Historic Stage Lighting Collective

Collection Note 03

Inside the Strand Pattern 243

Figure 1. *Strand Patt. 243 cutaway lantern showing the internal optical arrangement, including the 10-inch Fresnel lens, lamp, reflector, and focusing assembly. This surviving demonstration cutaway formed part of Strand Electric's showroom display heritage. HSLC Collection.*

The Big Fresnel That Defined a Generation

Following last year's exploration of classic profile cutaways, we turn our attention to a lantern that shaped the look of mid-20th-century stages and studios: the Strand Electric Pattern 243 Fresnel.

Introduced in late 1959 and notably used in the London Coliseum's 1959/60 production of *Aladdin*, the Strand Electric Patt. 243 2kW Fresnel quickly established itself as one of the defining stage and studio luminaires of the post-war era. Featuring a 10-inch Fresnel lens and leadscrew focusing mechanism, it offered a balance of output, softness, and mechanical durability that made it equally at home in large theatres, television studios, and touring productions.

Few lanterns of its period combined power, control, and sheer longevity so successfully. Even decades after production ceased, the Patt. 243 remains widely respected by technicians and lighting designers for the quality of its beam and the robustness of its construction.

Examples of the Patt. 243 family are documented in both brown hammertone and later blue finishes. However, practitioner evidence from former Strand personnel suggests that the standard production finish was Hammer Grey, with alternative colours, including blue and brown, typically arising from customer-specific variation orders rather than standard factory output.

Former Strand employee Alan Luxford recalled that broadcasters such as the BBC and ITV generally specified the standard Hammer Grey finish, while special finishes were more commonly associated with variation orders and bespoke customer requirements. He also noted that Strand regularly produced custom-coloured versions of other lantern ranges, including the Minim Fresnel and PC series, in finishes such as white, red, blue, brown, and black.

Before the Patt. 243: From Beam to Fresnel

To understand how the Patt. 243 came into being, it is necessary to look at the sequence of designs that led to it. As lighting designer Jim Laws reflects, the story begins not with Fresnels, but with the searchlight thinking of the 1930s.

The 1930s was the first decade in theatre lighting in which stage spotlighting, other than arc follow spots, became a significant part of the visual picture on stage.

It was at *The Pageant of Empire* at the Tower of London in 1936 that Strand Electric launched their first narrow beam spotlight to give a serious output with a 1000W lamp (the B1/4). This lamp was globular and not efficient in a lensed system. Lenses larger than 6 inches in diameter were very heavy and expensive, particularly as they were Plano-Convex (PC); that is, they were flat on one face and curved outwards on the other, usually the front face.

The Pageant lantern, the Strand Patt. 50A, used a very efficient rear parabolic reflector rather than a lens. This projected the reflected part of the lamp's output in parallel lines. This technique was used on most searchlights in both world wars. To avoid too much scattered light from the front output of the lamp, Strand fitted a series of concentric spill rings.

The Pattern 50A was very good at giving shafts of dominant light in narrow beams, but not at producing an even and easily adjustable spotlight beam on stage, as we would now expect.

Strand replaced the Patt. 50A with the Patt. 58 in 1953. By that time the T/2 lamp was available with a prefocus lampholder, and the Patt. 58 front baffling was achieved with a simple round disc in front of the lamp. The beam was more even, but the need for an adjustable and controlled spotlight beam was becoming increasingly important as lighting designers became recognised as part of the creative team.

By 1957 Strand realised that they needed a soft-edged beam spotlight. They produced the Patt. 123 with its revolutionary die-cast body, futuristic shape, and 6-inch Fresnel lens, with great success.

The Fresnel lens had been used in lighthouses for many years and in film studios since the mid-1930s, but Fresnels were expensive. They were designed to use much less glass than a PC lens of the same diameter, and their ringed structure gave a pleasing soft edge to the adjustable beam spread. Increased use in film lighting had brought the price down to a point where theatre lighting could adopt them more widely.

GEC had a range of Fresnel lenses, including 6-inch and 10-inch diameters. This pre-eminent electrical component manufacturer hoped to enter the film lighting market and, for a few

years in the 1950s, ran a hire service using lights of their own design. They secured few sales in film or the emerging television studios. When Strand needed Fresnel lenses, they avoided having to create their own moulds by purchasing from GEC.

Strand fitted a 10-inch GEC Fresnel lens into a modified Patt. 58 body, changed the reflector to a spherical design, and produced the Pattern 143 1kW Fresnel. It was supplied with two-leaf, non-rotatable barndoors.

Figure 2. *Evolution of Strand Electric's large spotlight and Fresnel development: (from left to right) Patt. 50A "Pageant" (1936), Patt. 58 "Pageant" (1953), and Patt. 143 1kW 10-inch Fresnel (1957). Together these lanterns illustrate Strand's transition from reflector-based spotlighting toward large-format Fresnel optics prior to the development of the Patt. 243. Original image courtesy of Jim Laws. HSLC collection.*

Clearly, something more refined and more powerful was needed. Within three years, the Pattern 243 was designed from scratch, tooled, and brought into production. This was the Fresnel that theatre and television had been waiting for, arriving just in time to equip the new civic theatres of the 1960s and the rapidly expanding television studios preparing for colour transmission. It could take the increasingly available and affordable 2kW lamps.

The body of the Patt. 243 would go on to house the optics of several later designs, including the Patt. 252 projector, Patt. 253 large PC spot, Patt. 293, and the Patt. 765 and 793 followspots, a clear indication that Strand's investment in tooling was both strategic and long-lasting.

A Fresnel Built for a New Era

When the Pattern 243 arrived, it represented a decisive step forward from the transitional Pattern 143, which represented an early attempt to bring Fresnel optics into Strand's existing spotlight designs.

Its styling carried a subtle television influence: clean lines, a purposeful silhouette, and a sense of engineered modernity that distinguished it from earlier Strand designs.

At its heart was a 10-inch GEC Fresnel lens, a size that proved ideal for soft, flattering illumination. Attempts were made over the years to reduce the lens size or increase lamp wattage, but nothing quite matched the 243's balance of output and softness.

The Patt. 243 also reflected a wider change within the entertainment industry. By the early 1960s, theatre and television lighting were no longer separate technical worlds. Broadcasters increasingly influenced lantern development, and manufacturers were expected to respond to the operational demands of television studios as much as theatres.

Strand's First 2kW Fresnel: A Technical Trailblazer

The Pattern 243 marked an important milestone in Strand's catalogue:

- Strand's first 2kW Fresnel, giving designers a powerful, controllable wash for large stages
- Supplied with rotating barndoors as standard, reflecting a shift toward greater control and usability
- Available in studio-adapted forms, including the Patt. 243TV and Patt. 243TV(Polestar)

It is important to note that the Patt. 243 was not Strand's first Fresnel lantern, but it was their first 2kW Fresnel, a significant step in both scale and capability.

In television environments, the Patt. 243 TV (Polestar) allowed pan, tilt, and focus adjustments to be made from floor level. In studio use these units were often suspended from pantographs, allowing rapid repositioning and focus adjustment in busy multi-camera environments. Former Strand R&D engineer Bruce Buck, who later contributed recollections to this research, was involved in the development of the pole-operated yoke system associated with these studio adaptations.

This was a lantern designed not simply for brightness, but for control, a key requirement as productions became increasingly sophisticated and lighting design matured into a recognised creative discipline.

Variants and Studio Adaptations

The Patt. 243 was produced in a number of variants reflecting the differing needs of theatre and television production.

- **Patt. 243** - Standard theatre version using the P40 prefocus lampholder and T/2 lamp arrangement associated with the earlier Patt. 143
- **Patt. 243BP** - Bi-post lampholder version associated with 2kW lamp standards used in television and studio environments
- **Patt. 243TV** - Studio-adapted version with protective lens guard, carrying handle, internal terminal block, and TV spigot, likely reflecting broadcast safety requirements and operational feedback from television environments, where manufacturers were expected to meet the specific standards of broadcasters such as the BBC
- **Patt. 243TV (Polestar)** - As above, with additional provision for pan, tilt, and focus via pole operation in studio environments. These systems also supported rapid repertoire refocusing. For example, the Stage No.1 bar at Sadler's Wells in 1967 reportedly carried twelve Polestar 243s, allowing adjustments to be made during intervals
- **Patt. 243R** - Referenced in some sources but not yet fully documented

Former Strand personnel Alan Luxford and Bruce Buck recalled that some Patt. 243 variants may have employed blackened lens risers as part of Strand's wider "colouverd" Fresnel development work associated with the Patt. 123 and Patt. 223 ranges. While recollections referenced a possible "Patt. 243R" designation, surviving catalogue references presently appear to identify the colouverd variant as the Patt. 243/C. It remains possible that "243R" was an informal or internal designation rather than a formally marketed production model.

These variations reflect the growing divergence between theatre and television lighting practice during the 1960s and 1970s.

Beyond the Patt. 243: The Unbuilt Patt. 543

Former Strand personnel Alan Luxford and Bruce Buck also recalled the development of a prototype 5kW Fresnel during the later evolution of the range. Internally referred to during development as the Patt. 543, the unit was reportedly tested within a BBC studio environment alongside competing luminaires.

According to Alan Luxford, the project was ultimately halted following Rank's agreement to market Quartzcolor luminaires, preventing the Patt. 543 from entering full production.

Surviving photographs from the period show the prototype in studio testing alongside other broadcast lighting equipment, providing a rare glimpse into Strand's late-period Fresnel development work and the close relationship between manufacturers and broadcasters during this era.

The proposed Patt. 543 designation may also reflect Strand's broader use of 500-series numbering during this period for larger specialist lighting equipment, including outdoor ranges already present in late-1950s catalogues. While no evidence has yet emerged to suggest the lantern entered production, the surviving photographs and practitioner testimony indicate that the project progressed beyond a purely conceptual design study.

Figure 3**.** *Prototype Patt. 543 5kW Fresnel undergoing comparative studio testing within a BBC environment alongside competing luminaires. The proposed production model was ultimately not released following Rank's agreement to market Quartzcolor products. Photograph courtesy of Alan Luxford*

A Lantern That Refused to Die

One of the Pattern 243's most remarkable qualities is its longevity. Built with Strand's characteristic over-engineering of the period, many units remained in regular service for decades.

The lantern's thick-gauge metalwork, robust mechanical assemblies, and generously engineered lamphouse allowed it to withstand heat, dust, transport, and repeated handling in ways that many later lanterns could not.

It is no exaggeration to say that the Patt. 243 became one of the most durable Fresnels ever produced. In an industry defined by constant technological change, it earned a quieter kind of respect: it simply kept working.

The Lamp: A Rare CP12 Survivor

The example featured here retains its original CP12 2kW pre-halogen lamp, a rarity in itself. These early globes often contained iron filings inside the envelope, a simple but ingenious maintenance feature. LX crews could gently shake the lamp to help remove carbon build-up from the filament supports and prolong working life.

It is a small detail, but one that beautifully illustrates the practical and resourceful culture of mid-century theatre electrics departments.

Lampholders: From P40 Prefocus to G38 Halogen

Like many Strand lanterns of the period, the Patt. 243 underwent a quiet but important internal evolution during its production life.

Early examples were fitted with the P40 prefocus ceramic lampholder associated with T/2 and CP12 style lamps. By the late 1960s and into the 1970s, Strand transitioned toward G38 mogul bi-pin lampholders to accommodate newer halogen lamp types such as the CP/28 and CP/91.

This transition mirrored the wider industry move from pre-halogen technology toward more efficient quartz-halogen systems and provides a useful dating indicator for surviving examples.

A Note on Softness: Why Size Matters

Lighting designer Jim Laws has long argued that the 10-inch Fresnel lens used in the Patt. 243 is approximately the size of a human head. Because of that proportion, he maintains, the light wraps around the face in a particularly natural and flattering way, producing a softness that smaller Fresnels rarely achieve.

Whether scientifically measurable or not, many designers and technicians who worked extensively with the Patt. 243 recognise exactly the quality he describes.

It serves as a reminder that lighting is ultimately as much about feel and perception as it is about technical specification.

A Lantern with a Second Life: Strand's Cutaway Heritage

The Patt. 243 cutaway featured here forms part of a wider, and now historically significant, Strand Electric tradition.

Throughout the mid-20th century, Strand produced precision-made cutaway lanterns for use in sales demonstrations, exhibitions, training, and showroom display. These highly detailed

presentation pieces allowed customers, engineers, and lighting professionals to understand the internal optical and mechanical systems of the company's products.

The Patt. 243 would have stood alongside cutaway examples of the Patt. 23, 23N, 123, 223, and later the Patt. 263, forming a visual narrative of Strand's evolving design language.

In 2014, to mark Strand's 100-year anniversary, a selection of original King Street cutaways was exhibited at PLASA as part of a Strand retrospective display.

The Patt. 243 cutaway discussed here is believed to be the only surviving original demonstration example of this model from Strand's King Street display collection, preserving a direct link to the company's internal exhibition culture.

Former Strand employee Alan Luxford also provided a surviving photograph from the Strand demonstration theatre at King Street, taken during the company's 1968 sales conference. The image captures members of Strand Electric gathered beneath demonstration lighting rigs and offers a rare glimpse into the culture of presentation, training, and product demonstration that surrounded the company during this period.

Figure 4. *Members of Strand Electric photographed during the 1968 sales conference within the Strand demonstration theatre at King Street. Identified in the image are Bruce Buck (centre), Paul Weston (right), and Philip Sheridan (left), son of Strand owner Jack Sheridan. Photograph and identifications courtesy of Alan Luxford.*

Its survival allows us to see, quite literally, how the lantern worked from the inside out.

A Classic Worth Preserving

The Strand Pattern 243 is more than a lantern; it is a piece of stagecraft history. It represents a moment when theatre and television lighting were rapidly evolving, and when manufacturers such as Strand were pushing mechanical engineering, optical design, and operational flexibility to new levels.

It also represents something more human: the accumulated working knowledge of the designers, engineers, operators, demonstrators, and technicians who developed, maintained, and used these lanterns in professional practice.

Whether encountered as a working unit, a museum object, or a cutaway revealing its internal construction, the Patt. 243 stands as a testament to the artistry, engineering, and practical ingenuity of its era.

This material is held in trust for study, demonstration, and future research.

About HSLC Collection Notes

HSLC Collection Notes record the history, use, and significance of objects within the collection. They combine research, technical understanding, and practitioner experience to help preserve not only equipment itself, but also the working knowledge and production culture that surrounded it.

Sources and Documentation

This article draws upon:

- Strand Electric catalogues (1936–1990s editions)
- Rank Strand technical datasheets, product literature, and installation guidance
- Surviving Patt. 243 series lanterns, cutaways, and associated components within the HSLC collection
- Accession records, provenance documentation, and technical reference material held by HSLC
- Practitioner testimony from former operators, technicians, lighting designers, and industry specialists
- Historical notes and contribution from Jim Laws, lighting designer and industry practitioner
- Historical correspondence, recollections, and photographic material provided by former Strand personnel Alan Luxford and Bruce Buck
- Surviving studio and broadcast reference imagery relating to the Patt. 243 and Patt. 543 development period

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