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HISTORIC STRUCTURES REPORT

PART II

ON

INDEPENDENCE HALL

Restoration of Roof

Independence National Historical Park

Architectural Data Section

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UNITED STATES DEPARTMENT OF THE INTERIOR
Eastern Office, Design and Construction
Historic Structures Branch

NATIONAL PARK SERVICE
143 South Third Street
Philadelphia

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HISTORIC STRUCTURES REPORT

PART II

ON

INDEPENDENCE HALL

Restoration of Roof

A P P R O V A L S H E E T

RECOMMENDED

Superintendent

Date _____

Robert G. Hall Date 3-14-63
Robert G. Hall
Chief, EODC

Regional Director, Northeast Region

Date _____

APPROVED

Director _____ Date _____

CONTENTS

	<u>Page</u>
BRIEF PHYSICAL HISTORY OF ROOF.....	1
RECOMMENDATIONS FOR REPAIRS.....	5

APPENDIX

1789 Bill of Carpenters Work at the Statehouse by
Joseph Rakestraw

ILLUSTRATIONS

1 Drawing and 4 Photographs

BRIEF PHYSICAL HISTORY OF ROOF

Despite a series of repairs and alterations some of the original roof covering on Independence Hall has fortunately been preserved. These repairs and alterations preserved the original roofing by covering it with several distinct layers of later roofing materials, thus providing us (for record and restoration) with a degree of authenticity rarely obtained for a building of this period.

The roof is formed over nine gambrel-like trusses that support it from below (see Illustration No. 1). The roof slopes are symmetrical about the ridge line. The lower slope rises from the main cornice to a balustrade that connects the chimney masses at each end of the building. Directly below the balustrade the pitch of the roof changes so that it is almost flat from that point to the ridge. The change in pitch was articulated with a cornice consisting of a bed moulding, fascia, and crown moulding (see Illustration No. 2).

When the roof was completed in the 1730's it was apparently covered in its entirety with wood shingles; the lower slopes being laid on lath and the upper pitches on solid sheathing. The shingles were 36" long, face nailed and exposed 11" to the weather (see Illustration No. 3). Due to the flatness of the upper pitches, the shingles were laid continuously over the ridge instead of the usual roof comb,

When the tower and steeple were added in the 1750's the south slope of the roof was altered to accommodate a "large dormand" that connected the attic with the tower. It was this alteration that covered and preserved a fragment of the original cornice between the upper and lower roof slopes. The form of the dormer followed the lines of the existing roof and was presumably shingled to match the existing shingles.¹ It is evident that when the dormer was added and the "Old Turret" (cupola) removed, that the upper slope of the roof was raised to its present pitch.² To achieve the steeper pitch the new shingles and sheathing were laid on tapered sleepers which in turn were nailed directly on the original shingles, thus leaving the latter intact to this day (see Illustration No. 1).

In 1768 part of the roof was repaired with new shingles;

¹"...[for] pulling down the Old Turret & making good the Statehouse roof where it stood & a Large Dormand between Statehouse & tower Wall & Shingling against S. wall....Jointing many thousands of Shingles." from account "The Province of Pennsylvania D^x to Edm. Woolley," dated April 26, 1756. Norris Papers, Manuscript Collection, Historical Society of Pennsylvania. See INHP Photo-stat No. 1016.

²It is very likely that the relative flatness of the shingled upper slope created the leakage problems usually attendant with such roofs.

and in 1785 additional repairs were ordered for the upper pitches.³

By the winter of 1788 the roof apparently needed extensive repairs and in the spring of 1789 the entire roof was rehabilitated by Joseph Rakestraw, Philadelphia carpenter.⁴ This included removal of the shingles which had been on the upper pitches in the 1750's. In their place, tongue and groove sheathing was laid on the existing c. 1750 sheathing and covered with copper. Shingles were also taken up from the lower slopes and the lath "shifted," possibly to reduce the exposure of the shingles. New copper pole gutters were installed and apparently the bed moulding, at the juncture of the lower and

³ Joseph Fox "Account of Money expended per Order of the Assembly, for Repairs on Part of the Roof of the State-house...shingles and Workmens Wages [etc]" dated Sept. 20, 1768. Pennsylvania Archives, Series 8, Vol. VII, p. 6254.

Articles of agreement between Council in behalf of the Commonwealth of Pennsylvania and James Pearson "to repair the State House, by covering with copper (such as is commonly used for sheathing of shipping) that part of the State House roof between the steeple and the turret of the clock bell, shingling anew the three courses on both sides the ridge of the said roof, repairing pitches of the said roof with two good coats of clarefied Turpentine and Spanish-brown," dated December 15, 1785. Colonial Records, Minutes, Supreme Executive Council, Vol. XIV, p. 597. It is not known whether this proposal was executed. Presumably it was not, for three years later the roof required extensive repairs.

⁴ "Resolved, That Mr. Mifflin, Mr. Miles and Mr. Read, be a committee to examine the roof and other parts of the State house, and report to Council an estimate of such repairs as are necessary." Colonial Records, Vol. XV, p. 580 dated 31 October 1788.

An estimate dated March 6, 1789, by Joseph Rakestraw, Nicholas Hicks, and Wm. Colladay was read before the Council on March 10, 1789: "Estimate for the Expences of the necessary repairs of the State House. For new shingling the House on both sides and both wings on the North side, £310. For covering the flat [upper slopes] with copper, 290...The Diffrance between Coppering & Shingling the Top Pitch [upper slopes], The Copering will cost £150 More;" Pennsylvania Archives [Series 1], Vol. XI, pp. 558-9.

upper slopes of the roof, was replaced⁵ (see Illustration No. 1).

With the exception of routine repairs the roof apparently remained unaltered until 1847 when the entire roof was covered with tin.⁶

In 1854 the roof was pierced by ventilators for the city council chambers on the second floor.⁷ The ventilators were large wooden cupola-like structures but were replaced with smaller sheet-iron units in 1874⁸ (see Illustration No. 4).

⁵"Bill of Carpenters Work at the Statehouse by Joseph Rakestraw... To 133 Sqr. 64 feet of Shingling and Shifting the Lath...210 feet of Mouldings, [illegible word], to the Shingling...a Copper Gutter Shingled in the frount Eves - & 2 Gutters in the Back...Taking up the Balustrad on the top of the house and fasting them down after the Copper was Lay^d and Repairing the Posts &c...Taking off the Shingling on the top pitch, Repairing the Roof and Laying it all Over with Board-Lap^d - and Groved to Copper-on." See Appendix for complete bill.

⁶Frederick Glading and Cumins & Brodie each engaged to do "one half of the Tin Roofing on the State House." City Council, Committee of City Property, Agreements 1834-1855, ms., p.23. City of Philadelphia Archives. That this work was executed is evidenced by the following newspaper account: "Roofing the State House--Working men were preparing scaffolds yesterday, in order to enable them to roof the State House, which measure has been determined upon, the present roof being much decayed." From Public Ledger, Philadelphia, Sept. 2, 1847.

⁷"Each chamber and committee room [on the second floor] is ventilated by large openings in the roof." Public Ledger, Philadelphia, Oct. 27, 1854, p. 2, col. 3.

⁸"That the Commissioner of Markets and City Property be directed...that the central superfluous ventilation [sic] on the main building be removed, and in the place of the present wooden ventilators (over the Council Chamber) substitute sheet iron ventilators of modern construction." Journal of Common Council, City of Philadelphia, 1873, Vol. II, p. 246 & Appendix pp. 308-310.

Somehow the tin roof was overlooked during the restorations of the 1890's and remained until 1918 when the roof was replaced. The tin, "old shingles" and lath were stripped off and replaced with 24" cypress shingles laid 7" to the weather on lath over gypsum sheathing.⁹ The upper pitches were stripped down to the 1789 tongue and groove sheathing and covered with lead-coated copper. The new pole gutters and flashing were fabricated from lead-coated copper.

The balustrades, the crown moulding and facia below the balustrades were replaced in 1945 with unfortunate results. The wooden facia was replaced with sheet metal over gypsum board and the bed moulding was not replaced at all. The new crown moulding only vaguely resembles the original (see Illustration No. 5).

RECOMMENDATIONS FOR REPAIRS

The existing roof is forty five years old and badly deteriorated. It is recommended that a complete rehabilitation of the roof be undertaken as soon as possible. Further it is recommended that the roof be restored as accurately as possible to its character and appearance during the historic period.

⁹"Commenced to work on roof Main Bldg. under contract...to replace present tin roof which is laid over layers of old shingles with new shingles properly fire proffed and under laid with fire protection material." 29 August 1918, Independence Hall, Curator's Daily Record, 1917-1946, Independence National Historical Park Files.

The lower slopes should be stripped of their 1918 work and replaced with 5/4 fireproof sheathing laid on the existing original rafters and trusses. This sheathing will closely approximate the thickness provided by the lath that was used originally as well as providing fire protection. New taper-split shingles (36" long) should be laid directly on the sheathing with 11" to the weather to match the original shinglework.

The 1918 lead-coated copper on the upper slopes should be removed and replaced with copper laid directly on the existing 1789 sheathing, thus restoring the 1789 roof form and covering materials.

The cornice at the change in roof slopes should be copied from the fragment of the original, with a new crown moulding, fascia, and bed moulding.

New copper pole gutters and flashing will complete the rehabilitation of the roof.

To protect the new work it is recommended that a cat-walk be provided along the ridge of the building and to the door in the tower. Further, to facilitate any possible repair or replacement of the existing balustrade, the supports and bracing of the balustrade should be incorporated into the cat-walk.

It is also recommended that the Wing Buildings and arcades of Independence Hall be resheathed and reshingled at the same time. The existing roofs are 46 years old and in very bad condition.

The estimate for this work, to be executed partly by contract and partly by day labor, is \$30,000.00.

APPENDIX

Joseph Rakestraw
Bill of Carpenters Work
No. 21
£ 292.5

1789 Bill of Carpenters Work at the Statehouse by Joseph Rakestraw

To taking Down a partition, Repairing it and putting it up in the Second Story of the Statehouse.....	£ 15. 0.
To 700 Small Sprigs - 2 lb of Nails, 1 Pair of Sash Cord and 2 doz ⁿ of Screws - one pair of T hinghes & Making a Small Door.....	16. 6.
To 133 Scur. 64 feet of Shingling and Shifting the Lath.....	141.10.5
210 feet of Mouldings, [illegible word], to the Shingling- Repairs under the Clock a Copper Gutter Shingled in the frount Eves & 2 Gutters in the Back.....	8. 3.2
Taking up the Balustrad on the top of the house and fasting) them down after The Copper Was Lay ^d , and Repairing the) Posts &c	}
Taking down the Steps & Rails of the Stairs from the top of the house in to the Stepel and Making Most Part of) them New.....	
	8. 6.6
Taking off the Shingling on the top pitch, Repairing the Roof - and Laying it all Over with Board-Lap ^d -and Groved to Copper on.....	13.17.3
Repairing the Out Side Stairs, going in to both Wings-and puting pules to both gates, 4 New Paniles in the Shuter of West Wing - Making a Scaffold across the Inside of Stepel for the Plasters and taking it down after they had Done the Cealing.....	4.12.6
To Sundry Repairs in the Assembly Room - Mending the Pilasters, Doors and Surbase &c Sundry ^s on the Stairs and in all the Chambers of the Second Story - and Repairing 27 Windows.....	13. 1
To Making a Partition between the Entry and Court Room and Repairing the Mouldings at Impost ^s & Base of Pilasters and a Pair of Large foulding Doors.....	8. 0.2
To puting a Large Number of Pidgen holes in Book Cases, and Desks in Counce Chamber and two New Locks.....	3. 2.6

not done

To Laying a floor in the Court Room Lenthing the Judges
Seat - Rasing the floor & Seats, Whare the Lawyers
Sett - Repairing the Baces - and Pedistals - and
Side of Lining on the wall by the Steps..... 75. 0.0

not done

For Board - Scantling, Nails, Sprigs &c for the Above Room 15. 0.0

£ 292. 5.0

+ of this [illegible] is yet to be done the laying Court

Room [illegible] the Materials & Estimate above [illegible] at £90--

"Joseph Rakestraw Bill of Carpenters Work;" Pennsylvania Historical

& Museum Commission, Division of Public Records, Harrisburg,

Independence Square, State House Maintenance Voucher, 1789, Folder N,

No. 10.

Bill No. 21 is dated June 17, 1789 on "Joseph Rakestraws acct for

Expenditures of Repairs of State House..." and noted as "To My

Account of Carpenters Work - as [illegible] Bill of Particklers...
No. 21...292-5.0"

"Joseph Rakestraws acct for Expenditures of Repairs of State House..."

Pennsylvania Historical & Museum Commission, Commonwealth of

Pennsylvania, State Archives, Harrisburg, Independence Square,

Independence Hall, 1789, P.R.O. Hsbg Repairs & Alterations.

1847: Standing seam tin roof was laid over earlier roofs.
See illustration No.4.

1789: Tongue and Groove sheathing, still in place, covered with copper, laid on c1750 sheathing. Note alternating use of boards that have either grooves or tongues on each edge. See footnote No.5



1789 Tongue & Groove sheathing Scale: 3" = 1'-0

1750s: 3/4 inch random width sheathing, still in place, on tapered sleepers that raised pitch of roof. Sleepers notched to fit original (c1730) shingles. Nature of c1750 shingles is unknown.

1730s: 3/4 inch random width sheathing, still in place with shingles on upper slopes and lath laid on lower slopes. Both slopes with 36" shingles laid 11" to the weather. Lower slope shingles apparently survived until 1789.

Existing original (c1730) roof truss.

Original (c1730) cornice see illustration No.2 for surviving fragment.

(Attic space)

1789 Covering consisted of copper sheets laid on tongue and groove sheathing.
Existing covering consists of lead-coated copper sheets over the 1789 tongue and groove sheathing. See illus. No.5

Original (c1730) shingles were 36" long laid 11" to the weather.
Existing roofing consists of Cypress shingles 24" long laid 7" to the weather, on wood lath over gypsum planks. See illustration No.5

CUTAWAY SECTION OF INDEPENDENCE HALL ROOF
SHOWING SUCCESSIVE LAYERS OF EARLY ROOFING MATERIALS

ILLUSTRATION NO. 2

Fragment of original (1730's) cornice at the juncture of the lower slope and upper slope of the roof. The fragment of upper slope shingles (note paint on under side of ends of the shingles), crown moulding and fascia (still in place in the attic of Independence Hall) were covered over when the dormer and tower were added in the 1750's. A 1-3/8 inch unpainted strip along the lower portion of the fascia shows the location of a bed moulding. The bed moulding evidently closed the gap between the fascia and shingles of the lower slope of the roof.

Photo: James L. Dillon, Inc., February 12, 1963
Neg. No. EODC 3978



ILLUSTRATION NO. 3

Original (1730's) shingle removed from upper slope of roof. The 36 inch shingle was hand planed on both sides and laid 11 inches to the weather (note weathered surface or "face" at right end of shingle). Shingles were nailed to 5/4 sheathing with three rows of hand-wrought nails, including one row of face-nails (note hand wrought nail at right end or face of shingle). There is no apparent evidence of paint or other applied surface treatment on the shingle.

Photo: James L. Dillon, Inc., February 12, 1963
Neg. No. EODC 3979

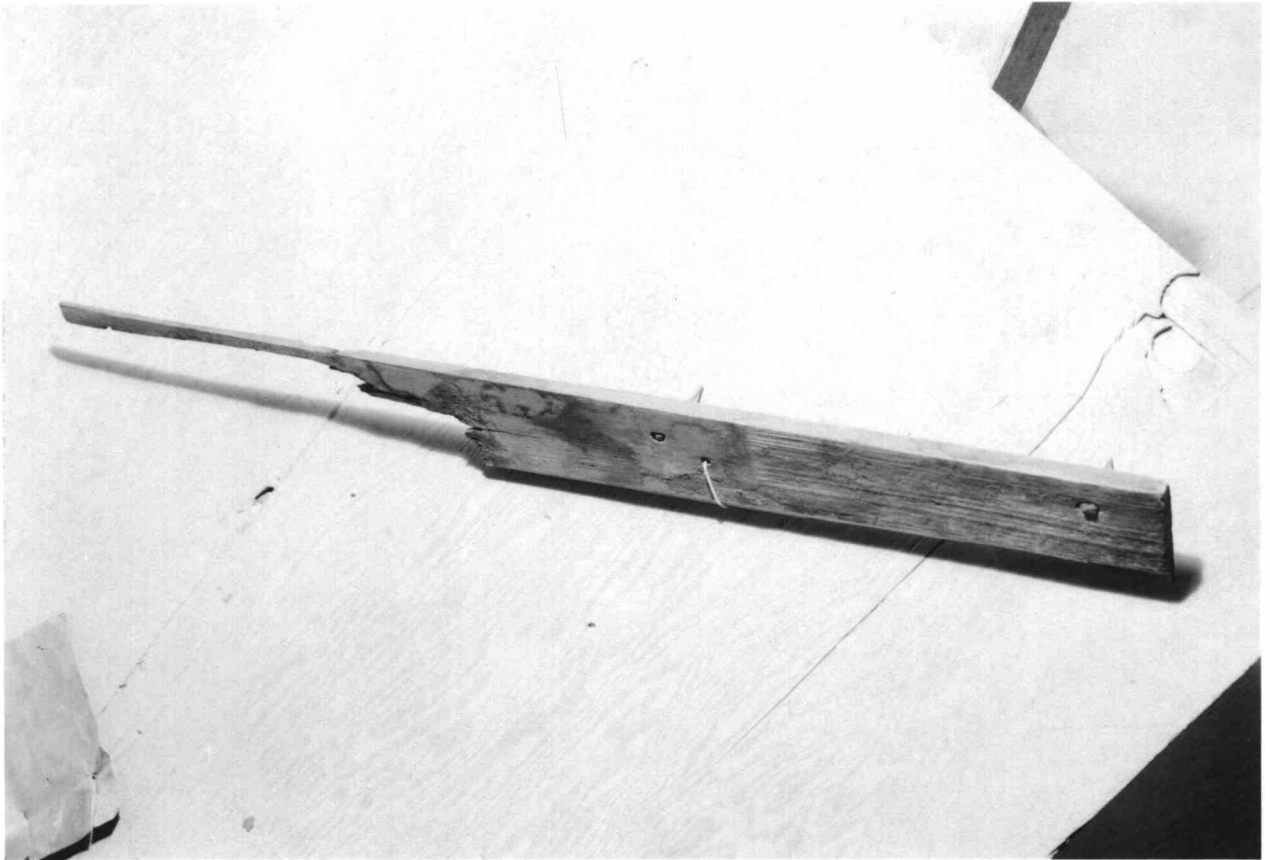


ILLUSTRATION NO. 4

One of the earliest photographs (ca. 1856) of Independence Hall showing its 1847 tin roof with standing seams, and c. 1854 wood cupola-like ventilators. Over the years the roof of Independence Hall has been cluttered with a variety of cupolas, turrets, balustrades, flag poles, ventilators, skylights, mechanical and electrical devices. This vast array of decorative and functional features are not relevant to the restoration of the roof, except that the existing utilities (floodlights and fire hydrants) will be accommodated.

The photograph was taken from Chestnut and Fifth Streets. Another print of the same photograph had the following inscription: "McClees. Taken in the Spring of 1856 Independence Hall or State House From the W. T. across the ruins made by the great-fire N. W. cor of Chestnut and Fifth street."

Inscription source: C. E. Poulson Scrapbooks, vol. 5,

p. 57, Library Company of Philadelphia.

Photo source: Philadelphia Miscellaneous Views [Scrapbooks], Vol. 3, irregular pagination, Library Company of Philadelphia.

Copy Neg. No. EODC 3980



ILLUSTRATION NO. 5

Existing conditions showing c. 1918 roof.

Upper slopes are covered with lead-coated copper and the lower slopes with 24" cypress shingles laid 7" to the weather. The pole gutters are fabricated from lead-coated copper.

Photo: James L. Dillon, Inc., February 20, 1963
Neg. No. EODC 3981

