Tyne Theatre Restored . . .

Newcastle's Tyne Theatre gets a backstage re-build into full Victorian working order. David Wilmore describes how the theatre's machinery and stage facilities were fully restored after the disastrous fire two years ago.

In 1867, The Tyne Theatre and Opera House opened its doors to the Newcastle Public with a performance of Dion Boucicault's 'Arrah-Na-Pogue', produced by the theatre's very own 'stock' or repertory company.

The theatre was designed by William B. Parnell, an architect of which very little is known. It relied heavily upon the use of timber, and being lit by gas, was potentially a tinder box. Yet amazingly whilst any theatre worth its salt in the nineteenth century had at least one great fire, this theatre survived intact until 1919 when it became a cinema without any major rebuild or 'modernisation'. A projection box was hurriedly inserted into the upper circle tier under the supervision of the Frank Matcham Office, a new box office was constructed in the foyer and a cinema screen erected on the stage - and there it stayed until 1974 when the projectors finally stopped after a double bill of 'World Without Shame' and 'Danish Bed and Board' - enough said!

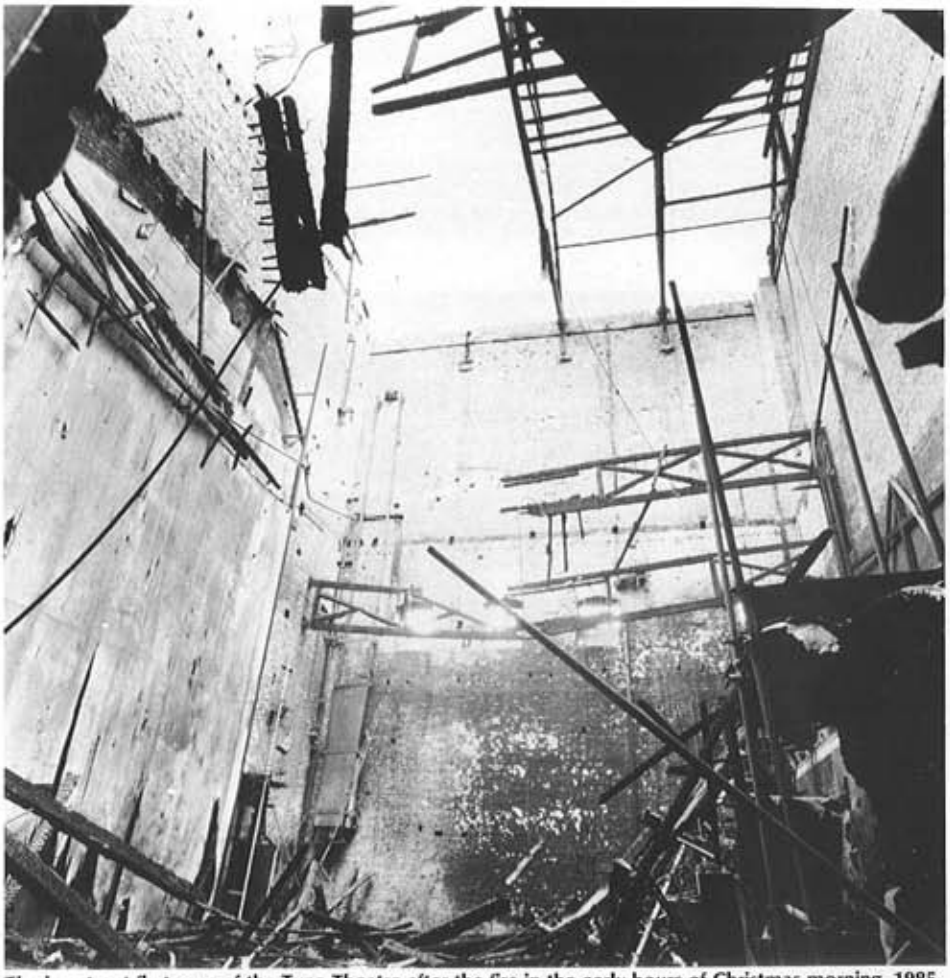
It was at this point that a local operatic society, led by businessman Jack Dixon, took on the task of restoring the theatre back to its former glory. This was no instant multi-million pound scheme but a slow, gradual, painstakingly caring process which took almost ten years, during which the theatre was completely redecorated and refurbished along with its unique victorian stage machinery which was restored to full working order.

It was almost complete when disaster struck - in the early hours of Christmas morning 1985 a fire began backstage in the dressing room area, probably inside a gas meter cupboard. Within a few hours the fire spread, gaining entry into the stage tower via the fly gallery access door. Once inside, the result was inevitable. Perhaps on any other day of the year someone would have been in the building, but not on Christmas Day. Even outside, the City was deserted, and the fire raged on unabated.

Thankfully, the safety curtain was in and the old 'iron' which had been installed around the turn of the century held back the fire and it was with some consternation that we later learned the iron was in fact only two layers of asbestos cloth covering an angle iron frame! - but my goodness it did the job.

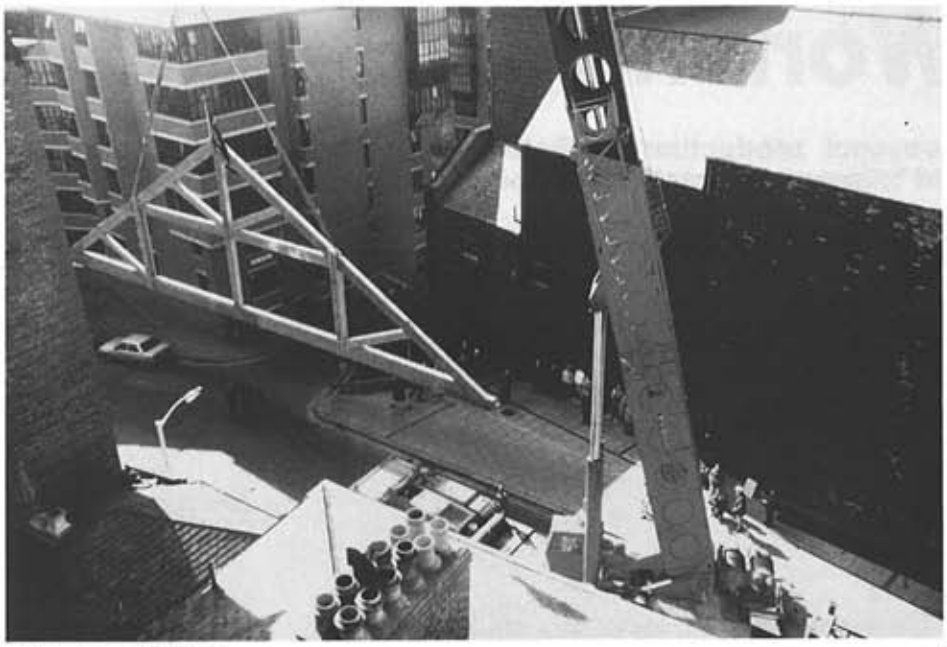
The fly galleries and the grid were completely destroyed beyond repair, yet surprisingly, beneath the stage a large amount of machinery remained intact. Faced with the task of clearing the debris we were determined to rebuild the theatre as it was before the fire.

This decision meant that the clearing out process had to be carried out in the manner of an archaeological dig. However, after the burnt timbers of the old grid iron had been demolished, a high wind caught the back wall of the stage and before any additional supports could be added it collapsed on to the stage sustaining even more damage to the understage machinery. Not to be deterred, we pressed on, intent that the machinery would be restored. Unfortunately



The burnt out fly tower of the Tyne Theatre after the fire in the early hours of Christmas morning, 1985.

A view from the back wall before the stage was re-built.



Raising the roof trusses.

The Tyne Theatre's new grid.

there were no measured drawings of the equipment, so burnt timbers had to be kept, as did every single piece of metalwork so that it could be used in the reconstruction.

It was decided very early on that any modern concessions to the theatre of the 1980's would have to be designed around the original construction details - for example, 20 single purchase counterweights were installed against the stage right wall, fitting in with the replacement timber galleries. While on the stage left side, the hemp gallery was reinstated without any modifications.

Luckily, because the theatre trust had wisely insured the building with Sun Alliance, work literally began on Boxing Day and by March 1986 the new timber roof trusses incorporating many original pieces of metal strap work, were raised into place above the stage. From then on, we could begin to rebuild and refit the stage as it had been prior to the fire.

David Wilmore - the project's mastermind.

It was not until that point that we began to realise that no one had actually built an English wooden stage using these techniques for eighty or ninety years. The original stage timbers were pitch pine but on availability and cost we decided to use douglas fir, a Canadian timber of comparable quality. Every single piece was bought 'down the road' at South Shields, dispelling the myth 'they don't grow 'em like that any more'! - but my goodness there were some big timbers. The stage is supported by 2 12" x 6" beams 45 feet in length and it took 17 men to carry each one into the building. (Incidentally, none of that metric nonsense here, it was originally built in imperial so that's the way we restored it!)

Because of the very tight schedule for the reopening on 24th November - eleven months to the day - the restoration of the stage machinery, especially in the sub-stage areas, was left until the second phase of the restoration project which is currently nearing completion - more anon.

Within the past two years, the face of 'theatre on Tyneside' has changed dramatically. The Theatre Royal has closed for major refurbishment and many large scale productions which might not otherwise have visited 'The Tyne' have found its intimate auditorium and superb acoustics a joy to behold. Yet once again, change is in the air, for as the Theatre Royal nears completion, the repertory company, originally based at the Newcastle Playhouse (formerly The University Theatre) has moved to the Tyne to form the Tyne Theatre Company. What is more, the machinery was completed in readiness for the Christmas presentation of 'Peter Pan' and all will be revealed . . .

Architect: Karol Biskupek
Structural Engineers: Ove Arup & Partners
Theatre Consultant: Tony Easterbrook for John Wyckham Associates
Electrical Contractors: Dixon Electricals
Heating Engineers: J.P.O'Brien
Main Building Contractors: Bowey

Tyne Theatre - Technical

Installed Wiring

12 Mic Circuits from stage to stalls control position switchable to control room.

24 Mic circuits from pit to stalls control position.

10 loudspeaker outlets for proscenium system from rack room all wired for either XLR-3-32 or E.P.S. for bi-amplified loudspeaker systems.

6 Rear of house effects loudspeaker circuits from rack room.

18 Under Balcony delay loudspeaker circuits from rack room.

8 On-stage loudspeaker circuits from rack room.

Full independent mains distribution system switched from rack room.

G.P.O. patchfield in rack room for 16 sends from control room or stalls control room position patching to delay lines, Martin controllers, and power amplifiers.

2 loudspeaker patching panels.

Sound Equipment

10 Martin CX2 loudspeakers, 2 Martin BX2 loudspeakers, 2 Yamaha loudspeakers, 18 Proac super tablette loudspeakers, 2 Tannoy Jupiter loudspeakers.

8 H/H V800 amplifiers, 2 Hill DX500 amplifiers, 1 Harrison 150 amplifier, 1 Crown DC300A amplifier.

3 Knowles delay lines.

1 Soundcraft 800 24/8/2 console, 1 Hill Multimix 12/4/2/1 console.

2 Revox PR99 Mk2 tape decks, 2 Itam 3 77 tape decks, 1 Revox B77 tape deck, 1 Shure CD player, 1 Luxman Z60 cassette deck, 1 dual turntable with Stanton cartridge, 1 Yamaha SPX-90 effects unit.

4 Crown PLC160 microphones, 2 Shure SM58 microphones, 3 Shure SM57 microphones, 4 AKG C535 microphones, 2 AKG C451/CK9 Rifle microphones, 1 AKG C451/CK1 microphone.

1 set BBC CD sound effects library.

Lighting Equipment

Profile spots: 4 x 2k Sil 15, 2 x 2k Sil 10, 2 x 1k Sil 30, 39 x Patt. 264, 6 x Patt. 774, 10 x Harmony 22, 20 x Harmony 12, 10 x Prelude 16/30, 8 x Cadenza 12/22.

Fresnel: 19 x Patt 743/223, 10 x Patt 243, 25 x Harmony F, 16 x Harmony PC, 2 x 5k Mole.

Beamlights: 10 x Par64 (Thomas) CP60.

Floodlighting: 21 x 4 way Coda sections, 6 x Nocturne floods.

Control: 160 way Gemini control, 120 Berkey Colortrack as optional back-up.

Dimming: 114 x 2.5 Berkey dimmers, 12 x 5k Green Ginger.

Patching Layout:

F.O.H. - 1,3-7, 9-11, 13-17, 15-20, FOH Horseshoe, 21-28, Prompt side, 29-36, Opp. Prompt, 4 5k Hardwired 109, 110,111,112. All red.

Upper Circle Boxes: Prompt: 37-40, Opp. Prompt: 41-44. All blue.

Prompt Side Fly Floor: 45-59, 118-120, 123-128, 60-66, 129-134. All yellow.
71-77, 82-85 2 x 5k Hardwired 119, 120. All Blue.

Prompt Fly Floor: 67-70 all yellow, 78-81, 90-93, 4 x 5k Hardwired 114, 115, 116, 117. All blue.

Prompt Side Floor: 95-97, 1 x 5k Hardwired 113 at facilities panel; 98-101, at mid-stage position; 102-105, at up-stage position. All blue.

Opp. Prompt Floor: 107-113, 1 x 5k Hardwired 118 at downstage position; 114, 117, at up-stage position. All blue.

Independents: A-H FOH, J, K Prompt side Fly floor, yellow; L, M Prompt side Fly floor, blue; N, P Opp. Prompt Fly floor, blue.

. . . in Full Working Order

The Tyne Theatre Company's seasonal production of 'Peter Pan' uses the restored stage machinery to full advantage. David Wilmore completes the story . . .

When the Tyne Theatre Company (originally based at the Newcastle Playhouse) decided earlier this year to move to the Tyne Theatre and Opera House it also undertook to complete the restoration of the sub-stage machinery in readiness for a Christmas production of J.M.Barrie's play 'Peter Pan'.

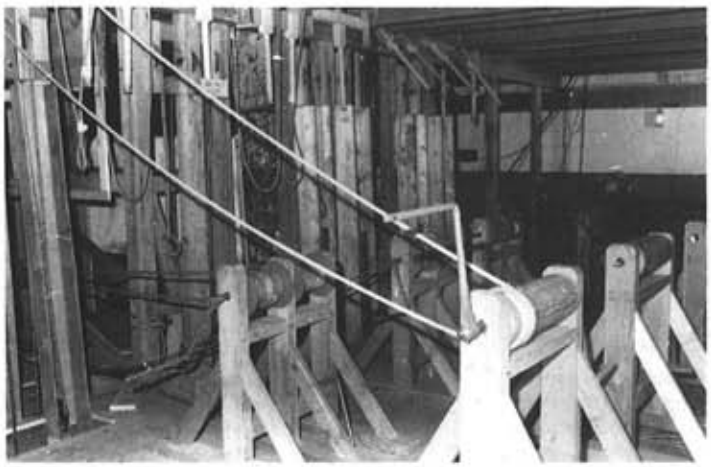
Alex McPherson was commissioned to design the production utilising the stage machinery to its full advantage within his own scenic design concept. Yet when this process began, the sub-stage was merely a structural timber framework awaiting the insertion of machinery.

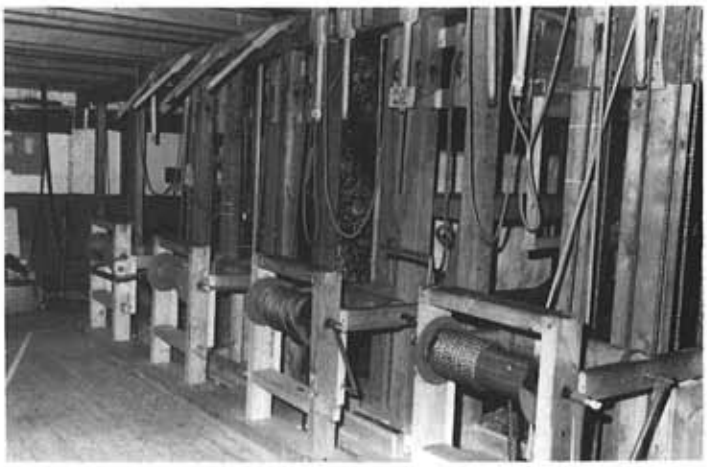
Due to the lack of measured drawings, its reconstruction, restoration and conservation (three distinct and separate operations) had to be carried out from photographs, memory and charred archaeological remains! The basic layout of the machinery was typical of the nineteenth century 'English wooden stage'. Downstage there are three hinged trap doors, a carpet cut, two corner traps, two staircase traps, a grave trap and then a series of alternating 'cuts' and 'bridges'. Whilst there is not enough space here to discuss the details of this machinery it is interesting to look at the relationship between these two latter pieces of equipment, and how they are used in Peter Pan.

The lagoon scene begins with a mermaid discovered on a rock, centre stage. The stage crew on the mezzanine floor, some ten feet below the stage must first of all open the 'cuts'; in effect trap doors. Each one measures 28' in length, nine inches wide and is orientated parallel to the proscenium opening. The off-stage ends are supported by levers or 'paddles', which when pulled back allow the floor to drop down into a set of guides which run off under the permanent staging of the wings at either side of the stage. Within each cut are mounted two 'sloats' which are essentially vertical timber posts that slide up and down inside a timber box. The position of the post, to which the scenery is attached, is controlled by a rope connected to a windlass on the stage right side of the mezzanine floor. The sloat is a moveable piece of equipment which can be moved around as required, however it is

Raising the set for the underworld scene, stage left, mezzanine floor. (See colour picture, facing page).

Raising the groundrows for the lagoon scene, stage right, mezzanine floor. Photos: Rik Walton





A close-up of some of the new 'Victorian' stage machinery at the Tyne Theatre. After the disastrous fire, all burnt timbers and every piece of metelwork had to be kept as there were no measured drawings of the equipment.

normally only necessary to have two positioned within a cut to raise a piece of scenery 28' long, both sloats being controlled from the same windlass to ensure a co-ordinated movement.

Once the cuts are all open and the cue is given to raise the ground rows (we allow ourselves the luxury of walkie-talkies for this!), the windlasses are turned to produce the effect of the water rising around the rock. At the same time, the upstage or number four bridge, which is in effect a lift 28' long and 2½' wide is raised from 14' beneath the stage to 5' above it revealing a series of three dimensional rocks. This mechanism works upon the same basic principle as the 'underworld' which is effected by coupling the two downstage bridges together, forming a lift 28' long and 8' deep. During the interval two tree trucks are secured on to the top of this lift which also serves as the stage for the majority of the production. As the scene opens a number of 'redskins' are seen encamped around the trees, but then, slowly and smoothly the whole unit begins to rise revealing the home of the lost boys. Normally the two bridges are operated as independent lifts but the English wooden stage is an incredibly flexible piece of equipment which can be modified to suit the requirements of a particular production.

The bridges are usually operated by independent windlasses positioned on the stage left side of the mezzanine floor and connected by steel cable to a large timber drum and shaft 25' below the stage in the cellar. The ratio between the circumference of the drum to the circumference of the shaft produces a mechanical advantage which assists the raising of the bridges. Further assistance is also given by variable counterweights which hang from either corner of the bridge. However, for Peter Pan we found it necessary to link the bridges,

The lagoon scene - windlasses are turned to produce the effect of water rising around the rock.

remove the independent drum and shafts and replace them with one drum and one long shaft, allowing both bridges to be operated as a large lift using one windlass.

Believe it or not the new shaft is in fact a redundant telegraph pole which was turned into the requisite diameter with the skills of our master carpenter Mike Wymark - no small task!

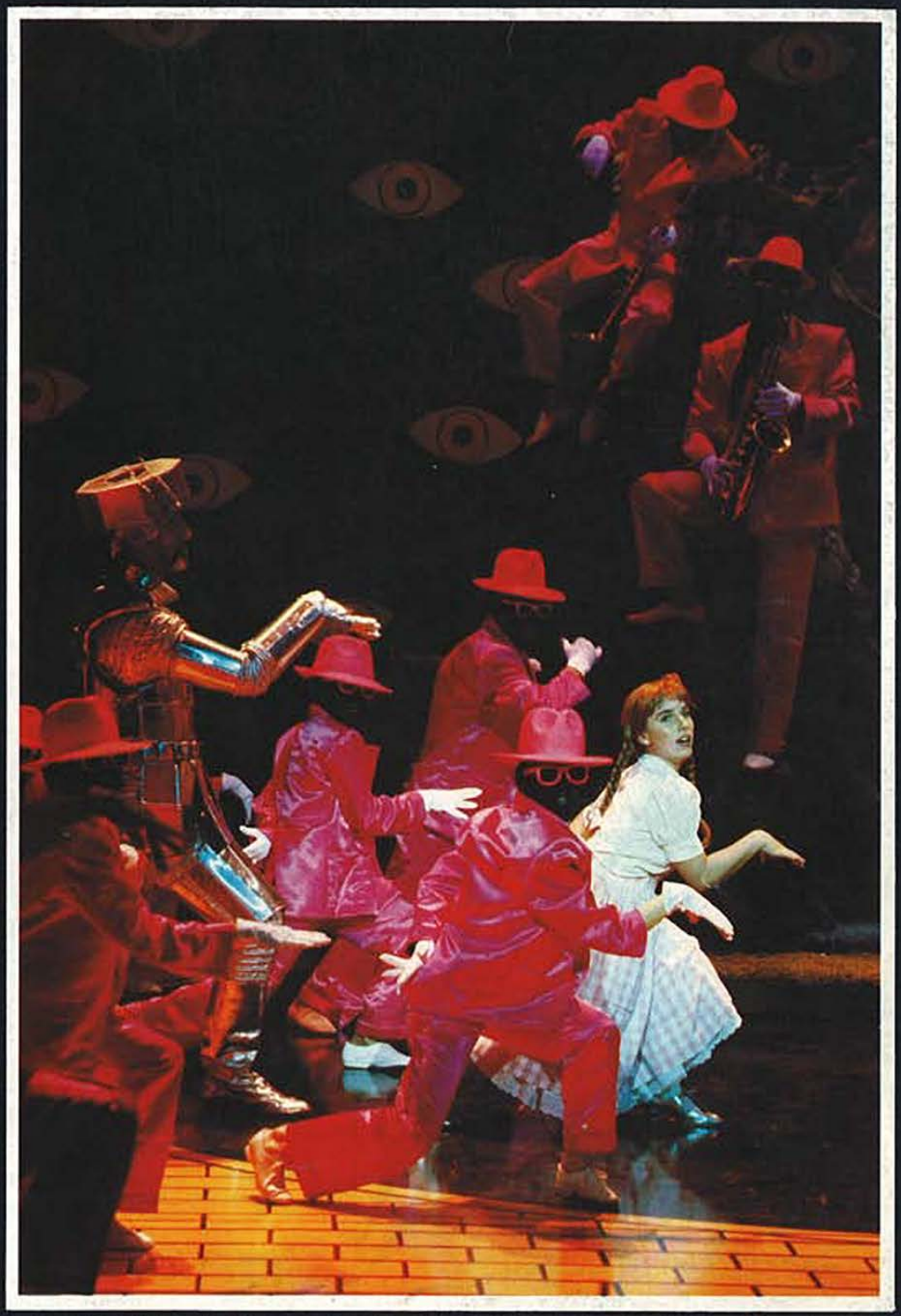
Finally, due to the fact that the underworld elevates not only scenery but also actors (who collectively weigh 120 stone) and descends minus the actors it is necessary during the course of the scene to remove some of the counterweights. Having said that, there are plenty of stage crew in the sub-stage at this point as the underworld and the number four bridge have just been raised by sheer muscle power. One thing is for certain - with almost 100 performances during the run we should have one of the fittest stage crews around by the end of January!

Production Credits
Director: Ken Hill
Designer: Alex McPherson
Production Manager: Clive Odom
Company Stage Manager: Jane Pule
Deputy Stage Manager: Sian Gilroy
Stage Director: Dave Wilmore
Set Construction Manager: Chris Coles
Master Carpenter: Mike Wymark
Assistant Carpenter: Richie Mahoney

Sound Designer: Mic Pool
Lighting Designer: Andy Phillips
Chief Electrician: Kevin Fitz-Simons
Stage Machinery Operators: George Boxer, Jim Tearse, David Forrest (crocodile), Glyn Colwill, Graeme Challands, Mark Dunlop, Stewart Hogarth, Michael Ede, Robert Laverick, Jim Glover, Frank Mendez, Glenda McCall, Tony Dolan, Paul Harrison, Keith Cadwallader, Steve Bell, David Eker, William Murphy, Philip Terry, Kevin O'Keefe.

The underworld scene - a major crew operation for every performance of 'Peter Pan' at Newcastle's Tyne Theatre.

LIGHTING+SOUND International



A scene from 'The Wizard Of Oz' at Birmingham Repertory Theatre - lighting design by Michael Northern. A profile of the designer is included in this issue.

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