

The new lighting bridge built above the Olivier stage.

system that gives eight lighting states in the foyer areas from a simple push button selection panel and the backstage worklight control also functions as designed though both systems suffered in the early years from inadequate ventilation and under-rating of components and some alteration and rewiring was necessary. It is easy to forget that such controls have to operate 24 hours a day all the year round in a theatre of this type.

Externally, however, the floodlighting was not a success, requiring too-frequent re-lamping. After a period of patchy inadequacy it was replaced by Philips metal halide fittings that give an effect that is tidy if not spectacular. Spectacle, or at least show-biz type raz-a-ma-taz is provided by the moving advertising sign overlooking the river added several years after the opening and, one hears, despite objections from the Architect and other purists. From the engineering viewpoint this is now judged a complete success and a new, larger all colour version may be on the way.

Success

For this first and only attempt at the design and construction of a British National Theatre the outcome judged after ten years use must be acclaimed a success. Critics, and there have been many over the years must remember that, in the words of the Theatre Projects publicity of the time, "The National Theatre opened in 1976 before it was complete. This sheet describes the final installation as intended."

A familiar, understandable and seemingly inevitable story. Consequently the technical contractors who had taken great risks to design the new equipment faced much

greater costs and delay trying to finish and carry out tests while the theatres were in use. Inevitably, there had not been sufficient foresight to entirely eliminate mistakes and these had to be faced and remedied. Luckily most contractors completed their obligations without excessive delay and the management, the South Bank Theatre Board, were eminently fair in paying additional costs.

Of the original theatre engineering concepts only the Lyttleton power flying had to be entirely abandoned and the alternative, classical manual counterweights, can be seen to be the better solution. Everything else worked and gives or has given good service. The Lightboards and dimmer installations set a new high standard and boosted the reputations of designer and manufacturer world wide. The operating methods made possible became the norm for this type of theatre and all wanted Lightboard facilities though most had to wait some years before they were affordable. Ten years (more since the Lightboards were commissioned well before the opening) is a good life for this class of equipment. The Olivier flying system has proved eminently satisfactory, especially if the difficulty of finding an alternative, even today, is properly considered, and with continuing good maintenance, should have a long life ahead of it. The drum revolve, though much more difficult to complete, now works well, but it has not yet been used enough for its value to be assessable. It probably needs the new control system that the NT team are planning to become fully reliable but, if finally accepted as a necessary part of the Olivier scenic style, it should last well into the twenty first century. It is worth noting that the Olivier stage has been permanently raised by about 300mm to improve sightlines and this required alteration to the revolve and to the adjustable stage edge and safety rails and many other details that were part of the original design. Unremarked, but in regular use are the raking stage, stage lifts, moving proscenium and the truck revolve in the Lyttleton and these too can have unlimited life if required. The stage management, worklight and communications systems in both theatres have already given good value and, it seems, leave little to be desired. Replacement when necessary, should be straightforward.

The Cottesloe, without any technically spectacular equipment and despite it's much criticised black box decor also works and has scored many artistic success. As in the main theatres, the lighting control has been replaced, a Strand 180 way Gemini this time, and now has a full complement of dimmers. Many lanterns have been transferred from the larger theatres and 60 Strand Preludes purchased to give saturation cover. The seating, once labour intensive to change, has acquired a new set of rostra with integral fold away seating and the first of three hydraulic lifts to change levels.

The sound installation should, of course, be mentioned but this author has to admit that he has no qualifications to do it justice. Obvious, however, even to the lay observer, is the move of the Olivier sound desk out of the control room to a permanent rear stalls position and, I am told, several complete changes of mixer and other hardware.

So the consultants got it more-or-less right and the contractors delivered; eventually. The remaining component in this success is the teams of directors, designers and staff who have used the facilities so creatively and efficiently. To them must also go congratulations. And, in this article last but not least, the NT management must be thanked for treating maintenance seriously and recognising that the expensive, powerful and potentially dangerous equipment rightly judged necessary for efficient operation of the enterprise deserves (and got) a competent and dedicated team of engineering specialists to keep it in order.


The main lesson, stressed by Doug Isham, is that a national repertoire theatre must demand the highest reliability from its technical suppliers and then make plans for backup operation when the inevitable failure occurs. Even the 97% reliability record achieved on most systems at the National leaves an embarrassing 3% when the backup is needed. The problem is to provide a backup that will work when it is required and be just good enough to permit performance of all the essential cues; but it must not be so expensive that it takes money better spent elsewhere. Lighting systems can now provide this need. The challenge remains for the designers and purchasers of special one-off stage machinery items.

My thanks to Chief Engineer Doug. Isham, Systems Engineer Ian Napier, and their staff for help and information about the NT maintenance operation and to Peter Radmore, in charge of lighting in the Olivier, for providing more details about the operating problems and the changes to the lighting rigs.

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