

Flight 93 National Memorial



**BOARD OF REVIEW MANAGEMENT REPORT
AND
CORRECTIVE ACTION PLAN
FLIGHT 93 NATIONAL MEMORIAL
Headquarters Structural Fire**

December 8, 2015

NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR



Flight 93 NM Board of Review Members

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Preface



This report is provided in accordance with the National Park Service (NPS) Director's Order and Reference Manual 50B, *Occupational Safety and Health Program*, Section 1.6, *Accident/Incident Reporting and Investigation*, for the purpose of relaying the facts, incident investigation results, and recommendations for future prevention associated with the structural fire at Flight 93 National Memorial (FLNI) on October 3, 2014. This report is based on a thorough incident investigation completed by a Serious Incident Investigation Team (SAIT). The Board of Review met in Somerset, Pennsylvania, April 15-16, 2015 to review the Team's findings, causes, and recommendations to prevent recurrence. Fortunately, there were no deaths associated with this event, but the loss of museum artifacts did occur.

Executive Summary



On the afternoon of October 3, 2014, the Park Headquarters buildings at Flight 93 National Memorial located outside Stoystown, Pennsylvania caught fire and burned. Three of the four temporary mobile buildings (trailers) that comprised the headquarters were completely destroyed, along with some nationally significant museum collections and records. There were no fatalities or serious injuries. The cause of the fire is believed, though not proved, to be the inappropriate discard of smoking materials into mulch used to landscape around and underneath the decking.

The emergency response and subsequent investigation by the National Park Service SAIT revealed that plasticized (High Density Polyethylene [HDPE]) lumber decking used to join the trailers is highly flammable and poses a significant and unacceptable structural fire hazard. This material is in widespread use in parks. A safety alert on the use of plasticized lumber was issued on April 15, 2015.

The SAIT investigation also revealed a number of other significant issues that were either causal to the incident or contributed to the severity of the damage, particularly with respect to the park's museum collection. Failure to implement or follow existing policy was a theme common to many, though not all, of the issues identified. Failure to reassess various forms of risk throughout the park's operations as circumstances evolved and the use of facilities changed also contributed to the fire's outcome.

With concurrence of the SAIT, the Board of Review has made a number of findings and recommended corrective actions that we believe the park and the National Park Service should implement.

Findings of the Serious Accident Investigation Team



Urgent Action Required

A Servicewide Safecom was issued on April 15, 2015, drawing attention to the volatility of the plasticized lumber under certain conditions. The Safecom addressed the conditions under which the material should not be used and/or replaced (e.g. in a required path of egress from buildings). See Appendix B.

Significant Findings

Finding 1: Director's Order 50D, *Smoking Policy* was not effectively implemented or enforced park-wide.

Finding 2: The practice of applying mulch directly in contact with combustible building materials contributed to the rapid spread from the point of ignition.

Finding 3: Plasticized lumber decking connecting the buildings was a major contributing factor to the speed and intensity with which the fire progressed and compromised egress from the buildings.

Finding 4: FLNI staff stored museum collections in buildings that were not designed for collections storage and did not have a fire suppression system.

- In August 2013, artifacts selected for exhibit in the new visitor center were moved to the headquarters and stored in a building that had no fire suppression system.
- The investigation determined the majority of items were not stored in fire resistant cabinets and therefore, were damaged or destroyed in the fire.

Other Findings of Significance

Finding 5: News releases inaccurately reported that loss to the collection was minimal, because items were stored in fire resistant cabinets.

Finding 6: The Accession Ledger, the legal record of collections ownership, was not properly stored in a UL listed fire resistant filing cabinet, and therefore, was destroyed.

Finding 7: Failure to accession museum property in a timely manner made it impossible to account for what and how much was lost.

Finding 8: Fire and security concerns at the FLNI Somerset facility, which were noted in the 2006 Collection Management Plan (CMP), had not been addressed. Other fire safety concerns were observed.

Finding 9: Trailer mounted buildings created a situation where the fire entered the building through the floor.

Finding 10: The Structural Fire Management Plan (SFMP) was insufficient, unsigned, and was not consistent with the response reported in the Automated Checklist Program (ACP) for the headquarters facility.

Finding 11: No Museum Collections Emergency Operations Plan (MCEOP) existed for FLNI.

Finding 12: The Scope of Collection Statement (SOCS) was not being followed, and needs to be revised and updated.

Recommendations and Corrective Action Plan



Recommendation #1: Reference Manual 50D *Smoking Policy* will be implemented and enforced.

Corrective Action Item:

- Superintendent shall develop a written smoking policy in accordance with 310 DM 11 and DO 50D, to include designated areas, proper receptacles, signage, and enforcement.

Action	Implement the policy at all Western Pennsylvania Parks (WEPA).
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	August 1, 2015

Action	Develop a control element to be included in the next NPS Structural Fire Management A123 program audit that targets the implementation and enforcement of NPS Smoking Policy requirements at the park level.
Responsibility	Division Chief, Fire and Aviation Management
Due date	Fiscal Year 2017

Action	Disseminate a memorandum to all superintendents restating the requirements in 310 DM 11 and DO 50D to implement Smoking Policy program elements locally.
Responsibility	Associate Director, Visitor and Resource Protection
Due date	March 1, 2016

Recommendation #2: Eliminate landscape practices that facilitate fire spread, which may contribute to combustion of building materials.

Corrective Action Item:

- Discontinue the practice of using combustible landscaping materials adjacent to and underneath vulnerable structures, i.e., combustible modular, mobile trailers, or temporary structures.

Action	Remove combustible landscaping materials adjacent to and underneath existing temporary structures.
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	August 1, 2015

Action	Develop a self-assessment tool for park managers to assist them with quantifying and developing mitigation strategies to maintain a “defensible space” landscape clearance around buildings housing museum objects per RM 18, Chapter 7, Section 3.7.
Responsibility	Associate Director, Visitor and Resource Protection
Due date	April 30, 2016

Recommendation #3 – Inventory, assess, and mitigate the use of plasticized (High Density Polyethylene [HDPE]) lumber material around structures. This action is necessary as an effort to reduce structural fire hazards around any structure, with special emphasis on facilities, including concessionaire-owned / operated facilities in parks.

Corrective Action Items:

Action	<p>Develop guidance and ensure each park/facility will inspect and inventory all areas where HDPE-based materials are currently installed to identify locations where these materials are:</p> <ol style="list-style-type: none"> 1. Located within the interior of a building or structure 2. Located near heat sources likely to exceed 250°F (e.g., welding/cutting operations, gas/charcoal grills, fire pits, etc.), 3. Located adjacent to buildings utilized for overnight occupancy, historic structures or buildings housing museum collections, egress routes or any application that could cause harm to people or resources. 4. Located adjacent to or surrounding critical infrastructure buildings, i.e. park headquarters, visitor centers, or maintenance facilities, which would have a significant operational impact if lost or damaged during a structural fire event.
Responsibility	Associate Director, Park Planning, Facilities, and Lands
Due date	September 30, 2016

Action	If HDPE-based materials are found in any of the above vulnerable locations per PPFL guidance, the park/facility must evaluate potential risks and take corrective action. Corrective actions may include relocation/removal of heat sources, removal of HDPE-based materials, modification of occupant emergency (evacuation) plans, and/or employee notification.
Responsibility	Individual Superintendents
Due date	November 30, 2016

Action	Parks with engine companies should review their response procedures for locations where HDPE-based decking materials are present. Additionally, parks that utilize local emergency services, should inform their local fire department if HDPE-based materials may be present in or near buildings.
Responsibility	Individual Superintendents
Due date	November 30, 2016

Action	Develop a structural fire response guideline for combating fires involving HDPE materials which can be shared with local fire departments and parks which operate engine companies.
Responsibility	Division Chief, Fire and Aviation Management
Due date	November 30, 2016

Recommendation #4: Flight 93 should store its museum collections in accordance with DOI Museum Property Directive #4, Section 1.8, *Fire Protection Standards*.

Corrective Action Items:

Action	The Western Pennsylvania Parks will consolidate their museum collections in one facility that meets DOI and NPS standards, such as Iron Mountain.
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	April 1, 2016

Action	A Collection Management Plan needs to be updated to include all facilities, including Iron Mountain, which house WEPA museum collections.
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	September 30, 2016

Action	Update NPS-28 to align with or meet the requirements of DOI Museum Property Directive #4 Section 1.8 <i>Fire Protection Standards</i> . Send memo to Regional Directors communicating this change.
Responsibility	Associate Director, Cultural Resources, Partnerships and Science
Due date	September 30, 2016

Action	Update NPS Museum Handbook to align with or meet the requirements of DOI Museum Property Directive #4 Section 1.8 <i>Fire Protection Standards</i> .
Responsibility	Associate Director, Cultural Resources, Partnerships and Science
Due date	September 30, 2016

Action	Each superintendent shall certify that they have reviewed and documented structural fire deficiencies associated with all buildings housing museum collections as documented in the parks ACP program, or as noted in FPCA deficiency reports provided by Regional Structural Fire Managers.
Responsibility	Individual Superintendents
Due date	September 30, 2016

Action	Ensure that buildings housing museum collections with documented structural fire deficiencies develop corrective actions for all RAC 1 through 3 deficiencies (actions shall be coordinated with their respective Regional Structural Fire Program Managers).
Responsibility	Individual Superintendents
Due date	September 30, 2016

Recommendation #5: The accession ledger should be properly stored in a UL listed fire resistant filing cabinet.

Corrective Action Items:

Action	Flight 93 will acquire another accession ledger from the National Catalog and begin reconstructing the source of every accession based upon data found within Interior Collection Management System (ICMS).
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	August 15, 2015

Action	Flight 93 shall ensure that the accession ledger and de-accession ledger are placed in a locked, fire resistant filing cabinet when not in active use.
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	July 1, 2015

Action	Issue a memorandum reminding parks that accession ledgers need to be secured in a fire resistant safe or cabinet whenever they are not actively being used, and whenever they are left unattended.
Responsibility	Associate Director, Cultural Resources, Partnerships and Science
Due date	April 2016

Recommendation #6: Accession museum property in accordance with established policies.

Corrective Action Item:

Action	Implement the policy at all Western Pennsylvania Parks. <ol style="list-style-type: none"> 1. Document incoming loans and track within ICMS. 2. Eliminate the accession backlog for items that were donated or are considered a field collection. 3. Accession future objects upon receipt. <i>The Museum Handbook</i>, Part II, Chapter 2, <i>Accessioning</i> discusses accessioning and incoming loans in more depth.
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	August 1, 2015

Action	Develop A-123 Audit Control to verify that parks are accessioning objects in accordance with established policy.
Responsibility	Associate Director, Cultural Resources, Partnerships and Science
Due date	Development: June 1, 2016. Implementation: Next A-123 Cycle Fiscal Year 2017

Action	Develop memorandum to all park curatorial staff reiterating the importance of following accessioning policy.
Responsibility	Chief Curator, WASO
Due date	April 2016

Recommendation #7: Assess and mitigate fire and security concerns at all WEPA park facilities.

Corrective Action Items:

Action	Ensure that structural fire protection condition assessments (FPCA) are completed at all WEPA parks.
Responsibility	Superintendent, Western Pennsylvania Parks with NER Structural Fire program assistance
Due date	September 1, 2016

Action	All WEPA parks which have undergone FPCA inspections shall develop corrective actions for all RAC 1 through 3 deficiencies; actions shall be coordinated with the NER Structural Fire Program Manager.
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Responsibility	Superintendent, Western Pennsylvania Parks with NER Structural Fire program assistance
Due date	September 1, 2016

Recommendation #8: The NPS should minimize the use of trailers for residential and office uses, and take steps to ensure that any temporary trailer installations meet fire, safety and accessibility codes.

Corrective Action Items:

Action	Flight 93 will retrofit current trailer inventory to meet these standards: <ul style="list-style-type: none"> 1. Proper clearance requirements/removal of combustible materials 2. Installation of fire resistant skirting 3. Fire resistant specifications for procurement of new modular buildings.
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	June 1, 2016

Action	Continue and reinforce the current prohibition on new placement of trailers in parks for housing. Develop guidance directing that the use of trailers be minimized to extraordinary circumstances and requiring Regional Director approval of any new office trailer installation
Responsibility	Associate Director, Park Planning, Facilities, and Lands
Due date	September 30, 2016

Action	Develop and execute a policy to ensure that all temporary installations of trailers in parks undergo the same life/safety design review and inspection that permanent facilities are subjected to prior to occupancy/ use.
Responsibility	Associate Director, Park Planning, Facilities, and Lands
Due date	October 30, 2016

Recommendation #9: Flight 93 should update its Structural Fire Management Plan

Corrective Action Items:

Action	Update Structural Fire Management Plan and have it reviewed by the Regional Authority Having Jurisdiction.
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	June 30, 2016

Action	The Northeast Museum Services Center will assist the parks of Western Pennsylvania to accurately update their Automated Checklist Program.
Responsibility	Deputy Regional Director
Due date	June 30, 2016

Action	The NPS Museum Program, Facilities Management Program, and Structural Fire Program will review existing policy with respect to museum facilities and collections structural fire protection standards and practices in order to report suggested improvements to the Deputy Director.
Responsibility	Associate Director, Cultural Resources, Partnerships, and Science; Associate Director, Park Planning, Facilities, and Lands; and Associate Director, Visitor and Resource Protection
Due date	June 1, 2016

Recommendation #10: Flight 93 should develop a Museum Emergency Operations Plan

Corrective Action Item:

Action	Develop and execute a Museum Emergency Operations Plan
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	September 30, 2016

Recommendation #11: The Scope of Collection Statement (SOCS) should be revised and updated.

Corrective Action Items:

Action	Establish a Flight 93 Collections Advisory Committee to advise Superintendent on collections acquisition.
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	September 30, 2015

Action	Revise, update, and follow the Scope of Collection Statement
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	October 31, 2015

Action	Flight 93 is done collecting tribute items unless they fall within the revised Scope of Collections Statement. Communicate to visitors that tribute items left at the memorial may not become part of the park's permanent collection. Engage with Flight 93 Families about this topic as appropriate.
Responsibility	Superintendent, Western Pennsylvania Parks
Due date	October 31, 2015

Action	Establish service-wide policy on tribute items.
Responsibility	Associate Director, Cultural Resources, Partnerships, and Science
Due date	September 30, 2016

Recommendation #12: Develop procedures for the coordination of news releases immediately following the aftermath of serious accidents.

Corrective Action Item:

Action	Modify the Serious Accident Investigation (SAI) Delegation of Authority letter with the requirement for all news releases to be coordinated through the SAI Team Leader prior to release. Consider the same modification for the Incident Command process.
Responsibility	Associate Director, Visitor and Resource Protection
Due date	September 30, 2016

- End of Board of Review Management Report and Corrective Action Plan -