



Smithsonian

*National Museum of American History Kenneth E. Behring Center*

## Richard Steele Papers

NMAH.AC.0080

Carol Dreyfus

Archives Center, National Museum of American History

P.O. Box 37012

Suite 1100, MRC 601

Washington, D.C. 20013-7012

[archivescenter@si.edu](mailto:archivescenter@si.edu)

<https://americanhistory.si.edu/archives>

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## Collection Overview

<b>Repository:</b>	Archives Center, National Museum of American History
<b>Title:</b>	Richard Steele Papers
<b>Date:</b>	1948-1963.
<b>Identifier:</b>	NMAH.AC.0080
<b>Source:</b>	National Museum of American History (U.S.). Division of Ceramics and Glass (Collector)
<b>Creator:</b>	Steele, Richard, 1916-1980
<b>Extent:</b>	1 Cubic foot (3 boxes)
<b>Language:</b>	English .

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## Administrative Information

### Acquisition Information

This collection was donated to the National Museum of American History in December 1983 by Christopher Steele, son of Mr. Richard Steele.

### Provenance

Collection transferred to the Archives Center by the Division of Ceramics and Glass (now Division of Cultural and Community Life) in 1984. The papers were collected as documentation for ceramic objects from the Steele family, including original Nephsy ashtrays, which were the first successful experiment done using the Ram Process.

### Processing Information

Collection processed by Carol Dreyfus, undated

### Preferred Citation

Richard Steele Papers, 1948-1963, Archives Center, National Museum of American History

### Restrictions

Collection is open for research.

### Conditions Governing Use

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## Biographical / Historical

Richard Steele (1916 1980), a ceramics engineer, was the primary inventor of the Ram press which revolutionized the ceramics industry. Mr. Steele attended classes at Ohio State University after working during World War Two as an aircraft engineer. While working at the Research Foundation at Ohio State, he

and another engineer, A. R. Blackburn (commonly referred to by Mr. Steele in the collection as "Blackie"), developed the Ram process in 1948. Up until this time, the jigger method and slip casting were used to produce ceramics. The jigger method was a manual process which required great strength on the part of the operator. A large amount of time was then required for shrinkage to occur and release the casting. As a result, the process also required a large amount of space to let the pieces dry.

The Ram process, on the other hand, was an automated machine process whereby dies made of special reinforced gypsum cement (as opposed to the plastic ones used in the jigger method), are pressurized on a hydraulic press and come together to mold the piece. Air is then fed into the die to act as a releasing mechanism. The machine is capable of pressing with 60 tons of force, up to 6,000 cycles per eight hour day. This process enables one person to operate the press with ease and to produce approximately five times the number of ceramic pieces as someone using the jigger method.

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## Scope and Contents

The collection, which consists of notebooks, journals, photographs, correspondence, memos, brochures, and technical drawings, is divided into three series: Sketches, Drawing Journals and Tests; Ram Company Materials; and Photographs. The papers were selected from among Mr. Steele's files by his son, Christopher. As a result, the papers included are somewhat sporadic and have many gaps. However, Mr. Steele was a conscientious record keeper, so the papers in the collection provide a good illustration of his development of the Ram process. Within the papers there are test results for water release problems, stress tests, plaster permeability tests, designs for different applications of the process, designs for dies, and other documentation. The journals he kept document his daily activities within the Ram Company in a very complete manner. Also included is a list of photographs with captions supplied by Mr. Steele's son Christopher.

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## Arrangement

The collection is divided into three series.

Series 1: Sketches, Drawing Journals and Tests

Series 2: Ram Company Records

Series 3: Photographs

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## Names and Subject Terms

This collection is indexed in the online catalog of the Smithsonian Institution under the following terms:

Subjects:

- Ceramic engineers
- Ceramics -- 20th century
- Ram process

Types of Materials:

- Audiotapes
- Business records -- 20th century
- Drawings -- 20th century
- Journals (accounts)
- Papers

Sketches

Names:

National Museum of American History (U.S.). Division of Ceramics and Glass

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## Container Listing

### Series 1: Sketches, Drawings, Journals and Tests, 1942 - 1951

Box 1	Curtiss-Wright Weight Saving Study , 1942 - 1943
Box 1	Resumes
Box 1	Early Press Drawings , 1948 - 1949
Box 1	Sketches, Hawk Roller, and Various Applications of Ram, Jigger
Box 1	Sketches , 1948 - 1949
Box 1	Journal
Box 1	Sketch Journal
Box 1	Reviews/Sketches , 1948 - 1951
Box 1	Journals , 1949 - 1949, 1947 - 1947
Box 1	Early Ram Tests , 1948 - 1948
Box 1	Pottery Tests , 1949

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## Series 2: Ram Company (Financial and Business Related Materials)

Box 2	Early Manuals
Box 2	Ram company Stickers, Letterhead and Matches
Box 2	Profit and Loan Statements , 1950 - 1950, 1961 - 1962
Box 2	Prospective Clients and Inquiries , 1949 - 1962
Box 2	Plaster/Gypsum Data , 1960 - 1960, 1949 - 1949
Box 2	Plaster Permeability Tests , 1949 - 1949
Box 2	Patent Litigation , 1947 - 1947
Box 2	Annual Report , 1950 - 1950
Box 2	Memorandum , 1947 - 1947
Box 2	Article , 1963 - 1963
Box 2	Miscellaneous , 1963

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## Series 3: Photographs

Box 3                      Transparencies, Reinforcing and Coil Holder Units, Negatives, Ram , 1955 - 1958

Box 3                      Press at work Making Nose Cone Using Ram Process

Box 3                      Miscellaneous Photos

## Narrated/Captioned by Curtis Steele, Richard Steele's son

Box 3                      1. Multi cavity dies – shows 4 slugs/charge (of clay)

Box 3                      2. Operator wiping sponge over the die – (quite common). Water driven off by pressing, would remain in cavity of the die. Acted as lubricant.

Box 3                      3. Same as above

Box 3                      4. Same as above

Box 3                      5. Taking ceramic pieces off top die, blowing out the lower portion.

Box 3                      6. Lids and bottoms of casserole or bowls

Box 3                      7. Ram press with foot pedals. Could be air or oil pressure

Box 3                      8. Die maker – holding die – good example showing gutters

Box 3                      9. Side of ram press?

Box 3                      10. Press with pumping unit behind press

Box 3                      11. Platter made on Universal Press adapted to Ram process

Box 3                      12. Hydraulic lines – possibly also air lines

Box 3                      13. Silent mixer possibly glaze oil

Box 3                      14. Ball mills to hold glaze

Box 3                      15. Rollers

Box 3                      16. Ball mill

Box 3                      17. Ball mill

Box 3                      18. Ball mill



Box 3	19. Ball mill
Box 3	20. Plaster mixer
Box 3	21. [Air compressor?]
Box 3	22. Rotating drying rack
Box 3	23. Scale, mixer at Hull Pottery in Crooksville
Box 3	24. Sinks and die rings at (Hull)
Box 3	25. Storage area (Hull)
Box 3	26. Two dies – one maple leaf dish die
Box 3	27. Free standing cones
Box 3	30. 2nd press to use ram die at Pilot Plant at O.S.U – Press would flex and crack dies because it only had one poster on press.
Box 3	28. Free standing cones
Box 3	29. Richard Steele on left – Andrew R. Blackburn on right
Box 3	31. Press with 2 handles as safety feature – so both hands would be on levers and not crushed by press
Box 3	32. Pumping unit
Box 3	33. Ram Press
Box 3	34. Ram Press – after being made at Accurate manufacturing
Box 3	35. Ram Press
Box 3	36. Press open
Box 3	37. Ram Press closed
Box 3	39. Instrumentation on Press showing dwell time
Box 3	38. Instrumentation on Press
Box 3	40. The more you "dwelled" the more water driven out
Box 3	41. Electronic circuitry

Box 3	42. Electronic circuitry
Box 3	43. Electronic circuitry
Box 3	44. Bars on Press controlling initial air, slo-down, dwell, final air, open limit with stops
Box 3	45. [Values controlling air to dies?]
Box 3	46. [Boots around posters to protect them for day, dirt]
Box 3	47. [Boots around posters to protect them for day, dirt]
Box 3	48. [Boots around posters to protect them for day, dirt]
Box 3	49. Connections from pumping unit to press
Box 3	50. Connections from pumping unit tot press
Box 3	51. Pumping Unit
Box 3	52. Same as above
Box 3	53. Oil lines on top of oil tank
Box 3	54. Oil lines on top of oil tank
Box 3	55. Inner workings of Press
Box 3	56. Inner workings of Press
Box 3	57. Inner workings of Press
Box 3	58. Electrical Circuitry

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## Transparencies

Box 3	59. Press with pumping unit on top, multicavity die
Box 3	60. Tru Porcelain Ram press
Box 3	61. Ram Press showing the inner workings of the press – earlier design
Box 3	62. Tru Porcelain pumping unit – re: to #60
Box 3	63. Ram Press from Hull Pottery – an early user of ram in Crooksville. Refer to 32, 33, and 34

Box 3	64. Pumping unit
Box 3	65. Charge or slugs being put into the dies
Box 3	66. Showing three individual dies (male)
Box 3	67. Same press as 66, showing bottom members
Box 3	68. Steam – Water being blown out when air is being put through die – makes pieces drop down on board
Box 3	69. Bar with screws in different positions controlling certain process of press
Box 3	70. Other side of press in (69)

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### Black and White Photographs in RED ALBUM

Box 3	71. At Glidden – January 1958 – Stops so press won't come down and crush the die or operator's hands. Shows operator removing pieces from top dies while wiping bottom die.
Box 3	72. Glidden's Show room
Box 3	73. Press
Box 3	74. Pumping Unit
Box 3	75. Operator sponging dies
Box 3	76. Press in closed position (June 1955)
Box 3	77. Multicavity die (June 1955)
Box 3	78. Same as (77) with operator taking (2) dishes off mold
Box 3	79. Ram Press
Box 3	80. Ram Press making cup
Box 3	81. Woman cutting holes in finger hole of cup
Box 3	82. Woman cutting holes in finger hole of cup and drying racks.
Box 3	83. Can see detail in die (designer's) name making a clock face
Box 3	84. Same as above

Box 3	85. Clock face
Box 3	86. Clock face with flash
Box 3	87. Finished clock face May 55
Box 3	88. Russell clock face May 55
Box 3	89. Press adapted to Ram process or an earlier Ram Press
Box 3	90. Same as above
Box 3	91. Two postered Ram Press (making a tile)
Box 3	92. Two postered Ram Press (making a tile) in closed position
Box 3	93. Same as above
Box 3	94. Man cleaning tile
Box 3	95. Woman operating press
Box 3	96. Two people operating Ram Press
Box 3	97A. Shows small Ram Press woman on left taking off piece – shows how firm the piece is
Box 3	97B. Tow women operating Ram Press
Box 3	98. Operating Press
Box 3	99. Same as above
Box 3	100. Same as above
Box 3	101. Same as above
Box 3	102. Same as above
Box 3	103. Same as above
Box 3	104. Press adapted to Ram Process
Box 3	105. Same as above
Box 3	106. Press adapted to Ram Process with drying racks
Box 3	107. Same as above

Box 3	108. Ram Press
Box 3	109. Two operators working Ram Press
Box 3	110. Press producing dish.
Box 3	111. Press with man controlling air value
Box 3	112. Press closed with woman operating (June 55)
Box 3	113. Woman operator using sponge
Box 3	114. Same as above
Box 3	115. Man in plaster shop with large assortment of dies (March 20, 1953) Possibly Hull
Box 3	116. Possibly putting die on press – inter die ring
Box 3	117. Die
Box 3	118. Die
Box 3	119. Two poster press
Box 3	120. Negative of Press
Box 3	121. Poster press
Box 3	122. Press producing large dish or platter
Box 3	123. Same as above
Box 3	124. Press producing plate – shows steam
Box 3	125. Closed press Note poster: "You keep those Big Fat Hands Out of the Machinery"
Box 3	126. Die shop, look at 127 and 128
Box 3	127. Production of lazy susan type dish, snack dishes
Box 3	128. Glidden showroom
Box 3	129. Finished piece from (127)
Box 3	130. Finished clock face May 54

Box 3	131. ? electrical fixture
Box 3	132. Outer liner of planter
Box 3	133. Snack dish
Box 3	134. Glidden casserole
Box 3	135. Glidden
Box 3	136. Glidden casserole
Box 3	137. Coffee cup and saucer
Box 3	138. Pieces
Box 3	139. Same as above
Box 3	140. Ceramic pieces – including poodle plate
Box 3	141. Glidden showroom
Box 3	142. Large bowl
Box 3	143. Unidentified
Box 3	144. "Abbott" dish
Box 3	145. Cups
Box 3	146. Large drain tiles
Box 3	147. Orchid pot
Box 3	148. Same as above
Box 3	149. Unidentified
Box 3	150. Drain tiles
Box 3	151. Ashtray
Box 3	152. Cup
Box 3	153. Server
Box 3	154. Ram ashtray, R. Steele used to give these to clients as promotion pieces

Box 3	155. Examples of pieces
Box 3	156. Press, June 55
Box 3	157. Press, March 22, 1955

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