

# I N T H E R I

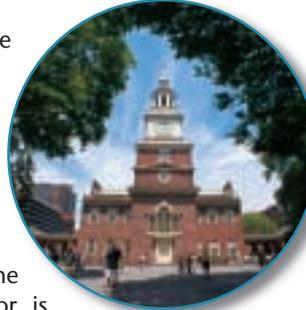
Independence Hall in Philadelphia, Pennsylvania, can be considered the birthplace of the United States. Historical documents which shaped the history of the new nation are displayed here, illuminated with fiber optic lighting from Schott.

The Declaration of Independence, the Articles of Confederation and the Constitution of the United States were all drafted in Independence Hall in the formative years of the new nation. Together these writings represent the "essential" ideas of representative government in the US and are invaluable national documents. Although they are over 200 years old and their conservation a top priority for the National Parks Service, protecting them from the ravages of time in a hermetically sealed dark safe is not an option.

## Encapsulated in Argon

Rather the documents are on display in the newly refurbished west wing of Independence Hall. In preparation for the new exhibit, the documents were cleaned and mended and then hermetically encapsulated. Since contact with oxygen leads to a variety of chemical reactions in organic materials, the documents were encapsulated in a special plastic, then in glass and then in an aluminum package filled with argon gas in order to slow down the natural deterioration process. Through a built-in port, argon can be re-introduced into the package as necessary.

Further the display case is climate controlled to keep temperature and humidity constant. There is also no heat in the cabinet since fiber optic lighting is used to illuminate the invaluable documents. The light source, or illuminator, is not in the case, rather it is located 20 feet away. The light is filtered in the illuminator to eliminate the ultraviolet and infrared part of the spectrum. Likewise, light intensity is controlled directly at the illuminator with metal screens.



*The Georgian style Independence Hall was built from 1732 to 1756 as the Pennsylvania State House. It was designated a World Heritage Site by the UNESCO in 1979 and belongs to the U.S. National Parks System since 1948.*

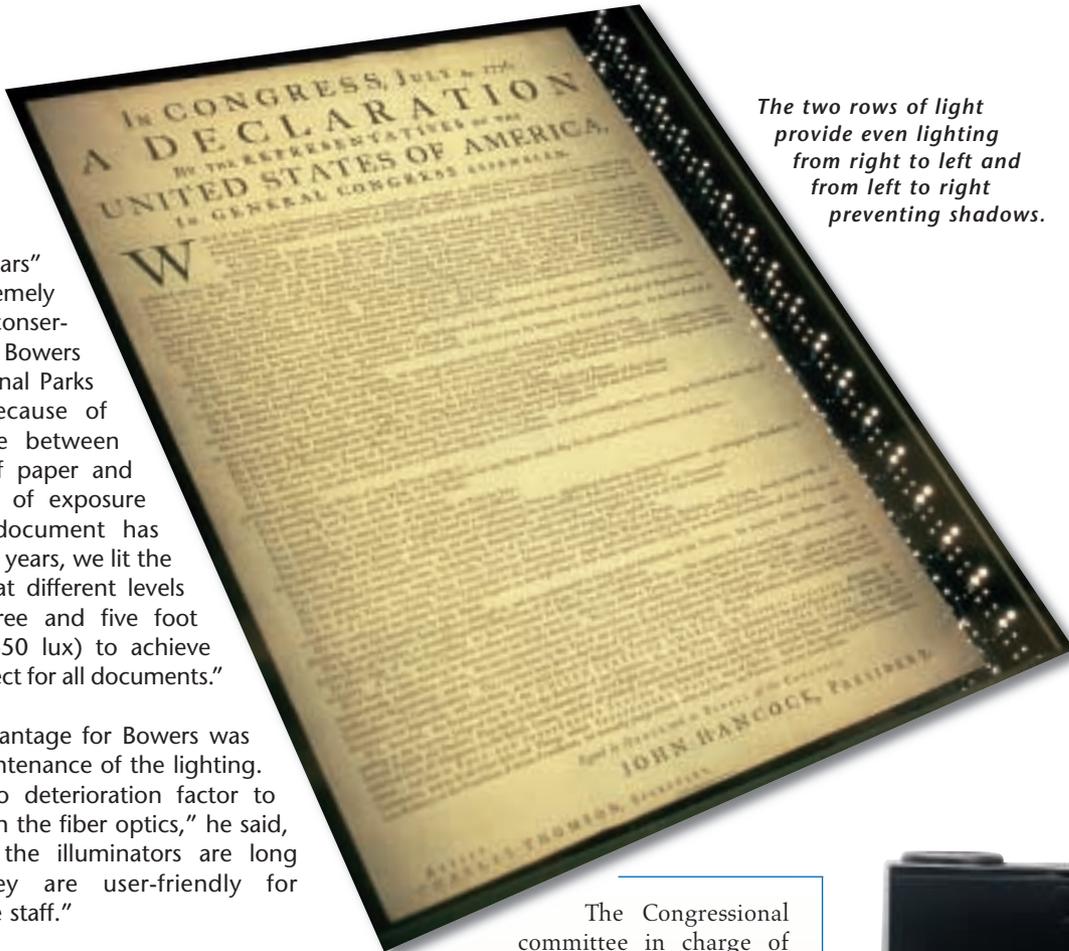
## Multiple points of light

Each document is illuminated by two "Light Bars" from Schott Fibre Optics in Doncaster, England. Multiple points of light set off in two rows provide even lighting at low conservation levels. "Producing even lighting without shadows was a major concern and



*The display case is made of steel with an exterior facing of solid walnut. It is fire resistant, climate controlled and equipped to deter theft. To limit further exposure, the documents are rotated. At any given time one of the three documents on display is a facsimile copy.*

# G H T L I G H T



*The two rows of light provide even lighting from right to left and from left to right preventing shadows.*

the "Light Bars" worked extremely well," said conservator Larry Bowers of the National Parks Service. "Because of the variance between the types of paper and the amount of exposure that each document has had over the years, we lit the documents at different levels between three and five foot candles (30-50 lux) to achieve the same effect for all documents."

Another advantage for Bowers was the low maintenance of the lighting. "There is no deterioration factor to consider with the fiber optics," he said, "and since the illuminators are long lasting, they are user-friendly for maintenance staff."

All the documents on display in Independence Hall are original printed copies made for distribution to delegates in the respective ratification processes. The signed hand-written originals are on display at the National Archives in Washington, D.C. ■

## THE DOCUMENTS

July 4, 1776 is the date most Americans associate with the signing of the Declaration of Independence, the document which marks the transformation from 13 colonies to a new young nation. When the church bells rang out over Philadelphia late in the afternoon of July 4, 1776, they signaled that the second Continental Congress had officially adopted the document. However it had not yet been signed.

The Congressional committee in charge of the Declaration, 'the Committee of Five', first had several copies of the document made by the Dunlap and Claypoole printing shop. These were distributed to various assemblies, conventions and military commanders before the official signing took place in Philadelphia on August 2nd, 1776.

Today 24 copies of what is referred to as the 'Dunlap broadside' are known to exist. They are owned by American and British institutions as well as by private owners. At the end of June, one of the existing copies was auctioned by Sotheby's online and sold for \$7.4 million.

The Articles of Confederation were drafted in the midst of war, just weeks after the Declaration was signed, and served as the first national constitution once unanimous approval from the states was won in March of 1781.

These articles were revised in 1787 when the state delegates gathered in Philadelphia to draft the Constitution. These fundamental principles of government took effect in 1789 and have been amended over the years. The first ten amendments are known as the Bill of Rights and were ratified in 1791. The latest is the 27th amendment, which was ratified in 1992.

