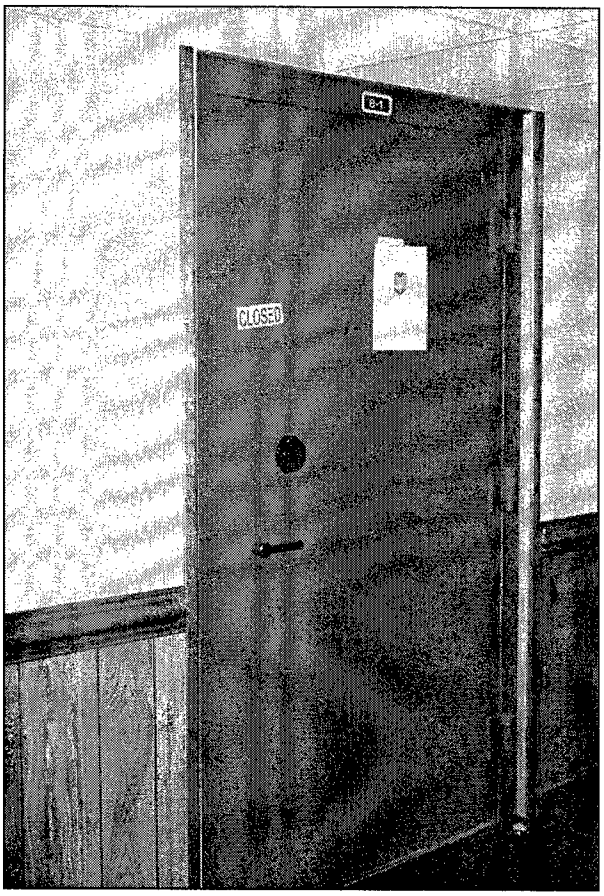

Figure 93. Vault door leading to the collection storage area.

The plumbing system in the building is as old as the building, but some of the pipes and fixtures have been replaced and updated. The electrical system was completely renovated in the mid-1980s. The heating and air-conditioning system is two years old. No problems with any of these systems were mentioned by the staff. Telephones are located in offices throughout the building.

Langley AFB's single archaeological collection is stored in a vault in the basement. The walls, ceiling, and floor of the vault are all constructed of concrete. Compact shelving units have been installed in the vault, and the shelving is on a platform that is approximately four inches above the concrete floor. This was done to ensure that if flooding did occur, standing water migrating toward the drain would not damage items stored on the shelving units.

The building, although not originally constructed as a curation facility, is considered structurally sound.

Environmental Controls

An HVAC system is not in place in the building. The building is heated with natural gas heat and also has an air-conditioning system. Dust filters are in place on these and are changed regularly by qualified staff. Temperature levels are maintained according to AF regulations, which are based on human comfort. Humidity is not monitored in the facility, but a portable dehumidifying unit is kept operating in the vault. A contracting service cleans the facility on a regular basis but does not have access to the vault. Staff members with the proper clearance are responsible for the upkeep of the vault.

Pest Management

No consistent pest-management system is currently in place. The staff monitors for pest infestation, and measures are taken if any is noted. Professional monitoring and regular spraying do not occur. Staff members did not mention any past or present problems of pest infestation.

Security

Security measures in the Command Historian's offices, while not fully in compliance with federal standards for safeguarding archaeological collections, are well above average. All exterior doors have double-cylinder, key locks on them. Many interior doors have key locks, and some have cipher locks and key pads mounted on them. All of these measures function properly and are used daily. The door to the basement is a reinforced-steel vault door with a combination lock (Figure 93). Only a limited number of the staff know the combination, and the door is kept locked at all times that the vault is unattended. An additional measure of controlled access is provided by the main gate's 24-hour security. Access to the base, as well as to the building, is strictly controlled. During the night, security police patrol the area around the building. All windows on the first floor are considered accessible from the outside, but all have basic window locks. Staff members did not recall any past

Figure 94. Primary and secondary containers housing the Langley AFB collection currently curated on base.

episodes of unauthorized entry, nor did the assessment team note any evidence of this.

Fire Detection and Suppression

The entire building is protected by a fire-alarm system wired to the base fire department. Smoke detectors, heat sensors, and fire extinguishers are located throughout the facility. Fire extinguishers are checked regularly by base personnel. The facility is not considered fireproof, but the vault is constructed completely of concrete and is more fire retardant than the rest of the building. Inside the vault there is a smoke detector, a heat sensor, and an alarm wired to the base fire department. No fire-suppression measures, however, are located within the vault, but a fire extinguisher is located just outside the vault door.

Artifact Storage

Langley AFB currently curates four boxes (totaling 5.4 ft^3) of archaeological materials from excavations carried out on base property. Materials held are from approximately six sites: 44HT21, -22, -23, 24, -28, and -29. Materials are stored in a secure vault in the basement of the Command Historian's office on compact metal shelving units.

Primary Containers

Primary containers for the Langley materials are quite varied. Three of the boxes are acidic cardboard boxes that measure approximately 18 x 12 x 11 inches (l x w x h). One of the containers is an acid-free box (Hollinger type) that measures 16.5 x 13 x 10 inches. All of the boxes show some type of damage to their exterior surfaces, mostly in the form of tears and abrasions caused by compression. All boxes are of glued and folded construction, and most of their sides are reinforced with nonarchival packing tape. Information pertaining to box contents is written directly on the front and rear of the boxes in black marker.

Secondary Containers

Secondary containers are all plastic, zip-lock bags. For most material, one bag is internested in another, although some material is stored in single bags. Label information is applied directly to the outer bag in black marker, while the inner bag has a preprinted insert with information written on it in pen; single bags use a combination of direct and preprinted labels (Figure 94). One of the boxes contains a smaller acidic cardboard box (11 x 9 x 4 inches [l x w x h]) in addition to plastic bags. Information is written directly on the smaller box in black marker.

Table 25.
Material Classes in the Langley AFB Archaeological Collection at Langley AFB, by Box

Material Class	Box 1	Box 2	Box 3	Box 4
Historical-period				
Ceramics	50	45	20	10
Glass	10	5	10	10
Metal	—	5	—	—
Brick	10	20	50	10
Faunal remains				
Vertebrate	10	5	—	20
Invertebrate	—	20	20	50
Flotation	10	—	—	—
Mixed	10	—	—	—

Most information included on the preprinted labels consists of site proveniences and site numbers. However, site numbers are often omitted, and site provenience is the only information provided. All of the boxes are packed with crumpled newspaper.

Laboratory Processing and Labeling

The collection recovered from Langley AFB includes various types of historical-period artifact classes (Table 25). Recovered materials consist mainly of ceramics and brick fragments, however, glass and metal also occur in high frequency. There is also a fair amount of vertebrate and invertebrate faunal remains and some flotation samples. Artifacts are sorted by material class, and larger fragments are usually labeled in india ink.

Human Skeletal Remains

There are no human skeletal remains curated at Langley AFB.

Records Storage

Documentation for Langley AFB archaeological resources is curated in the Cultural Resource Manager's Office in Building 205 and in the base historian's office. None of these materials have been archivally processed.

Paper Records

The associated documentation held in Building 205 (6 linear inches) is currently housed in a legal-size metal file cabinet. It has not been processed according to archival standards and is maintained for office use only. These materials consist mainly of administrative records and survey and report materials from 1990 to 1994. Cartographic materials (field maps, line drawings) are folded and stored with other records.

Materials located in the Command Historian's office (2 linear inches) are stored together with artifacts in one of the four boxes described above. These materials consist of field notes and survey records. In addition, some of the boxes also contain computer-generated information pertaining to various artifacts. These appear to be excerpts from a report that have been included with the artifacts that they describe.

Collections-Management Standards

Registration Procedures

Accession Files. There is no formal accessioning system, but all incoming material is accounted for through a receipt system.

Location Identification. The physical location of the collection is identified in the administrative files kept by Suzanne Allan.

Cross-Indexed Files. The files at Langley are not cross-indexed.

Published Guide to Collections. There is only one collection from Langley AFB housed on base, and the final report serves as the published guide; no other guides exist.

Site-Record Administration. No site-record administration exists.

Computerized Database Management. No computerized database management is used.

Written Policies and Procedures

Minimum Standards for Acceptance. Langley AFB personnel do not have an individual plan for the minimum standards for acceptance. Instead, they follow the standards outlined in AF Regulations and Instructions.

Curation Policy. No formal curation policy is currently in existence; however, staff members have applied for funds to develop a Historic Preservation Plan, which would also address the curation and handling of archaeological collections.

Records-Management Policy. No formal policy has been established by Langley AFB; the staff follows the standards and guidelines outlined in AF Regulations and Instructions.

Field-Curation Procedures. In general, the staff follows AF Regulations and Instructions. If more specific instructions are needed, the staff specifies these in the scope of work for the investigation.

Loan Policy. No established loan policy is in effect. The staff plans to develop appropriate procedures and include them in the Historic Preservation Plan.

Deaccessioning Policy. No deaccessioning policy exists at this time. The staff hopes to address this issue in the Historic Preservation Plan.

Inventory Policy. No inventory policy exists. The staff plan to develop appropriate procedures and include them in the Historic Preservation Plan.

Latest Collection Inventory. When the collection was transferred to Langley AFB, the contents of the boxes were checked against the inventory provided by the contractor. The inventory was then kept on file as a finding aid.

Curation Personnel

There is no full-time curator at Langley AFB. The only individual responsible for the archeological collection does so as a collateral duty. Suzanne Allan has no formal training in archival or archaeological curation, but expressed interest in attending some training courses on these topics.

Curation Financing

At the time of the evaluation, no funding mechanism was in place for the long-term curation of the archaeological collection or associated documentation. Suzanne Allan feels that funding issues should be addressed after the completion of the Historic Preservation Plan.

Access to Collections

Anyone interested in using the collection must make arrangements with Suzanne Allan. She then arranges for someone to open the vault and retrieve the collection. Until loan procedures are developed in the Historic Preservation Plan, the collection is not to be removed from its current location.

Future Plans

According to the staff, future plans include attendance of archival and archaeological curation training courses some time in the near future. In addition, Ms. Allan has requested $220,000 through the FY95 DoD Legacy Resource Management Program for the purpose of funding a Historic Preservation Plan. As an alternative funding initiative, funds have also been requested through the AF A-106 Environmental Compliance Program.

Comments

1. The building is structurally sound.

2. An HVAC system is not installed in the building.

3. A portable dehumidifier is located in the vault, but the staff do not monitor or control humidity or temperature to the standards needed to preserve archaeological collections.

4. The vault provides excellent security for the safeguarding of the collection, but its use simultaneously curtails researcher access to the collection.

5. Fire-suppression and -detection systems are adequate, but a sprinkler system should be installed in the vault.

6. Registration procedures and policies have not been established for the long-term care of archaeological collections and associated documentation. The staff plan to develop most of these policies and procedures in the base Historic Preservation Plan.

7. No funding currently is allocated for the curation of archaeological collections and associated documentation. Furthermore, the current staff has no formal training in either the curation or rehabilitation of archaeological collections or documentation.

8. Not all artifacts have been labeled directly in india ink.

9. Primary containers are inappropriate and have suffered from compression damage.

10. Archaeological collection requires complete rehabilitation for compliance with federal regulations.

11. Associated documentation requires complete rehabilitation for compliance with federal regulations and modern archival practices.

12. The collection is stored on compact, enameled metal shelving units.

Recommendations

1. Place UV filters on fluorescent lights in the vault.

2. Create a more rigorous temperature- and humidity-monitoring and -control regimen for the vault. Temperature should be kept at 67°F (± 2°), and humidity should be kept at 47 percent (± 2%) relative humidity.

3. Label all artifacts with indelible ink to prevent information loss if artifacts are separated from provenience data.

4. Replace secondary containers with four-mil, zip-lock, polyethylene plastic bags, and label with indelible ink. Labels inserted into secondary containers should be made from spun-bonded, polyethylene paper (e.g., Nalgene polypaper), and labeled in indelible ink.

5. Replace acidic cardboard boxes with acid-free boxes. Apply adhesive polyethylene plastic label holders, with acid-free inserts, to the boxes. Labels should no longer be applied directly to the boxes. When label information or box contents change, inserts should be replaced. This method reduces the chance of conflicting and confusing information.

6. Arrange all associated documentation according to modern archival procedures and create a finding aid for the documentation collection.

7. Remove all contaminants (e.g., staples, paper clips and rubber bands) from the documents.

8. Duplicate all paper records onto acid-free paper, and place in acid-free folders labeled in indelible ink. Place all folders in acid-free cardboard boxes, and apply adhesive, polyethylene plastic label holders, with acid-free inserts, to the boxes.

9. Flatten oversized material and place in map-storage cases for long-term curation.

10. Make a duplicate copy of all associated documentation, either on acid-free paper or preservation microfilm, and store these materials in a separate, fire-safe, secure location.

11. Arrange for staff to be trained in curation practices and collections management.

Repository 2: WMCAR

Date of Visit: May 15, 1995

Points of Contact: Don Linebaugh and Dennis Blanton, Codirectors; David Lewes, Archivist; and Debbie Davenport, Laboratory Supervisor

Approximately 1.5 linear inches of associated records from Langley AFB are currently stored at WMCAR in Williamsburg; however, WMCAR is not currently curating any material remains recovered from Langley AFB. WMCAR does not view itself as a long-term collections repository, but rather as a temporary holding facility until collections can be transferred to the Virginia Department of Historic Resources.

WMCAR offices are contained within a two-story house located directly across the street from the College of William and Mary. The collections and associated records are housed in the basement of a 4½-story dormitory building on the campus. The basement facility includes six major areas encompassing approximately 10,000 ft^2. There is a separate field- equipment storage room, a drafting and report production area, an archives storage area, a collections storage area, a photograph-processing and large-scale-map storage area, and a laboratory and collection-processing area. Of interest to the assessment team was the archives storage area (Room 51), measuring approximately 200 ft^2, and the photograph-processing and oversized-map storage area (Room 50).

Figure 95. Exterior of dormitory housing WMCAR collections storage areas in the basement.

Assessment

Structural Adequacy

This facility was constructed in the late 1930s as a dormitory, and the three floors above grade are still being used for that purpose (Figure 95). The building has a concrete foundation (covered with tile in the storage areas), concrete block walls below grade, and concrete block walls with a brick facade above grade. The roof consists of slate tiles and is original to the building. Interior walls in the basement are also concrete block, and the ceiling is of poured concrete. Plumbing and electrical systems have been updated at some time in the past, and the heating system has been renovated within the last two years. There are overhead pipes in all rooms. All are in close proximity to fluorescent lights, but no problems have occurred due to leaking.

The only differences in structural adequacy between the storage areas are the number of doors and windows in the rooms. The archives storage area (Room 51) contains one east-facing window at ground level. The window measures approximately 2 x 3 feet, has a wooden frame, and is covered with plywood on the interior. Two interior wood-panel doors exist. The west-facing door exits into the hallway, and the south-facing door separates the photograph storage from the paper records storage

There is one interior, west-facing, wood-panel door to the photograph-processing and oversized-map storage area (Room 50). It also

exits into the hallway. There are no windows in this room.

The archives storage area (Room 51) is only at approximately 30 percent capacity in terms of records storage, and the photograph-processing and large-scale map storage area (Room 50) has room to expand, only being filled to approximately 5 percent. Although the building is structurally sound and functions well as a temporary collections and archives storage facility, it will need further work if it is to continue to house archaeological collections and associated records.

Environmental Controls

Climatic conditions and controls are the same in each of the storage areas. Central air conditioning and a gas-fired boiler control the temperature. A digital "Thermo-Hygro" reader monitors the humidity in the collections storage area (Room 54), whereas a commercial dehumidifier attempts to control it. Current temperature and humidity readings in the collections storage area are 73°F and 62 percent humidity. Light is provided by fluorescent tubes in the archives and collections storage areas, while incandescent bulbs illuminate the photograph-processing and oversized-map storage area (Room 50). Standard furnace and air-conditioning filters are the only preventive measures against dust. The storage areas are cleaned daily by the janitorial staff of the college.

Pest Management

There is no integrated pest-management program at this facility. However, the college contracts out for an annual inspection and treatment, if needed. At the time of the visit by the assessment team there was no evidence of pest infestation.

Security

The exterior door to the facility is secured by both key and bolt locks, and there is controlled access to the basement area. Although the three floors above WMCAR function as dormitories, there is no inside access to the basement area from the floors above. The single window in the archives storage area (Room 51) has a simple window lock and is covered with plywood on the interior. The doors separating the storage areas from the hallway are all secured with key locks. The four double-hung wood sash windows in the collections storage area are half below ground level and half above. They are multipaned, contain simple window locks, and appear to be painted shut, but there are no interior or exterior security bars. Collections are stored in close proximity to these windows, posing a security risk. Unauthorized entry occurred between 1990 and 1991, when a window air-conditioning unit in the collections-processing area was removed and computer equipment was stolen. When the heating and cooling systems in the facility were renovated a few years ago, all of the window air-conditioning units were removed for security purposes.

Fire Detection and Suppression

Smoke detectors wired into the fire department and manual fire alarms located in the hallway outside the storage areas represent the only means of fire detection in the facility. The assessment team also noticed one fire extinguisher in the hall outside the storage areas. This, however, does not constitute adequate fire protection.

Artifact Storage

WMCAR is not currently housing any artifacts recovered from Langley AFB.

Human Skeletal Remains

No human skeletal remains from Langley AFB are housed at WMCAR.

Records Storage

Approximately 1.5 linear inches of documentation from the Langley AFB MCP Site survey (WMCAR Project 89-26) are stored at WMCAR. Records are stored in the archives storage area (Room 51), and consist exclusively of paper documentation, including administrative and survey records (Figure 96).

Paper Records

Original paper records, which are arranged by project number within year, are stored in several unlocked, letter-size, enamel metal file cabinets located against the north wall of the archives storage room. The dimensions of a single file

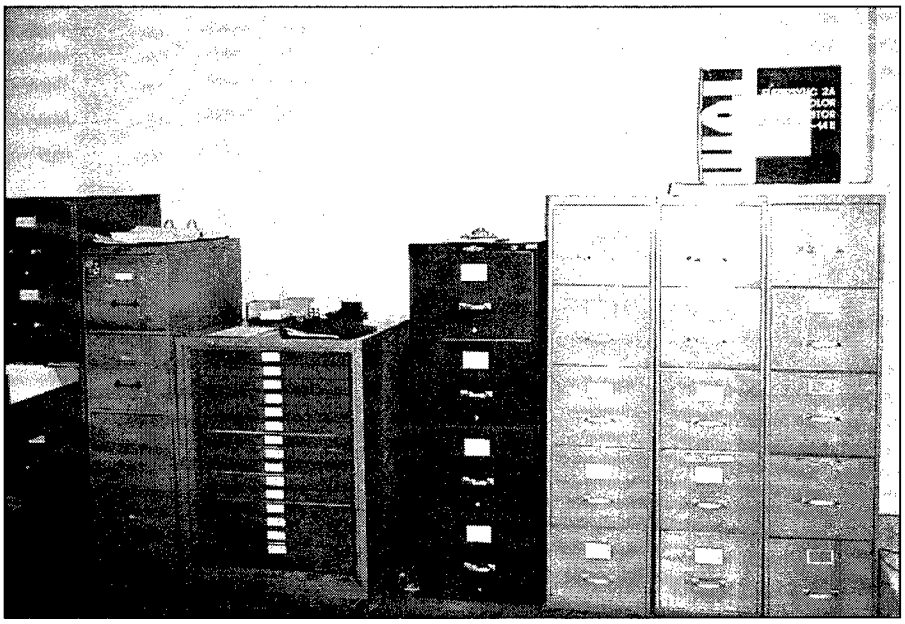

Figure 96. WMCAR archives (Room 51).

cabinet are 1.2 x 2.3 x 4.7 feet (w x d x h). Paper tags with computer-printed label information are contained in metal tag holders on the fronts of the drawers. The label information consists of the project numbers housed in any given drawer. A three-ring binder located on top of one of the file cabinets contains the "archives index." Records are cross-referenced in this index by three methods: (a) by project number and name, (b) by city/county, and (c) by agency/client name. Acidic manila file folders with adhesive labels serve as secondary containers for paper records. Label information is typed and includes project number and name (Figure 97). Each project folder contains a sheet listing the contents of the specific folder, including any

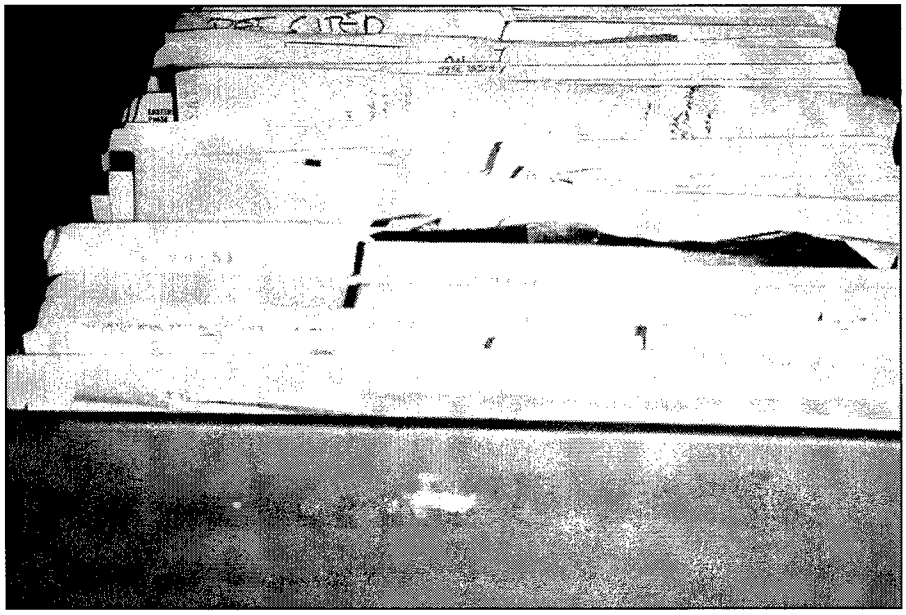

Figure 97. Associated documentation from Langley AFB is kept in a file cabinet, arranged by project name and number.

photographic or oversized records stored in other areas (Figure 98). Although the general condition of the records is good, they contain contaminants such as staples and paper clips. None of these records have been duplicated.

Maps and Oversized Documents

The oversized documentation in the Langley AFB collection has been rolled and is temporarily stored in the collections storage area (Room 54) until it can be integrated into the oversized-map collection.

Reports

Camera-ready versions of all WMCAR reports are stored in legal-size file cabinets in the archives storage room. They are arranged in alphabetical order by project and contained within acidic manila file folders. File drawers are labeled alphabetically, and file folders contain adhesive folder labels with typed information listing project name.

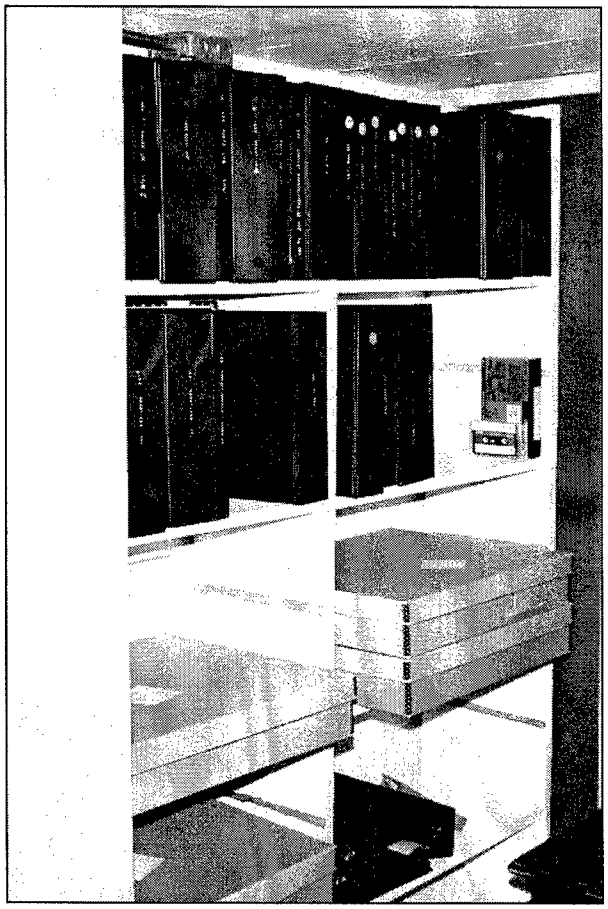

Figure 98. WMCAR photograph storage room.

Collections-Management Standards

Registration Procedures

Accession Files. When collections and records arrive they are assigned a number that includes the year and project number (e.g., 92-198).

Location Identification. The general storage area is specified, but not the location of the record or artifact collection within the storage area.

Cross-Indexed Files. Files are indexed by project number, which is cross-indexed to the project, collection, and photograph files.

Published Guide to the Collections. There is no published guide to the collections, other than the project reports that are produced.

Site-Record Administration. The Smithsonian trinomial site-numbering system is used.

Computerized Database Management. The Paradox database-management program is employed to manage the collections and records. Backups of these records are made each time the program is used or edited, and one disk copy is stored in WMCAR offices and one in the laboratory.

Written Policies and Procedures

Minimum Standards for Acceptance. WMCAR does not accept collections other than those they generate.

Curation Policy. Curation-policy information is available but has not been compiled into a single document. Information regarding the procedures undertaken to accession and organize a collection is summarized in a paragraph in the final report.

Records-Management Policy. Records-management policy information is available but has not been compiled into a single document. Information regarding the care of associated records is summarized in a paragraph in the final report.

Field-Curation Procedures. A document exists that describes how artifacts are to be treated in the field.

Loan Policy. A standardized loan form specifies such things as the length of the loan and how loaned materials are to be cared for.

Deaccessioning Policy. No deaccessioning policy exists.

Inventory Policy. Because WMCAR is not a long-term collection repository, a comprehensive inventory has never been performed. Collections are processed, inventoried, and then sent to a facility that will care for them on a long-term basis.

Curation Personnel

The full-time curatorial staff is made up of two individuals. Ms. Debbie Davenport, the senior laboratory technician, is the full-time curator of archaeological collections. Her formal training consists of a B.A. in historic preservation from Mary Washington University. Mr. David Lewes, senior draftsperson/editor, is responsible for the associated records. Mr. Lewes earned a B.A. in history from the University of Chicago. Mr. Don Linebaugh and Mr. Dennis Blanton are the codirectors of the center. Mr. Linebaugh has an M.A. and is working on his Ph.D., both from the College of William and Mary. Mr. Blanton obtained an M.A. in anthropology from Brown University.

Curation Financing

Curation is funded through monies written into cultural resource management contracts.

Access to Collections

Access to collections is controlled by Mr. Linebaugh, Mr. Blanton, and Ms. Davenport. Anyone wishing access is required to contact one of them. Researchers wishing access to collections must first submit a written letter or intent. Collections are not to be viewed without the supervision of the senior laboratory technician.

Future Plans

The staff view education, maintenance of the collections, and research as the primary responsibilities associated with the collections. There are plans for upgrading the curation program that include slowly replacing the wooden shelving units with steel ones, purchasing new cabinets as needed, and eventually installing temperature and humidity controls. Even with these plans, the staff emphasize that WMCAR is only a stopping place for the collections on their way to a final curation repository.

Comments

1. WMCAR is located in a basement surrounded on all sides by concrete and is therefore not as susceptible to fire as other facilities. However, adequate fire-detection and -suppression systems are lacking.

2. Although there have been no past episodes of the overhead pipes in the storage areas leaking, the steam release valves are located directly above the fluorescent lights, creating a fire hazard.

3. Humidity is monitored with a digital reader, and partially controlled with a commercial dehumidifier. However, paint is peeling off the ceiling in sheets due to humidity fluctuations.

4. Associated records are well organized, but only the photographic prints and negatives are archivally preserved, and none of the records have been duplicated.

5. There was no evidence of pest infestation, but there is no integrated program for pest management.

Recommendations

1. Upgrade the fire-detection and -suppression systems to include smoke alarms and multiple fire extinguishers. If possible, install a sprinkler system.

2. If possible, move the electrical lines and light fixtures from under the steam pipes and release valves as a further fire-prevention measure.

3. Purchase additional dehumidifiers for the storage areas, if it is not feasible to install an HVAC system to monitor and control temperature and humidity.

4. Place bars or some other type of deterrent over the exteriors of the windows as a security measure.

5. Replace the varnished wooden shelving units with metal shelving units. This should be a priority before the acids in the wood destroy the archival containers on them.

6. Duplicate all paper records on acid-free paper or preservation microfilm. Store a copy of these records at a separate and secure location. Transfer the original associated records to Langley AFB, leaving copies of these records at WMCAR.

7. Implement a pest-management program that includes monitoring and control.

8. Arrange associated documentation according to modern archival practices, and create a finding aid.

9. Flatten rolled maps and store in map-storage cases.

10. Remove contaminants (e.g., staples, rubber bands, and paper clips) from the documents.

Findings Summary

Two repositories currently house archaeological collections recovered from Langley AFB: the Langley AFB Command Historian's offices and WMCAR. WMCAR does not accept collections for curation. Although the facility at Langley AFB, the Command Historian's Office, is not a curation facility, a more appropriate repository has not been identified. Suzanne Allan and the staff at Air Combat Command Headquarters both agreed that until an appropriate repository was identified, Langley AFB would curate its own archaeological collections. The discussion below reflects that decision and recommends actions to bring the Command Historian's Office in compliance with federal regulations addressing the long-term curation of archaeological collections.

Infrastructure Controls

The Command Historian's Office is not a curation facility, and some of the infrastructure controls are missing or require upgrading to meet federal curation standards (Table 26). Staffing at Langley AFB is appropriate given the small amount of material (5.4 ft^3), but these individuals have duties and priorities other than archaeological curation. Suzanne Allan specifically noted a need for additional training in this area.

Environmental Controls

The Command Historian's offices are equipped with air conditioning and gas heat, neither of which are zoned systems. The vault is therefore not a separate zone, and the temperature of the vault is the same as the rest of the building. Temperature in the building is maintained at a level that is comfortable for the staff, not at what is appropriate for long-term storage of archaeological materials. Humidity is neither monitored nor controlled in most of the building, but a portable dehumidifier located in the vault is turned on when the humidity is deemed too high. Apparently, no scientific measures are used to indicate when the humidity is too high. These measures afford some control over the humidity, but neither the monitoring nor the control measures are fully in compliance with federal standards for the care of archaeological collections.

Table 26.
Presence or Absence of Repository Infrastructure Controls at Langley AFB

Repository	Environmental Controls	Pest Management	Security	Fire Detection & Suppression	Full-Time Curator
Langley AFB	partial	partial	yes	partial	none

Pest Management

Staff in the Command Historian's office monitors for pest infestation, and if a problem is detected, the base entomologist takes action. There is no regular spraying schedule against pests, nor is the building and vault monitored by a professional pest-management company.

Security

Security measures safeguarding the archaeological collection recovered from Langley AFB are excellent. An around-the-clock guard is stationed at all gates into the base. Security police regularly patrol the area surrounding the Command Historian's offices. Access to the basement vault is severely limited because classified documentation is also stored there. Even access to the basement itself is controlled by an additional vault door. The vault doors are both constructed of reinforced steel and have combination locks for which only a limited number of personnel know the combination.

Fire Detection and Suppression

Fire-detection devices are installed in the vault—smoke detectors, heat sensors, and an alarm wired to the base fire department. Fire-suppression measures, however, are absent. A fire extinguisher is located right outside the vault, but there are no suppression devices inside. In order to be in compliance with federal regulations regarding curation of archaeological collections, a sprinkler system should be installed in the vault. Whether this is feasible, however, is an entirely different question. The vault is used primarily to store classified documentation, and the installation of a sprinkler system may counter AF regulations in regard to classified materials.

Artifact Curation

The collection curated at Langley AFB requires complete rehabilitation for long-term curation. Primary containers should be replaced with ones constructed of acid-free materials and labeled consistently. Secondary containers should be replaced with four-mil, polyethylene, zip-lock bags labeled in indelible ink (Table 27). All interior label inserts should be replaced with inserts made of acid-free paper and filled out in indelible ink.

Table 27.
Secondary Containers Used in the Langley AFB Collection at Langley AFB

Container Type	Percentage Present
Plastic zip-lock bag	97
Small cardboard box	2
Newspaper	1
Total	100

Records Management

Paper records require complete rehabilitation to comply with federal standards and modern archival practices. Some of the documentation—e.g., administrative records, the final report, and cartographic records—are housed in a four-drawer, legal-size metal file cabinet in Suzanne Allan's office. She uses these in her daily activities, so they must be easily accessible. The field records and specimen catalogs, however, are placed in a box that also contains artifacts. No finding aid is available for any of the documentation. Files are in acidic manila folders labeled in various media. Oversized maps have been folded and placed in manila folders.

The collection housed at the WMCAR should be transferred to Langley AFB, so that all archaeological collections from Langley AFB are in a single location. Associated documentation at WMCAR also requires complete rehabilitation. This collection is stored in acidic manila folders labeled in different media. Contaminants remain in the paper documentation. Maps are rolled and stored upright. These materials should be transferred and rehabilitated as soon as possible.

All paper documentation from both collections should be copied onto acid-free paper, contaminants removed, arranged archivally, and placed in acid-free folders labeled in indelible ink. Maps should be flattened and placed in flat, metal map cases. Finding aids should then be created, and the acid-free safety copies of the collections stored in a separate, safe, fire-proof location.

Collections-Management Standards

Collections management tools—accession records, inventories, and written policies and procedures for curation, records management, and loans—are an integral element in the long-term survival of federal archaeological collections. At the time of the evaluation, Langley AFB did not have these management tools in place but were anticipating their development in a Base Historic Preservation Plan. Until these tools are developed, the base follows the standards and guidelines outlined in AF Regulations and Instructions.

Recommendations

The following are general recommendations for bringing Langley AFB collections into compliance with the mandates of 36 CFR Part 79. All recommendations will be discussed at length in Chapters 10 and 11.

1. Transfer the collection currently at WMCAR to Langley AFB for long-term curation and storage.

2. Inventory and rehabilitate the artifact collection currently curated at Langley AFB.

3. Inventory and rehabilitate both collections of associated records.

4. Dedicate space for storage of materials, particularly if additional data are collected.

5. Provide staff with additional training in archaeological and archival curation and rehabilitation.

6. Develop cooperative agreements with other federal agencies to share the costs of rehabilitation and long-term curation of collections.

7. Upgrade facilities to comply with minimum standards set forth in federal regulations.

8. Pursue development of proper management controls.

9

Status of Curation-Needs Assessment on Other ACC Installations

At the request of HQ ACC, the U.S. Army Corps of Engineers, St. Louis District, performed a curation compliance assessment of installations under its command. Work was performed during FY94 and FY95, and two volumes were produced that summarized the finding of the MCX.

Initially, 42 installations were to be evaluated during the course of the project. The St. Louis District ascertained that 14 installations had been the subject of archaeological investigations in the past, and collections had been generated. Two installations (Nellis AFB and Nellis AFR) had already contracted out to perform an evaluation of this nature. The remaining 12 installations (listed below) formed the first volume of findings, presented herein.

1. Avon Park AFR, Florida
2. Barksdale AFB, Louisiana
3. Beale AFB, California
4. Cannon AFB, New Mexico
5. Davis-Monthan AFB, Arizona
6. Fairchild AFB, Washington
7. Holloman AFB, New Mexico
8. Langley AFB, Virginia
9. MacDill AFB, Florida
10. Melrose AFR, New Mexico
11. Poinsett AFR, South Carolina
12. Shaw AFB, South Carolina

Several of the ACC installations originally included were scheduled for archaeological investigations during FY94 and FY95, and it was decided that these installations would be addressed in the second phase of the project.

As with any undertaking of this magnitude, the scope of work was dynamic and reflected changes necessitated by Base Realignment and Closure policies. The current status of the 28 ACC installations from the initial agreement are listed in Table 28.

Lajes Air Base in Portugal was evaluated by staff from HQ ACC. Barring any additional changes in status, the following installations have completed archaeological investigations and will be addressed in Volume 2 of this study.

1. Dare County AFR, North Carolina
2. Dyess AFB, Texas
3. Ellsworth AFB, South Dakota
4. Ellsworth Missile Complex, South Dakota
5. Grand Bay AFR, Georgia
6. Howard AFB, Panama
7. Little Rock AFB, Arkansas
8. Minot AFB, North Dakota

9. Minot Missile Complex, North Dakota
10. Moody AFB, Georgia
11. Mountain Home AFB, Idaho
12. Offutt AFB, Nebraska
13. Pope AFB, North Carolina
14. Saylor Creek AFR, Idaho
15. Seymour Johnson AFB, North Carolina
16. Whiteman AFB, Missouri
17. Whiteman Missile Complex, Missouri

Table 28.
Status of ACC Installations

Installation	Status[a]
Badlands AFR, S.D.	active
Castle AFB, Calif.	BRAC
Cuddeback AFR, Calif.	BRAC
Dare County AFR, N.C.	active
Dyess AFB, Texas	active
Ellsworth AFB, S.D.	active
Ellsworth Missile Range, S.D.	active
Grand Bay AFR, Ga.	active
Griffiss AFB, N.Y.	BRAC
Homestead AFB, Fla.	BRAC
Howard AFB, Panama	active
Lajes Air Base, Portugal	active
Little Rock AFB, Ark.	active
Loring AFB, Maine	BRAC
McConnell AFB, Kan.	BRAC
McConnell Missile Range, Kan.	BRAC
Minot AFB, N.D.	active
Minot AFR, N.D.	active
Moody AFB, Ga.	active
Mountain Home AFB, Idaho	active
Offutt AFB, Neb.	active
Pope AFB, N.C.	active
KI Sawyer AFB, Mich.	BRAC
Saylor Creek AFR, Idaho	active
Seymour Johnson AFB, N.C.	active
Whiteman AFB, Mo.	active
Whiteman Missile Range, Mo.	active

[a] BRAC indicates that the base has been selected for closure or realignment to other commands.

10

Findings Summary for 12 ACC Installations

Of the 42 ACC installations initially assessed during this project, 14 were found to have collections at the time of the first telephone survey. Two of these, Nellis AFB and Nellis AFR, had already contracted out to conduct an assessment of their archaeological collections. The remaining 12 installations have 34 distinct collections and 125 unique reports located in 20 different facilities in seven different states. The assessment team visited 19 of these repositories (Table 29), as well as the 8th AF Museum at Barksdale AFB, which will be taking over curation of the Barksdale AFB collection currently housed at SCIAA. Three of these repositories have two storage facilities housing ACC collections; in all three cases, both facilities were visited. In all, 23 facilities were visited; however, Shaw AFB and JANUS Research and its additional storage facility were not evaluated. At the remaining 18 visited repositories and two additional storage facilities, the team conducted a building evaluation, survey questionnaire, and collections and documentation evaluation, as applicable; however, because such a small amount of documentation was examined at PAR Environmental, it was deemed unnecessary to present the results of that evaluation in this report. (This information is on file at the St. Louis District.) All material remains and associated documentation were physically examined except the Shaw AFB collection held by CHRS, Inc., which was unavailable for evaluation in the time allocated for fieldwork. In total, the results for 19 facilities are discussed here.

In summary, the following can be concluded.

- Only 5 of the 19 facilities evaluated approach the standards of 36 CFR Part 79—ASM, SCIAA, NMARMS, MIAC/LOA ARC, and ACA.
- To achieve proper care, collections must be brought together in a single repository per state, in the same state as the ACC installation(s) whose collection(s) they house.
- Collections in all require some type of rehabilitation, and approximately 33 percent require complete rehabilitation.
- Records in all but one of the 17 facilities holding records are in very poor condition and should be completely rehabilitated.
- Management controls and a master collection database do not exist for ACC installations and should be created immediately.

Infrastructure Controls

Only 6 of the 19 evaluated facilities were designed originally or adapted to the requirements of a modern curation center. ACC collections are housed in a variety of building types—museums, university classrooms and laboratories, modern multistory office buildings, dormitories, renovated military buildings, and warehouses. With rare exceptions, these buildings were neither designed nor properly adapted to the requirements of a modern curation center. In most

cases, institutions use whatever space they can acquire from their governing bodies; they do not have the financial capability to acquire additional space suitable for collections-management needs. Despite the differing types of structures evaluated in this study, only one is considered structurally unsound, the Albuquerque Federal building where the U.S. Army Corps of Engineers offices are located.

Most facilities receive some measure of maintenance, though on an irregular basis. At most facilities, offices are cleaned by professional companies, but maintenance of the collection storage areas is the responsibility of curatorial staff. Four of the 19 evaluated facilities have artifact-storage areas that are cluttered with other materials such as excavation equipment, supplies, and furniture. Such clutter is a major fire hazard, introduces pests into the collections area, and serves to impede the movement of collections within each facility.

None of the facilities are fully in compliance with the mandates of 36 CFR Part 79. Only five facilities partially comply with the major standards—proper environmental controls, pest management, security, and fire safety—included in federal regulations. These elements, and how well they are met, are discussed and summarized below.

A final measure of the care afforded collections can be ascertained by examining the professional staff devoted to collections management and curation. Only 8 of the 17 repositories employ full-time curators for the care of archaeological collections.

Table 29.
Repositories Curating Archaeological Collections from ACC Installations

Repository	ACC Installation
8th AF Museum	none, but will curate Barksdale AFB collection
ACA warehouse	Melrose AFR
Albuquerque District	Melrose AFR and Holloman AFB
ASM	Davis-Monthan AFB
Avon Park AFR	Avon Park AFR
Beale AFB Museum	Beale AFB
CHRS	Shaw AFB and Poinsett AFR
Davis-Monthan AFB	Davis-Monthan AFB
Holloman AFB	Holloman AFB
HSR	Holloman AFB
JANUS Research	Avon Park AFR and MacDill AFB
Langley AFB	Langley AFB
Maxwell Museum	Holloman AFB
MIAC/LOA ARC	Melrose AFR
NMARMS	Holloman AFB, Melrose AFR, and Cannon AFB
OCA	Holloman AFB and Melrose AFR
PAR Environmental	Beale AFB
SCIAA	Shaw AFB, Poinsett AFR, and Barksdale AFB
Shaw AFB	Shaw AFB and Poinsett AFR
USF–Tampa	MacDill AFB
WMCAR	Langley AFB

Table 30.
Environmental-Control Measures Present in Evaluated Facilities

Repository/Facility	HVAC	AC	Heat	Temperature		Humidity	
				Monitor	Control	Monitor	Control
8th AF Museum		x	x	x	x	x	
ACA warehouse							
Albuquerque District		x	x		x		
ASM		x	x	x	x	x	
Avon Park AFR		x	x				
Beale AFB Museum		x	x		x		
Davis-Monthan AFB		x	x	x	x		
Holloman AFB	x	x	x	x	x		
HSR			x	x	x		
Langley AFB		x	x	x	x		x
Maxwell Museum		x	x	x	x	x	
Warehouse							
MIAC/LOA		x	x	x	x	x	
LOA		x	x	x	x	x	
LVR Building			x	x		x	
NMARMS			x	x		x	
OCA			x		x		
SCIAA			x				
USF–Tampa		x	x	x	x	x	x

Environmental Controls

Environmental monitoring and adequate control measures exist in 12 of the 19 evaluated facilities curating ACC archaeological collections (Table 30). Although most structures are heated and air-conditioned, all of the evaluated facilities have experienced temperature and humidity fluctuations outside the acceptable range dictated by AAM standards. All but two of the facilities that monitor humidity cannot control it. Many of the facilities that monitor the humidity are in the desert Southwest, where humidity presents less of a problem. The Langley AFB facility can control the humidity, but does not have any scientific means of monitoring it. Three facilities—Avon Park AFR, Holloman AFB, and USF–Tampa—have HVAC systems. Environmental control in collections storage areas is one of the most difficult goals to achieve but the problem most noted by curatorial staff.

Pest Management

Twelve of the facilities evaluated have a formal pest-management program—one that monitors and controls insects and small mammals. These facilities are sprayed with chemicals on a regular basis. The types of chemicals used, their frequency of use, and the attendant hazard to personnel and collections are beyond the scope of work but should be investigated. Severe pest infestation, and subsequent damage to the collections, was noted at only one repository—Avon Park AFR.

Security

Federal regulations require a number of security measures for the proper safeguarding of archaeological collections. These measures include door locks, motion detectors, intrusion alarms,

Table 31.
Security Measures Present in Evaluated Facilities

Repository/Facility	Motion Detectors	Intrusion Alarms	Window Locks	Limited Access
8th AF Museum			x	x
ACA warehouse				x
Albuquerque District		x	x	x
ASM	x	x	x	x
Avon Park AFR			x	x
Beale AFB Museum		x		x
Davis-Monthan AFB			x	
Holloman AFB			x	x
HSR				x
Langley AFB				x
Maxwell Museum	x	x	x	x
Warehouse				x
MIAC/LOA ARC				
LOA	x	x	x	x
LVR Building				x
NMARMS	x	x	x	x
OCA, UNMA	x	x	x	x
SCIAA		x		x
USF–Tampa				x

limited access, and window security. Eighteen of the 19 facilities evaluated have a policy limiting access to the collections storage area, and all have door locks located on the entrances to the collections storage areas. Only five of the facilities evaluated, however, meet the minimum federal standards for security measures. All of the installations that currently curate collections are afforded extra protection by the security police posted at the entrances to the bases. The remaining facilities provide varying security measures (Table 31).

Fire Detection and Suppression

Thirteen of the 19 evaluated facilities contain at least one fire-detection measure (Table 32). Seven facilities (37%) have overhead sprinkler systems installed. Only three (16%), however, fully meet the minimum federal standards for protecting archaeological collections from fire hazard. All 19 evaluated facilities had at least one fire extinguisher located in the collection storage areas, but in four facilities, extinguishers were the only fire safety measure present. Needless to say, this is inadequate protection against fire hazards.

Artifact Curation

None of the facilities holding material remains have properly prepared ACC artifact collections for long-term curation. Overall, most of the primary containers are acidic cardboard boxes of varying size that are frequently overstacked, overpacked, compressed, and torn. Not all primary containers include adequate label information.

Although approximately 60 percent of the secondary containers used to house ACC collections are zip-lock bags, many are of only two-mil thickness and have begun to suffer puncture

Table 32.
Fire-Detection and -Suppression Measures Installed in Evaluated Facilities

Repository/ Facility	Smoke Detectors	Heat Sensors	Alarm	Wired to Fire Dept.	Sprinklers
8th AF Museum		x	x	x	
ACA warehouse					
Albuquerque District			x		x
ASM	x	x	x	x	x
Avon Park AFR		x	x	x	
Beale AFB Museum					
Davis-Monthan AFB		x	x	x	
Holloman AFB	x	x	x	x	x
HSR					
Langley AFB	x	x	x	x	
Maxwell Museum	x		x	x	
Warehouse					
MIAC/LOA ARC					
LOA	x	x	x	x	x
LVR Building	x		x	x	x
NMARMS	x		x	x	x
OCA, UNMA			x	x	
SCIAA	x		x	x	x
USF–Tampa		x			

damage. Other secondary containers found include paper bags (21%), PVC plastic bags (14%), and cloth bags (2%). The assessment team also found materials packaged loose in primary containers, in plastic film vials, in paper envelopes, packed in newspaper, and stored unprotected in smaller cardboard boxes. The wide variety of nonarchival containers has led to an inventory nightmare, and the continuation of these conditions eventually will contribute to the deterioration of the collections.

Six basic steps are necessary for the most basic physical stabilization of most archaeological material remains: (1) cleaning, (2) sorting, (3) directly labeling each artifact, (4) bagging the material properly and labeling each bag, (5) creating acid-free label inserts for each secondary container, and (6) boxing the materials and labeling the primary containers. These steps also help ensure the integrity of the data, thus enhancing the research value of the collection. Full control is accomplished through proper registration procedures. Physical stability is ensured by proper storage conditions (e.g., in a controlled environment). All collections require at least partial rehabilitation to comply with federal regulations (Table 33).

Data also were collected regarding the major prehistoric and historical-period material classes observed in each of the ACC collections (Table 34). Lithics and ceramics are most abundant in prehistoric collections. Metal and glass are the most abundant historical-period materials. As Table 34 illustrates, almost 75 percent of the ACC materials come from prehistoric contexts.

Human Skeletal Remains

Although the human skeletal remains identified and evaluated by the assessment team do not

Table 33.
Summary of Rehabilitation Needed for Artifact Collections

Repository/ Facility	Level of Rehabilitation Needed[a]
ACA warehouse	complete, in process
ASM	partial, minor
Avon Park AFR	complete
Beale AFB Museum	complete
CHRS	unknown
Davis-Monthan AFB	partial, major
Holloman AFB	complete
HSR	partial, minor
JANUS Research	partial, minor
Langley AFB	complete
Maxwell warehouse	partial, minor
MIAC/LOA ARC	
LOA	partial, minor
LVR Building	partial, minor
SCIAA	partial, minor
USF–Tampa	partial, major

[a] "Partial, minor" means that 1–2 of the described tasks need to be done to bring the collection into compliance; "partial, major" means that 3–4 of the described tasks need to be done to bring the collection into compliance; "complete" means that 5–6 of the described tasks need to be done to bring the collection into compliance.

Table 34.
Summary of Material Classes in ACC Collections

Material Class	Percentage Present
Prehistoric	
Lithics	36
Ceramics	9
Human remains	6
Faunal remains	2
Shell	1
Botanical	1
Flotation	4
Soil	8
^{14}C	3
Other	3
Historical-period	
Ceramics	5
Glass	6
Metal	9
Brick	3
Worked bone	2
Faunal remains	1
Other	1
Total	100

comprise a large portion of the collections (6%), they are still an important element, especially in view of NAGPRA requirements. Only one collection, recovered from MacDill AFB, contains human skeletal remains. This collection, containing remains from at least three individuals (two adults and one juvenile), is housed at USF–Tampa.

Records Management

ACC associated records encompass approximately 13 linear feet. Although some attempts at minimal conservation practices have been made at most facilities, archival-quality protocols are observed at only 1 of the 17 repositories that hold associated documentation. None of the original paper records have been duplicated. Paper documents are not housed within acid-free folders, metal contaminants are present, maps are not always stored flat in metal cases, and photographic materials have not always been isolated and stored in chemically inert sleeves and proper environment. Sixteen collections of associated documentation require complete rehabilitation to comply with federal standards and modern archival practices.

Environmental controls that meet the minimum federal standards are absent in most of the repositories that curate associated documentation.

All repositories have suffered humidity and temperature fluctuations outside accepted ranges. Archive materials readily absorb and release moisture, leading to expansion and contraction, dimensional changes that accelerate deterioration and promote major visible damage such as cockling paper, flaking ink, warped covers on books, and cracked emulsion on photographs.

Collections-Management Standards

Basic collections-management tools—e.g., accession records; inventories; and written policies and procedures for curation, records management, and loans—exist at 5 of the 16 applicable facilities; are partially present at 7 facilities; and do not exist in any form at 4 facilities (Tables 35 and 36). Therefore, many of the examined repositories entrusted with the care of the nation's heritage have no long-term plan for the management of these resources. This responsibility must be honored by federal resource managers as well and must be corrected immediately. Failure to meet elementary curation needs and responsibilities has led to substandard care for many of the ACC archaeological collections.

Prior to this collections assessment, ACC did not know the extent, locations, or conditions of their archaeological collections. ACC personnel should be commended for recognizing this problem and addressing it, but now that specific deficiencies have been identified, action must be taken. At a minimum, a plan of action for the long-term management of ACC collections should implement the following five items.

1. Inventory all human skeletal remains to comply with NAGPRA.

2. Establish an order for the rehabilitation of all the collections.

3. Place collections in appropriate curation repositories in each state of origin.

Table 35.
Registration Procedures in Place at Evaluated Repositories

Repository	Accession Files	Location Information	Cross-Indexed Files	Site-Record Admin.	Database Mgmt.
8th AF Museum	x	x			
ACA warehouse		x			x
Albuquerque District					
ASM	x	x	x	x	x
Avon Park AFR					
Beale AFB Museum	x	x	x		
Davis-Monthan AFB					
Holloman AFB	x		x	x	
Langley AFB	x	x			
Maxwell Museum	x	x	x	x	x
MIAC/LOA ARC	x	x	x	x	x
NMARMS	x	x	x	x	x
OCA				x	
SCIAA	x	x	x	x	x
USF–Tampa	x	x		x	x
WMCAR	x		x	x	x

Table 36.
Written Policies and Procedures in Place at Evaluated Repositories

Repository	Minimum Standards	Curation Policy	Records Mgmt.	Field Curation	Loan Policy	Deaccession Policy	Inventory Policy
8th AF Museum			x		x	x	x
ACA warehouse		x				x	
Albuquerque District							
ASM	x	x	x		x	x	x
Avon Park AFR							
Beale AFB Museum							
Davis-Monthan AFB							
Holloman AFB	x			x			
Langley AFB							
Maxwell Museum	x	x	x	x	x	x	x
MIAC/LOA ARC	x	x		x	x	x	x
NMARMS	x		x			x	x
OCA					x		
SCIAA	x	x			x	x	x
USF–Tampa	x	x		x			
WMCAR		x	x	x	x		x

4. Inventory and rehabilitate the collections and associated documentation.

5. Develop an archives-management plan.

Implementation of these minimal tasks will contribute greatly to the preservation of data essential to our understanding of the culture history of North America.

11

Recommendations

The following general recommendations are submitted for bringing the evaluated ACC collections into compliance with the mandates of 36 CFR Part 79 and NAGPRA. To ensure maximum savings in cost to ACC, compliance with 36 CFR Part 79 should be undertaken by multiple installations whenever possible. A comprehensive plan for curation compliance includes the following points.

Develop a Plan of Action

A plan of action minimally must address four points—(1) long-term housing of the collections and records, (2) rehabilitation of the artifact collections, (3) rehabilitation of the associated records, and (4) management of these data.

Develop a Formal Archives-Management Program

A plan of action must be developed immediately to establish archives-deficiency priorities within ACC. Following this survey, all records for each state must be collected in a single repository and rehabilitated to comply with existing federal guidelines and standards for modern archival practices. This task must precede the rehabilitation of the artifact collections, because the archives within ACC are in the most immediate danger. Archives rehabilitation includes 11 steps.

1. Develop an archives inventory-management program that uses microcomputer technology.

2. Inventory and catalog all associated records in a manner consistent with professional museum standards.

3. Using an appropriate professional staff, assess the condition of all records, and implement a long-term conservation program for appropriate records.

4. Conserve significant records that are currently at risk.

5. Arrange records according to modern archival principles.

6. Remove all contaminants from the records.

7. Transfer paper records into acid-free folders, labeled directly in indelible ink; store in acid-free primary containers, also labeled in indelible ink; and place on appropriate archival storage units.

8. Place photographs, negatives, and slides into archival, polypropylene sleeves; acid-free envelopes; and appropriate storage units.

9. Catalog and curate large-scale maps in metal map cases.

10. Produce duplicate or back-up copies of associated records that will be stored in a separate location.

11. Create finding aids for each collection, and create a master, cross-indexed finding aid to be housed at HQ ACC.

Proper management of the ACC archaeological archives will provide opportunities for scholars, students, and the public to benefit from the information contained in these records—a major public benefit that currently is not being realized.

Inventory and Rehabilitate Existing Artifact Collections

A priority based on physical condition must be assigned to ACC collections, a general inventory must be produced, and the collections must be rehabilitated to professional museum standards. Rehabilitation must include the following four steps.

1. Inventory and catalog all artifact collections in a manner consistent with professional museum standards.

2. Label and package artifacts consistently and in accordance with archival standards, and place them in archivally sound containers.

3. Using an appropriate professional staff, assess the condition of all perishable artifacts, and implement a long-term conservation program for the appropriate materials.

4. Develop a collections manual to aid in the management of archaeological collections.

These steps will result in the stabilization and preservation of existing collections and will ensure management of the collections in the most cost-efficient manner for the federal taxpayer. Proper management of these collections will ensure that scholars, students, and the public have access to, and benefit from, the ACC archaeological collections, which presently do not approach their potential for use.

Bring Together Collections

A plan of action for the long-term care of collections and associated records must be adopted by ACC. In this era of cost-effectiveness, the St. Louis District recommends bringing together collections at regionally based, federally owned or leased repositories whose primary mission is the curation and long-term management of archaeological collections. Another option, which is not cost-efficient, is to place the collections at existing facilities in their state of origin, then spend the requisite funds to upgrade these facilities to meet the federal curation standards and the regional differences in collections and management needs.

The second option—placing the collections in a facility in the state of origin—is recommended as a temporary solution for the long-term curation needs of ACC collections. At the very least, ACC installations should cooperate within their state of origin to curate their materials collectively. This strategy will be particularly effective in the states of New Mexico and Florida. As regional repositories become available, ACC collections should be curated in perpetuity at these facilities.

Develop Cooperative Agreements

To defray costs, ACC is encouraged to develop cooperative agreements with other agencies to share costs of building construction and collection rehabilitation. Cooperative agreements provide opportunities for joint ventures between and among federal agencies with similar curation requirements.

The St. Louis District regards all the aforementioned recommendations as minimal tasks that must be addressed in order to bring ACC into compliance with federal standards on archaeological curation.

APPENDIX 1

Annotated Bibliography for Avon Park AFR, Florida

Austin, Robert J., and Jacquelyn G. Piper
1986 *A Preliminary Cultural Resource Assessment Survey of the Avon Park Air Force Range, Polk and Highlands Counties, Florida.*

Collection Location: Avon Park AFR
Documentation Location: JANUS Research (formerly Piper Archaeological Research)
Report Location: HQ ACC; Florida state site files

Brooks, Mark J.
1983 *An Archaeological Survey of the Proposed X Range Construction Project Area, Avon Park Air Force Range, Highlands County, Florida.*

Collection Location: No collections made
Documentation Location: JANUS Research (formerly Piper Archaeological Research)
Report Location: HQ ACC; Florida state site files

DeVane, Park T.
1983 *A History of the Lands Composing the Avon Park Bombing Range.*

Collection Location: Not applicable
Documentation Location: Not applicable
Report Location: HQ ACC

JANUS Research (formerly Piper Archaeological Research)
1992 Draft National Register of Historic Places, Multiple Property Documentation Form for Sites Located on the Avon Park Air Force Range, Polk and Highlands Counties, Florida.

Collection Location: JANUS Research
Documentation Location: JANUS Research
Report Location: Avon Park AFR; JANUS Research

APPENDIX 2

Annotated Bibliography for Barksdale AFB, Louisiana

Blikre, Lowell, and Jeani L. Borchert
1992 *Colstrip 18MM5 Radar Site, Re-examination for Cultural Resources.* Prepared for U.S. Air Force, Strategic Air Command, 1ECRG/RDS, Barksdale Air Force Base, Louisiana, by UNDAR-West.

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: Montana SHPO

Grandy, Walter F. (editor)
1971 *The History of Barksdale Air Force Base.* Everett's Bindery, Bossier City, Louisiana.

Collection Location: Not applicable
Documentation Location: Not applicable
Report Location: Undetermined, reference found in Heartfield, Price and Green (1989)

Heartfield, Price and Green, Inc.
1989 *A Cultural Resources Survey and Assessment of Proposed Peacekeeper Rail Garrison Facilities, Barksdale Air Force Base, Bossier Parish, Louisiana.* Submitted to USAF, Norton Air Force Base, California.

Collection Location: No collections made
Documentation Location: None found
Report Location: Louisiana Division of Archaeology site files (#22-1354)

Shuman, Malcolm K., and Dennis C. Jones
1994 *Cultural Resources Survey of Three Proposed Well Pads (Seagull Mid-South Inc., USA No. 41-ALT, USA No. 52-ALT, and USA No. 53-ALT) in the Sligo Oil and Gas Field, Barksdale Air Force Base, Bossier Parish, Louisiana.*

Collection Location: No collections made
Documentation Location: None found
Report Location: Louisiana Division of Archaeology site files (#22-1849)

1994 *Cultural Resources Survey of Two Proposed Well Pads (Hunt Petroleum USA B. No. 7-ALT and USA No. 30-ALT) in the Sligo Oil and Gas Field, Barksdale Air Force Base, Bossier Parish, Louisiana.*

Collection Location: No collections made
Documentation Location: None found
Report Location: Louisiana Division of Archaeology site files (#22-1848)

APPENDIX 3

Annotated Bibliography for Beale AFB, California

Heipel, Steve
1991 *Addendum Report Cultural Resources Inventory of the Proposed Beale Air Force Base Transportation Improvement Project, Yuba County, California.* PAR Environmental Services, Inc., Sacramento, California.

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: North Central Information Center of the California Historic Resources Information System

Maniery, James Gary
1989 *Cultural Resource Inventory and Evaluation for the Proposed Beale Air Force Base Rail Line Extension: Western Corridor, Yuba County, California, Addendum Report.* PAR Environmental Services, Inc., Sacramento, California.

Collection Location: Par Environmental Services, Inc.
Documentation Location: Par Environmental Service, Inc.
Report Location: North Central Information Center of the California Historic Resources Information System

Maniery, Mary L.
1989 *Cultural Resource Inventory and Evaluation for the Proposed Beale Air Force Base Rail Line Extension: Eastern and Central Corridors, Yuba County, California.* PAR Environmental Services, Inc., Sacramento, California.

Collection Location: PAR Environmental Services, Inc.
Documentation Location: PAR Environmental Service, Inc.
Report Location: North Central Information Center of the California Historic Resources Information System

Storm, Donald J.
1989 *Archaeological Inquiry at the Surface Lithic Scatter Site YUB-1161, Beale Air Force Base, Yuba County, California.* Submitted to Interagency Archeological Services Branch, National Park Service, San Francisco.

Collection Location: Beale AFB
Documentation Location: Beale AFB
Report Location: North Central Information Center of the California Historic Resources Information System

1989 *Archaeological Investigations within the Parks Lake Bivouac Area, Beale Air Force Base, Yuba County, California.* Submitted to the Interagency Archaeological Services Branch, National Park Service, San Francisco.

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: North Central Information Center of the California Historic Resources Information System

U.S. Army Corps of Engineers, Sacramento District
1984 *Intensive Cultural Resources Survey FY86TR1 Shelters, Beale Air Force Base, Yuba County, California.* U.S. Army Corps of Engineers, Sacramento District.

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: North Central Information Center of the California Historic Resources Information System

Weddell, George C.
n.d. *Intensive Cultural Resources Survey of the Proposed Unaccompanied Enlisted Personnel Housing (UEPH) Project at Beale Air Force Base, Yuba County, California.* U.S. Army Corps of Engineers, Sacramento District.

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: North Central Information Center of the California Historic Resources Information System

APPENDIX 4

Annotated Bibliography for Cannon AFB, New Mexico

Trierweiler, W. Nicholas
1988 *Report of a Class III Cultural Resource Inventory of 388 Acres on Cannon Air Force Base, Curry County, New Mexico.*

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: HQ ACC; NMARMS #25207

APPENDIX 5

Annotated Bibliography for Davis-Monthan AFB, Arizona

Altschul, Jeffrey H.
1988 *Life Away from the River: A Cultural Resources Class II Survey of Davis-Monthan Air Force Base, Tucson, Arizona.* Statistical Research, Inc., Tucson.

Collection Location: ASM
Documentation Location: Statistical Research, Inc.
Report Location: Arizona SHPO; ASM
Pertinent Site Numbers: AZ:BB:13:386–392

Altschul, Jeffrey, and Sylvia Lindsay (compilers)
1993 *On the Bajada: Archaeological Studies at Davis-Monthan Air Force Base, Tucson, Arizona.* Statistical Research, Inc., Tucson.

Collection Location: ASM
Documentation Location: Statistical Research, Inc.
Report Location: Arizona SHPO; ASM; Davis-Monthan AFB
Pertinent Site Numbers: AZ:BB:13:385–392

Bremer, Michael
1978 *An Archaeological Overview of Davis-Monthan Air Force Base, Tucson, Arizona.*

Collection Location: ASM
Documentation Location: Undetermined
Report Location: Arizona SHPO

Hewitt, James, and David V. M. Stephen
1980 *Archaeological Survey of the Naval and Marine Corps Reserve Center Site, Davis-Monthan Air Force Base, Tucson, Arizona.*

Collection Location: No collections made
Documentation Location: Undetermined
Report Location: Arizona SHPO

Rozen, Kenneth
1979 *The Archaeological Survey of the Transportation Corridor Project, Tucson, Arizona.*

Collection Location: No collections noted in the report
Documentation Location: Undetermined
Report Location: Arizona SHPO

Sterner, Matthew A.
1991 *Processing Camps in the Lower Bajada: A Report on Data Recovery Conducted on the Davis-Monthan Air Force Base, Tucson, Arizona.*

Collection Location: ASM
Documentation Location: Statistical Research, Inc.
Report Location: Arizona SHPO; ASM
Pertinent Site Numbers: AZ:BB:13:385, -388, -390–391

APPENDIX 6

Annotated Bibliography for Fairchild AFB, Washington

Spokane City/County Historic Preservation Office
1990 *Historic Resources Inventory: Fairchild Air Force Base, Washington; August.*

Collection Location: No collections made
Documentation Location: Spokane Historic Preservation Office
Report Location: Washington SHPO

APPENDIX 7

Annotated Bibliography for Holloman AFB, New Mexico

Alexander, Robert K.
1992 *An Archaeological Survey of a Proposed Rescue Helicopter Facility at Holloman Air Force Base, Otero County, New Mexico.* Submitted to the U.S. Army Corps of Engineers, Albuquerque District.

Collection Location: No collections made
Documentation Location: Undetermined
Report Location: NMARMS #39067

Cheek, Charles
1993 *Final Phase/Archaeological Survey for West Area/BBSG Taxiway and the North Area/Sewer Effluent Projects, April.* John Milner Associates.

Collection Location: No collections made
Documentation Location: Undetermined
Report Location: NMARMS #42515

Clifton, Donald E.
1985 *Red Rio I: An Archaeological Survey of 1,280 Acres Near Chupadera Mesa, White Sands Missile Range, Socorro County, New Mexico.*

Collection Location: Unknown whether or not collections made
Documentation Location: Undetermined
Report Location: HQ ACC; NMARMS #7094

Doleman, William H.
1992 *Draft Archaeological Sample Survey of Boles Wells Water System Annex, Holloman Air Force Base, Otero County, New Mexico.* Submitted to the U.S. Army Corps of Engineers, Albuquerque District.

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: NMARMS #43907

1993 *Data Compendium: Archaeological Sample Survey of Boles Wells Water System Annex, Holloman Air Force Base, Otero County, New Mexico.*

Collection Location: No collections made
Documentation Location: Undetermined
Report Location: U.S. Army Corps of Engineers, Albuquerque District

Doleman, William H., Janette Elyea, and Robert Dello-Russo
n.d. *Data Compendium: Holloman Test Track Impact Area Archaeological Survey.*

Collection Location: Laboratory of Anthropology
Documentation Location: NMARMS
Report Location: U.S. Army Corps of Engineers, Albuquerque District; Holloman AFB

1988 *The Holloman Test Track Impact Area Archaeological Survey, July 25.*

Collection Location: White Sands Missile Range, Environmental Division
Documentation Location: NMARMS
Report Location: HQ ACC; NMARMS #25754

1990 *Archaeological Testing of 2 Prehistoric Sites at Holloman Air Force Base, New Mexico.*

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: U.S. Army Corps of Engineers, Albuquerque District

Eidenbach, Peter L.
1983 *Cultural Resource Survey. Holloman Air Force Base Water Pipeline Right-of-Way near Dog Canyon, Otero County, New Mexico.*

Collection Location: No collections made
Documentation Location: U.S. Army Corps of Engineers, Albuquerque District; Human Systems Research, Inc.
Report Location: NMARMS #10295

1994 *Draft Three Historic Preservation Plan for United States Air Force, Holloman Air Force Base, New Mexico.* Submitted to the U.S. Army Corps of Engineers, Albuquerque District .

Collection Location: No collections made
Documentation Location: Human Systems Research, Inc.
Report Location: U.S. Army Corps of Engineers, Albuquerque District

Elyea, Janette
1989 *The Holloman Testing Draft Report.* Submitted to the U.S. Army Corps of Engineers, Albuquerque District.

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: U.S. Army Corps of Engineers, Albuquerque District

Higgins, Howard C.
1987 The Desert Survival Area Class III Cultural Resource Survey, Northeast Quarter, Southwest Quarter, Section 4T. 16 SR.8E. Zone 13. UTMS: Unavailable [approximately 394464E 3646426N], Holloman 15′ USGS Quadrangle Map, 1948. 4SCS-CRS-1987-001. Otero County, Holloman Air Force Base.

Collection Location: No collections made
Documentation Location: None
Report Location: Holloman AFB

1989 *The 4SCS(M) Communications Squadron Cultural Resource Survey of Northwest Quarter, Northwest Quarter, Section 01, T.17S., R.08E. UTMS (Center): 3636241N 398819E, Zone 13, 4SCS-CRS-1989-020. Holloman, New Mexico.* 1982 7.5′ USGS Quadrangle Map, Otero County, New Mexico.

Collection Location: No collections made
Documentation Location: None
Report Location: Holloman AFB; NMARMS #25361

Kirkpatrick, David T.

1987 *Archaeological Survey of the Red Rio and Oscura Bombing Target Areas, White Sands Missile Range, Socorro and Lincoln Counties, New Mexico.*

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: HQ ACC

Kneebone, Ronald R.

1991 *Archaeological Survey of Fifty Acres, Holloman Air Force Base, 8 October.*

Collection Location: No collections made
Documentation Location: U.S. Army Corps of Engineers, Albuquerque District
Report Location: NMARMS #37331

1992 *A Cultural Resource Inventory of 3.5 Acres near San Andres and Dog Canyons, Otero County, New Mexico, 30 March.*

Collection Location: No collections made
Documentation Location: U.S. Army Corps of Engineers, Albuquerque District
Report Location: U.S. Army Corps of Engineers, Albuquerque District

1992 *A Cultural Resource Inventory of 12 Hectares on Holloman Air Force Base, Otero County, New Mexico, 17 November.*

Collection Location: No collections made
Documentation Location: U.S. Army Corps of Engineers, Albuquerque District
Report Location: U.S. Army Corps of Engineers, Albuquerque District

Laumbach, Karl W.

1980 *Archaeological Investigation on White Sands Missile Range.* Cultural Resources Management Division Report No. 382. New Mexico State University, Las Cruces.

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: Undetermined, reference found in Laumbach and Kirkpatrick 1985

1981 *An Intensive Archaeological Survey of Four Use Areas on White Sands Missile Range.* Cultural Resources Management Division Report No. 430. New Mexico State University, Las Cruces.

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: Undetermined, reference found in Laumbach and Kirkpatrick 1985

1981 *An Intensive Archaeological Survey of Three Use Areas on White Sands Missile Range.* Cultural Resources Management Division Report No. 450. New Mexico State University, Las Cruces.

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: Undetermined, reference found in Laumbach and Kirkpatrick 1985

1986 *Red Rio II: An Archaeological Survey of 2,280 Acres near Chupadera Mesa, White Sands Missile Range, New Mexico.* Human Systems Research, Inc., Tularosa.

Collection Location: Undetermined (possibly Human Systems Research, Inc.)
Documentation Location: Undetermined (possibly Human Systems Research, Inc.)
Report Location: Undetermined, reference found in Kirkpatrick 1987

Laumbach, Karl W., and David T. Kirkpatrick
1985 *A Cultural Resource Inventory of the Southern Edge of the Chupadera Mesa: The Sgt. York Archaeological Project,* vol. 1.

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: HQ ACC

Leftwich, Keith
1986 *An Archaeological Survey of 47 Miles of Fiber Optics Cable Right-of-Way for Mountain Bell Telephone Company from East of Las Cruces to Holloman Air Force Base, New Mexico.*

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: NADB

Mariah Associates, Inc.
1987 *Class III Cultural Resource Inventory of 45 Parcels on Holloman Air Force Base, New Mexico.*

Collection Location: No collections made
Documentation Location: NMARMS
Report Location: NMARMS #32096

Mendez, Sergio
1993 *An Archaeological Clearance Survey of Four Well Pads and an Associated Access Road on Bureau of Land Management, Holloman Air Force Base, and State Trust Lands in Otero County, New Mexico.* Human Systems Research, Inc. Submitted to the Radian Corporation.

Collection Location: No collections made
Documentation Location: Human Systems Research, Inc.
Report Location: Holloman AFB

Phippen, G. Robert, Jr.
1988 *Class III Cultural Resource Inventory of Two Parcels on Holloman Air Force Base, New Mexico.* Mariah Associates. Submitted to the Primate Research Institute, New Mexico State University, Las Cruces.

Collection Location: No collections made
Documentation Location: None
Report Location: NMARMS #24071

1990 *Class III Cultural Resources Inventory, 64 Acres on Holloman Air Force Base, New Mexico.* Mariah Associates. Submitted to the Primate Research Institute, New Mexico State University, Las Cruces.

Collection Location: No collections made
Documentation Location: None
Report Location: NMARMS #32183

Rayl, Sandra

1987 *Cultural Resources Inventory of Proposed RATSCAT Modernization White Sands Missile Range, White Sands, New Mexico.* Submitted to Holloman AFB, Alamogordo, New Mexico (COE 87-9).

Collection Location: No collections made
Documentation Location: None
Report Location: Holloman AFB

1987 *Cultural Resources Inventory of Proposed Rapid Runway Repair Training Site, Borrow Pit Extension, and Stockpile Area, Holloman Air Force Base, Alamogordo, New Mexico* (COE-87-11).

Collection Location: No collections made
Documentation Location: None
Report Location: NMARMS #23411

1987 *Cultural Resources Inventory of Proposed Water Quality Drill Hole Sites, Holloman Air Force Base, Alamogordo, New Mexico* (COE-87-12).

Collection Location: No collections made
Documentation Location: None
Report Location: NMARMS #23412

1987 *Cultural Resources Inventory of Two Proposed Development Areas, a Medical Clinic and an All Terrain Vehicle Course, Holloman Air Force Base, Alamogordo, New Mexico* (COE-87-13).

Collection Location: No collections made
Documentation Location: None
Report Location: NMARMS #23413

1988 *Cultural Resources Inventory of Two Proposed Projects, Construct Test Facility and Large Scale Winged Target Facility, Holloman Air Force Base, Alamogordo, New Mexico* (COE-88-3).

Collection Location: No collections made
Documentation Location: None
Report Location: NMARMS #21444

1988 *Cultural Resources Inventory of Four Proposed Projects, Holloman Air Force Base, Alamogordo, Otero County, New Mexico* (COE-88-10).

Collection Location: No collections made
Documentation Location: None
Report Location: NMARMS #21446

1989 *Cultural Resources Inventory of Three Proposed Utilities Installation Projects, Training Area, and Wash Rock Construction Area, Holloman Air Force Base, Alamogordo, Otero County, New Mexico* (COE-89-02).

Collection Location: No collections made
Documentation Location: None
Report Location: Holloman AFB

1990 *Cultural Resources Inventory of Six Proposed Development and/or Expansion Areas, 83d TCX Training Area, Weapons Evaluation Building, UH-60 Beddown Facility, Ramp Extensions and Operations Complex, Rod and Gun Club Relocation and Asbestos Landfill Area, Holloman Air Force Base, Otero County, New Mexico* (COE-90-3).

Collection Location: No collections made
Documentation Location: None
Report Location: NMARMS #32135

1991 *Cultural Resources Inventory of Proposed 37th TFW High Voltage Power Line, Holloman Air Force Base, Otero County* (COE-91-13).

Collection Location: No collections made
Documentation Location: None
Report Location: NMARMS #37330

1991 *Cultural Resources Inventory of Proposed Sanitary Landfill Expansion Area, Holloman Air Force Base, Otero County, New Mexico* (COE-91-14).

Collection Location: No collections made
Documentation Location: None
Report Location: U.S. Army Corps of Engineers, Albuquerque District

Sale, Mark, and Duane Peter

1993 *Archaeological Survey of Proposed Locations for a Wastewater Treatment Plant near Holloman Air Force Base, Otero County, New Mexico.* Geo-Marine, Inc.

Collection Location: No collections made
Documentation Location: Undetermined
Report Location: NMARMS #44027

Shields, Helen B.

1991 *An Archaeological Survey of 36 Acres for Proposed Borrow and Drainage Areas on Holloman Air Force Base, Otero County, New Mexico.* Human Systems Research, Inc. Submitted to Burke and Associates.

Collection Location: No collections made
Documentation Location: Undetermined
Report Location: Holloman AFB

1992 *Archaeological Test Excavations at Site LA59153, Evaluation of Sites LA59141 and LA59152; and Survey of 11.5 Acres in the Red Rio Area of White Sands Missile Range, Socorro County, New Mexico* (Preliminary Report).

Collection Location: Collected, but location is undetermined
Documentation Location: Undetermined (possibly Human Systems Research, Inc.)
Report Location: HQ ACC

Tagg, Martyn D.

1992 *Wastewater Lagoon Hydropunch Testing Cultural Resources Survey, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1992-001).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1992 *Test Track Equipment Dirt Mound Cultural Resources Survey, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1992-002).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1992 *Out of Compliance Undertaking Building 1060 Parking Lot Cultural Resources Investigation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1992-003).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1992 *6586 Test Squadron Operations Building Cultural Resources Survey, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1992-004).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1992 *Building 1249 (Sole Site) Disturbance, Cultural Resources Investigation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1992-005).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #42514

1992 *Alpha Blockhouse (Building 1175) Repair Cultural Resources Documentation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1992-006).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1992 *AN/TRC 170 Radio Testing Area, Previous Survey Documentation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1992-010).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB; NMARMS #42516

1992 *FY92 Building Demolition Cultural Resources Evaluation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1992-011).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1992 *Fire Training Facility Previous Survey Documentation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1992-012).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1993 *FY93 Building Demolitions Cultural Resource Evaluation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-001).

Collection Location: Holloman AFB
Documentation Location: Holloman AFB
Report Location: NMARMS #42517

1993 *FY93 Building Demolitions II Cultural Resource Evaluation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-001B).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1993 *Building 835 Demolition Cultural Resource Evaluation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-001B).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1993 *Bare Base Training Area Addition, Cultural Resource Survey, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-004).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #42518

1993 *Test Track Area Sites, Cultural Resource Documentation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-005).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #42519

1993 *German Air Force Tornado Complex Cultural Resource Survey, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-006).

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: NMARMS #42520

1993 *San Andreas Tank and Well Fence, Previous Survey Documentation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-008).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1993 *Boles Wells Road Maintenance Cultural Resource Survey, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-009).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #42142

1993 *Nexrad Radar Complex, Cultural Resource Survey for Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-010).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #42521

1993 *48th Air Rescue Squadron Training Areas, Cultural Resource Survey for Holloman Air Force, Lincoln National Forest: Cloudcroft Ranger District, Otero County, New Mexico* (HAFB-1993-011).

Collection Location: Lincoln National Forest Supervisor's Office
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1993 *48th Air Rescue Squadron Training Area II Cultural Resource Survey for Holloman Air Force Base, White Sands Missile Range, Otero County, New Mexico* (HAFB-1993-011B).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1993 *20,000 Pound EOD Facility Testing, Previous Survey Documentation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-012).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #43145

1993 *Boles Wells Sump Cleanout Cultural Resource Survey, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-013).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #43146

1993 *Escondido Pipeline Road Maintenance, Previous Survey Documentation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-014).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #43147

1993 *Owl Well Site, Cultural Resource Documentation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-015).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #43445

1993 *Family Housing Demolition and Replacement Cultural Resources Evaluation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-016).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1993 *Test Track Artifact Collecting Cultural Resource Investigation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-017).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1993 *C-141 Airplane Crash Simulation Cultural Resource Survey, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-018).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #44801

1993 *Security Police ATV Training Area Cultural Resources Survey, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-019).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #44802

1993 *McNatt Ranch Disturbance Cultural Resource Investigation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-020).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #44803

1993 *Douglas Well Field Trash Cleanup Cultural Resource Evaluation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-021).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #45181

1993 *New Mexico R:3:1 Relocation, Cultural Resource Investigation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-023).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: NMARMS #45063

1993 *Bern Site, Cultural Resource Documentation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1993-024).

Collection Location: Holloman AFB (one isolated occurrence collected)
Documentation Location: Holloman AFB
Report Location: NMARMS #45064

1994 *Base Trash Cleanup, Cultural Resource Survey, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1994-001).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1994 *83rd ACS Training Area, Previous Survey Documentation, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1994-008).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

1994 *High Frequency Periodic Antenna, Cultural Resource Survey, Holloman Air Force Base, Otero County, New Mexico* (HAFB-1994-009).

Collection Location: No collections made
Documentation Location: Holloman AFB
Report Location: Holloman AFB

U.S. Army Corps of Engineers, Albuquerque District

1992 *Project Definition Design Analysis for Sewer Effluent System, Holloman Air Force Base, Otero County, Alamogordo, New Mexico.* U.S. Army Corps of Engineers, Albuquerque District.

Collection Location: No collections made
Documentation Location: Undetermined
Report Location: Undetermined

APPENDIX 8

Annotated Bibliography for Langley AFB, Virginia

Cook, Jody

1989? *Architectural and Historical Survey of Langley Air Force Base and Inventory of Historic Resources Langley Field, Virginia.*

Collection Location: No collections made
Documentation Location: Virginia Department of Historic Resources
Report Location: Undetermined

Hunter, Robert R., and Joseph B. Jones

1989 *A Phase I Archaeological Survey of the Proposed MCP Sites, Langley Air Force Base, Virginia.*

Collection Location: No collections made
Documentation Location: Virginia Department of Historic Resources; WMCAR
Report Location: Virginia Department of Historic Resources

Koski-Farell, Daniel

1984 *Phase I Cultural Resources Reconnaissance Survey at Langley Air Force Base, Virginia.*

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: Undetermined

1984 Addendum 1 to Phase I Cultural Resources Reconnaissance Survey at Langley Air Force Base, Virginia.

Collection Location: Langley AFB
Documentation Location: Virginia Department of Historic Resources
Report Location: Virginia Department of Historic Resources

Traver, Jerome, and Robert Hoffman

1992 *Phase I Cultural Resource Survey of the Proposed OSD Industrial Complex Site, NASA Langley Research Center, Hampton, Virginia.*

Collection Location: No collections made
Documentation Location: Virginia Department of Historic Resources
Report Location: Virginia Department of Historic Resources

Wheaton, Thomas
1990–1991
Archaeological Site Survey and Testing, Langley Air Force Base, Virginia.
Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: Undetermined

Wheaton, Thomas, Lawrence Abbott, Mary Beth Reed, and Theresa Hanby
1991 *Archaeological Site Survey and Testing, Langley Air Force Base, Virginia.*
Collection Location: Langley AFB
Documentation Location: Virginia Department of Historic Resources
Report Location: Virginia Department of Historic Resources

APPENDIX 9

Annotated Bibliography for MacDill AFB, Florida

Brooks, Mark J., Harry M. Piper, and Catherine B. Slusser
1983 *An Archaeological Survey of Designated Areas within the Proposed MacDill Air Force Base 18 Hole Golf Course, Hillsborough County, FL.*

Collection Location: No collections made (Previous collection noted at USF–Tampa from site 8HI50 includes recovered human skeletal remains and other NAGPRA items.)
Documentation Location: JANUS Research
Report Location: HQ ACC

Chance, Marsha A.
1988 *Addendum To: The Phase I Archaeological Assessment of a Florida Gas Transmission Company Proposed Corridor Expansion Project.*

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: Florida state site files

Chance, Marsha A., and Greg C. Smith
1991 *A Phase II Investigation of Six Archaeological Sites in Florida (8GU84; 8JA551; 8MR1878; 8PO1037; 8PO1038; and 8HI3382) for the Florida Gas Transmission Company.*

Collection Location: No collections made
Documentation Location: Undetermined
Report Location: Florida state site files #2730 (910768)

Ehrenhard, John E.
1987 Letter report of negative findings to Colonel Robert L. Bell, Base Commanding Engineer, MacDill AFB.

Collection Location: No collections made
Documentation Location: Letter report
Report Location: Florida state site files HI #1390

Engineering Science, Inc.
1993 *Cultural Resources Report for MacDill Air Force Base, Florida.* Report prepared for USAF Center for Environmental Excellence at Brooks AFB, Texas.

Collection Location: None indicated
Documentation Location: Undetermined
Report Location: Florida state site files #3421 (CRAT#930803)

U.S. Air Force
1992 *Preliminary Draft Environmental Impact Statement on Partial Disposal and Reuse of MacDill Air Force Base, Florida.*

Collection Location: No collections made (BRAC document)
Documentation Location: None found
Report Location: HQ ACC

APPENDIX 10

Annotated Bibliography for Melrose AFR, New Mexico

Acklen, John, et al.
1987 *Class II Survey and Testing of Cultural Resources at the Melrose Air Force Range, Curry and Roosevelt Counties, New Mexico, May.*

Collection Location: Undetermined
Document Location: Undetermined
Report Location: HQ ACC

Childers, W. M., A.V. Eggers, and E. L. Sichi
1983 *Final Report on Contract #F296055-81-C0013 (Class I Overview and Class I Inventory Melrose Bombing Range, Roosevelt County, Melrose, New Mexico).*

Collection Location: Undetermined
Document Location: Undetermined
Report Location: HQ ACC

Department of the Air Force
1985 *Final Environmental Impact Statement for Expansion of the Melrose Air Force Range, Curry and Roosevelt Counties, New Mexico.* Department of the Air Force, Tactical Air Command.

Collection Location: Undetermined
Document Location: Undetermined
Report Location: Reference found in Trierweiler 1988 (see Appendix 4)

Hodder, David, William Childers, A.V. Eggers, and E. L. Sichi
1983 *Final Report on Contract #F29605-81-C0013 (Class I Overview and Class I Inventory of Melrose Bombing Range, Roosevelt County, Melrose, New Mexico).* 2 vols.

Collection Location: Agency for Conservation Archaeology, Eastern New Mexico University, Portales
Documentation Location: Geoscientific Systems & Consulting
Report Location: HQ ACC/Cannon AFB
Comments: Skeletal remains were rumored, but survey did not find them. One volume of this report includes site forms and maps.

Lintz, Christopher, Karen Kramer, Amy Earls, W. Nicholas Trierweiler, Terry Del Bene, John Acklen, Fred Nials, and Jack Bertram

1987 *Class II Survey and Testing of Cultural Resources at the Melrose Air Force Range, Curry and Roosevelt Counties, New Mexico.*

Collection Location: Undetermined
Documentation Location: Undetermined
Report Location: HQ ACC; NMARMS #19151

Mariah Associates, Inc.

1986 *Presurvey Field Prospectus, Class II Cultural Resource Survey of Proposed Expansion of the Melrose Air Force Range, Curry and Roosevelt Counties, New Mexico.* Submitted to the U.S. Army Corps of Engineers, Albuquerque District, under contract DACW47-86-0002, DM00024.

Collection Location: Undetermined
Document Location: Undetermined
Report Location: Reference found in Acklen et al. 1987

1987 *Data Compendium: Melrose Expansion Project, Phases I and II.*

Collection Location: University of New Mexico Laboratory of Anthropology
Documentation Location: NMARMS
Report Location: U.S. Army Corps of Engineers, Albuquerque District.

Rayl, Sandra

1990 *Cultural Resources Inventory, Melrose Range Boundary Survey, Roosevelt County, New Mexico* (COE-91-04).

Collection Location: No collections made
Documentation Location: None
Report Location: NMARMS #35264

Reed, Heidi E.

1992 *Class III Cultural Resources Inventory, Melrose Air Force Range Boundary, Curry and Roosevelt Counties, New Mexico. Phase V: Additional 960 Acres Data Compendium.* Office of Contract Archeology, University of New Mexico, Albuquerque. Submitted to the U.S. Army Corps of Engineers, Albuquerque District.

Collection Location: No collections made
Documentation Location: Undetermined
Report Location: U.S. Army Corps of Engineers, Albuquerque District

APPENDIX 11

Annotated Bibliography for Poinsett AFR, South Carolina

Brown, Ann, Timothy Jones, Kenneth Basalik, and Timothy Payne
1983 *Cultural Resources Management Plan for Shaw AFB and Poinsett Range.*

Collection Location: Will be transported to SCIAA from CHRS
Documentation Location: Shaw AFB; SCIAA
Report Location: Shaw AFB

Cable, John
1992 *Site Visit and Assessment of the Cultural Resource Sensitivity Areas, Poinsett Range.*

Collection Location: New South Associates
Documentation Location: SCIAA
Report Location: SCIAA

APPENDIX 12

Annotated Bibliography for Shaw AFB, South Carolina

Brown, Ann, Timothy Jones, Kenneth Basalik, and Timothy Payne
1983 *Cultural Resources Management Plan for Shaw AFB and Poinsett Range.*

Collection Location: Will be transported to SCIAA from CHRS
Documentation Location: Shaw AFB; SCIAA
Report Location: CHRS, Inc.; Shaw AFB

APPENDIX 13

State of Louisiana Standards for Curation

Cataloging Standards and Procedures

The following standards and procedures apply to all collections from state lands. They also apply to any other collections that will be turned over to the Division of Archaeology for curation. Collections that result from grant projects and Section 106 compliance fall under these guidelines only if the collections will be housed and cared for by the Division of Archaeology.

This system is designed as the *minimum* level of documentation needed for curatorial purposes. It is not designed to replace or to be used in lieu of any cataloging system for specialized analyses. Archaeologists are encouraged to use more rigorous systems in their research, but if the artifacts will be stored by the Division of Archaeology, the system used must at least meet these minimum standards. If an archaeologist or client will be depositing artifacts with the Division of Archaeology, the following procedures must be observed.

1. The archaeologist contacts the Division of Archaeology requesting the next available catalog numbers for each site. Even if the site is newly recorded, the archaeologist must contact the Division of Archaeology so the catalog numbers can be recorded in the state files. The archaeologist should also request catalog record forms if he does not have them. State forms must be used unless the archaeologist has approval from the Division of Archaeology to use another type of form.

2. The archaeologist cleans, catalogs, labels, bags, boxes, and prepares for transfer all artifacts in the collection according to the guidelines described in the following sections.

3. The archaeologist notifies the division of all catalog numbers used.

4. The archaeologist arranges with the division for transfer of the artifacts to the division's storage facility.

5. The archaeologist ships or delivers artifacts and inventory to the storage facility. The archaeologist also makes sure that the following documents have been turned over to the Division of Archaeology: two typed copies of the catalog, two copies of the final report, one typed copy of the site form for the site from which the collection came, and one copy of the field records.

Cataloging System

The system involves only two numbers: the state site number and the catalog number. Catalog numbers are assigned by the state. They indicate provenience, and at a minimum must be used in the following manner.

1. All artifacts found within a single provenience are given the same catalog number. That is, artifacts within each level, each feature, or within anything excavated separately, are assigned the same catalog number.

2. *At a minimum* within each provenience, artifacts and other remains must be assigned to the following categories, counted, and listed on the catalog form.
   - bone, animal (fauna)
   - bone, human
   - bone, worked
   - ceramics, aboriginal

- ceramics, historic
- construction materials (specify brick, daub, mortar, slate, etc.)
- flora
- glass
- leather
- metal (specify culinary, nail, tool, weapon, etc.)
- other (specify)
- Poverty Point Objects
- shell
- special sample (specify carbon, flotation, soil, etc.)
- stone, chipped (except projectile points)
- stone, ground
- stone or mineral, other (specify)
- stone, projectile point
- textile
- wood

3. Archaeologists are encouraged to include more detailed information on the catalog form, in order to accurately reflect the level of analysis used for the collection. For example, if your analysis shows the collection to include 6 handpainted polychrome sherds and 3 Bellarmine jar sherds, indicate this on the catalog, rather than listing "9 historic ceramics."

4. Everything in the collection should be listed in the catalog, even if some artifacts will be retained when the bulk of the collection is turned over to the Division of Archaeology.

5. The catalog record form must also include information about collection procedures for special samples and conservation treatment used (see items 2 and 4 in the following section).

Artifact Cleaning, Processing, and Stabilization

1. All artifacts to be turned over to the division
   - must be washed or otherwise cleaned (unless cleaning will damage the artifacts or remove potentially important residues)
   - fully conserved (do not include any unconserved iron unless you have contacted the Division of Archaeology before packing)

2. For all special samples (soil, flotation, carbon, pollen, etc.) to be stored by the Division of Archaeology, the collecting procedures must be referenced or documented in the catalog. The following information must be included in paperwork turned over to the division:
   - site number
   - catalog number
   - sample collection date
   - person collecting sample
   - purpose of sample
   - weight of sample
   - steps taken during collection
   - any special cleaning or preliminary processing.

Detailed information simply may be referenced in the catalog with a note showing which field notes to consult, or an addendum may be attached to the catalog.

3. Special samples may not exceed 250 g (10.5 oz.) without prior approval of the Division of Archaeology.

4. Any conservation treatment of artifacts must be referenced in the catalog and on the inventory. An addendum to the catalog must show
   - site number
   - catalog number
   - type of object
   - material of which it is made
   - condition before treatment
   - specific materials and chemicals used, including trade names and concentration
   - steps taken in treatment

Artifact Labeling

All artifacts of the following types must be labeled with the site number and the catalog number.

1. diagnostic prehistoric artifacts; "diagnostic" in all discussions is to be determined by the project archaeologist, depending on the level of analysis, and may include, for example:
   - ceramics: decorated, rim, or base sherds; lugs, PPOs; figurines, ear spools; and complete vessels
   - lithics: points, scrapers, drills, ground stone, and blanks
   - metal
   - exotic (imported) raw material
   - worked bone

2. diagnostic historic artifacts, for example:
   - ceramics: decorated, rim, or base sherds; maker's marks; complete vessels

- glass: cut, pressed, or decorated; bottle and jar bases and lips; labels; complete vessels
- identifiable metal: tools, gun parts, machine parts
- identifiable plastic
- worked bone.

3. any artifacts to be cross-mended, separated for specialized analysis, or displayed.

For other types of artifacts, that are considered to be non-diagnostic or that only will be counted and weighed, the procedures below should be followed. Artifacts that might be included in this category are:

- plain body sherds
- small indistinguishable glass artifacts
- lithic debitage
- construction material
- shell

1. Only a representative sample (10% is adequate) of each type of artifact from each provenience must be labeled.

2. A card or piece of paper with the following information on it should be placed in the bag with the artifacts:

- site number
- catalog number
- archaeologist's name or organization
- date artifacts collected

Cards or paper placed in bags or organic material or in bags of metal must be acid-free.

Artifacts should be labeled using the following procedures:

1. Use a Rapidograph, quill, or steel-nib pens with permanent ink.

2. Before labeling porous artifacts, such as prehistoric ceramics, a clear inert lacquer must be applied to the label area. This ensures that the label can be removed in the future, if necessary. Clear fingernail polish may be used as the lacquer.

3. Dark-colored artifacts may be labeled with permanent white ink or may be labeled with black ink applied over a white background. White fingernail polish may be used for the background.

4. After labeling, the site number, catalog number, and background (if used) must be completely covered with clear varnish for permanence.

5. Self-stick labels, tape, rubber cement, and white-out are not long-lasting enough to use for labeling artifacts and should not be used.

6. Archaeologists should keep in mind display possibilities, consistency, and long-term abrasion when deciding where the catalog number will be located on an artifact.

7. Large artifacts, specially treated artifacts, or certain fragile artifacts which are not suited to direct labeling may have aluminum, cloth, or plastic tags attached to each artifacts, showing the site number and catalog number.

Artifact Bagging

1. All nonorganic artifacts must be bagged in polyethylene (not polyvinyl chloride) plastic resealable bags. The bags may be zip-closure type or may be closed with plastic-coated wire. Staples may not be used to close the bags.

2. When size permits, organic remains, such as bones, textiles, leather, seeds, and wood, should be put in polyethylene bags that have had one or more holes punched (with a hole puncher) in them to allow for some air circulation.

3. Small organic remains may be stored in polyethylene bags without holes if the materials are thoroughly dry and, in the opinion of the archaeologist, will not mold, mildew, or otherwise deteriorate in an airtight container. Otherwise, they must be placed in acid-free cardboard boxes or paper bags (if bags provide adequate protection during handling and shipping).

4. Bags or boxes of artifacts must be labeled with permanent marker on the outside with at least the following information:

- site number
- catalog number
- archaeologist's name or organization
- date artifacts collected

5. Bags or containers of artifacts or organic remains in which only a representative sample are labeled or in which no remains are labeled (because of small size) must also have the following information on a card or piece of paper in each container:

- site number
- catalog number

- archaeologist's name or organization
- date artifacts collected

The paper or card placed in containers of organic material and in containers of metal must be acid-free.

6. Oversized artifacts may be wrapped in acid-free paper and placed directly in boxes.

7. For a given provenience, each category of artifacts listed below should be bagged separately.

- bone, animal (fauna)
- bone, human
- bone, worked
- ceramics, aboriginal
- ceramics, historic
- construction materials (specify brick, daub, mortar, slate, etc.)
- flora
- glass (see below)
- leather
- metal (specify culinary, nail, tool, weapon, etc.)
- other (specify)
- Poverty Point Objects
- shell
- special sample (specify carbon, flotation, soil, etc.)
- stone, chipped (except projectile points)
- stone, ground
- stone or mineral, other (specify)
- stone, projectile point
- textile
- wood

8. All glass artifacts must be double-bagged.

9. For a given provenience, each category of diagnostic artifacts should be bagged separately from non-diagnostic ones. For example, at a minimum, all diagnostic prehistoric sherds for a provenience should be in one bag and all non-diagnostic sherds must be in another bag. Archaeologists are, of course, welcome to sort and bag smaller subsets of artifacts.

10. For small collections, all bags of artifacts from the same provenience then may be grouped together in a larger plastic bag or cardboard box. The container of all artifacts from the same provenience should be labeled with

- site number
- catalog number
- archaeologist's name or organization
- collection date

11. For large collections, and for certain special collections (see below), it is acceptable to box by material rather than by provenience.

12. Certain artifacts, such as (1) organic remains, (2) metal, (3) artifacts that have been conserved or treated, or (4) artifacts that are fragile, may require special packing materials or storage conditions. Consult with the Division of Archaeology before bagging or packing these.

Boxing

Collections to be transferred to the Division of Archaeology must be boxed in the following way:

1. No more than 30 pounds of material may be in any box.

2. All materials must be in corrugated cardboard boxes with the following dimensions: 15 inches in length, 12 inches in width, and 10 inches in depth (height). Single wall boxes are permissible. Boxes must have a minimum gross weight limit of 65 pounds. This type box is very common and should be available from any box distributor and from many office supply stores.

3. Large artifacts may be put in boxes up to 30 inches in length, 24 inches in width, and 10 inches in depth (height). Standard size large boxes that are acceptable are 29 inches in length, 10 inches in width, and 9 inches in depth; and 28 inches in length, 11 inches in width, and 9 inches in depth.

4. An inventory of the contents of each box must be made and enclosed in the box. The inventory should also show the site number, box number (#6 of 14, for example), the catalog numbers, number of bags or containers for each catalog number, and any special conservation treatment used (see example).

5. Any artifacts removed from the collection before transfer (to be used for an exhibit, or other purpose) must be included in the catalog, and the storage location must be noted on the catalog.

6. Boxes must be labeled on only one end with:

- site number
- site name
- catalog numbers of artifacts in the box
- name of archaeologist or organization
- date artifacts boxed

Supplementary Materials

Before transfer, or at the time of transfer, the archaeologist must turn over to the Division of Archaeology:

1. one typed copy of a site form for the site from which the collection came,

2. two typed copies of the catalog for the collection,

3. copies of all field notes, site diaries, unit forms, profiles, maps, and other field documents,

4. two copies of the final project report, and

5. inventory sheets (to be enclosed in each box).

Division of Archaeology's Responsibilities

1. Provide catalog numbers within 24 hours of the request (if by telephone).

2. Provide catalog record forms (mailed within 24 hours of the receipt of the request).

3. Provide a storage facility for all collections from state lands or donated to the Division of Archaeology.

4. Maintain a record by site number of the catalog and location of artifacts in the Division of Archaeology's collection.

5. Meet archaeologists at a designated storage facility to show them where to place boxes of artifacts.

6. Check contents of boxes against inventory provided by archaeologists.

7. Allow archaeologists to have access to the collections for research purposes.

Sources for More Information

Ontario Museum Association and Toronto Area Archivists Group
1985 *Museum and Archival Supplies Handbook.* 3rd ed. Available from Ontario Museum Association, 38 Charles Street, East, Toronto, Ontario, M4Y 1T1; telephone: (416) 923-3868.

Sease, Catherine
1987 *A Conservation Manual for the Field Archaeologist.* Archaeological Research Tools Vol. 4. Institute of Archaeology, UCLA. Available from Institute of Archaeology Publications, University of California, Los Angeles, CA 90024-1510.

APPENDIX 14

Excerpts from *New Mexico Cultural Resource Information System User's Guide*

5. Requirements for Submitting Archeological Records

This chapter of the *NMCRIS User's Guide* outlines the basic requirements for submitting archeological records to the Historic Preservation Division and the Archeological Records Management Section. The term *records* is broadly defined here to include the following kinds of materials:

- published and unpublished **reports** documenting archeological investigations.
- **data forms** capturing information relating to sites, activities, and other archeological entities.
- **maps** of various scales documenting the geographic locations of archeological sites and investigations, or the internal details of archeological sites.
- **photographic materials** documenting archeological sites, internal site features, and field investigations.
- **other notes and records** documenting archeological investigations and analyses.

As the designated clearinghouse for archeological information in New Mexico, ARMS receives both survey and excavation records from a variety of sources. Most new records are submitted to ARMS through the review and compliance section of HPD. Records are also submitted directly to ARMS by the Museum of New Mexico Archeological Repository Collections (ARC), and by independent researchers. Materials coming through the Museum are almost always original excavation records that are maintained by ARMS in conjunction with the artifact collections curated by ARC. Archeological records submitted to HPD by other government agencies in support of Section 106 consultation are transferred to ARMS at the completion of review. The bulk of these records consist of reports, site forms and maps documenting archeological survey throughout the state.

The requirements for submitting archeological records to HPD and ARMS are detailed in the remainder of this chapter and summarized in Figure 5.1. Note that the requirements outlined here are specific to the Archeological Records Management Section, and that most state and federal agencies issuing cultural resource permits have more detailed requirements for archeological reports and other records.

Reports

The Historic Preservation Division requires a single report copy for Section 106 consultation. Unless special arrangements are made with HPD, this consultation copy must come from the federal agency with a cover letter requesting consultation, not from the performing agency. For projects that involve state lands but are part of a larger, federal undertaking that will be subject to Section 106 review, performing agencies can meet the requirements of their State permit by sending HPD a letter indicating the PLSS location of the State lands in question, noting the sponsoring agency and NMCRIS Project or Activity Number, and enclosing a copy of the title page of the report. The only time that the performing agency must send a complete report directly to HPD is when a project

or activity occurs wholly on State or State and Private land is carried out under a state permit.

Once the Section 106 review is completed by HPD the review copy of the report and accompanying documentation are transferred to ARMS; it is not necessary to send additional copies of reports to ARMS if the report is undergoing HPD review. Reports *not* reviewed by HPD should be sent directly to ARMS, however. Regardless of who the report is submitted to , all reports must be accompanied by a completed LA Project/Activity Record.

Original site forms, field sketch maps and site-specific documentation (e.g., photographs, collection records, specimen catalogs) must be not be [*sic*] bound into reports. A separate unbound attachment is required for archival reasons and so site records can be filed properly at ARMS. Documentation of isolated occurrences (IOs) may, however, be bound into the report.

A legible project location map based on portions of one or more USGS 7.5′ topographic maps *must* be included in every report and labeled with quadrangle name(s). Surveyed area boundaries will be digitized by ARMS starting in 1993, so it is critical that the location of the undertaking (e.g., right-of-way boundaries, well pad limits) and the areas actually surveyed (if different from the undertaking area) be clearly identified. For extensive survey projects such as pipelines, actual copies of topographic maps should be submitted if possible to facilitate digitizing. These maps will be returned after the project boundaries are digitized.

A site location map is also required if new sites are discovered during survey, or if previously registered sites are investigated. Site locations can be added to the project location map, or a separate map can be prepared. If a separate map is prepared it should also be based on USGS 7.5′ topographic maps and labeled with quadrangle name(s). The boundaries of each site should be clearly indicated and LA numbers, rather than field site numbers, should be used.

Figure 5.1.
Records Submission Checklist.

For each archeological investigation, submit:

a **report.**

a **completed LA Project/Activity Record.**

survey reports only: a **project location map** and, if sites are discovered, **a site location map,** based on USGS 7.5′ quadrangle(s).

For each archeological site investigated, submit:

a completed **LA Site Record*** with assigned LA Number.

a **site plan map.**

a **site location map** based on USGS 7.5′ quadrangle(s).

*Sections 1–4 of the LA Site Record must be completed for all sites. Remaining sections of the form should be completed if the site has not been previously recorded on the LA Site Record, or if existing information on the site is incorrect or incomplete.

Site Recording Forms

The LA Site Record is completed whenever an archeological site is visited. LA Site Record forms must be accompanied by a site plan map and a photocopy of the USGS 7.5′ topographic map showing the site's boundaries. All maps, artifact drawings, photos, and continuation sheets should include the appropriate LA number and be attached to the LA Site Record. Site records must be legible and should be submitted to HPD or ARMS as part of a separate records packet along with the associated report.

All new sites must be registered and have LA numbers assigned by ARMS before records are submitted to HPD (see **Registering Archeological Sites** in Chapter 6). The submitted form may consist of a printed version supplied by ARMS, such as the one included in Appendix 1, or a word processor version. Sections 1–4 (pages 1–2) of the LA Site Record must be completed for *all* sites. Sections 6–13 (Section 5 is for SHPO use only) should be completed if the site has not been previously recorded on the LA Site Record, or if existing information on the site in incorrect or incomplete. Site updates must also include a site plan map if there are any changes in the condition, archeological status, or physical description (e.g., new vandalism or erosion, new or reinterpreted features, additional collection or test excavation units). If a site's location or configuration requires updating, a copy of the USGS 7.5′ topographic map showing the site's boundaries must be attached to the LA Site Record.

As indicated above, word processor versions of the LA Site Record are acceptable. The length and format (i.e., font, bold, italics, check boxes, etc.) of user-generated forms are not important, but submitted forms must contain, at a minimum, the same data

items in the same order as the printed form. If additional variables specific to your research or management are included, it is requested that these items be placed at the end of the form. A copy of the LA Site Record is available on diskette from ARMS. This document is a simple, unformatted version of the printed form, but can be imported into any MS-DOS or Macintosh word processor and modified.

LA Site Record forms may also be generated by the NMCRIS Data Entry Program (DEP), scheduled for distribution in late 1993. In addition to generating printed versions of the LA Project/Activity Record and LA Site Record, the DEP allows data to be transferred to the NMCRIS database electronically.

Site Plan Maps

Sketched site plan maps are essential extensions to the LA Site Record and are one of the most important documents produced during archeological survey. Each site plan is a graphic record of the site's internal structure and location in relation to the local environment and modern human activities that may threaten the site's integrity. Also, a site plan map documents the condition of the site (e.g., vandalism, erosion) and the investigative activities that were conducted on the site (e.g., collections, datum placement, test excavation units, shovel and auger tests) at the time of recording. Site plan maps are used by land managers and engineers as well as archeologists to relocate, evaluate, and avoid damaging sites. To be responsive to these diverse needs, site plan maps should contain the following elements:

- *Site identification:* indicate the LA number assigned to the site in addition to the field site designation.
- *North arrow:* both magnetic and true north are acceptable, but specify which was used.
- *Scale:* use a graphic bar-scale showing on-the-ground measurement rather than a ratio scale (i.e., 1 cm = 1 m) so that reduced/enlarged copies will also be to scale; if the map scale is approximate, clearly indicate this.
- *Map symbol key:* identify all symbols used on the map.
- *Site boundaries:* clearly mark the site's boundaries and note their basis (e.g., limits of artifact distribution, topography, disturbance).
- *Project boundaries:* if appropriate, identify features relevant to the undertaking (e.g., right-of-way limits, centerlines, temporary-use areas, access roads); direction and distance to the nearest project feature should be indicated if that feature is located far outside the site limits.
- *Landmarks:* indicate landmarks (e.g., fences, roads, houses) useful in relocating the site. If landmarks are not located on or immediately adjacent to the site, specify direction and distance.
- *Datums and Benchmarks:* mark site-identification stakes or tags, and points used in mapping, surface collection, and excavation.
- *Collection and excavation units:* clearly identify surface collection areas, esxcavation units, and shovel or auger tests, and key them to discussions in the site form and/or report.
- *Drainage and vegetation features:* indicate the location of drainages and vegetation patterns on or near the site.
- *Topography:* use estimated major contour lines (or for large sites, copy contours from the USGS map source) or slope measurements to indicate major topographic features on or near the site. Do not, however, compromise other information on the site or project with contour lines—simply indicate the location of major topographic features and directions of slope for especially complex sites.
- *Features:* accurately depict and label all recorded features and key them to descriptions in the site form.
- *Artifact distribution:* identify artifact concentrations and the location of key diagnostic artifacts.
- *Name of observer and date (including year) of field observations.*

Colored pencils may help to produce a good site plan, but remember that most future users will be working with photocopies. Rectangular or polar graph paper is essential to creating an accurate map, but use brands where the grid does not interfere with features, boundaries, and labels when the map is photocopied. Alternatively, include drafted sketch maps from the report with the LA Site Record.

Photographs and Drawings

Photographic documentation is an integral part of site recording. Photos serve to supplement the site plan map by documenting aspects of site location, structure, and condition that cannot easily be drawn. Although not required, black-and-white photographic prints, or *very clear* photocopies thereof, may be submitted to NMCRIS with the site form. Actual photos are preferable, and most government agencies require them—check with the appropriate

permitting agency to be sure. Negatives, color prints, or slides may be submitted, but are also optional. Negatives may be included with each site form or attached to the report.

All prints, slides and negative must be submitted in archival quality sleeves (see **Archival Considerations** below) and must be accompanied by proper documentation. At a minimum, a photo record should indicate frame number, subject identification (i.e., site number, description of view), direction of view, and date, including the year. Photographic documentation should also be included in Section 2 of the LA Site Record (**Photographic Documentation**) as to media/format, roll, and frame numbers, regardless of whether photocopies or actual prints are submitted.

Although the number and kind of photos taken depend on the size and complexity of the archeological site, basic photographic documentation commonly includes the following types of shots:

- *Overview photos* showing the entire site in relation to major topographic and cultural features. A photo of such large scale may require several frames and necessitate taking photos at some distance from the site. It is useful to have a person in these shots for scale. If possible, include the site datum in the center of the photo so it can be related to the site sketch map.
- *Feature photos* showing some overt site detail (e.g., exposures showing deposit depth, evidence of vandalism or other disturbance, excavation units) or site features (e.g., roomblocks, surface depressions). Again, it is desirable to have a person or recognizable object in the field of view for scale and have a means of relating the photo to the site map. Feature photos should be keyed to the site sketch map and site form.
- *Artifact photos* showing the size, material, and configuration of surface artifacts whose presence is important for evaluating site significance. A metric scale should be included in this type of photograph, and significant items should be keyed to the sketch map.

Drawings of internal features are also basic to site documentation and are valuable attachments to the LA Site Record. Many kinds of features and feature details simply cannot be recorded accurately through photography, especially if accurate measurements are essential to interpretation. Obviously, excavations require measured plans and profiles, but detailed drawings are frequently warranted during survey recording, especially when standing architecture is present. If uncollected diagnostic artifacts cannot easily be photographed, these items should be drawn to scale and keyed to the site map.

Archival Considerations

The long-term survival of paper and photo records is a critical issue but is often ignored by archeologists. ARMS will produce a comprehensive set of records management and curation guidelines for archeologists in the future, but until this document is completed, those submitting archeological records to ARMS should observe the following recommendations.

Paper and Forms. If possible, acid-free paper should be used for all archeological records, simply because it lasts longer. Yellow pad paper should be avoided as should the use of adhesive notes—these stickers will not stay attached very long and leave a deposit of glue that attracts dirt and insects.

Writing Instruments. Hard pencil (No. 3 or 4) is preferable over ink mainly because it does not fade over time or run when wet. Soft pencil (No. 2) will smear with handling, but will remain readable over time. Ballpoint pen may smear and fade over time but is acceptable. Felt-tip pens of any type are unacceptable for archeological records as they will bleed through several layers of paper over time.

Mounted Photos. Although the mounting of prints in reports is a necessity, almost all mounting methods cause deterioration of the print with time and eventually lose their adhesive power, resulting in the loss of the print from the page. This cannot be avoided completely, but heat-sensitive adhesive sheets are less destructive and last longer than other methods. The best method of including photos in a report is to mount archivally sound sleeves in the report. In all cases, photos should be marked (pencil or india ink only—no ballpoint pen) on the back side for association with the correct figure numbers and captions in the report if they become separated from the report or sleeve. Also, the performing agency should always maintain a set of negatives for all mounted photos with the manuscript.

Loose Photos and Negatives. Loose photographs accompanying site forms or reports must be numbered (pencil or india ink only—no ballpoint pen), matched to a log, and sleeved in archival polypropylene or polyethylene before submission to ARMS. Sleeves submitted with reports cannot, however, be larger than 8.5 x 11". Note that the stiff plastic sleeves known as PVC, or polyvinyl chloride, should not be

used; this material contains gases harmful to just about everything. Sleeved negatives should also be attached to the prints (or contact sheet) and the photo log for the roll, if possible.

Magnetic Computer Media. Archiving computer data on magnetic media has two major problems. First, the magnetic media used by most PCs will not reliably store data for extended periods of time. The typical 5.25" IBM format diskette can only reliably store data for a year or two. Second, the format that applications use for storing data changes as new versions of the application are released. At some point in time the old format becomes unreadable. For instance, version 5.1 of WordPerfect can only read back as far as version 4.2. Consequently, ARMS cannot guarantee the long-term survival of any information submitted on magnetic media. Archival copies of archeological data sets, field and analysis records, and other information on magnetic media must be printed out, preferably on acid-free paper.

Archival Supplies. Acid-free paper can be obtained from large supply houses specializing in bulk papers, and is available in xerographic paper, form-feed computer paper, and many other formats. While more expensive than regular paper, acid-free paper may still be obtained at reasonable cost. Special pens for writing on polypropylene sleeves, film, and other non-paper archival materials are available from photo supply stores or archival catalogues. Note that the word *Archival,* often found on plastic sleeves *does not refer to archival preservation;* it refers to *organization.* Care should be taken when purchasing plastic materials as not all plastics are sound for preservation. If you have any questions about archival preservation or supplies, please do not hesitate to call ARMS.

APPENDIX 15

Procedures for Submission of Collections to the State Archaeological Repository, New Mexico

December 1, 1988

I. Policies

A. Statement of Purpose

The State Archaeological Repository is that unit of the Laboratory of Anthropology/Museum of Indian Arts and Culture which fulfills the Museum of New Mexico's responsibilities for archaeological collections. These collections are generally derived from permitted archaeological excavations and surveys on state and federal land in New Mexico or from public projects on private lands. For state lands, these curatorial responsibilities are defined in 18-6-6(B) NMSA 1978 and CPRC Rule 87-8. For federal lands and federal projects on all types of land, the responsibilities are defined in 36 CFR 79 and related federal laws. The Curator of Anthropology is in charge of the Archaeological Repository. Collections received in to the Repository must conform with these procedures and current Museum of New Mexico policies. Collections in the Repository are available for study by qualified researchers, for loan, for Museum exhibit and related Museum public programs [18-6-5(O) and 18-6-6B NMSA 1978]. Collection use is a high priority, as emphasized in 36 CFR 79.

B. Submission of Materials

1. Ownership

a. All archaeological collections recovered from state owned lands shall be the property of the State of New Mexico [18-6-5(O) NMSA 1978].

b. Ownership of collections from private land which are to be submitted to the Repository for curation must be deeded to the Museum of New Mexico. Exceptions to this are allowed when a federal agency assumes responsibilities for a private collection under 36 CFR 79.

c. Archaeological materials recovered from federal lands are property of the federal government and will be maintained by the Repository for public benefit on long term loans from each federal agency (36 CFR 79).

2. Priority of Acceptance into the Repository

a. First Priority: Archaeological collections recovered from state owned or controlled lands (18-6-9A, NMSA 1978) which remain property of the State [18-6-5(O) NMSA 1978]. Within six months of the completion of permitted survey or excavation, the permittee shall submit to the State Archaeologist a list of the items removed from the State lands investigated [CPRC Rule 87-8(D)]. These collections must be accessioned into the Museum of New Mexico, Archaeological Repository permanent collections within six months of completion of the final report. Exceptions to this can only be made at the time the permit is issued. There will be no exceptions in regard to State Trust Lands.

b. Second Priority: Archaeological materials recovered by Museum staff during excavation, survey, or related projects regardless of land ownership.

c. Third Priority: Archaeological materials recovered from federal lands. Current federal policy states that collections from federal lands should

reside, if possible, in a repository in the state of origin (36 CFR 79). Collections from federal lands will be considered long-term loans from the federal government (43 CFR 7 etc.). These collections will be treated as part of the Museum of New Mexico collections, and will be subject to Museum policies and standards regarding research access and curation. Detailed provisions in regard to loans, research use, exhibition etc. are defined in specific agreements with different agencies.

d. Fourth Priority: Archaeological materials from anywhere in the state regardless of land ownership or project type. This material will be accepted if the Repository has adequate room for curation.

C. Assessment of Curation Fees

A fee will be assessed to the institution/agency/individual submitting archaeological artifacts or collections to the Repository. The fee will be assessed on all materials received into the Repository, regardless of their origin (state, federal, or private lands). The charge represents the cost of cataloging, computer data entry, equipment such as shelving, expendable supplies, and processing the collection into the Repository. The curation charge assumes basic standards are fulfilled before collections are turned in to the Repository staff. Any work by repository staff to fulfill the basic standards will require extra charges and agreements to fund this work can be arranged. Fees are payable at the time of submission of the materials. Current fee schedules may be obtained from the State Archaeologist, Laboratory of Anthropology, Museum of New Mexico, P.O. Box 2087, Santa Fe, New Mexico 87504 or by telephone at (505) 827-8941.

D. Definitions

In regard to federal collections, the definitions followed in these procedures will be the same as those appearing in 36 CFR 79. In general these definitions will apply to all collections discussed by these procedures. Additional definitions are found in the state regulations, CPRC Rule 87-8.

II. Standards and Procedures for Submitting Collections to the Repository

A. Introduction

All materials received into the State Archaeological Repository must adhere to certain standards, regardless of origin or ownership. The following pages outline the procedures and standards under which collections can be submitted to the State Archaeological Repository. For additional discussion of this requirement, refer to 36 CFR 79.

B. Curation Storage Locations and Cataloging Procedures

The archaeological collections are stored in primary and secondary storage locations. The researcher bringing a collection should make recommendations as to which items, if any, should be kept in primary storage. Final choice of location will be made by Museum Curators.

1. Primary storage consists of drawers in cabinets and lockers or shelving units located in high security areas with very limited access. In primary storage are artifacts which require superior security, as well as those which require conservation and special handling. Examples are whole pots, feathers, matting, basketry, and other perishables. Commonly these items receive individual catalog numbers.

2. Secondary storage contains the vast majority of materials from excavations and surveys. These are containers of sherds, lithics, and so forth. These items are stored in bulk containers and usually cataloged by container rather than the individual item.

C. Containers

1. General

a. Collections are maintained in standard size cardboard boxes and plastic bags or other acceptable containers (see below) within the boxes.

b. The Repository will receive collections in any sturdy boxes which approximate our standard boxes. They will be reboxed in our boxes upon receipt.

c. Retrieval of information from the computerized records system and of the objects from the storage area are based on a one box/one site unit of storage. Accordingly, collections must be boxed and separated by site.

d. Multiple component sites are best handled if the components are separated. We request that such sites be separated into their several components before the collection is brought to us. If there are difficulties in separating the materials from components, please discuss this with the Repository staff.

2. Curation Containers: The standard curation unit is a 15 x 11 x 11" cardboard box containing approximately a cubic foot. Other containers are half box (15 x 5.5 x 5.5"), quarter box (7.5 x 5.5 x 11.5"), and eighth box (7.5 x 5.5 x 5.5"). For small collections there is a unit termed a locker item. Curation charges will be based on the number of these various containers submitted.

3. Choice of Box Size: The primary criterion for choice of box size is weight, not size or volume of artifacts. An appropriate maximum weight is 30 pounds. Therefore, although two metates and four manos might fit into a standard box, weight makes the larger box an unacceptable container choice.

4. Interior Containers: Containers within the boxes must be plastic bags, plastic or glass vials, or boxes. *Paper bags are not acceptable containers.* Plastic bags must be at least 4 mil thick and must be of the zip-lock variety. The standard sizes are 3 x 4", 3 x 5", 4 x 6", 6 x 8", 9 x 12", and 12 x 12". Interior containers must close without the assistance of tape, rubber bands, string or staples.

5. Site/Isolated Artifact Information Form: The submitter must fill out a Site Information/Isolated Artifact Form for each site or isolated artifact submitted so the labels and computer records may be prepared. The focus of this form is on determining land ownership and identifying the responsible agency. Since isolated artifacts have the same information needs as sites, this form must be filled out for isolated artifacts as well as sites. The following form can be copied as needed. (See Figure 1, attached).

6. Explanation of Site/Isolated Artifact Information Form:

a. *LA Number:* Every site entered into the Repository collection must have an LA number. These are available from the Registrar of Site Survey Records. For Isolated Artifacts, record the identification number appearing in the report. Omit the site name and site number blanks with all the other information provided as if for a site.

b. *Site Name:* Enter the site name; if there is no site name, leave blank.

c. *Other Site Number:* Record your field or institutional number.

d. *Project Name:* Enter the project name.

e. *Project Number:* Enter project number or use the Contract Number.

f. *Date:* Enter year(s) project was conducted, and month if appropriate.

g. *Project Principal Investigator or Archaeologist in Charge of Project.*

h. *County and State.*

i. *Land Ownership:* Enter owner(s) of land where site is located. If private, give owners name(s) and address(es).

j. *Accession Source:* Person and institution or agency bringing collection to the Repository.

k. *Donor or Loaning Agency:* Donor pertains to private land. Enter name(s) of private landowner(s) who donated the collection to the Museum of New Mexico. If this is a long term loan, enter name of the responsible agency arranging the loan with the Museum of New Mexico, even if the same agency owns the land.

l. *Cultural Information:* This is the same information required for the Archaeological Site Records Management System (ARMS). Follow the ARMS guidelines and enter the same data as for the ARMS forms.

m. *Reference:* Enter title and author of the report.

D. Packaging and Labeling the Collection

1. General:

a. Perishable materials must be submitted in acid-free containers and wrapped in Bubble-Pak as needed.

b. Fragile items must be wrapped in Bubble-Pak, or other suitable packaging materials. Consult with Repository Staff if in doubt.

c. Repository Staff should be advised in writing as to number and identity of containers with fragile and/or perishable items.

Figure 1.

STATE ARCHAEOLOGICAL REPOSITORY

SITE/ISOLATED ARTIFACT INFORMATION FORM

LA NUMBER/ISOLATED ARTIFACT NUMBER _____

SITE NUMBER _____ OTHER SITE NUMBER _____

PROJECT NAME _____ PROJECT NUMBER _____

PROJECT DATE _____ PROJECT P.I. _____

COUNTY AND STATE _____

LAND OWNERSHIP _____

ACCESSION SOURCE _____

DONOR OR LOANING AGENCY _____

CULTURE (1) _____

PERIOD (1) _____

PHASE (1) _____

DATE _____ B.C./A.D. TO _____ B.C./A.D.

METHOD OF DATING _____

CULTURE (2) _____

PERIOD (2) _____

PHASE (2) _____

DATE _____ B.C./A.D. TO _____ B.C./A.D.

METHOD OF DATING _____

IF MORE SPACE IS NEEDED FOR CULTURAL INFORMATION, USE BACK OF SHEET.

REFERENCE _____

_____

COMMENTS _____

_____

****

ARC STAFF ONLY. List Assigned Catalog Numbers Here: _____

_____

_____

d. All human skeletal materials is to be kept separate from other artifact classes (including other bone). Skeletons from separate locations should not be placed in the same box.

e. Specimens which have been illustrated in any publication must be packaged separately. In addition, all packaging for illustrated artifacts must contain the following information:

(1) the plate or illustration number and, if available

(2) the plate or illustration caption.

f. Washed artifacts are desired, if compatible with the researcher's constraints. However, unwashed and reasonably clean artifacts will be accepted. Occasionally a researcher will want some of the items to remain unwashed for future analysis needs. Unwashed items intended for special analysis should be clearly marked and separated from the rest of the collection.

2. Plastic Bags or Other Inside Containers:

a. Each inside container should contain only one raw material class such as sherds, lithics etc. Exceptions should be discussed with the Repository Staff.

b. Inside containers should not be overloaded.

c. The original label from the field bag should be cut out and placed in the plastic bag or other inside container, unless fragile items would be damaged.

3. Labeling of Inside Containers:

All inside containers must be labeled by the submitting agency/individual in the manner illustrated on the following page (see Figure 2, attached). Use this same format for isolated artifacts and collections from within a site. Other kinds of inside containers such as vials or boxes must contain the same information, organized in a similar fashion to the illustration and preferably written on the container. If there is not enough space on the container then the information should be written on a tag inside the container, preferably attached to one of the artifacts within. Inside containers must be legibly marked with permanent ink. Several brands of markers are acceptable, and Repository Staff can advise on this. If an artifact is too large for a container, firmly attach sturdy tags (metal is preferred) to record the information. Consult with Repository Staff if there are questions, especially with regard to large items and fragile or perishable items.

4. Explanation of Information Needed on Inside Containers:

a. ARC catalog number—*Very important* to leave space in upper left corner for ARC catalog number. Repository Staff will assign and enter these.

b. LA number—The appropriate LA number must be written on each inside container.

c. Site name—Enter the site name. If there is no site name, you can use your field/institution number.

d. Project name and number—Write in the project name and if applicable, the project number.

e. Provenience information—Provenience information here means the within site provenience or Isolate location information. This can be represented by the field specimen number, a point provenience number or a grid system number, but it must allow the future researcher to place the artifact in its proper locus in the site. This information must correlate with the field records and the report. If the contents are from multiple places within a site, then the container should be labeled "multiple locations." An example would be all the Santa Fe B/W sherds from a site. In this case, the provenience of each sherd requires identification.

f. Date—Enter the year the project was conducted. If possible, add the month contents were collected.

g. Condition—General condition of the contents: broken, stable, fragile, rusted, perishable etc. List the various conditions. The main thing is to call attention to special treatment needed.

h. Contents of container—Describe the contents. Use general raw material groups such as sherds, lithics, bone or specifics such as projectile point, bone awl, Mesa Verde Black-on-white. Information listed here should correspond to what is written in the report.

III. Records

Records are an integral part of a collection (36 CFR 79). Records, as defined in 36 CFR 79, will be maintained with the related artifacts. Under a Memorandum of Agreement between the Museum of New Mexico and the Historic Preservation division, the records will be maintained by Historic Preservation Division staff at the Laboratory of Anthropology. Records may include field journals, feature forms, specimen inventories, maps, photographs (prints, negatives and transparencies) and/or artifact data recorded and stored on media such as digital tape or diskette. Refer to 36 CFR 79 for further

Figure 2.

LABELING OF INSIDE CONTAINERS

Plastic Bags, Small Boxes, etc.

A. ARC Catalog number.

Leave Blank

B. LA Number

C. Site Name/Other Site Number

D. Project Name/Project Number

E. Provenience Information

F. Date of Field Work

G. Condition

H. Contents

---

illustrations. Therefore, in order to promote comparability of information and to insure maximum use and research capability, the following requirements must be met in order that records may be received. Preliminary and handwritten manuscripts should not be submitted unless they constitute the only report of the work. Questions should be addressed to the Curator of the Archaeological Records Management System. The Museum of New Mexico remains responsible for the records and regards them as an integral component of the collections submitted to the State Archaeological Repository.

A. Paper Records

1. Records should be organized in separate envelopes or in a divided notebook labeled by LA number. Each must be accompanied by a "Documents Check List", which is included at the end of these procedures (see figure 3, attached). Records that apply to more than one site (such as project logs, non-site-specific analysis data, intersite comparisons, research designs, etc.) should be placed in clearly labeled envelopes or sections of a notebook.

2. A paper size of 8½ x 11" is preferred for written or typed material. Information must be legible, preferably typewritten or written in ink. If photocopies are provided as the documentary record, they must be clear. Carbon copies of data are not acceptable as the document of record.

3. Each map must contain a legend, north arrow, scale, title, date and delineator. Project name, sponsor and number must be included, if such exist.

B. Photographs

1. Photographs should not be interfiled with the paper documents. When possible, contact prints, negatives, 35 mm transparencies, and other photographic materials should be separated by LA number.

2. Photographic materials should be fully documented (see specific items under 35 mm transparencies). Frame by frame captions should be provided for each image. Photographer, date, and project should be included with each lot.

Figure 3.

ARCHAEOLOGICAL RECORDS MANAGEMENT SYSTEM
HISTORIC PRESERVATION DIVISION

Documents Check List

LA numbers _____ Site name _____
Project name _____ Project number _____
Principal Investigator _____
Date of project _____
Submitted by _____ Received by _____

Records submitted:
Paper records
___ site survey forms
___ field journals
___ excavation forms
___ specimen inventory sheets
___ analysis sheets
___ burial forms
___ maps
___ other _____
_____
_____

Photographic records
___ 35 mm color transparencies
___ color prints
___ black and white negatives
___ large format negatives
___ contact sheets
___ black and white prints
___ photo record sheets
___ other _____

Other media
___ computer tape—specifications _____
___ diskettes—size and density _____
___ microfiche—describe _____

Reference:
author _____
date _____
title _____
publisher _____
report number _____
number of copies (minimum: 2) _____

3. 35 mm transparencies (2 x 2" cardboard mounts) should be individually labelled with the LA number in india ink. They should be oriented right side up with emulsion to the back in appropriate archivally stable sleeves or binder pages for 35 mm transparencies, such as Pro-line polypropylene sleeves.

4. Black and white negatives should be submitted in archivally stable sleeves with contact prints. The negatives should be numbered with india ink if the frames lack clear printed numbers. Each set of negatives and contact prints must be accompanied by a photo record sheet that identifies each frame by roll and frame number or by strip and frame number. The photo record sheet must identify each frame by LA number and sheet.

5. The photo record should include the following:

a. LA number

b. Description (including orientation of photo)

c. Location of site

d. Photographer

e. Date of photo

f. Roll and frame number, strip and frame number, or negative number.

6. Large format negatives (2.25 x 2.25"; 4 x 5") should be accompanied by a contact print or an enlargement. Each negative should be stored in an archivally stable sleeve. These sleeves can be provided to the submitter at cost.

7. Do not write on the back of any print, as it will show through. Information similar to that for the photo record should be typed on an archival quality label and affixed to the back of the print.

C. Data Tapes or Diskettes

In order for tapes and diskettes to be used by someone not familiar with the contents, documentation of the contents must be provided with the tape or diskette. The documentation should include:

1. code of program producing tape or diskette,

2. block size, LRECL (logical record length) and record format of data,

3. description of records including names of variable and position on the tape or diskette,

4. list of files contained on tape or diskette in order,

5. if SAS data set, formats for variables with format descriptions,

6. if tape, a statement that it is labeled or non-labeled,

7. tapes or diskettes must be in SAS data sets format or in ASCII or EBCDIC. Card decks are not acceptable. If your data are key punched on cards, they should be run to tape or diskette. If hard copies or printed reports are provided, it is preferred that the data be on COMFICHE or that provision is made with the Archaeological Site Survey Records to have the copy reproduced on microfiche.

APPENDIX 16

Requirements for Submitting Archaeological Collections to the Maxwell Museum of Anthropology

1. Repository Information

1.1 The Maxwell Museum

The Maxwell Museum of Anthropology was founded in 1932 to house growing anthropological collections of faculty, students and benefactors of the University of New Mexico. Since that time, the collections have expanded to form one of the largest ethnographic and archaeological collections in the Southwest and one of the fastest growing archaeological repositories in the state of New Mexico. The archaeological collection is used by scholars and students for research and teaching, by museum professionals in this and other institutions as part of public exhibitions and by the museum's Education Department in their public education programs. Archaeological collections are therefore accepted with a repository agreement and accessioned into the museum's permanent collection in order to make them available for these purposes, as well as to preserve this unique and perishable record of the past for future generations. The goal of these guidelines is to ensure that collections accepted are legally obtained by donors or overseeing agencies and legally curated by the museum, that the integrity of material remains and their documentation is maintained, and that access to and uses of the collections are defined. Questions concerning submitting archaeological collections to the museum can be address to the Curator of Archaeology (505-277-4405).

Members of the Maxwell Museum's staff concerned with repository activities are:

Garth Bawden, Director

Janet Hevey, Collections Assistant

Krisztina Kosse, Curator of Collections

Natalie Pattison, Photo Archivist

Katherine Pomonis, Administrative Coordinator

Stanley Rhine, Curator of Osteology

Marian Rodee, Curator of Southwestern Ethnology

Landis Smith, Conservator

Kathryn Trinkaus, Curator of Archaeology

1.2 Repository Description and Requirements

1.2.1 Organization of the Archaeological Collection

The Archaeology collection contains material remains and associated documentation generated by archaeological data recovery and curated by the Maxwell Museum. The archaeological collection is housed in several locations on the UNM Campus. Bulk archaeological materials are in boxes or drawers in a warehouse on the North Campus; fragile, organic materials are in a sealed cabinet in the same warehouse. Whole ceramic vessels and other fragile objects are curated in the Collections area of the Maxwell Museum building. Human remains are curated in the Osteology Laboratory, while photographic materials are curated by the Photo Archive. Some teaching collections are stored in drawers in the Anthropology Annex and in teaching laboratories.

Project materials are accessioned on arrival at the Museum with a two-part accession number, e.g., 89.25. The first part indicates the year in which the collection was accepted (1989) and the second is a

sequential number indicating where the collection falls within the order of accessions for that year (the 25th collection). The same number describes all material remains and associated documents and is unique to that project. In accordance with standard museum practice, this number defines the unit for which the museum is responsible and will remain the same in all museum records.

Material remains are cataloged by lot and can be retrieved from the Archaeology catalog, and ARGUS file, by lot or box number. Within each box, a list of field specimen numbers (or other unique identifying numbers) is entered into the catalog and descriptions of each field specimen are kept in paper files for retrieval of individual objects. The catalog also contains information on project and site names and numbers, accession number, general box contents, geographic point of origin, provenience and storage location (see Repository Agreement, Exhibit B). Thus, the accession number is the permanent, unique key to each accessioned collection and the field specimen number is the permanent, unique key to each object.

Documents are inventoried and listed with an accession number. A paper catalog of documents organized by project is kept in the office of the Curator of Archaeology.

1.2.2 Uses of the Archaeological Collection

The Archaeology collection is available for use by qualified professionals for research and teaching, for public exhibit and for public education programs, as defined in the Museum's policies concerning *Access to and Use of the Archaeology Collection.* Materials may be loaned for public exhibit as soon as accessioning and processing into the Museum's collection is complete. The Curator of Archaeology and Assistant Registrar will provide a loan agreement, describing the objects loaned, their condition, the purpose and location of the loan and the date of return, as described in the Museum's *Archaeology Collection Loan Policy.* If materials are put on display before the collection is submitted to the Museum, the donor or contractor should complete a Collections Released Form describing each item, its provenience, site and field specimens numbers and giving a photograph of each objects. If large enough, objects should be labeled with "Maxwell Museum" (otherwise, with "MMA") and with their site and field specimen numbers. A label recognizing the Museum as curating agency (e.g., "This materials will be curated by the Maxwell Museum of Anthropology, University of New Mexico.") should be placed in the exhibit and photographs of the exhibit submitted to the Museum when the objects are returned. The exhibit-related documentation should be submitted to the Museum at the time the bulk of the collection is turned over; the Curator of Archaeology or Collections Assistant will prepare a loan agreement.

1.3 Obtaining a Repository Agreement

The Museum accepts complete, fully documented and legally obtained collections of known provenience for which either the title of ownership (if from private lands) or the right to curate the collection (if from federal, native American or state lands) has been transferred to the Museum. Site collections from the state of New Mexico must be registered with the Museum of New Mexico or the overseeing federal agency and be accompanied by their L(aboratory of) A(nthropology) or agency-assigned numbers. The Museum cannot provide appraisals of donated materials, although it will refer prospective donors to licensed appraisers upon request. In some cases, partial, poorly provenienced or incompletely documented collections may be accepted, provided that they meet the other conditions mentioned above; for example, if such materials are related to collections already held by the Museum. Such decisions will be made on a case-by-case basis by the Curator of Archaeology. Requests for a Repository Agreement should be made in writing and include project name and location, sponsoring agency's or institution's name, principal investigator's name, land ownership, scope of work and estimated duration of fieldwork and analysis.

1.3.1 Collections Ownership

In the case of collections from private, corporate, and some county or municipal lands from which objects are to be donated to the Museum, it is the responsibility of the collections donor(s) to complete a Deed of Gift transferring title of ownership to the collection to the Museum. In the case of collections which will remain the property of federal, native American, state, county, or municipal governments, a repository agreement must be completed and signed by all responsible parties by the time a permit citing the Museum as curating agency is signed. In the case of collections containing material from both categories of lands, it is the responsibility of the person or agency submitting the collection to obtain all necessary documentation of origin and all necessary signatures to Deed(s) of Gift and Repository Agreement(s) by the time a permit citing the Museum as curating agency is signed. If private owners decline

to donate the material remains, all associated documentation and photographs of the objects should be submitted to the Museum along with the rest of the collections.

1.3.2 Definition of a Complete Collection

To meet the demands of current and future archaeological research, a complete collection must include all material remains recovered by a given archaeological data recovery project and all documents generated or copied by the project that provide supporting evidence on which study of the material remains and their archaeological contexts may be based. No part of the material remains or documentation may be arbitrarily disposed of by the contractor or sponsoring agency. Disposal of any material remains or documentation, however, apparently trivial, must be agreed upon in writing by the Curator of archaeology and the contractor or sponsoring agency. In general, disposal will be limited to fragmentary and redundant artifacts or the residue of samples that have been studied and the results presented in a professionally acceptable and accessible manner.

Following the definition given in Department of the Interior/National Park Service 36 CFR Part 79.4 (Curation of Federally-Owned and Administered Archaeological Collections, Definitions), an archaeological collection is defined as the material remains recovered from an archaeological context, prehistoric or historic, and the associated records documenting the archaeological context and material remains. An archaeological context is considered to be any surface or subsurface location associated with material remains of prehistoric or historic human life or activities, including sites, features, buildings and other structures, caves, rockshelters, middens, resource exploitation loci and isolated artifact occurrences. Material remains, the archaeological context from which these are taken and the associated documentation are considered to be an archaeological resource.

Material remains include any physical traces of prehistoric or historic human activity, occupation, habitation, environmental modification or use. These include but are not limited to whole and fragmentary structures and features such as houses, storage shelters and pits, mounds, water control features, earthworks, fortifications, in-place working facilities (e.g., boulder metates), and animal pens, and whole or fragmentary artifacts of human manufacture, such as tools, weapons, pottery, basketry, textiles, minerals and crystals, bone, feathers and pigments. Also included are whole and fragmentary byproducts, waste products and debris generated by human manufacture and use of naturally occurring materials such as slag, ceramic wasters, cores, debitage, butchered bone and dumps, whole and fragmentary organic materials such as vegetable and animal remains, coprolites, human bone and teeth, mummified flesh, hair, burials and cremations, whole or fragmentary artistic or symbolic representations such as petroglyphs, pictographs and graffiti, whole or fragmentary remains of transport equipment such as baskets, carrying frames, wagons, wheels, travois, boats, canoes, horse trappings and the contents of such transport equipment, and environmental samples such as plant remains, pollen, soil, clay, adobe, tree cores, stone and minerals.

Associated documentation includes any documents created or copied in association with an archaeological data recovery project in order to document prehistoric or historic archaeological resources. This includes but is not limited to records documenting the location, survey, mitigation , monitoring, testing, excavation, analysis or publication of an archaeological context or resource such as field notes, journals, logs, student notebooks, artifact inventories, site forms, drawings, maps, level plans, sections and profiles, photographs, negatives, contact prints, and slides, films, video and audio cassette tapes, magnetic tapes, disks and diskettes, oral histories, laboratory analysis forms and reports, computer cards and printouts, antiquities permits, correspondence relating to the project history, methodology or results, reports, manuscripts and presented papers, and catalog, accession and inventory lists.

Also included are records relating to the surface or subsurface location, identification and choice of archaeological resources for further investigation such as aerial and satellite photographs and other images, and magnetometer, sonar and radar scan information, as well as copies of public and/or archival documents relating to the archaeological resource investigated such as maps, deeds, survey plats, historical drawings, photographs, diaries, ledgers, military and census records, birth, marriage and death certificates, immigration and naturalization papers, bills of sale, tax forms and reports, manuscripts, letters, architectural and landscape plans, catalogs and receipts.

Not included in associated documentation are administrative records which may fall under federal privacy legislation such as payrolls, vouchers, budgets and personnel action documents.

1.3.3 Time Schedule

During preparation of the proposal to carry out archaeological data recovery, the Curator of Archaeology should be notified of intent to submit project materials to the Museum. If the Museum agrees in

principle to accept the collection, Repository Agreement(s) and/or Deed(s) of Gift should be completed and submitted by the time a permit citing the Museum as curating agency is issued or, if no such permit is necessary, prior to the beginning of the fieldwork. During field work, Project Registration materials and copies of the Requirements for Submitting Archaeological Collections to the Maxwell Museum of Anthropology (Repository Agreement, Exhibit C) will be provided by the Museum. If materials or data are recovered from lands not mentioned in the Repository Agreement of Deed(s) of Gift, the Museum should be notified as soon as possible and additional agreements negotiated and signed prior to completion of field work. During the analysis phase, project employees should begin organizing, labeling and documenting project materials, including samples released for analysis. During report preparation, organization and packing of material remains according to the Museum's guidelines should be completed and project documentation organized, inventoried and packed. After the final draft is complete, completed Project Registration materials should be turned over to the Museum, the amount of curatorial fees confirmed and transfer of the collection to the Museum scheduled. The Curator of Archaeology must be notified at least two weeks in advance of intent to deliver project materials to the museum. All project-associated material remains and documents must be turned over to the Museum at one time, with the sole exception of materials documented by a Collections Released form or a Loan Agreement. Two copies of the final report should be sent to the Museum following publication, one for the Museum's library and one for its archives. After the collection is placed in the Museum's storage facilities, copies of the catalog entries will be returned to the donor or overseeing agency and their contractor, if so requested.

2. Preparation in the Field and Laboratory

The purpose of archaeological fieldwork is to locate, describe and (usually) remove for study objects, samples and information from loci of prehistoric or historic activity. Since objects and samples are subject to physical deterioration and to deterioration of their potential information content by this removal and archaeological contexts are a limited resource, such removal is justified only if accompanied by responsible handling and full documentation of objects, samples and their relation to the contexts from which they come.

2.1 Material Remains

2.1.1 Handling and Packing

The principal sources of physical deterioration are rough handling, inadequate packing, exposure to light, air, biological agents (such as molds, bacteria, fungi, insects or rodents) and changes in humidity and temperature. Even relatively stable objects such as ceramics, lithics or material samples may be reduced in usefulness by scratching, breaking or contamination by surface soils and other substances. Fragile objects should be lifted from the soil in a block stabilized by wood, metal or heavy cardboard and transported in their matrix to a conservation laboratory for treatment. Objects soaked in water, largely desiccated or frozen should be kept in the same condition until they can be treated in a laboratory. They are then allowed to dry, absorb moisture or thaw slowly. The objects should be placed in plastic bags (but not entirely sealed) surrounded by appropriate packing (e.g., a damp cloth for water-logged objects), taking care not to crush the object with the packing materials. Only non-acidic packing materials (e.g., acid-free tissue paper, tin foil or plastic, including plastic bags and virgin polyethylene or polyurethane foam) should be used for organic materials.

Samples should be packed according to their proposed analyses, (e.g., carbon samples should be wrapped in tin foil to prevent contact with organic materials and soil samples thoroughly dried and carefully sealed to prevent contamination by surface soils). Durable materials may be packed by lot in sealed (but not airtight) containers such as ziplock bags with small (1–2mm in diameter) holes. Very small items may be wrapped in paper or tissue paper to prevent loss. Do not use acidic paper, cardboard, newspaper, toilet paper or cotton batting as packing materials. All objects should be packed in sturdy boxes during transport to prevent scratching, erosion and breakage.

2.1.2 Labeling, Preparing and Conserving

Information loss usually is due to poor documentation of the object at each stage of its removal from the site and into the laboratory. Fragile objects or those in association with other objects or features should be photographed in situ before being removed from the ground. All materials, fragile or not, should be placed in sealed containers (e.g., ziplock bags

(which should have holes 1-2mm in diameter for air circulation), plastic boxes with secure lids or plastic vials with screw caps) and fully labeled as soon as they are removed from their findspots. A catalog of field specimens should be kept up to date with each day's work and materials kept together with their labels at all times. Keep in mind that ordinary paper labels are both organic and acidic; while objects must be kept with their labels at all times, an acid-free barrier may be necessary between the object and the label. Labels on and with objects should be kept dry and out of direct sunlight. Unlabeled objects from differing proveniences never should be mixed.

In the field laboratory, objects should be sorted, counted, labeled, bagged and listed on the field specimen inventory as soon as possible. In general, it is best to use minimal preparation procedures prior to analysis. Durable objects can be dry brushed for identification and preliminary counts; routine washing is discouraged as it can remove surface pigments and residues. Fragile organic remains should be stabilized by their intact soil matrix and appropriate packing materials. Routine soaking in chemical stabilizers such as PVA should be avoided as it may permanently alter the object's composition.

If possible, each object should be labeled with its site, project and field specimen numbers. If not possible, then at least on object per bag should be fully labeled. Labels written on the object should be small, clearly legible, unobtrusive (not obscuring elements of design or manufacture) and removable. A base coat of transparent, inert paint (e.g., Acryloid B72) prevents ink from staining the object. Lettering can be placed on the base coat or on a second layer of inert, white paint (e.g., Liquitex) painted over the base coat. Lettering should be done in black indelible ink or, for very dark surfaces without a white background, white indelible ink. A final top coat of transparent inert paint should be applied. Nail polish and acetone based glues (e.g., Duco Cement) should not be used as base or top coats, nor is white correction fluid an acceptable base. Labels with the object should be on heavy acid-free paper. Organic materials and very small objects should have a label tied on gently with acid-free string and be placed in a container with an additional label. Objects larger than 1 sq ft should have a label written on the surface as above and an additional tag tied securely to the object.

If fragmentary objects are to be reconstructed, reversible adhesives and soft fillers should be used. Never use tape, plaster, beeswax, epoxy, silicon, white glue, animal-based glue, rubber cement or instant-bonding glue. In particular, scotch tape, Elmer's glue and Duco cement harden and crack with time and leave a permanent residue on the surface of the object.

The Museum's Conservator will provide advice on conservation materials and procedures on request.

2.2 Documentation

2.2.1 Organization, Labeling and Inventory

Paper documentation should be kept organized according to the major activities and archaeological units of the project. Documents should be placed in binders or folders protecting as far as possible the written contents from direct sunlight, wind and abrasion. Particularly important forms (e.g., coding sheets, lists of standard terms) should be laminated or put in plastic sheets and duplicates kept in at least two places.

Photographic materials, films, videotapes, audio cassettes and computer-readable tapes and disks should be grouped by archaeological study unit, inventoried and labeled (see section 5) as they are created, and protected from heat, direct sunlight, dust, moisture and smoke. Negatives, prints and slides should be protected from skin oils by polyethylene or Mylar sheets.

2.2.2 Error Correction and Changes to Recording Standards

It frequently happens that errors in recording are identified and corrected in the field or during subsequent analysis. For the final archival documentation, it is important that erroneous documents are replaced by corrected ones or, if documents are substantially correct, that error corrections be clearly marked and readily identifiable by future collections users. Changing interpretations, opinions concerning the significance of objects and features, or relationships observed during fieldwork and analysis are part of the project history, however. Elimination of such changes should not be attempted, as it involves tedious and error-prone recopying of major portions of the project documentation. Instead, all documents should be clearly dated and, if desired, marked as having been superseded. In this way, the relation of these documents to the conclusions presented in the final report will be clear.

Within the scope of one project several different recording standards also may be used. In this case, it is important that all recording systems be clearly described, along with an indication of when, where and by whom each was used. All documents also must have an unambiguous indication (e.g., date, place,

phase, team, etc.) of which recording system was used for each one.

2.3 Project Registration Forms

These are the Project Registration, Collection Summary, Collection Inventory, and Collections Removed for Analysis forms. These forms describe the nature of the project and the data recovered, give a summary of the materials recovered, account for any collections released for analysis or exhibit, and inventory and catalogue individual boxes for entry into the Museum's records. Since some of the information is most easily compiled during or soon after field work, it is suggested that these be given to the project field director while track dispersal of the collection as analysis or exhibit proceeds. Inventory and summary forms organize the material as it is packed for storage. After the collection is accepted, the Museum will make out additional cataloguing forms used to generate the Museum's permanent accession record. All forms are filed with the project documentation as a reference for curators and researchers. The forms record many useful details that may be unfamiliar to laboratory personnel or quickly forgotten after the final report is written, so that the time needed to complete them is regained in organizing the collection for storage and using it at a later date.

Objects individually accessioned into the Museum (e.g., any pot more that 1/2 complete, fragile organic materials) should be accompanied by its complete in-site provenience, time period and/or dates, identification (pot type, plant species), any related analyses, and any reference to the object in project documentation.

Completed registration documents and information must be turned over to the Museum at the time the collection is accepted.

3. Preparation of Material Remains for Submission to the Museum

3.1 Organizing, Inventorying and Boxing Collections

Since collections are stored in order to be available for use, rational packing of a collection is essential. The organization of the collection should reflect the major proveniences and special research topics of the project, although routine analysis groups (e.g., ceramics, lithics) may need to be regrouped. Collections should be organized and boxed by major provenience unit (e.g., site, survey unit or other significant study unit). Within major provenience units, they should be further subdivided into material type, so that all examples of one material (e.g., ceramics) from one unit are boxed together. Within material types, collections may be ordered by provenience or by field specimen number. In general, then, for very large collections (usually those involving large crews or excavation over several years), the site should be subdivided into major research areas (e.g., a room, test trench, survey transect) and all materials from all subdivisions of each major provenience boxed together. For small surveys, testing or mitigation projects and other short term excavations, each site (or study unit for non-site collections) should be a single major provenience and all material types from this unit boxed separately. For very small collections, a single box may contain more than one material type or even material from more than one site.

As storage space is at a premium, the materials must be packed in standard-sized boxes 11.5" wide x 17.75" long x either 4.5" or 9.5" high. These boxes will be provided at cost by the Museum or may be purchased from an Albuquerque firm. The boxes should be filled by major provenience and by material as above. For very small collections, several material types or all of the materials from several sites may be boxed together. Under no circumstances should heavy or unstable materials be packed with fragile items. Boxes may weigh no more than 20 lbs. each and, if only partly filled with heavy items, should be labeled in the upper left corner of one end and one side with the project name or number, the site name or number, the materials included and the provenience(s) or field number(s) present. For example:

OCA 185-247
Bolack Land Exchange
LA 16660
Bulk Soil samples
FS 100-250
HEAVY/UNSTABLE

or

Pottery Mound, NM
LA 416
Duck Unit, Room 9
Miscellaneous Organics and Minerals

Museum personnel will add a unique box number to each box and put the collection accession number

on all boxes. These numbers fill the upper right-hand corner of one end and one side of each box.

An inventory of the collection by field specimen number may be generated at this point to help with packing; in any case, such a complete project inventory and an inventory for each box must be submitted with the project documentation when the collection is turned over to the Museum.

If the original field labels are replaced, the Museum prefers, and some federal agencies require, that the original labels remain with the collection. Labels relating to items in each box should be collected and put in that box when the collection is packed. If reorganization makes this impossible, the original labels should be collected together and put into one box. "Original field labels" should be listed on the box and the Archaeology Catalog form for this box.

3.1.1 Inorganic Remains

Inorganic remains should be bagged individually or by log in strong, inorganic, nonacidic sealing containers (e.g., ziplock bags, at least 2 mil for small quantities of inorganics or for light organics, at least 4 mil for larger quantities and for heavy or sharp-edged materials). Bags should be perforated with small holes (1-2mm in diameter) to allow air circulation and should not be more than three-quarter full. If objects are identified by field specimen or other field numbers, they should be bagged one field number to a bag unless objects are individually labeled. At least one object per bag should be labeled as described above. An acid-free label included in the bag should have project name and/or number, site number, detailed provenience information, data and description of contents, including the number of items. Basic provenience (e.g., site number and field specimen number) and contents information should be repeated on the outside of the bag. Use a marker that is durable on plastic (extrafine Sharpies); ball point pens and ordinary felt-tipped pens (such as Razor points, other Sharpies and Magic markers) are not acceptable as they are permanent on fabric but not plastic. Labels inside the bag should be free floating rather than stuck to the inside of the bag in order to reduce abrasion of the label surface by objects in the bag. Very large objects (e.g., metates or floor slabs) should have labels written on them as described above and an additional acid-free label containing the same information as the bag labels tied securely to the object. Any object larger than the standard boxes (11.5" x 17.75") should not be boxed; these will be placed on shelves.

3.1.2 Organic Remains

Organic remains need special care due to their fragility and attractiveness to insects and rodents. In particular, all organic remains should be packed in acid-free materials, as even a few years' contact with acidic bags and labels can visibly weaken such materials as bone or plant remains. Hair, skin, fur, hide, leather, baleen and keratin-containing materials are particularly attractive to dermestid beetles and can initiate a major infestation of a repository if not properly stored. These materials can be turned over to the Museum with their original packing materials and labels. They will be repacked by the Museum in open, acid-free containers and placed in a sealed storage cabinet. Other organic materials should be packed in plastic bags with multiple perforations (1-2mm in diameter) to allow air circulation; these must be wrapped in acid-free tissue if the pieces are small enough to fall through the holes in the bag. An acid-free label should be placed in the bag. Organic materials should be packed together as one category of material type with the heavier items (e.g., bone) on the bottom. Care must be taken with bone, in particular, not to overload the bags as sharp points and edges will split the plastic.

3.1.3 Samples

Analyzed samples and any residues of analysis should be kept together, e.g., the solid fraction of all flotation samples or a series of thin section with the sherds from which they were cut. The material remains of such analyses generally figure in the final report and will be referred to again as a unit. Unanalyzed samples should be packaged carefully in order to preserve their usefulness for future analysis (e.g., soil samples carefully dried and sealed, carbon samples wrapped in tin foil). These should be packed with the other materials from the major proveniences from which they were taken.

3.2 Documenting Box Contents

Each box should be accompanied by a list by field specimen number of the objects contained in the box. This box list should include field specimen number (or other number unique to each object), site name or number, intra-site provenience, an object description for each field specimen number, and a count or weight (e.g., a lot of 37 sherds has a count of 37 or a weight in grams, while a stone palette broken into 4 pieces has a count of 4).

3.3 Documenting Collections Removed for Analysis or Exhibit

Samples sent out for analysis or loaned for exhibit and returned prior to turning the collection over to the Museum can be documented with a Collections Removed form. The objects and documentation should be turned over with the bulk of the collection. This situation is preferred by the Museum as a minimum of confusion is generated by creating Museum records for the entire collection at one time.

If samples or objects have not been returned by the time the collection is turned over to the Museum, or if samples have been destroyed in entirety during analysis (e.g., carbon samples used for dating), completed Collections Removed forms for each missing object should be included with the rest of the collection. Loan forms will be made out by the Museum (see 1.2.2 above). It is the responsibility of the project director (or, if the work is done on a contract, of the firm's principal investigator) to forward the missing samples or objects to the Museum when analysis or exhibit is completed.

If analysis will partially or wholly destroy the samples, the project director must identify these samples and document their analysis with a Collections Removed form. Unused portions of samples or residues (e.g., mounted sections) must be returned to the Museum when the analysis is completed.

Analysts and agencies constructing exhibits may not keep indefinitely samples or objects from collections covered by the Museum's Repository Agreement, with the sole exception of the Laboratory for Tree Ring Research, University of Arizona, which permanently curates all samples analyzed in that laboratory. Under no circumstances will the Museum accept or give a permanent loan.

3.4 Documenting Collections on Loan

Objects (including both material remains and documents) from a project may be loaned as outlined above (see 1.2.2) and in the Museum's *Archaeology Collection Loan Policy.* Loans will be documented by the Museum's loan agreement, including the name, title, address and telephone number of the person to whom the loan is made, the date and duration of the loan, the purpose of the loan, any restrictions arising from the project, the objects' ownership, an inventory of the objects, and a statement of the condition and value of the objects. The maximum length of a loan is normally one year. Materials are subject to recall if the terms of the loan are violated.

3.5 Disposition of Human Remains

Any project-associated human remains to be curated will be catalogued and stored by the Osteology Laboratory. Questions concerning the treatment of human remains should be directed to Stanley Rhine, Curator of Osteology.

4. Preparation of Documentation for Submission to the Museum

An archaeological collection is as good as its documentation, since information on the nature of the project, the research goals and strategies, the areas investigated and the proveniences of the objects and samples determines the subsequent use of the collection. For this reason, the Museum accepts only fully documented collections and its records are organized to preserve the link between objects and documents.

4.1 Organizing, Inventorying and Packaging

All documentation from a project should be brought together and a complete inventory made. An inventory should be organized by the major stages of the project (e.g., test excavation), list the study units for each (e.g., test trenches 1 and 2) and the kinds of documents generated by each unit (e.g., 1 field notebook, 3 level plans, 1 profile, 5 photographs each). Individual documents should be arranged in this order.

4.1.1 Field Notes

Field notes include any written, typed or printed forms, notebooks, logs, journals, or sketches describing all or any part of a site or survey. These are often not uniform for all study units and may evolve through the period during which any one unit is studied. It is particularly important that field notes be kept organized by study unit and that they are clearly and fully labeled in order to be comprehensible to a user not part of the original field project. The Museum prefers that field notes not be bound but be placed in envelopes or file folders by study unit. If very large quantities of such notes are involved or their condition is fragile, microfilm/fiche copies are preferred. In producing such copies care must be

taken to ensure that all pages are included and that all are legible.

4.1.2 Maps

All maps generated or used by the project must be submitted to the Museum along with the rest of the collection. This includes USGS quadrant maps, other printed maps and all maps drafted by the project, including site and survey maps, excavation plans, sections and profiles, collection and distribution grid plans, and any maps, drawings or sketches not included in field notes.

Maps should be stored flat, rather than folded or rolled, and labeled with the project name and number, the site, survey or other study unit name and the number, the field number of the map (if any), the date drawn and name of the cartographer, a north arrow, a scale and a brief descriptive title. This information can be written on a separate sheet of paper attached to the map.

4.1.3 Manuscripts, Presented Papers and Reports

These documents are generated from the Primary field documentation and provide supporting evidence for the understanding of the materials remains. Reports should be submitted in two copies, one for non-circulating reference and one for archival storage. Manuscripts and presented papers should be unbound and placed in large envelopes or file folders. They should be clearly labeled with full bibliographic citation and any restrictions as to their use by other researchers. Authors may request that unpublished materials be quoted with the author's permission. As the Museum's collections are open to qualified researchers and collections from public lands are public property, indefinite restrictions cannot be accepted. Copyright for such materials is shared by the authors and the Museum.

4.2 Document Labeling

Since field documentation is unique to each project and is frequently complex, labels should be sufficiently informative that a user not part of the original project can understand the relation of each document to the whole. The information included will differ from project to project but should include, at a minimum, the project name, the stage of work, a brief description of contents and the date generated.

5. Preparation of Photographic Materials

Photographic records of fieldwork and laboratory analysis are an essential part of the documentation of an archaeological project. The Museum's Photo Archive curates all photographic materials in the Museum's collections and makes these available for research, teaching, scholarly and commercial publication and exhibition.

5.1 Archival Film and Treatment of Photographs

As film is a rather fragile medium, easily damaged by poor handling or storage conditions and subject to deterioration over time, care is needed to ensure that photographic collections reach the Museum in good condition and that they contain materials that will remain usable in the long term. Black-and-white negatives are generally recommended for archival documentation of a project. Color positive and negative film are sometimes need to record information not shown by black-and-white film but, due to their instability over time, should not be the sole photographic record of a project.

Film should be protected from excessive heat and dust before being used and processed as soon as possible after exposure. Negatives and prints should be stored in a stable environment, away from heat, dust and moisture, and should be handled with thin 100% cotton gloves to protect the emulsion from oil, dirt and moisture on the hands.

5.2 Organizing, Labeling and Inventorying

Photos should be organized chronologically by the major stages of the project and the study units or objects that they document. Any redundant, inaccurate (e.g., incorrect labels shown in photo) or poor quality photos should be disposed of in order to reduce expenditure of time, labor and supplies in accessioning and cataloguing the collection.

Since photographs are used for a wide variety of purposes, the Photo Archive will catalogue them in detail. Information is needed on the subject of each photo (including archaeological sites, objects, individual features, activities, equipment and names of people shown), ethnic, cultural and geographic affiliation, provenience (including site name and number,

feature or specimen numbers and intra-site provenience), photographer's name and date taken. This information should be included in an inventory of the project's photographic documentation in the same order that the prints and negatives themselves are organized. Individual prints and negatives should be labeled so that their relation to the inventory is clear (e.g., with numbers or brief descriptions).

5.2.1 Black-and-White Negatives

Roll film negatives should be cut into 6 image strips, labeled as described above and placed in Mylar sleeves. These should be contact printed onto 8"x11" sheets and the contact prints submitted to the Museum with the negatives. Do not cut negatives into shorter strips: negatives culled can be marked with a film marker pen or black india ink. Each negative should have an identifying field number written on the non-emulsion (shiny) side of the negative and on the Mylar envelope in ink durable on Mylar (e.g., film marker or black india ink).

5.2.2 Prints and Contact Prints

Prints and contact prints with or without negatives should be labeled on the back with a soft lead pencil. Ink, rubber stamps and sharp pointed writing implements should not be used on any part of the print. Prints should be placed in Mylar envelopes with the field number written in ink (film marker or black india ink) in the middle of the right margin, leaving room for the accession and catalogue numbers to be added above.

5.2.3 Slides

Slides should be labeled with a field number corresponding to the number with their description in the photographic inventory: this numbers should be written in ink (film marker or black india ink) in the upper right hand corner of the slide mount on the non-emulsion side. Store slides in polyethylene sheets or plastic boxes.

5.2.4 Films

Films should be turned over to the Museum in round plastic or metal containers with a label on the container including the inventory number, project name, film name, photographer's name, date of shooting and brief description of the subject. An abbreviated label on the film lead should include the project name or number and film inventory number.

5.2.5 Lantern Slides, Glass Plate and Silver Nitrate Negatives

In rare cases, archaeological collections may include photographs and negatives of obsolete type, requiring special handling and storage. For information on packing, labeling and transport of these materials, contact the Curator of the Photo Archive for advice.

6. Preparation of Computer-Readable and Other Magnetic Media

Magnetic, especially computer-readable, media are becoming increasingly common means of storing the large amounts of digital data generated by archaeological data recovery. While there is considerable gain in efficiency for the project generating these data, tapes and disks deteriorate under less than ideal conditions, have a limited life-span even under ideal conditions and need special equipment in order to be read. If essential data are stored in these forms, special care must be taken of recording equipment and tapes or disks in the field and sufficient information provided with tapes and disks to make them useful in the long term.

6.1 Tapes, Disks and Diskettes

6.1.1 Treatment and Handling

Computer tapes, disks and diskettes must be carefully protected from heat, dust, smoke, food and moisture while in the field and laboratory. While in use, all of these should be backed up regularly and successive revisions clearly labeled to ensure that the final copies contain complete, accurate data sets. Magnetic tapes should be turned over to the Museum in clearly labeled and dated round plastic containers. Disks and diskettes should be placed in their original paper or plastic sleeves and grouped in plastic storage boxes. Labels on all of these should include their inventory number, project name or number, date generated, whether final or interim version, date and brief description of contents.

6.1.2 Format

Data must be recorded on new, high quality ½" magnetic tape or 3½" or 5¼" floppy disks. A backup copy must be submitted with each tape or disk. In the case of magnetic tapes, a second copy may be

included on the same tape. A paper copy of tape or disk specifications and file documentation must accompany the tapes or disks. Tape specifications must include the density at which the tape is written, the character set used, label information, the number and names of files on the tape, and record length and blocking information. The preferred specification are 9 track, 6250 BPI, 8 bit ASCII or EBCDIC, no label, and fixed length records and blocks. IBM Standard labeled tapes are acceptable, as are tapes written in default CDC character set. Variable length records and blocks are not acceptable. Seven track tapes and tapes written at less than 800 BPI are not acceptable.

Disks and diskettes should be labeled with the number of tracks, the number of bits ASCII, the disk capacity, the number of K used, the number and names of files and the system software used to generate the files. Either IBM or Apple-compatible disks will be accepted.

6.1.3 Printouts and Supporting Documentation

Formats and codes must be supplied for all computer-readable data sets. These should be separate paper documents summarizing the data recording and analysis represented by each file. A description of each raw data field should also be included, giving the column numbers of the field, the length and format of the field and a description of the data recorded. If the data is coded, a list of all codes (including dates if successive revisions have altered the codes) and their values should be included. In addition, all final data compilations and analyses must be accompanied by printouts, either paper or microfilm/fiche. If the quantity of data is large, microfilm/fiche is preferred. Paper printouts must be in binders less than 6" thick. All printouts must be labeled with the name of the file(s) included and the inventory numbers of tape, disk, or diskette from which they were printed.

6.2 Long-term Storage

Magnetic media will be stored away from heat, light and dust in climate controlled facilities. Collections donors and contractors should be aware that even under the best of circumstances the average lifespan of magnetic media, particularly computer tapes, disks and diskettes, is about five years. Arrangements can be made to duplicate particularly important tapes or disks. A fee covering curatorial and computer technician's time and the cost of replacement tapes or disks will be charged at the time of replacement.

7. Transfer of Materials to Museum Storage

7.1 Accessioning, Cataloguing and Assigning Box Numbers

When a date to submit a collection has been scheduled, the Curator of Archaeology will assign an accession number to the project materials. Museum personnel will review the collection with the donor or contractor, check the project registration documentation and cataloguing forms and put accession numbers on each unit (e.g., box, folder, bound papers). Catalogue forms will be filled out and catalogue numbers will be assigned to each box at this time. It is necessary for Museum personnel to familiarize themselves with the project and to handle each unit to be accessioned, a process usually averaging about 3 hours per box and 10 hours for documentation. Large or poorly organized collections will take longer. Donors and contractors should allow sufficient time to complete this process before planning to move the collection into storage.

7.2 Moving the Collection to Storage

Boxing materials and organics packed to go into the sealed cabinet will be transported to the Museum's North Campus warehouse and put on shelves. Location of each box or specimen will be recorded at this time. Whole pots and documents will be moved to the Maxwell Museum building and stored in the Collections area pot room or in one of the archaeological collections document storage areas. Human remains will be turned over to the Osteology Laboratory in the Anthropology wing. Photographs will be turned over to the Photographic Archive, also located in the Anthropology wing.

7.3 Information Returned to Donor

After the collection is stored, a file containing the project registration documentation will be added to the Archaeology collections project file, accession and loan forms will be turned over to the Museum's Registrar and Assistant Registrar, and cataloguing forms will be given to the Museum's data entry personnel. The documents inventory will be used to generate catalogue records for the project's

documentation. This process is not normally less than a week or more than a month, depending on the size of the project and the current workload of Museum staff. When complete, copies of these records will be returned to the donor, contractor or overseeing agency, if requested.

8. Summary

Because archaeological sites and projects are varied and distinctive it is not possible to specify all aspects of the process of turning a current field collection into an archival resource. These requirements are intended to ensure that the Museum accepts only legally obtained collections, that it has a legal right to curate these, that such collections are useful for the research, teaching and public education programs of the Museum, and that collections are organized, packed and documented so as to preserve that usefulness.

With these goals in mind, under no circumstances will the Museum accept:

- collections obtained without the permits and/or letters of permission required by state and federal law or collections obtained in violation of the provisions of those laws;
- collections for which title or right to curate has not been transferred to the Museum with a Repository Agreement or Deed of Gift;
- partial collections, including but not limited to collections from which material remains, documents or key information:
  - are missing, especially items illustrated in the project report, exhibit-quality objects, maps, field notes, coding sheets, provenience data or format information for computer-readable media;
  - are held by the depositors without a signed Loan Agreement;
  - are under analysis without Collections Removed forms;
  - have been disposed of without a written agreement with the Museum and, if required by the permitting agency, with that agency;
- collections lacking completed Project Registration documentation, including LA or agency-assigned site numbers;
- collections for which insufficient notification of intent to deliver to the Museum is given;
- collections with undue restrictions on use for the normal functions of the Museum.

The Museum will accept only with prior agreement to provide curatorial services, subject to the availability of Museum personnel and facilities:

- collections that are disorganized, including but not limited to those in which:
  - material remains, documents or boxes have no labels or have unstable, insufficient or illegible labels;
  - material remains or documents are unsorted, inconsistently sorted or sorted in such a way as to be difficult to retrieve (e.g., by minimal provenience);
- collections not in stable condition or otherwise not ready for archival storage, including but not limited to those for which:
  - analysis is in progress;
  - some material remains or documents are in need of immediate conservation to prevent destruction and no prior arrangement has been made with the Museum to provide such conservation;
  - materials or documents are packed so as to compromise their future usefulness;
  - boxes are overpacked;
  - nonstandard-sized boxes are used;
  - non-climate-resistant tape is used to close boxes;
  - infestation by insects or microorganisms is present.

Collections in violation of these major provisions will not be accepted; if delivered to the Museum, they will be returned at the depositor's expense. The Museum encourages depositors to be in touch with its curators at any stage or the project for information or clarification of any of the provisions contained in these requirements.

Acknowledgements

These requirements have evolved from the Maxwell Museum's policies and practices dealing with archaeological collections, from the experience of several other institutions, notably the Museum of New Mexico, the Arizona State Museum and the New York State Museum, and from the ongoing efforts of the National Park Service to develop and codify archaeological curation standards. I am especially grateful to Mike Jacobs and Karen Lominac (Arizona State Museum) for helpful discussion and model documents on which these are based. For their

suggestions concerning the handling and use of University of New Mexico collections I am indebted to Maria Jorrin, Krisztina Kosse, Natalie Pattison, Stan Rhine and Marian Rodee (Maxwell Museum), to Martha Binford, Dick Chapman, Pat Hogan and Joe Winter (Office of Contract Archaeology) and to Robert E. Bienstock (University of New Mexico Counsel's Office). For their broad perspective on archaeological curation I am particularly grateful to Curt Schaafsma (Museum of New Mexico), Lynne Sullivan (New York State Museum) and Michele C. Aubry, Dave Brugge, Gloria Fenner, Kim McLean and Barbara Stanislawski (National Park Service). The responsibility for any errors or ambiguities is my own.

—Kathryn Maurer Trinkaus

APPENDIX 17

South Carolina Institute of Archaeology and Anthropology Draft Curation Standards

The following standards apply to all artifact collections accepted by SCIAA for curation:

1. The collection must be appropriately cleaned, cataloged, conserved, packaged, and labeled.

• Cleaning and conservation procedures should be appropriate to the material as per the professional judgement and discretion of the Investigating Archaeologist. If desired, conservation services can be provided by SCIAA via separate, prearranged funding agreements.

• Artifact cataloging and labeling should include the State site number and provenience designation. The use of a specific cataloging system is not required as long as the materials are cataloged in some logical manner, and accompanied by explanatory documentation, so that the collection continues to have research utility for other investigators.

• Artifacts should be packaged, minimally by material class and provenience, in ziplock plastic bags at least 2 millimeters in thickness. Paper bags, non-ziplock plastic bags, and the use of rubber bands, tape, staples, or paper clips are *not* suitable packaging alternatives. Material class bags (and any analytical groupings within these) should be labeled on the exterior and on a paper tag inside, with site and catalog number, and contents. The overall bag for the provenience, containing the material class bags, should be labeled with the site number, enclosed catalog numbers, site and/or project name, provenience information, investigator's affiliation, recovery date, and bag number (e.g., Bag 1 of 2). This same information should be replicated on a paper tag within the bag as well. All bag labeling should be done clearly and legibly, in permanent black marker (e.g., Sharpie).

• The collection should be packed in medium-sized boxes (approximately 1 cubic foot) that are clean, sturdy, and easily handled. Boxes should not be overloaded! Artifact bags should be arranged in the boxes in site number order and by catalog number within each site. Each box should contain an inventory list of its contents. A typed tag should be stapled to the box exterior that clearly states the site number(s), catalog numbers for each site, project name, investigator's affiliation, year of recovery, and box number (e.g., Box 1 of 4).

2. The collection must be accompanied by appropriate records and documentation.

• A complete catalog for the collection (including all field samples such as soil, shell, etc. that are going to be curated) and an explanation of the cataloging system should be submitted, as well as a separate list of conserved objects in the collection and a description of the conservation treatments they received, and a copy of the final project report.

• Site Inventory Record Forms (68-1 Rev. 85) for the project should already be on file at SCIAA as they are required before State site numbers are assigned. If the project entailed work at a previously recorded site, an updated Site Inventory Record Form reflecting any additional work and/or changes to the site since it was last recorded should be submitted with the collection (preferably earlier).

• SCIAA also curates project-related field and laboratory records, maps, drawings, and photographs. An inventory list should accompany these materials if they are submitted for curation.

APPENDIX 18

Glossary

Accessioning is the process of formally accepting and establishing permanent legal title (ownership/custody for artifacts and/or associated records. This process involves the agency assigning a unique "accession number" to the item(s).

In chemistry, **acid** is a substance capable of forming hydrogen ions when dissolved in water. Acids can weaken cellulose in paper, board, and cloth, leading to embrittlement. Acids may be introduced in the manufacture of library materials and may be left in intentionally (as in certain sizings) or incidentally. Acids may also be introduced by migration from other materials or from atmospheric pollutants.

In chemistry, materials that have a pH of 7.0 or higher are said to be **acid free**, a term sometimes used incorrectly as a synonym for alkaline or buffered. Such materials may be produced from virtually any cellulose fiber source (cotton and wood, among others), if measures are taken during manufacture eliminate active acid from the pulp. However free of acid a paper or board may be immediately after manufacture, over time the presence of residual chlorine from bleaching, aluminum sulfate from sizing, or pollutants in the atmosphere may lead to the formation of acid unless the paper or board has been buffered with an alkaline substance.

Acrylic is a plastic noted for transparency, light weight, weather resistance, color fastness and rigidity. In addition to these qualities, acrylics are important in preservation because of their stability, or resistance to chemical change over time, a characteristic not common to all plastics. Acrylics are available in sheets, films, and resin adhesives. Some common trade names for sheet form are: Perspex, Lucite, and PlexiGlass.

Alkaline substances have a pH over 7.0. They may be added to a material to neutralize acids or as an alkaline reserve or buffer for the purpose of counteracting acids that may form in the future. A buffer may be added during manufacture or during the process of deacidification. While a number of chemicals may be used as buffers, the most common are magnesium carbonate and calcium carbonate.

Archival or **archivally sound** are nontechnical terms that suggest that a material or product is permanent, durable or chemically stable, and that it can therefore safely be used for preservation purposes. The phrase in not quantifiable; no standards exist that describe how long an "archival" or "archivally sound" material will last.

Archival quality indicates materials that have been manufactured of inert materials specifically designed to extend the life of artifacts and records by protecting them from agents of deterioration.

Arrangement is the process and results of organizing archives, records, and manuscripts in accordance with accepted archival principle, particularly provenence, at as many as necessary of the following levels: repository, record group, subgroup, series, file unit, and document.

Associated records/associated documentation are all original records (or copies thereof) that have been prepared and/or assembled in the efforts to locate, evaluate, records, study, preserve, or recover prehistoric or historical-period resources.

Cartographic records are archival records that contain information in graphic or photogrammetric form of a portion of a linear surface (e.g., maps).

Cataloging is the process of assigning and applying a unique identifying number to an object and completing the written documentation of this process.

Chemical stability indicates a material that is not easily decomposed or otherwise modified

chemically. This is a desirable characteristic for materials used in preservation, since it suggests an ability to resist chemical degradation (such as embrittlement of paper), over time and/or upon exposure to various conditions during use or storage. Other terms used loosely as synonyms: inert, stable, chemically inert.

Collections are material remains that have been excavated or removed during a survey, excavation, or other study of prehistoric or historical-period resources. Collections also include associated records that are prepared or assembled during the survey, excavation, or other study.

Conservation is the treatment of library or archive materials, works of art, or museum objects to stabilize them chemically or strengthen them physically, sustaining their survival as long as possible in their original form.

A **copy** is a reproduction of the contents of an original document.

Cross-indexing is the process of accessing information from several different points.

Curation is the long-term, professional management and care of all objects, materials, and records recovered as the result of a federal or nonfederal archaeological undertaking.

Curatorial services manage and preserve collections according to professional museum and archival practices.

Deaccession is the formal procedure whereby objects or records are permanently removed from a repository's holdings.

Deacidification is a common term for a chemical treatment that neutralizes acid in a materials such as paper and deposits an alkaline buffer to counteract future acid attack. Deacidification technically refers to only the neutralization of acids at the time of treatment, not to the deposit of a buffer. For this reason, the term is slowly replaced with the more accurate phrase "neutralization and alkalization." While deacidification increases the chemical stability of paper, it does not restore strength or flexibility to brittle materials.

Field-curation procedures are a set of formal procedures and protocols that outline how artifacts and records are to be treated following field excavation.

Finding aids are the descriptive media, published and unpublished, created by an originating office, an archival agency, or manuscript repository to establish physical or administrative and intellectual control over records and other holdings.

Holdings are the total accessions and deposits of a repository.

Integrated pest management is the selection, integration, and implementation of pest-management methods based on predicted economic, ecological, and sociological variables. IPM can also be defined as a decision-making process that helps one decide if a treatment is necessary and appropriate, where the treatment should be administered, when treatment should be applied, and what strategies should be integrated for immediate and long-term results.

Inventory is the process of creating and maintaining a contemporaneous record of all objects for which a repository is responsible. An inventory is also an itemized listing of objects.

A **loan** is the temporary transfer of objects from a repository to a museum or other repository. These transfers do not involve a change in ownership.

Location information indicates the physical location of an item or collection.

Machine-readable records are archives and records, whose informational content is usually in code, that have been (1) recorded on media such as magnetic discs, drums, tapes, punched paper cards, or punched paper tapes and (2) are accompanied by finding aids known as software documentation. Coded information is retrievable only by machine.

Material remains are artifacts, objects, specimens, and other physical evidence that are excavated or removed in connection with efforts to locate, evaluate, document, study, preserve, or recover prehistoric or historical-period resources.

Minimum standards for acceptance are a set of formal procedures and protocols that outline what basic stabilization steps must be performed before a repository will accept an archaeological collection for curation.

The term **permanence** refers to the ability of a material to resist chemical deterioration, but it is not a quantifiable term. Permanent paper usually refers to a durable alkaline paper that is manufactured according to ANSI Standard Z39.48-1984 *Permanence of*

Paper for Printed Library Materials. Even so called permanent materials depend for their longevity upon proper storage conditions.

Pests are organisms that can cause damage to collections or interfere with human objectives for a controlled environment.

In chemistry, **pH** is a measure of the concentration of hydrogen ions in a solution, which is a measure of acidity or alkalinity. The pH scale runs from 0 to 14, and each number indicates a tenfold increase. Seven is pH neutral; numbers below 7 indicate increasing acidity, with 1 being most acid. Numbers above 7 indicate increasing alkalinity, with 14 being most alkaline. Paper with a pH below 5 is considered highly acidic. Buffered storage materials typically have a pH between 7 and 9.

Polyester is a common name for plastic polyethylene terephthalate. Its characteristics include transparency, colorlessness, and high tensile strength. In addition, it is useful in preservation because it is very chemically stable. Commonly used in sheet or film form to make folders, encapsulations and book jackets. Common trade names are Mylar by DuPont and Mellinex by ICI.

Polyethylene is a chemically stable, highly flexible, transparent or translucent plastic used in preservation to make sleeves for photographic materials, among other uses.

Polypropylene is a stiff, heat-resistant, chemically stable plastic, often used to make sleeves and containers in which 35-mm slides and films are preserved.

Polyvinyl acetate is a plastic that is usually abbreviated as PVA. A colorless transparent solid, it is usually used in adhesives, which are themselves also referred to as PVA or PVA adhesive. There are dozens of PVA adhesives, some are "internally plasticized" and are suitable for use in conservation, because of greater chemical stability and other useful qualities.

Polyvinyl chloride is yet another plastic, often abbreviated as PVC. It is not as chemically stable as some other plastics, since it can emit hydrochloric acid (which in turn can damage library and museum materials) as it deteriorates, and therefore has limited application in the preservation of books, paper, and artifacts.

Preservation is the basic responsibility to provide adequate facilities for the protection, care, and maintenance of records and artifacts.

Primary containers are the largest receptacle in which collections are placed.

Processing, in archival work, is the act of arranging, describing, and preserving a collection of documentation.

Provenance is the information of successive transfers of ownership and custody of a particular manuscript or document collection.

Provenience is the specific location, in either two-dimensional or three-dimensional space, where an object was originally collected, where a site is located, or where an archaeological collection was made.

Qualified museum professionals are persons who possess the knowledge, experience, and demonstrable competence in museum methods and techniques that (1) are appropriate to the nature and content of the collections under the person's management and care and (2) are commensurate with the person's duties and responsibilities.

Records management is that area of general administrative management concerned with achieving economy and efficiency in the creation, use, maintenance, and disposition of records.

Registration is the overall procedures for officially recording and monitoring object transactions: e.g., acquisition, accession, loan, movement, care, shipment, and deaccession.

Relative humidity is the relation between the air's water content and its temperature. Stated as a percentage, relative humidity relates the moisture content of the air being measured to the amount of water vapor it could hold at saturation, assuming that there is no change in temperature.

A **repository** is a facility such as a museum, archaeological center, laboratory, or storage facility that is managed by a university, college, museum, other educational or scientific institution, a federal, state, or local government agency, or Indian tribe that can provide professional, systematic, and accountable curatorial services on a long-term basis.

Retention/disposition schedule is a document that governs, on a continuing basis, the retention and

disposition of the recurring records series of an organization or agency.

Reversibility is the ability to undo a process or treatment with no change to the object. Reversibility is an important goal of conservation treatment, but it must be balanced with other treatment goals and options.

Secondary containers are the largest receptacles in which collections are housed within a primary container.

Site-record administration is the system by which prehistoric and historical archaeological resources are organized and maintained.

Sizings are chemicals added to paper that make it less absorbent, so that inks applied will not bleed. Acidic sizings can be harmful and can cause paper to deteriorate, but some are not acidic and are expected to more chemically stable.

Sticky traps are passive insect or rodent traps that consist of cardboard with an adhesive layer.

Telescoping lids are box lids that are separate pieces of cardboard and are not attached to the box in any manner. These lids may be removed by lifting them off of the box.

Type specimens are the unique natural or cultural items—used as the basis for the original description of a biological taxon or an archaeological material group–which function as standards for the assignment of a scientific name to that particular specimen.

A **UV filter** is a material used to filter the ultraviolet (UV) rays out of visible light. Ultraviolet radiation is potentially damaging to library, archival, and museum objects, and more is present in sunlight and fluorescent light than in incandescent light. Removing UV radiation from storage, use, and exhibition spaces can reduce the rate of deterioration of materials stored there. A UV filtering material usually is placed over windows or fluorescent light tubes, or over glass used in framing, or in exhibition cases. Certain acrylic sheet materials have UV-filtering properties built in.

The word **vinyl** is imprecisely used to refer to any of a number of plastics, many of which are not appropriate for use in preservation. For specific safe plastics, see polyester, polypropylene, polyvinyl acetate, and acrylic.

APPENDIX 19

Sample Memorandums of Understanding for Curatorial Services

Memorandum of Understanding for Curatorial Services Between the (Name of the Federal Agency) and the (Name of the Repository)

This Memorandum of Understanding is entered into this (day) of (month and year), between the United States of America, acting by and through the (name of the federal agency), hereinafter called the Depositor, and the (name of the repository), hereinafter called the Repository, in the State of (name of the state).

The parties do witnesseth that,

WHEREAS, the Depositor has the responsibility under federal law to preserve for future use certain collections of archaeological artifacts, specimens and associated records, herein called the Collection, listed in Attachment A which is attached hereto and made a part hereof, and is desirous of obtaining curatorial services; and

WHEREAS, the Repository is desirous of obtaining and maintaining the Collection, and recognizes the benefits which will accrue to it, the public and scientific interests by housing and maintaining the Collection for study and other educational purposes; and

WHEREAS, the Parties hereto recognize the Federal Government's continued ownership and control over the Collection and any other U.S. Government–owned personal property, listed in Attachment B which is attached hereto and made a part hereof, provided to the Repository, and the Federal Government's responsibility to ensure that the Collection is suitably managed and preserved for the public good; and

WHEREAS, the Parties hereto recognize the mutual benefits to be derived by having the Collection suitably housed and maintained by the Repository;

NOW THEREFORE, the Parties do mutually agree as follows:

1. The Repository shall:

   a. Provide for the professional care and management of the Collection from the (names of the prehistoric and historic resources) sites, assigned (list site numbers) site numbers. The collections were recovered in connection with the (name of the Federal or federally-authorized project) project, located in (name of the nearest city or town), (name of the county) county, in the State of (name of the State).

b. Perform all work necessary to protect the Collection in accordance with the regulation 36 CFR Part 79 for the curation of federally owned and administered archaeological collections and the terms and conditions stipulated in Attachment C to this memorandum.

c. Assign as the Curator, the Collections Manager and the Conservator having responsibility for the work under this Memorandum who are qualified museum professionals and whose expertise is appropriate to the nature and content of the Collection.

d. Begin all work on or about (month, date and year) and continue for a period of (number of years) years or until sooner terminated or revoked in accordance with the terms set forth herein.

e. Provide and maintain a repository facility having requisite equipment, space and adequate safeguards for the physical security and controlled environment for the Collection and any other U.S. Government–owned personal property in the possession of the Repository.

f. Not in any way adversely alter or deface any of the Collection except as may be absolutely necessary in the course of stabilization, conservation, scientific study, analysis and research. Any activity that will involve the intentional destruction of any of the Collection must be approved in advance and in writing by the Depositor.

g. Annually inspect the facilities, the Collection and any other U.S. Government–owned personal property. Every (number of years) years inventory the Collection and any other U.S. Government–owned personal property. Perform only those conservation treatments as are absolutely necessary to ensure the physical stability and integrity of the Collection, and report the results of all inventories, inspections and treatments to the Depositor.

h. Within five (5) days of discovery, report all instances of and circumstances surrounding loss of, deterioration and damage to, or destruction of the Collection and any other U.S. Government–owned personal property to the Depositor, and those actions taken to stabilize the Collection and to correct any deficiencies that may have contributed to the loss, deterioration, damage or destruction. Any actions that will involve the repair and restoration of any of the Collection and any other U.S. Government–owned personal property must be approved in advance and in writing by the Depositor.

i. Review and approve or deny requests for access to or short-term loan of the Collection (or a part thereof) for scientific, educational or religious uses in accordance with the regulation 36 CFR Part 79 for the curation of federally owned and administered archaeological collections and the terms and conditions stipulated in Attachment C to this Memorandum. In addition, refer requests for consumptive uses of the Collection (or a part thereof) to the Depositor for approval or denial.

j. Not mortgage, pledge, assign, repatriate, transfer, exchange, give, sublet, discard or part with possession of any of the Collection or any other U.S. Government–owned personal property in any manner to any third party either directly or indirectly without the prior written permission of the Depository, and redirect any such request to the Depositor for response. In addition, not take any action whereby any of the Collection or any other U.S. Government–owned personal property shall or may be encumbered, seized, taken in execution, sold, attached, lost, stolen, destroyed or damaged.

2. The Depositor shall:

a. On or about (month, date and year), deliver or cause to be delivered to the Repository the Collection, as described in Attachment A, and any other U.S. Government–owned personal property, as described in Attachment B.

b. Assign as the Depositor's Representative having full authority with regard to this Memorandum, a person who meets pertinent professional qualifications.

c. Every (number of years) years, jointly with the Repository's designated representative, have the Depositor's Representative inspect and inventory the Collection and any other U. S. Government–owned personal property, and inspect the repository facility.

d. Review and approve or deny requests for consumptively using the Collection (or a part thereof).

3. Removal of all or any portion of the Collection from the premises of the Repository for scientific, educational or religious purposes may be allowed only in accordance with the regulation 36 CFR Part 79 for the curation of federally owned and administered archaeological collections; the terms and conditions stipulated in Attachment C to this Memorandum; any conditions for handling, packaging, and transporting the Collection; and other conditions that may be specified by the Repository to prevent breakage, deterioration, and contamination.

4. The Collection or portions thereof may be exhibited, photographed, or otherwise reproduced and studied in accordance with the terms and conditions stipulated in Attachment C to this Memorandum. All exhibits, reproductions and studies shall credit the Depositor, and read as follows: "Courtesy of the (name of the federal agency)." The Repository agrees to provide the Depositor with copies of any resulting publications.

5. The Repository shall maintain complete and accurate records of the Collection and any other U.S. Government–owned personal property, including information on the study, use, loan and location of said Collection which has been removed from the premises of the Repository.

6. Upon execution by both parties, this Memorandum of Understanding shall be effective on this (day) day of (month and year), and shall remain in effect for (number of years) years, at which time it will be reviewed, revised, as necessary, and reaffirmed or terminated. This Memorandum may be revised or extended by mutual consent of both parties, or by issuance of a written amendment signed and dated by both parties. Either party may terminate this Memorandum by provided 90 days written notice. Upon termination, the Repository shall return such Collection and any other U.S. Government–owned personal property to the destination directed by the Depository and in such manner to preclude breakage, loss, deterioration and contamination during handling, packaging, and shipping, and in accordance with other conditions specified in writing by the Depositor. If the Repository terminates, or is in default of, this Memorandum, the Repository shall fund the packaging and transportation costs. If the Depositor terminates this Memorandum, the Depositor shall fund the packaging and transportation costs.

Title to the Collection being cared for and maintained under this Memorandum lies with the Federal Government.

IN WITNESS WHEREOF, the Parties hereto have executed this Memorandum.

Signed: (signature of the federal agency official) Date: (date)

Signed: (signature of the repository official) Date: (date)

Attachment A: Inventory of the Collections
Attachment B: Inventory of any other U.S. Government–owned Personal Property
Attachment C: Terms and Conditions Required by the Depositor.

Cooperative Agreement Between the U.S. Army Corps of Engineers and the State of Illinois

I. PURPOSE

The purpose of this Cooperative Agreement is to specify arrangements under which the U.S. Army Corps of Engineers and the state of Illinois will cooperate to implement a program to house, manage, stabilize, preserve, and provide access to archaeological collections and records generated in conjunction with Corps of Engineers activities in the state of Illinois.

II. PARTIES

The parties to this Cooperative Agreement are the U.S. Army Corps of Engineers represented by the District Engineer, St. Louis District (hereinafter "Corps"), and the state of Illinois, represented by the Department of Energy and Natural Resources through its division, the Illinois State Museum (hereinafter "ISM"), and the Illinois State Museum Society (hereinafter "ISMS").

III. AUTHORITY

This Cooperative Agreement is executed by the parties hereto pursuant to the following authorities: The Reservoir Salvage Act of 1960, as amended (P.L. 86-523; 74 Stat. 220, 88 Stat. 174; 16 U.S.C. 469 et seq.); the National Historic Preservation Act of 1966, as amended (P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470 et seq.); the National Environmental Policy Act of 1969 (P.L. 91-190; 83 Stat. 852; 42 U.S.C. 4321 et seq.); the Archaeological Resources Protection Act of 1979, as amended (P.L. 100-588; 102 Stat. 29883; 16 U.S.C. 470aa–470mm): the Abandoned Shipwreck Act of 1987 (P.L. 100-298; 102 Stat. 432; 43 U.S.C. 2101 et seq.); 36 CFR Part 79 Curation of Federally-Owned and Administered Archaeological Collections; ER 1130-2-433; ER 200-2-2; ER 1105-2-100; ER 1130-2-438; and ER 1165-2-131.

IV. DEFINITIONS

For the purpose of this agreement, the following definitions are applicable.

A. Associated Records refers to original records (or copies thereof) that are prepared or assembled and document efforts to locate, evaluate, record, study, preserve, or recover materials from a prehistoric or historic resource. Some records such as field notes, artifact inventories, and oral histories may be originals that are prepared as a result of the field work, analysis and report preparation. Other records such as deeds, survey plats, historical maps, and diaries may be copies of original public or archival documents that are assembled and studied for historical research. Classes of associated records (and illustrative examples) that may be in a collection include, but are not limited to:

1. Records relating to the identification, evaluation, documentation, study, preservation, or recovery of a resource (such as site forms, field notes, drawings, maps, photographs, slides, negatives, films, video and audio cassette tapes, oral histories, computer disks and diskettes, printouts of computerized data, manuscripts, reports, and accession, catalog, and inventory records);

2. Records relating to the identification of a resource using remote-sensing methods and equipment (such as satellite and aerial photography and imagery, side-scan sonar, magnetometer, subbottom profilers, radar, and fathometers);

3. Public records essential to understanding the resource (such as deeds, survey plats, military, and census records, birth, marriage, and death certificates, immigration and naturalization papers, tax forms, and reports);

4. Archival records essential to understanding the resource (such as historical maps, drawings and photographs, manuscripts, architectural and landscape plans, correspondence, diaries, ledgers, catalogs, and receipts); and

5. Administrative records relating to the survey, excavation, or other study of the resource (such as scopes of work, requests for proposals, research proposals, contracts, antiquities permits, reports, documents relating to compliance with Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) and National Register of Historic Places nomination and associated forms.

B. A collection is composed of material remains and associated records. Specifically it refers to the composite of all material remains that are excavated or removed during a survey, excavation, or other study of a prehistoric or historic resource, as well as the associated records that are prepared or assembled in connection with the study.

C. Curation and Collections Management refers to those curatorial services such as processing, cataloging, and accessioning, as well as application of specialized techniques necessary for conserving and maintaining collections and their associated records. This includes, but may not be limited to:

1. Handling, cleaning, stabilizing, and conserving a collection in such a manner to preserve it;

2. Inventorying, accessioning, labeling, and cataloging a collection;

3. Identifying, evaluating, and documenting a collection;

4. Storing and maintaining a collection using appropriate methods, containers, environmental conditions, and physically secure controls;

5. Periodically inspecting a collection and taking such actions as may be necessary to preserve it; and

6. Providing access and facilities to study a collection.

D. Collections Management Center refers to any qualified facility where cultural materials and their associated records are curated, maintained, and made accessible for educational, interpretive, scientific, and religious purposes.

E. Collections Management Professional refers to a person who possesses knowledge, experience, and demonstrable competence in methods and techniques appropriate to the nature and content of the collections under the person's management and care.

F. Initial processing refers to collection-management functions and activities leading up to, and including, the placement of a collection and its associated documentation into a management center. Such activities include, but are not limited to, cleaning; sorting; stabilizing; packaging; cataloging; inventorying; accessioning; and the acquisition of all necessary supplies and materials.

G. Material remains means artifacts, objects, specimens and other physical evidence that are excavated or removed in connection with efforts to locate, evaluate, document, study, preserve, or recover a prehistoric or historic resource. Classes of material remains (and illustrative examples) in collections include, but are not limited to:

1. Components of structures and features;

2. intact or fragmentary artifacts or human manufacture;

3. intact or fragmentary natural objects used by humans;

4. by-products, waste products, or debris resulting from the manufacture or use of man-made or natural materials;

5. organic materials;

6. human remains;

7. components of petroglyphs, pictographs, intaglios or other works of artistic or symbolic representation;

8. components of shipwrecks;

9. environmental and chronometric specimens; and

10. paleontological specimens that are found in direct physical relationship with a prehistoric or historic resource.

V. COOPERATION

In consideration of the above premises, the parties hereto agree as follows:

A. General. The Federal Laws cited in Article III above establish the requirement that significant prehistoric and historic artifacts and associated records (collections) acquired pursuant to Federal recovery mandates must be appropriately curated by deposit in a collections management center possessing adequate long-term curatorial capabilities. The cited laws mandate this responsibility to Federal agencies to provide for the use of these archaeological and historic collections in a controlled manner for education, scientific study, and public interpretation.

B. The St. Louis District, Corps of Engineers:

1. The Corps and individuals issued Corps historic properties contracts in the state of Illinois will use the ISM for the long-term curation of archaeological collections and associated records.

2. All archaeological collections and associated records submitted to the ISM by a contractor will conform to the standards of the Corps (standards are attached as Appendix A).

3. Archaeological collections will be submitted by the contractor (the party to the cultural resource contract) directly to the ISM.

4. Prior to submission to the ISM, archaeological collections shall be subject to inspection by the District Engineer or his designated representative.

5. Following this inspection, it is the responsibility of the contractor to deposit the collections at the ISM.

6. The Corps will notify the Director of the ISM upon award of a contract for the recovery of archaeological materials in conjunction with Corps activities in the state of Illinois. Within thirty (30) days of this notification, the contractor will submit a schedule to the District Engineer, or his designated representative, outlining the curation schedule the contractor has arranged with the ISM.

7. The District Engineer, or his designated representative, will inspect the ISM at least once a year. The Corps will provide sixty (60) days notice to the Director of the ISM to arrange a mutually beneficial time period for the inspection. This inspection is to ensure that the collections management center and curatorial standards, as cited in 36 CFR Part 79 (specifically 79.4-79.9) published in the Federal Register, vol. 52, No. 167, August 28, 1987 (see Appendix B) and St. Louis District Standards for Collections Management Centers (see Appendix C). Within thirty (30) days of this inspection, the District Engineer, or his designated representative, will provide the ISM with a written report detailing the results of the inspection. Non-compliance with standards set forth in Appendices B and C will be addressed and the ISM will be given thirty (30)

days in which to develop a plan of action to correct any violations. Failure to correct any violations will be cause to terminate this agreement.

C. The Illinois State Museum:

1. Agrees to maintain an Archaeological Collections Management Center for the long-term curation of Corps archaeological and historic collections and the associated records within the state of Illinois.

2. Agrees to provide for the long-term curation and management of Corps archaeological collections and associated records in accordance with Federal standards outlined in proposed 36 CFR Part 79 (specifically 79.5, 79.6, and 79.9) ER 1130-2-433, St. Louis District Standards for Collections Management Centers (Appendices B, C, and D), and to the satisfaction of the District Engineer.

3. Will accept custody of Corps archaeological collections and associated records in perpetuity or other fixed period of time.

4. Within the state of Illinois, the ISM agrees to construct a periodic museum exhibit at each District lake in consultation with the lake interpretive staff using relevant Corps collections to illustrate the prehistory and history of the region. The proposed cost of exhibit design will be submitted to the District Engineer and the lake interpretive staff on the anniversary date of execution of this agreement each year the agreement is in effect. Within sixty (60) days' receipt of the cost estimate the District Engineer, or his designated representative, will inform the Director of ISM of the Corps' decision regarding funding of said museum exhibits. Funding for this component of the agreement will come from the St. Louis District's interpretive program. The ISM also agrees to present two (2) public lectures at each District lake in Illinois that discuss the archaeological history of the region. A schedule for said programs shall be developed in consultation with the lake supervisors and the Historic Properties staff and provided to the District Engineer on the anniversary date of execution of this agreement each year the agreement is in effect. Within sixty (60) days' receipt of the cost estimate the District Engineer, or his designated representative, will inform the Director of ISM of the Corps' decision regarding funding of said lecture programs.

5. Agrees to arrange for the loan or display of all or part of a collection on request of qualified agencies, organizations, institutions, or individuals having adequate facilities for study or display only after written consultation with the District Engineer or his designated representative. The individual or agency requesting a collection is obligated to pay all fees associated with the loan of said collection.

6. Agrees to report any loss or damage to archaeological collections and associated records to the District Engineer within seven (7) days of discovery of the loss or damage.

7. Assures that curatorial services furnished pursuant to the Cooperative Agreement conform to the standards set forth in Appendices A, B, C, D, F, and G. It is understood that standards furnished in Appendices A, C, F and G shall be updated by the Corps as needed to reflect the "state of the art" in the field of curation of archaeological collections.

D. The Illinois State Museum Society:

1. The Illinois State Museum Society, a not-for-profit organization, will serve as contractor to rehabilitate and otherwise prepare for curation the U.S. Army Corps of Engineers, St. Louis District archaeology collections.

2. Agrees to inspect, inventory, accession, and upgrade the archaeological collections and associated records which are submitted by the Corps to ensure the materials and records meet St. Louis District Curation Standards presented in Appendix A. Following June 1990 all collections and associated records submitted by Corps contractors to the ISMS which are not in the proper condition are to be returned to the contractor, by the ISMS along with a list of actions necessary to prepare the materials or records for long-term curation.

3. Agrees to develop and provide a computer-assisted collections management retrieval system within three (3) years of initiation of the agreement that will allow the Corps and other qualified individuals and institutions, access for study, loan education or public interpretation of said collections. The retrieval system will be updated as new collections are added. It is also understood that the retrieval system will be modified upon mutual consent of the Corps and ISMS. The format for this retrieval system is included in Appendix F.

4. Agrees to regularly monitor the collections and associated records and provide an annual catalogue of such conservation treatments as are needed to ensure physical stability and integrity in perpetuity. A schedule for such monitoring will be provided to the District Engineer on the anniversary date of execution of this agreement. Additionally, a catalog of recommended conservation treatments organized on the basis of individual archaeological collections will be provided to the District Engineer on the anniversary data of execution of this agreement. This catalog will be updated each year the agreement is in effect.

5. During the first year of this agreement, the ISMS agrees to inspect all collections and prepare a report which inventories and evaluates the condition of each collection. This inventory/evaluation report will be delivered to the District Engineer one (1) year following approval of this Cooperative Agreement. The report will contain an overview of the condition of each collection according to the St. Louis District, Procedures for Inventory and Evaluation of Existing Collections (see Appendix G), as well as recommendations, including a budget, detailing the status and costs associated with rehabilitating each collection. The budget to accomplish this work is contained in Appendix E and represent the monies allocated for years 2–5 (FY 92– FY 95). Within thirty (30) days of receipt of the report, the District Engineer, or his designated representative, will inform the Executive Secretary of the ISMS of the Corps' findings regarding the ISMS evaluation recommendations.

6. The ISMS will use the monies provided by the Corps only for the express purpose of rehabilitating, managing, and providing for the retrieval of Federal (Corps) artifacts.

E. Special Provisions:

1. Archaeological collections and associated records removed from public land remain the property of the United States even though they are curated in a state institution. The ISM will not dispose of any Corps archaeological collections or associated records without the written authorization of the District Engineer.

2. ISM is responsible for transferring archaeological collections and associated records to a facility approved by the District Engineer in the event that the ISM is closed.

3. Human skeletal remains will not be made available for public display.

4. The Historic Properties staff from the Corps and the ISM will meet as needed to review the curation standards presented in the various appendices and prepare necessary changes to the satisfaction of the District Engineer, or his designated representative.

VI. PAYMENT

Pending receipt of operations and maintenance general funds, the Corps will pay the ISMS the amounts agreed to (see Appendix E) as representing rehabilitation, and annual maintenance curation costs associated with processing, conservation, and management of archaeological collections and associated records. The sums agreed upon for rehabilitation curation costs are $50,000 per annum, payable quarterly starting in FY 91 and ending in FY 95. In FY 94 a contract for annual maintenance of Corps' collections will be drafted by the Corps. This contract will commence in FY 96 and be renegotiated every three (3) years.

VII. ACCOUNTING RECORDS

Insofar as it is practicable, the ISMS will maintain bookkeeping records of Corps funds received for individual collections. In addition, the ISMS will maintain books, records, documents, and other evidence pertaining to costs and expenses incurred under this Cooperative Agreement, to the extent and in such detail as will properly reflect all net costs, direct and indirect, of labor, materials, equipment, supplies, services, and other costs and expenses of whatever nature involved therein. The ISMS will make available at its office at reasonable times said accounting records for inspection and audit by an authorized representative of the Corps.

VIII. DISPUTES

Any disputes between the parties arising under this Cooperative Agreement will be decided by the Corps, District Engineer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the ISM. The decision of the St. Louis District Engineer shall be final and conclusive unless, within thirty (30) days from the date of receipt of such copy, ISM mails or otherwise furnishes to the Corps a written appeal addressed to the Corps, LMVD Division Engineer. The decision of the Division Engineer will be the final and conclusive administrative decision of the dispute. In connection with any appeal proceeding under this clause, ISM shall be afforded an opportunity to be heard and offer evidence in support of its appeal. Pending final decision of a dispute hereunder, ISM will proceed diligently with the performance of all tasks identified and agreed to be undertaken pursuant to this Cooperative Agreement and in accordance with the decision of the District Engineer. Recourse to judicial process shall not be precluded following the final decision of the Division Engineer.

IX. COVENANT AGAINST CONTINGENT FEES

The ISM warrants that no person or selling agency has been employed or retained to solicit or secure this Cooperative Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee. For breach or violation of this warranty, the Government shall have the right to annul this Cooperative Agreement without liability.

X. RELATIONSHIP OF PARTIES

The parties to this Cooperative Agreement act in their independent capacities in the performance of their respective functions under it, and no party is to be considered the officer, agent, or employee of the other.

XI. DURATION

A. This Cooperative Agreement will continue in full force and effect unless terminated by any party hereto on providing ninety (90) days advance written notice to the others.

B. It is understood and agreed that termination of this Agreement by any party for whatever reason will not end the obligation of ISM to curate in perpetuity those archaeological materials already accepted.

XII. AMENDMENT

This Cooperative Agreement may be amended at any time by mutual agreement of the parties.

XIII. EFFECTIVE DATE

This Cooperative Agreement shall take effect upon the date of execution by the District Engineer, St. Louis District.

Dated this _____ day of _____, 199____.

STATE OF ILLINOIS

_____
Director, ENR

CORPS OF ENGINEERS

_____
District Engineer

ILLINOIS STATE MUSEUM

_____
Director, ISM

ILLINOIS STATE MUSEUM SOCIETY

_____
Executive Secretary, ISMS

Appendices:

A—St. Louis District Curation Standards
B—36 CFR Part 79
C—St. Louis District Standards for Collections Management Centers
D—ER 1130-2-433
E—Budget: Years 1–5 (FY 91– FY 95)
F—St. Louis District Collections Management Retrieval Format
G—St. Louis District Procedures for Inventory and Evaluation of Existing Collections

Contract Particulars

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submitted in fulfillment
under agreement with the
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Headquarters Air Combat Command,
Langley Air Force Base, Virginia

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U.S. Army Corps of Engineers
St. Louis District
Mandatory Center of Expertise for the
Curation and Management of Archaeological Collections

Archaeological Curation-Needs Assessment
Technical Report No. 10, Volume 1

edited and produced by
Statistical Research, Inc.,
P.O. Box 31865, Tucson, AZ 85751

1996