



Cover picture: Glyndebourne Festival Opera's 1984 production L'incoronazione di Poppea. Director: Peter Hall. Design and Lighting: John Bury.

Inside we celebrate Glyndebourne's 50th with contributions Anniversary Frederick Bentham whose association with Glyndebourne goes back to 1934, and Francis Reid describing the middle period 1959-68 during which he was Glyndebourne's Lighting Director.

Both provide in vivid recall the many technical and artistic achievements which have helped to make Glyndebourne performances a unique operatic experience for 50 years.

Photography by Guy Gravett.

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Editorial Board James Twynam (Managing) Francis Reid Jeremy Twynam Jasbir Singh Bassi (Art)

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CARBUNCLE DAY (The Thirtieth of May)

There is a hoary old showbiz proverb which claims that any publicity is good publicity provided that your name is spelled correctly. On this basis the Royal Institute of British Architects may have derived some long term comfort from the utterances of their Royal Patron on the evening of their 150th anniversary. Although the Prince's speech may have taken the edge off the appetite of some of the diners, his contribution propelled the event to a front page prominence that it would not have otherwise gained. Despite the risks involved through delivering ammunition into the mouths of the philistines, this publicity must surely be regarded as desirable. In recent years, debate and popular concern have been curiously absent in a society which inhabits an urban environment largely created by the architectural profession.

On the evening when carbuncle was added to the critical vocabulary, there does not seem to have been reference to the state of new theatre building. Which gives CUE its cue to affirm that we think that the state of theatre architecture is looking healthy.

In the last thirty years, theatre has survived the attentions of proscenium abolitionists and black-box depressives. Stages have generally become more workable. Audience togetherness is decreasingly sacrificed for purity of sightline. The air castor has turned multipurpose from dream to reality. And some of the theatres even look inviting from the street.

Our architects (and theatre consultants?) still seem committed to polygonal geometry and the purity of functional structures. Shall we soon witness a rediscovery of the curve, perhaps even accompanied by a new awareness of the possible contribution of the decorative arts? Who knows, we may even see a judicious reassessment of the merits of fibrous plaster!

Golden Glyndebourne

In the fiftieth anniversary year of the Festival Opera House, delightfully if improbably located amidst the Sussex Downs, FRANCIS REID recalls his own Glyndebourne decade which began in the year of their Silver Jubilee.

My first contact with both Glyndebourne and Don Giovanni was from the gods' benches of Edinburgh's King's Theatre during the 1948 Festival. But my actual decision to work at Glyndebourne was not made until 1950. The idea occurred in the queue for gallery early doors - a long wait entertained by the comings and goings through the adjacent stage door, and rewarded with a perch in the very front row watching Beecham rehearse his Ariadne orchestra while an impatient house manager fretted to open the house with the (then) traditional blast on his whistle. But the moment of must came during a Cosi Fan Tutte: the Ebert/Rolf Gerard production that was to remain in the repertoire long enough for me to re-light more than a decade later.

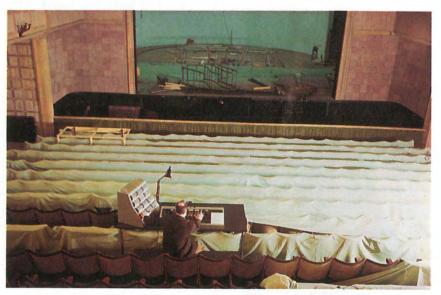
However, before I could even offer my services to Glyndebourne, there were some minor matters to get out of the way. For reasons that I have never quite understood, I was reading pure science at Edinburgh University. On the dubious principle that it would be tidier to graduate, I continued my unmotivated attempts to classify fossils and analyse chemical mixtures. My true education came from such activities as debating, and ultimately rejecting, the behaviourism that was the basis of my university's psychology teaching; from getting lost in the library's humanities stacks (to this day I am reluctant to use library indexes in case I miss the joy of random discovery); and above all, education was attending at least the three concerts or plays per week that were possible on my entertainments budget of five shillings (25p). (And those were the days before student standby reductions!)

After four years reading for a three year degree and having completed but 70% of the journey, the Minister for War (these were the days before political marketing men had re-labelled war as defence) suggested that I might care to assist the Royal Corps of Signals in some minor capacity like seeking out the dry joints in a communications device known as Wireless Set No 19. Fortunately this activity could be carried out at a crossroads leading to several German opera houses, so I was on my way to a closer understanding of music theatre.

On a December Saturday in 1954 I reported for assistant stage manager duty at Tonbridge Playhouse, and on the Sunday I wrote to Glyndebourne to inform them of my need to be allowed to assist them. The letter established contact with Douglas Craig, then Glyndebourne's Stage Director. and lead me to my operatic debut in 1956 with 'Opera for All' as ASM and the organ grinder in Il Tabarro. (Caryl Jenner was much displeased that her production manager should move to this Arts Council touring unit at the very time that her own ACGB grant was slashed.) At the end of this six month's tour - learning to light with five spots and two floods, a bigger rig than I had ever had before - I was interviewed for, but not appointed to, a Glyndebourne stage management vacancy. This was fortunate because an opportunity arose to work for two Aldeburgh seasons where the intimate scale of the English Opera Group was a more appropriate place to continue learning my operatic trade by working closely with the likes of Britten, Piper, Cranko and Osbert Lancaster. When the lighting summons came from Glyndebourne, I was stage managing a Stanley Baxter Mother

Goosè. These were the days when, even in a Freddie Carpenter production for Howard & Wyndham, the stage management had to go on in sundry roles. So survival included learning a lot about timing by feeding the comedians. If they did not get a laugh, it was my fault — just as it was if they did not get a laugh because of the timing of a black-out.

In retrospect it seems ridiculous that I turned down this approach from Glyndebourne. I had no particular wish to specialise in lighting. As a stage manager I had been getting increasingly involved in the lighting process but I did so mainly because I liked going to bed at night and lighting rehearsals seemed to go on for ever. They needed a bit of organisation. Three months later, Easter 1959, Glyndebourne rang again. My planned English Opera Group European grand tour had collapsed. I had a massive dental abscess. I was an overdrawn father at a time when banks were less sympathetic than they are now. The prospect of Carl Ebert's final season as Artistic Director of Glyndebourne (their joint 25th anniversary) suddenly seemed irresistible even if I would have to turn my hand to



The author at the stalls rehearsal desk of the Strand 120-way (4-preset, 3-group) thyristor control (1964-76)

lighting!

The job was a new one for which the title Lighting Manager had been coined (or so I believe — historians, please: does any theatre programme show a credit for lighting manager prior to 1959?). This was one of the first of a series of reorganisational moves that Glyndebourne recognised as a necessary accompaniment to the change from a single director (Ebert) to separate directors for the individual productions in the season. Rationalisation is an essential feature of lighting in such a repertoire.

I went for interview in my kilt. I am quite sure that I did not measure up to Moran Caplat's vision of a lighting manager, but an opera boss who has run his own submarine is prepared to live dangerously. I think that Douglas Craig, by now his assistant, believed in me rather more than I believed in myself. So I was in. What helped considerably, I am sure, is that rehearsals were due to start in a fortnight and there seemed to be no alternative candidate on the immediate scene.

If I seem to have taken an inordinately long time to reach this point in the story, it is because I have been so frequently asked 'How does one become a lighting designer?' I believe that there are two alternative routes: determination or destiny. It may have been determination that took me to Glyndebourne, but it must have been destiny that took me as a lighting designer.

Since its opening in 1934, the Glyndebourne emphasis had been on ensemble developed through an intensity of rehearsal over an extended period that was unique then and is difficult to sustain in today's age of jet-mobile singers, directors and designers. Ensemble of music and acting was extended to the performance of the lighting by a team drawn from John Christie's various Glyndebourne Estate enterprises. This team of a dozen or so included gardners, blacksmiths, plumbers and motor mechanics in addition to electricians. Their committment was total and several had a sensitivity for focusing that I have never seen exceeded. Carl Ebert was his own lighting designer and the process was carried out in a series of lighting rehearsals of legendary length, followed by a fine tuning over the many dress rehearsals which were part of the Glyndebourne pursuit of ensemble excellence.

The ratio of crew to lights and the accessibility, via bridges, to virtually the entire rig both backstage and front-of-house enabled the lighting design to be developed in a free and experimental way. Several of the commentators on the current Glyndebourne jubilee have suggested that set design was a weakness in Glyndebourne's early years, and this is to a large extent borne out by many of the designs and photographs that remain. However, lighting at Glynde-bourne, especially in the 1930s and in the immediate post-war period, had a degree of artistic and technical sophistication that was well ahead of the norm for the time. Consequently the totality of the visual experience of a Glyndebourne performance was much more than can be judged from the images that remain.

The Glyndebourne lighting installation that I met in 1959 was virtually identical in spirit to that of 1934, and many of the details of the rig were unchanged - neither the positions nor the original 500w, 1kW and 2kW planoconvex focus spots. The only postwar equipment was six pattern 43 and a couple of dozen pattern 23. Even the foh lighting bridges carried some 2kW PC focus spots, although several of them became Patt 53 within a fortnight - they had to because ES 2kW lamps were fortunately becoming scarce. Clockwork effects discs were finally phased out in 1960. The stage bridges had chunky transformers and an electrics dungeon was an aladdin's cave of discarded 30 volt equipment of all kinds including projectors. I wish my archaeological interests had developed earlier — although they would doubtless have had an inhibiting effect upon the thirst for lighting development that was not only the spirit of the times, but appropriate for an under-30 with the scent of theatrical reform in his nostrils.

Glyndebourne never had an architect in the conventional sense. John Christie acted as his own masterbuilder. The foundations were marked out by his Head Gardener and Christie supervised his own estate's 'Ringmer Building Works' in the original construction and the annual redevelopments that were always a feature and still are. I suspect that it was only the requirements of planning legislation that led to anything being put on paper prior to this annual rebuilding. Certainly any plans during my period tended to be treated as tentative and subject to considerable modification at site meetings. On several occasions the foreman handed me a piece of chalk to mark out my requirements.

Unfortunately the theatre was originally built too close to the house with the consequence that whereas the OP (stage right) could be continuously expanded, PS (stage left) remained extremely constricted. The effect of this on the working of the stage will be obvious but it also explains why, at least in my day, the moon tended to rise rather more frequently from OP than it did from prompt. Designers have even been known to accommodate this in their painting!

Having built the opera house with his own funds and sustained the pre-war seasons from the same source, it is hardly surprising that John Christie had something of a passion for saving electricity. (Tales of his blacking out the ladies shortly after the fall of the curtain are no mere apocrypha!). I believe it was this rather than artistic considerations that were his prime motivation in importing a Siemens Bordoni transformer as a lighting control, rather than dissipate a lot of expensive electricity through traditional English resistance dimmers.

Thus Glyndebourne acquired, in 1934, a lighting control where every dimmer accepted a load variation of 40w to 6kW. The sliders of the Bordoni were connected by tracker wires to a four bank Micklewright where every scale had mechanical limiting devices to allow presetting of 36 discrete up and down limits per channel. This was certainly not British standard practice. Nor was up for out and down for full! There were no individual circuit switches but the incoming mains were both switched and protected by a separate massive oil-filled circuit breaker for each of the three phases. The 60 outgoing circuits were patchable to any of the theatres outlet sockets by means of a single pole jack plug (all neutrals were bonded together throughout the entire production lighting). This patching frame also included low-voltage transformers enabling 24volt practicals to be fed via any dips or fly plugs.

The downstage booms were iron pipes of an appropriately massive girth to support cat



The author with the Siemens/Micklewright 60-way Bordoni transformer control (1934-63)

ladders and the flexibility of the boom arms ensured that the four pattern 23's suffered in nearly every scene change. There was an intriguing wheeled pyramid tower (about 14 ft) which was climbable to change colour and focus, but the pans and tilts of the three patt 23's at its apex could be adjusted from ground level — the pans by rods and the tilts by bicycle brake linkages.

The massive rendered brick cyclorama still had its banks of horizon floods with long sausage lamps (the ones that are more familiar on British stages as the light source in water ripple boxes). Indeed they remained throughout my Glyndebourne decade because the cyclorama was so far

behind the acting area that it did not require much intensity. My only cyc changes were to have it painted a much lighter shade of blue, and to replace the cloud machine with a backlighting bar. This cloud machine from, I believe, London's Plaza cinetheatre, was a typical grand German affair of slides, lenses and mirrors. In 1959 it could still light (with 3kW GES lamp) and rotate, but no longer had motorised control of the mirror angles. Its existence, like the steam boilers understage, was all part of John Christie's early Wagnerian ambitions. To theatre archaeologists it is an important example of an era in staging: looking at it, we should remember firstly that it was

added a couple of years after the main stage was completed and secondly that the proscenium was subsequently widened in the early 1950s.

The installation that I found in 1959 was something that had been superb prewar and, with some minor post-war adjustments, was still adequate for the productions in the particularly Ebert repertoire when designed, as most were, by Oliver Messel. But by the second production of the season, with the arrival of Günther Rennert, I was into a development programme which started with rented 2kW fresnels (the old heavily massive Strand Patt 102) which were not only rigged daily on ladders but rerigged in different positions during the long interval.

The long interval of around 1½ hours can be quite an influence on design and technology at Glyndebourne. It offers the possibility of a total stage reset and a total light refocus in the middle of the performance if required. This often resulted in focusing the entire rig three times per day — at 9 for rehearsal, 3 for performance and around 7 during the interval. I do firmly believe that this constant refocusing was one of the major factors in my learning to design stage lighting — observation of cause and effect in relation to a gradual refining of pan, tilt and focus at each rehearsal and performance.

The days were long and so were the weeks. It was well into the 1960s before we had enough stage and electrics crew to institute a weekly day off. So a 7-day 80-hour week is my memory of these early summers. However we did get to bed at night. Except for about six non-performance Mondays each season when we let lighting rehearsals run through until about 2 am, no work was done after the fall of the curtain apart from striking the final scene. Designers were required to work within the constraints of the following timetable:

8 am. Stage crew set stage. 9 am. Light crew prepare. 9.30 am. Stage handed over for focussing. 10.30 am. Commence rehearsal. 1 pm. Stage crew break. 1.30 pm. Finish rehearsal. 2 pm. Light crew break. Stage crew change to performance. Light crew prepare. 3 pm. 3.30 pm. Stage handed over for focussing. Tea if set-up complete. 4.30 pm. 5 approx. Performance. 7-8.30 pm. Interval change. 10 pm. Curtain falls. by 10.15 Stage dark,

Although never formally admitted by anyone, the final decision on whether a design would meet this requirement really lay in the hands of the legendary Jock Gough who rejoiced in the programme credit of 'Chief Theatre Technician and Director of Scenic Construction'. My relations with Jock might be described as sweet and sour —

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often going to the extremes of both in the same moment. I certainly respected him and I suspect that he may even have come to believe that I was not totally impossible which was a great accolade for such a master carpenter to bestow on a humble Mozartian masquerading as an electrician. He regarded spotlights as a needless extravagance, although a single one for the moon was acceptable. Therefore he went to great pains to ensure that cloths were hung properly in relation to the lighting battens. Jock had a splendid eye for hanging a show and would adjust the hanging plot to minimise changeovers by a process he called 'finessing'.

On moving into the sixties, the prime need - the desperate need - was foh side lighting positions. So for the 1960 season a tentative start (tentative in relation to accoustic uncertainty) was made by opening three ports a side in the sloping ceiling over the orchestra pit. By 1962 these had been linked to form slots and some of the Pattern 23s, the only available profile spot that would fit the space, replaced by Reiche and Vogel 500w 24volt beamlights to give the directional oomph that most of the German inspired productions required. On a very low check and with double 52, they could also varnish the more softly atmospheric designs of Emmanuele Luzzatti, Lohrenzo Ghiglia and Henry Bardon.

Beamlights (the smaller 250w 24v type) were also fitted to the downstage booms to link up with the directional quality of the foh. These booms were rebuilt as scaffolding structures which protected the spots from the ravages of scene changes. (I am too polite to say scene shifters.) Some of the first Patt 264s off the production line were added in due course. (Fred Bentham and Paul Weston had brought prototypes to Glyndebourne for long throw testing on a day when the red paint on the soft shutters was still wet.) The pattern 243/2kW was introduced as soon as it appeared and winched ladders were installed with pole

operated 223s.

By 1963 we had a radio microphone for talking to the board while focusing on the stage. A low frequency loop was less successful because of the steelwork on the bridges. However a similar loop was used with great success in that season's new Magic Flute for stage management cueing of the eight students who provided the motive power for the periakti whose variable geometry formed Luzatti's design. These periakti were of simple three flat construction: once inside the operators completed their triangles with a simple line and cleat throw. The scene changes were magically kaleidoscopic - particularly the entrance of the Queen of the Night who came forward from the 60 feet depth of the cyc on a high truck (if I remember aright, some of the costume was built on to the truck although it appeared to be worn). As the truck moved down, the periakti pirouetted and formed a new pattern. Much of the magic came from a relatively new device which was so new that we called it 'dapples' - if the word 'gobo' was around, I had not heard it. I first

used gobos in Pelleas and Melisande in 1962. I was first aware of them during the previous winter at Covent Garden. When was the first gobo production in Britain? Anyone prepared to claim an earlier use than Covent Garden in 1961? The technique certainly caused much interest in directors and designers from other parts of Europe, including Germany and Italy, where profile spotlights were then extremely rare.

The 1962 Pelleas and Melisande was one of the great experiences of my life until then and since. Debussy's musical idiom is not one which particularly stimulates my senses and Maeterlinck's characters do not command my emotional involvement. So I was able to approach the work in a fairly objective way. It is a curious feature of my personal psychology that I work much better on scripts and scores that I have no particular passion for - when working on Mozart, Handel and the like, I continually stop working to listen to the music!

This Pelleas was Carl Ebert's final production. Working with Ebert was the realisation of that student dream in the Edinburgh gallery queue. I got to Glyndebourne just in time to be on the perimeter of his new Rosenkavalir and to be associated with revivals of the Mozart/Messel repertoire when he would occasionally take over the direction of a rehearsal and increase the committment and understanding of all present. Everyone referred to him as 'The Professor' and addressed him as 'Professor'. He never imposed: he only drew out. And that applied not just to the performers but to all of us who supported the performers in their projection. I have a clear memory of an extended late Pelleas lighting rehearsal - the kind where a large crew have been awaiting a scene change for so long that they have lost hope. There is a problem about the look of a scene. I do not have the solution. The professor walks to and fro with me through the layers of forest gauze. With score in hand, he talks about Maeterlinck's imagery and Debussy's response. We arrive at the well. He becomes Melisande (Ebert came to direction from acting.) I realise what we need. He already knew the required colour and direction of the light but he did not tell me - he drew it out.

The first night was the climax of my lighting career. The Maestro, Vittorio Gui, called me over to the seat in the wings where he had a habit of holding court while awaiting his call to the pit. 'Francis' he began, 'I knew Debussy and he would be very happy'. And he went to speak of the lighting in a way which modesty forbids me even to remember. This was the peak: from now on there was only one way my career could go down! Twenty years on, if faced with the same sets and costumes, I could resolve many technical details to a higher degree of finish. But I doubt if I could contribute at the same level of sheer total gut-rightness that Ebert and Gui drew from us all.

The professor's successor was Günther Rennert (invariably addressed as Dr Rennert) a brilliant stylist who could create productions of great emotional intensity and did so particularly with Fidelio and L'incoronazione di Poppea. He directed with a depth of concentration that often brought an atmosphere of tension to his rehearsals, with character being imposed rather developed from within. Unlike Ebert, Rennert was not an actor. Michael Redgrave was, and he rehearsed with an incredible economy of words and actions. With Henry Bardon as designer and the incomparable Charles Bravery as painter, I did my technical personal best ever on Redgrave's Werther: pity I did not like the opera much! I was much more influenced by Glyndebourne's all-time critical low - Jeptha. It was cut and re-arranged, and Rennert's staging of 'Waft her, Angels, to the Sky' (including some ghastly lighting that he imposed on me at that point) made me cringe. But living with any Handel staging for weeks, even in such a bowdlerised form and sometimes with my eyes shut, changed my life thereafter in a way that is evident from my diaries and my record shelves.

The other frequent director of the late sixties was Franco Enriquez who infuriated some parts of the Glyndebourne establishment with his total disregard for logic. He extemporised with a pure theatre instinct that was not, alas, infallible. There were many witty ideas and lovely images, but characters were often too lightly shaded. But he was very good for me – taught me to trust my eye rather than my logic.

In technical terms, I suppose that the new lighting board of 1964 was the big event of Glyndebourne decade. Fantastica' was the lable bestowed by Enriquez and Luzzati. It may seem pretty basic in these microprocessor times but, twenty years ago, thyristors, four presets, flicker-free grouping and stalls control were a whole new world. But all that has been described elsewhere.*

My final season was 1968. The surface reason was money. But I should really have left a couple of seasons earlier. There is a limit to the length of time that anyone can be creative in the same theatre. For a lighting designer, the danger is falling into the use of safe formulas that have been found to work. And that danger is particularly acute when working under the pressures of daily reper-

toire changeover.

I did not have the emotional strength to go to Glyndebourne on the final night of my contract - the opening night of the Anna Boleyna revival. But psychosomatics came to my rescue so that my body rebelled sufficiently to give my mind and soul a rational excuse for not taking a formal farewell. I have been back (to see dress rehearsals) less than half-a-dozen times, and not for seven years. Life in the theatre is like that. Glyndebourne was a major influence in my life - I hope that I made some tiny contribution to it.

^{*} Tabs Vol 22 No 2 (June 1964) & Vol 35 No 2 (Summer 1977), Glyndebourne Programme Book

JOE DAVIS - THE PIONEER

FRED BENTHAM

With the death of Joe Davis, early this July, just after conducting a lighting rehearsal of 42nd Street at Drury Lane, the theatre has lost a real pioneer and those who knew him, a friend who was great company. For many years Joe had suffered a heart condition which used to shoot him off to the local emergency ward from time to time. There to recover as quickly as he could and it was back to lighting a show — another to make up his total of nearly six hundred.

Joe Davis was the first in this country to have his name regularly on the programme as 'doing' the lighting - in other words, as the lighting designer. It is commonplace today to sum up progress in stage lighting in terms of the changes in technology; particularly, the ones concerning dimmers and their control. In an ambience of chips and computers the man who decides in what manner all this equipment should be deployed, who lights the show or paints the stage with light - put it how you like could be submerged. That this is not so is in large part due to Joe Davis, founder in 1961 and first chairman of the Society of British Theatre Lighting Designers; later its Life President, a role he continued when it was enlarged as the Association of Lighting Designers a couple of years ago.

Joe had a marvellous memory and was a born raconteur and his own words, in an article he wrote for Tabs of December 1963 provide a witty but authentic evocation of his first job at the time of his thirteenth

birthday:

'In December, 1925, accompanied by my mother, I presented myself at the premises of the Strand Electric, 24 Floral Street, to be interviewed for a 'position'. A position seemed a little more attractive than a job! My mother having convinced the foreman of the sheet metal shop that he would never regret having the foresight to employ such a potential gift to industry (subsequent events have proven this was not strictly true), I was engaged at the princely sum of

3½d. per hour.

"I was introduced to a world of cowled gas rings, gas fumes and the pungent smell of spirits of salts as the hot soldering irons were plunged into the pot, the hammering of rivets, sheet metal of every size and shape and tea in large tin mugs, cheese cake and bread and dripping - the staple diet for the tea breaks. The tin mug was made by each tinsmith to his own capacity and design. The shop produced every type of lantern used in those days and the craftsmanship was of a very high standard. From very scanty drawings they could produce a flambeau, candelabra, trick boxes, intri-cate signs and chandeliers that looked real, and, of course, tin mugs.

After 18 months Joe left this to work in Strand's outside fit-up department; which meant that by 1928 he was "going out on tour with productions of various managements, such as C.B. Cochran, Julian Wylie,

Clayton & Waller and others as fit-up electrician rigging and setting all the equip-ment." Today the job would be called production electrician and the backstage photograph of the Palace, Manchester, in 1933 shows him (on the left) during the fitup for Gay Hussar. For it's time this was a very big musical and in an interview for Sightline in 1976 he described it and the techniques of those times in some detail:

"We managed to get sixteen Patt 43's, the old focus spotlight, on the No 1 Bar which was pretty good going. On the perches we had 43's on stands to crosslight the downstage area but there were no booms. You must remember that what you were dealing with in those days was a very different style of production. The scene painting was of such a quality that you could use an even wash from a batten and the shadows and details were there - sunlight, depth and perspective. There was no question, as today, of using the lamps to make real shadows of realistic scenery. The sets were mainly of canvas and timber and painted with such artistry that you could create practically any effect with the battens, coloured to enhance the skill of the painter.

'You had no problem of staffing. There could be as many as twelve electricians and up to four operators on the main switchboard. An operator had to be an acrobat or an octopus to execute cross fades and blackouts with a fast return. It was not unusual for the production staff to work two or three all-nights and rates of pay were low even by the standards of the day. Heads of Departments, as we were called, were paid a basic salary irrespective of the hours we worked. In a musical there were usually two men on the arcs — the old 40 amp type — in the bio-box or at the corners of the Upper Circle. Arcs on the perches had ceased of course but there would be men there to change the colours or the setting of the Patt 43's. It was the same on the stage. You could have as many stage floods or mobile spots as you wanted for backings or backcloths. I favoured the use of Towers as did Hassard Short and these were moved and repositioned by men detailed to them.

Hassard Short was an American producer (as we called directors then) who did Waltzes from Vienna in August 1931 at the old Alhambra theatre, Leicester Square. It took the town by storm, as they say, but to us technicians it was his use of massed spots on the circle front that caught our eye. This was a real first. Short's lighting was outstanding and Stop Press at The Adelphi in February 1935 was the peak of what could be done with lanterns of the type common before the new range of Pageants, Acting Areas and Mirror spots was introduced in my 1936 catalogue. It was sometime in 1932 that I first met Joe Davis, when he dropped in to see what the new Seecol demonstration theatre in Floral Street was like. Thereafter we never quite lost contact and although it was not always a matter of 'honeyed' words (how could it be in theatre!) between us, advancing years brought a genuine friendship. When together we often used to wonder what the lighting of shows in the days of such limited technical resources really had been like. Here is Joe on the

subject:

'I suppose that memory can play tricks but when I look back on the shows I saw and worked on in those days they were very well lit and had marvellous visual effects. I remember the last scene of Wylie's Good Companions when Jess Oakroyd is going off to Canada. There was a cloth painted black for the side of the liner. There were holes cut in it for portholes with two Patt 49's in Amber to light them up. There was a canvas gang plank — you could't walk up it of course. There was a bit of smoke, the sound of a ship's siren blown by an air cylinder and a few bits of rope and 19 Blue in the batten. Jess was discovered downstage with his back to the audience, looking up at the great liner. A follow spot in No. 17 steel blue picked him up and as he walked slowly upstage towards the gangplank the curtain came slowly down. So with great economy and simplicity you had all the atmosphere of a great liner leaving

'My interest in and appreciation of what can be done with lighting was really roused when working with Komisarjevsky. He was a stimulating producer, a designer in his own right and a creative and exciting lighting man. Then there was Blackbirds in 1936 where I clocked up two firsts. It was the first time I started to do drawings or layouts of what I was going to use before I went into a theatre and it was the first time my name actually went on the bill outside the theatre as responsible for the lighting.

This meticulous planning on paper in advance was for a long time peculiar to Joe's way of working, it is commonplace now. With few exceptions the pre-war shows even those in London - can be thought of as tours because the house facilities were so limited. Indeed some of the variety houses, provincial dates and super cinemas were much better equipped than a West End theatre: they had to be, in order to cope with the regular Monday change-over. A number of portable interlocking boards had almost always to be used wherever you went. These were 6-way and 12-way weighing 2 cwts and 3-cwts respectively; so although they were called 'portable interlockers' the word 'movable' was more appropriate. The big problem as Joe saw it -

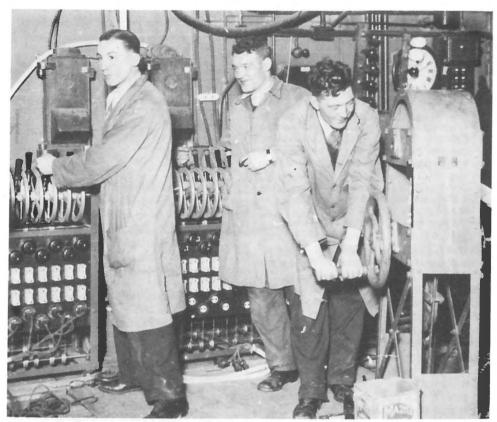
". . . was that if you took a show out of London on tour, or even across London to another theatre, you would be faced with different types of current, different voltages and different plugs and sockets. Varying voltages meant lamp changes to suit and the nature of the current affected the use of effects motors. All this and the continual

changing of plugs used a lot of time before you could even start to hang the equipment. In those days it was impossible to visualise the uniformity of equipment and control which we take for granted today."

With the arrival of the Grid so well exemplified by Battersea Power Station there was a change over to AC and the supply voltage tended towards a standard. It has to be put that way because it took many years and the chief engineers of the various area supply authorities still could exercise their own preference as to voltage. What the change-over did mean was that the old switchboards were replaced by dead front ones with a new electrical installation to match. Such boards were either Grand Masters or less expensive variants of the same idea. All, except the Covent Garden and Glyndebourne ones of 1934, were direct-operated and cumbersome for what they did so they had to be backstage in theatres. Curiously many of the boards they replaced had been remote control - the smelly liquid dimmers were housed in a room somewhere off or under the stage and a tracker wire linkage used. The obsession with battens as the backbone of any installation still tied up a large part of the houseboard so that in spite of the increase in its number of control-ways, this plus the greater use of spots on productions meant that not only did the need for portables remain but their numbers increased also. Remote control began to be accepted just after the war.

But it was not until well into the 1960s that a standard stage layout for the electrical installation came into being. This had long been the aim of some of us, both inside and outside Strand Electric, but it needed an Association of British Theatre Technicians to provide the ambience and status. The ABTT was launched in March 1961 and Joe Davis was the first elected chairman of their stage lighting committee, and layout went early on the agenda. Tabs first published that layout in December 1965 and states that the first installation went into the Apollo theatre, but I have been unable to track down the date. However, late in 1961 Joe resigned from that ABTT committee and devoted himself to the professional aspects represented by his SPTLD: that and Theatre Sound & Lighting Ltd. of which he was a founder and director tended to take any time he could spare from the actual process of lighting shows.

It had been in 1935 that he joined H.M. Tennent and "except for a season with the R.A.F." had "been in a constant state of production" ever since and even in the war "season" managed to get himself mixed up in shows, notably John Gielgud's Blithe Spirit and Hamlet tour of the Far East. Among other Hamlets, he did the Peter Brook one in Moscow in 1956. His work for Tennent's in the decade just after the war meant that not only did he light the majority of the important West End productions which originated in this country, such as Ring Round the Moon, The Lady's Not for Burning, Under Milk Wood and Irma la Douce; but he was responsible for adapting



Joe Davis, left, during fit-up for Gay Hussar at the Palace Manchester in 1933.

the lighting of Broadway shows over here to cope with our decidedly different equipment and techniques. Examples were A Streetcar Named Desire, Death of a Salesman, Oklahoma and West Side Story. I was able to see this technique of his in action to perfection in the case of My Fair Lady at Drury Lane in 1958, as I was on standby at the lighting rehearsals. It was a case of transposition in terms of a quite different set of instruments — among them that most eccentric of switchboards, the Light Console!

Around 1960 Joe Davis became freelance and that, if possible, seemed to involve him in even more work and often took him abroad. Among other things he became personal lighting director to Marlene Dietrich:

"In 1953 I received a telephone call from



Noel Coward at the Cafe du Paris. He

explained that Marlene Dietrich was to

appear in a season there, and the lighting

or perhaps summoned would be a more

appropriate term - to go and see if I could

help with her lighting problems.
"With great trepidation I went along and

was introduced to her. I had already been

was practically non-existent. I was asked -

Joe Davis lighting from the stalls, anytime and anywhere in 1980.

"All seemed to be well and her season was an enormous success, after which she left London and returned to Paris.
Although I did not know it at the time, it was the start of an association which has continued for nearly 22 years and has meant working in practically every major city in the world.
"She would normally attend lighting

rehearsal and stand in. This was an exacting exercise for both lighting and sound balance: it required setting up each state for a particular song and correcting levels and sometimes colours if she was not happy. She was critical but if, due to local conditions, certain units were not available she would accept my explanation with 'O.K.

Let's go on . . .

One can only speculate on the extraordinary range of makes and types of switchboards he encountered during his long career. And how to communicate with their operators: at first those shouting matches across the footlights or the message distorted in transit from mouth to mouth; then phone and inter-com systems until, finally, the operator himself alongside in the stalls with a panel truly portable. Everything from the downright primitive to the over-sophisticated: those decades in which to plot, re-plot and, above all, to go-back were time-boggling tasks right 'thru' to the instant 'punch-up' expected today.

On the visual side every spot and flood had, once upon a time, not only to be carefully masked itself but all tell-tale flares excluded: whereas from 1960 fully-frontal exposure has not only been excused but seems often to be de rigeur. However, whatever fashion or technology dictated and the director or designer demanded, Joe must have come to terms with it. But let him the Doyen, as we affectionately and rightly came to call him - sum up in his own

words:

"The most important preoccupation for me of pre-war years was the development of a relationship with the producer whose control of the production was absolute. It took a long time and people were suspicious because it was an age when the producer, as he was then called, liked to and did his own lighting and often very well. Even if it took a long time, labour was cheap. He was after all the only one who knew where his actors were going to be, what the mood was and what was going to happen at what time. Many of them were wary of the technical innovations in equipment and began to see that there was a benefit in having someone technical, and perhaps artistic, to allow them to concentrate on directing the actors.

Peter Brook, with whom I worked on many productions much later on, made a very shrewd remark. He said 'the lighting of a production is only as good as the design'. The point he was making is a very important one. If the equipment - the lanterns or instruments - is of the right type and hanging in the right position you can do anything you want to do. If you haven't got the right layout you can't produce the right results and you are in trouble."

The quotes come from Tin Mug by Joe Davis in Tabs Vol. 21, No 3, December 1963 and from an interview with him in Sightline, Vol. 10, No 2, Autumn 1976.

The Market Theatre **Johannesburg**

STEPHAN CHAMBERS

South African theatre has had a great deal of attention in Britain recently. Nearly 7,000 people saw the twenty five performances of Athol Fugard's A Lesson From Aloes at the National in 1981. More recently, Woza Albert! has achieved extraordinary success both in Edinburgh and London, Master Harold and the Boys has enjoyed critical and popular approval at the National and the musical Poppie Nongema is well received at the Riverside Studios. Before this there was The Blood Knot, the first South African play to win international critical acclaim, and earlier still, in 1974, there was the Royal Court's South African season which featured Sizwe Banzi is Dead and The Island, again by Fugard, both of which were hugely successful. These productions argue well for the state of South African drama and for the home of many of these productions: The Market Theatre in

Johannesburg. The Newton fruit market was built in 1913 to meet the demands of a fast growing city. Its steel girder structure was shipped from Britain and an octagonal building errected over the Fordsburg spring. In 1974 the fruit market moved to a different location and the steel girdered building was listed for demolition. The efforts of conservationists concerned to save the handsome building with its distinctive portico, and the interest of an experimental theatre company combined to rescue the building and it was put up for tender. The Company, founded by Barney Simon and Mannie Manim and established to break with bureaucratic and apartheid tradition, was quick to see the potential of the old fruit market and with the help of funds from various sources, won the tender. Renovation began in July 1975 when The Company moved into the market and made the new upstairs theatre its permanent home. They opened in 1976 with The Seagull and later in the same year the main auditorium opened with Peter Weiss' Marat-Sade. Two years later Pieter-Dirk Uys' play Die van Aardes van Grootoor was performed in the third auditorium, ironically named the Laager (an Afrikaans word for a white wagon enclosure). From these beginnings, The Market Theatre has expanded and flourished. It now houses three theatres, a bookshop, bar, restaurant, two galleries, a museum and a cabaret venue. Despite extensive renovation however, the building remains substantiallly unchanged. The girders of its steel structure rest on ball and socket joints which are still

visible at ground level in the main auditorium. The same theatre also still contains billboards advertising the fruit vendors who occupied the building from 1913 to 1974.

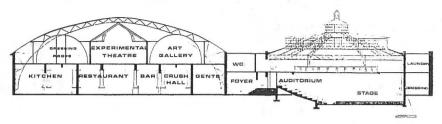
The success of The Market Theatre Company is largely due to its commitment to an artistic policy and to its adventurous administration. Dedicated to mixed casts, mixed audiences and plays which confront South Africa's manifest racial tensions, it provides a focus for difficult and developing identity. It draws on director Barney Simon's work in starved rural areas and brings together talent which, for political reasons, would otherwise find scarce outlet. Energetically administered by Mannie Manim, it remains resolutely committed to progress and integration. Manim has been criticised because of this, and The Market Theatre's concentration on black theatre questioned. He answers this criticism firmly: "To those critics who say they cannot face another black play at The Laager, I say that they will have to face another twenty, and another twenty after that.' Together with this strength of artistic purpose, which Manim characterises by five near synonyms: "enterprising, innovative, challenging, inviting and demanding", he combines a flair for publicity and fundraising. A flair which is essential in view of his own statement that The Market Theatre remains an embodiment of Grotowski's 'poor theatre', which needs to make up with talent and energy what it lacks in material resources. An acclaimed lighting designer who has lit 200 major productions in twenty years, Manim is ingenious in raising funds. A recent scheme, for example, invites the Market's patrons to "hug a pillar". To subscribe in other words, R25,000 over five



years and have their names engraved on one of the buildings pillars. Manim has also introduced a system whereby audiences underwrite productions for a share in the profits. This scheme was recently vindicated when a production of Children of a Lesser God was totally subscribed before opening. If such schemes continue to succeed and if the Market Theatre continues to offer internationally acclaimed productions, Manim's claim that The Market Theatre is heading for more prosperous times is surely justified, especially as such success appears to hold no danger for the artistic policy of the theatre. He says for example: 'I'd rather fail with a South African play than succeed with a British or American product. It would be a much more worthwhile way to go!"

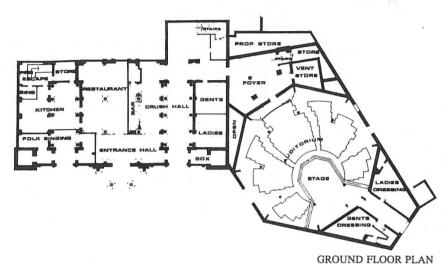
The three theatres which make up The Market Theatre complex, vary in size and design to meet the needs of different companies and different productions. The largest of the three venues is The Market Theatre itself, with a seating capacity of 520 people. It has flexible arena or thrust staging, raked seating in stalls and gallery and unrestricted sight lines from all seats in the house. The Market Theatre has no flying facilities, although in the past designers have suspended props. from the lighting grid overhead alongside lanterns and cycloramas. The present lighting system for the theatre consists of a Rank Strand Duet 11, 96 way central memory board with a backup fader wing pin matrix, through the dimmer control room which houses 72 dimmers in Rank Strand Permus Racks rated at 21/2 kw each (soon to be expanded to 96) to 90 outlets on the main grid, backstage barrels and dipboxes. This gives 100% patching facility in the Dimmer control room. The theatre's sound system consists of a Revox B77 reel to reel tape recorder, an Audio Specialist octave equaliser, a Cyclops Stereo 2 channel 200 watt amplifier and two Electrovoice PI 12/2 200 watt speakers (rms).

The studio theatre; Upstairs at the Market Theatre, does not have a permanent stage or



The Market Theatre Johannesburg

SECTION



PIRE
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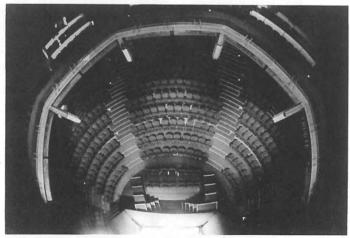
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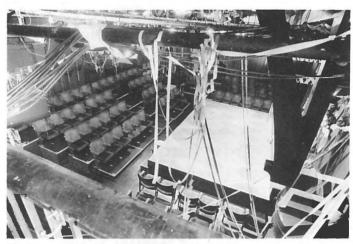
LAUNDE



The eastern facade and entrance to the Market Theatre complex in Johannesburg



The auditorium of the Market Theatre, photographed from above. This theatre, which used to be the Indian Fruit Market, seats up to 520 people, including the gallery seats.



The Upstairs Studio Theatre in the Market Theatre complex. This theatre seats up to 152 people, and can be changed into any format or shape.



The Laager Experimental Theatre is the smallest theatre in the complex. It is an experimental venue, that has a flexible stage and seating arrangement, and seats a maximum of 80 people.

auditorium layout. Both the stage and seating rostra can be broken up and moved around according to the requirements of various productions. Most of the productions mounted in the upstairs theatre, involve two basic layouts however. Either an end stage format with the stage raised to 90cm at one end of the auditorium with all seats facing the front of the stage in the manner of a proscenium arch format. This format is employed when a production requires considerable solid scenery. The other layout typically used 'upstairs at The Market Theatre' is an arena format with the

stage at floor level. As with the main auditorium, there are no flying facilities. The upstairs theatre, when arranged as described above, seats a maximum of 152. Its lighting is controlled by a 48 way Tempus M24 memory board with 100% patching facility (48 2½kw Tempus dimmers) to 50 outlets on the grid. The Tempus M24 memory board and its backup F.X. unit are both totally portable, making rigging and plotting in the auditorium more convenient and time-saving. The sound system consists of a Revox B77 reel to reel tape recorder, an amp. rack consisting of an octave equaliser,

a 4 way Mic/Line mixer and a mono 2 Channel 100 watt amplifier with 4 Electrovoice 50 watt Monitor speakers.

The Laager is the experimental venue of The Market Theatre complex, which again uses predominantly 'end stage' or arena formats. Its lighting facilities consist of a 12 way 2 pre-set manual dimmer board, with 24 outlets on the grid and its sound system is made up of a Teac Tape recorder reel to reel, a 50 watt Peavey mono amplifier and 2 Peavey speakers (50 watts). The Laager seats between 65 and 85 people, depending on the production and its layout.

The Market Theatre is in many ways an idealistic enterprise, surviving against all financial and political odds in a country where many still find the idea of multi-racial theatre a threat. Manim and Simon have survived such bigotry and the censor board meetings which are its bureaucratic manifestation, and continue to succeed despite, or perhaps because of, adversity. Their theatre has won 22 local theatrical awards so far and increased its box office by nearly 50% since 1982. This recent increase in popularity and profits will, says Manim, allow the Market to subsidise more experimental work in the Upstairs theatre and in the Laager, especially since Johannesburg Council has allowed the theatre a concessionary 'pepper corn' rent on the Market premises.

Production plans for the future include Othello, especially if Janet Suzman (an honoury patron of the Market) can play Desdemona. Generally however, Manim and Simon want "to concentrate on the work we do best, and are best known for, and enjoy the most." It appears then, that Britain can look forward to more exports from what has been called with some justification "the only truly national South African Theatre", which serves as a splendid example of successful independent theatre and as a fascinating barometer of the progressive changes initiated by theatre in South Africa

France, Production Manager, for their assistance & technical information.



Odd Enough or Down in Ringmer Someone Stirred

FREDERICK BENTHAM

On the first day of June this year a small cactus flowered in Shaftesbury Avenue: not the famed thespian avenue in London's West End but another, somewhere in Middlesex, to which I have retired more or less. My wife Ilse had bought the cactus in a Northamptonshire village nearly sixteen years ago but flower it would not. The point of drawing your attention to the curious incident of the cactus in the day-time becomes clear when I tell you that it was a Carl Ebert cactus. In a technical journal like CUE, Ebert is the great name to remember in Glyndebourne's Golden Jubilee season. To the musician the name would be Fritz Busch. It is these two who set the course for artistic excellence of production; but someone had to be odd enough to build an odd opera house in such an odd location in the first place.

The name Christie popped-up, literally for it was on a lift, in my school days. The local Bernstein house was the Empire Willesden — the name Granada came later. Sitting in the front row of the circle it was possible to see Francis Soames playing

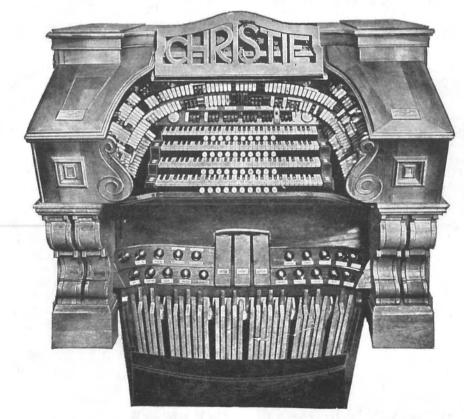
away for the silent second features without a single sheet of music on the desk. There can be no doubt that my one-man console control idea was born there. My interest in the cinema organ grew and soon I was reading everything about them I could find. The odd thing about the Christies was that whereas Comptons were built by Compton and Wurlitzers by Wurlitzer, they were built by Hill, Norman & Beard. Although my first real job was under Basil Davis in the cinema building world, I still did not become aware that the chairman and source of energy behind that firm from 1923 was a certain John Christie, ex-schoolmaster at Eton. Further that as my interest in organ consoles grew his was on the wane.

The man Christie arrived in the Strand Electric fittings showroom as I was sitting there — a lone soul in the slack summertime of 1932. As I recall, he did not make himself known: I was young and a nobody whereas he obviously wasn't. He said he was building an opera house and the object of his visits, there were to be several, seemed to be to tell me how unsuitable our Strand equipment was for it. Even the well-known

optical wave effect, which used to make our customers goggle, was no good as the waves merely surged and would not roll up the beach. When the new shining chromiumplated Grand Master at last completed the installation in our Seecol demonstration theatre he was equally scornful as I stood with my back to the thing. The only people who had the right kind of control and all other equipment were the Germans and enthusiastic descriptions of Teutonic wonders would follow. All this was hard to take as I had fallen for the German type of lighting layout while still at school; but when it came to control even they had got it wrong. I knew very well, by then, that there was only one man who had the right idea when it came to that - and that was myself!

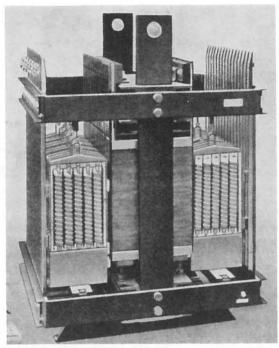
By that time I was aware that my eccentric visitor's name was Christie but although I had my Light Console layout and circuits on the drawing board, I thought it tactless to mention it as I wanted Comptons to make it. The reason had to do with mechanics. I had learned from a book* on the Cinema Organ published that year that only they and the Austin company in United States had allelectric action, the others used electropneumatics. This meant wind at the console to move the stopkeys (circuit-selectors) for piston (group-preset) and cancel action. Also the stopkeys were better, as they had a second touch and larger tabs for clearer labelling - all important in those distant days before circuits were identified by numbers. The truth was that on the technical and manufacturing side Compton were way ahead of Christie and Wurlitzer. One has only to look at their very early installation of a bakelite moulding machine in their own factory, the cross-bar relay and the setter relay for instant group-memory.

Subsequent reading about John Christie has shown me two things. First, that during the tenure of his office as managing director of Hill, Norman & Beard he went all out to improve the technical side of their organs. And second, that at the time he used to lecture me in the Seecol theatre; instead of one crackpot, myself, there were two crackpots there! Both of us were equally ignorant of the practical problems of staging Wagner with whose works we were quite besotted. John Christie was at that time around fifty, Fred Bentham was twenty-one. Christie had position and authority plus wealth, travelled

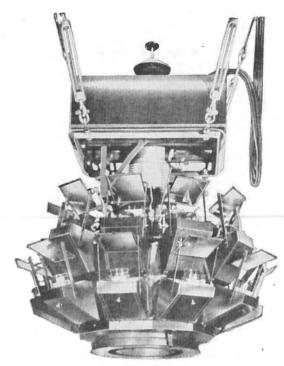


Organ console for Regal Marble Arch, 1928

^{*} The Cinema and Theatre Organ by Reginald Whitworth: Musical Opinion 1932.



German multi-slider auto-transformer dimmer, c. 1934: resistances are to avoid dead shorts between taps



Schwabe 2-tier 3-kw cloud machine

widely, knew German opera houses including Bayreuth well; whereas Bentham was limited to what he had read of these plus Henry Wood's Monday Wagner Nights at the Queen's Hall Proms and the like, together with a few 12-inch gramophone records.

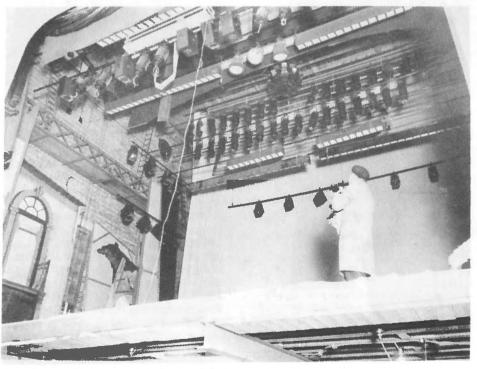
It is both necessary and easy for me in writing of *those* times to think of that Fred in the third person. Anyone who has attained over-mature years will know the feeling. Some things remain vivid and bits of paper turn up which prompt or set one musing; but there remain great gaps as to what that chap,

who was oneself, thought and did and why. I do know that young Bentham was obsessed with the idea of replacing the plump casts and the crude scenery and effects, he had learned about, by Appia inspired settings and lighting. The latter to change to express the mood of the music. Music Drama would become Colour Music. This is a convenient but rotten expression because variation of form and tempo of change were (are!) more important than colour: anyway there were to be no singers or actors to *clutter-up* the stage. The nearest I had got to this had been to improvise to the wireless broadcasts of

Good Friday Music and other chunks of Parsifal in my model theatre. After my Light Console was working in the Seecol theatre 'B' Bear enthusiastically set up a regular audience, the Light Console Society, to explore this art form and such things as Forest Murmurs, Dawn & Siegfried's Journey to the Rhine together with his Funeral March went into the repertoire. But, while it was a case of using that chromium-plated Grand Master, it was Albert Ketelby and Eric Coates — such stuff as cinema interludes were made on.

A cinema-exhibitor approach, seems to have coloured Christie's thoughts on the opera orchestra problem - a small orchestra could be enlarged by use of the organ. For a film, such as the Emil Jannings Faust, the organ used to be used solo for the second feature etc. but join the band to fillin for the feature film. It seems to have been the technical side especially the lighting which fascinated him; but, unlike me, not as an inventor. All the requisite lighting equipment existed. Not here in England, the stuff made here was hopeless: it was the German Schwabe system complete with a great cyclorama and pros. bridge-perch array which held the key to everything. Backed up, of course, by the standard compact regulator with levers at 1%-inch centres to operate dimmers remotely by long stretches of tracker-wire over pulleys. The dimmers could be tall-frame resistances tapped to a vertical linear commutator: or, much better, a large transformer with multi-slider commutation all around it. Post the second war these have been generally referred to as Bordoni transformers, reputedly after the Italian inventor. What is certain is that all that equipment was much more expensive than anything Strand Electric then could dare to make for the U.K. market.

Expense did not deter John Christie. The German system went into Glyndebourne



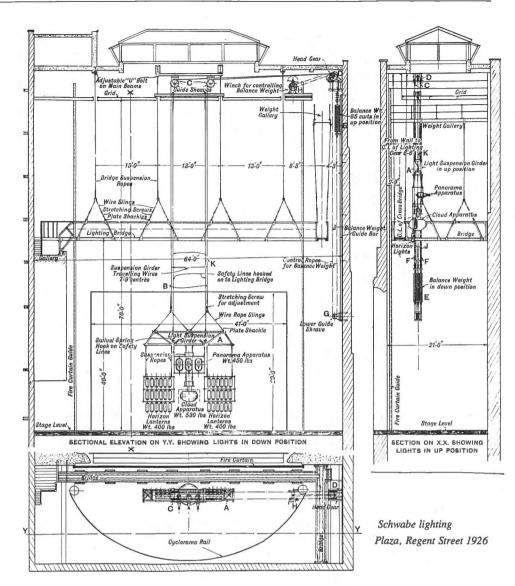
Glyndebourne stage lighting 1934 from orchestra pit

with a Bordoni transformer as the dimmers. For some reason the regulator was not German but appeared to me to have been made by Mickelwright of Alperton, a small firm which made switchboards for Strand's various oppositions. The mechanical facilities were very limited compared to the genuine German article. The reader must bear in mind that when the Glyndebourne opera house was completed and opened for its first season at the end of May 1932 it was much smaller both backstage and out-front than what we have come to know over the years; and one cannot think of it, even as it is today, with a pros. opening of under 30-ft as anything but on the small side for opera. How Christie could ever have conceived that Wagner was a practical proposition for 1932 can only be explained in terms of absolute faith in the powers of German stage lighting. Get that right and all things were possible!

A photograph of the Glyndebourne backstage in The Times Weekly Edition taken shortly before the place opened shows everything German with the exception of the compartment battens which look like Strand B-type, L.G. Applebee, manager of the Theatre Lighting Dept. for so long, must have had a go at selling Christie something - it would be quite unlike him not to. In any case, the famous Schwabe double-tier cloud machine ex-Plaza cinema Regent Street turned up in 'my' showroom for overhaul by our effects expert Frank Weston. I was not told, but someone must have arranged it. All of a sudden, it was hauled up on the outside crane to hang among the large crystal chandeliers for some weeks while Frank tinkered with it or got his assistant Eddie Biddle to do things to it. None of John Christie's visits coincided with its stay there perhaps the notion of a Teutonic breakdown was distasteful.

There were diverter mirrors to the ten lenses in the bottom tier driven via axles & bevel gearing from one motor and eight in the top tier driven from another motor in the same manner. A third motor rotated the whole machine. Each lens was a high quality objective and plus its individual cloud slide and condenser constituted a projector, only the 3-kW lamp being common to all. It was an elaborate and very expensive machine, proper in the context of the great German stages but absurd in the cramped confines of the Plaza cinema. Who on earth managed to persuade them that this, complete with horizon lanterns etc, was appropriate to a cinema stage only 21-ft. deep is not known. The GEC were the Schwabe agents in the twenties, so perhaps it was H. Lester Groom the Heidelbergscarred manager of their stage lighting department.

The object of the tier motors was to ride the clouds over each other for greater effect but this stuff had been badly damaged and was stripped off. It is important to put the Glyndebourne lighting in its proper context. Listening to John Christie at the time and long afterwards, one might imagine that the rest of the U.K. merely slopped light all over the place using just battens and floats.





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Schwabe Horizon Flood

It is true that theatres had only the basics and that almost everything important had to be hired for a show, but it could be and was. Not even the Schwabe installation was unique, Basil Dean had been using such equipment at the St. Martin's in 1923 and in 1924 for his superbly lit A Midsummer Night's Dream at Drury Lane which I can still conjure up in my mind's eye. There was Terence Gray's Cambridge Festival theatre of the twenties and White Horse Inn at the London Coliseum in 1931 had a complete cyc and its Schwabe lighting. All C.B. Cochran's shows were properly lit and staged. Even the tiny Westminster theatre (1931) had a permanent cyc with an

appropriate Strand installation which Molly McArthur was able to use with remarkable effect in its opening years.

Above all, exactly one month before Glyndebourne opened for the first time the Royal Opera House under Beecham inaugurated its entirely new stage lighting installation with brand new productions of Beethoven's Fidelio and Wagner's Ring. It is curious that even I, who was up there on the cyc end of the control and brought face to face with the practical side of staging opera for the first time, had forgotten until this point of the article the historic relationship of the two installations. There at Covent Garden was for the first time the Hasait cloth cyc from grid to floor encompassing the main stage with the associated pros. bridge and perch structure. Having described it very fully a couple of years ago** it must suffice here to say that no part of it came from Germany, it and its unique (literally) remote control was by Strand Electric.

No credit for any part of that installation can be claimed by myself but whereas in time I was to 'do' Covent Garden, those other gardens down in Ringmer have kept themselves clear of Benthamism. Even when in 1964 they had at last to pension off the Bordoni, unlike Covent Garden who — coincidentally — did the same with their 1934 control that year, they resisted any control of mine. Instead of a system C/AE

desk they insisted that Strand make a control desk to the design of their Lighting Manager — a man called Francis Reid!***

Looking back in this Golden Jubilee year to those strange but not brief encounters of nigh on fifty-two years ago, one cannot help wondering what the story would have been if Hill, Norman & Beard had been my chosen organ builder. Would my first Light Console have been in Glyndebourne - and if so would the espousal to electropneumatics have blighted its career elsewhere. As it was, John Christie never had a good word to say for it. I have a clear memory of an Illuminating Engineering Society visit there in which the members formed a square on the upper lawn while an impromptu tennis match of words went on between he and I with Applebee as umpire great fun. However, when Carl Ebert in 1948 sat down at the console in the London Palladium he declared after a solemn pause: - "All my life I have dreamed of something like this." And shortly after we installed one for him with all the other stage lighting equipment in his opera house in Ankara. Back at Glyndebourne - I have recalled one achievement to make a worthy conclusion to this strange tale. The year was 1976, I think: that year I was among those who, granted official dispensation because of the intense heat, removed our dinnerjackets and enjoyed the opera in our shirt sleeves!

*** That control and the ones that preceded it and succeeded it were described by Francis Reid in Tabs Vol 35, No 2 1977 page 3 et seq

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TRANSMOGRIFICATION

As the last dynamo quiescent falls
And fades the flowing kilowatt hours
Enter developers, walking the marble halls
Possessed of magic planning powers.
Avaunt! the turbines, coal and elevators
Behold! the pleasure dome that flowers
Babel in place of humming alternators
Henceforth will fill our leisure hours.

On learning that Sir Giles Gilbert Scott's 1933 masterpiece is to become a leisure centre.

^{**} Famous Strand jobs of the past: Tabs, Vol 39, No 1

Museo Cerrado in Barcelona

FRANCIS REID travels hopefully

CUE readers may have noticed that the location of theatres and performing arts museums exerts some influence upon my travel plans. Whereas the prospect of a theatrical experience rarely affects my choice of destination (I wish that I could afford such an ultimate in gracious living!), it can certainly cause me to stopover and possibly travel by an indirect route. Alas the theatric tourist trail is so poorly charted that hopeful travel must needs be preceded by considerable detective work. And even when the existence of a theatre collection is established, there can be uncertainty as to whether it is a research archive, a permanent display of ephemera, a space for alternating exhibitions or a permutation of these

Assorted clues suggested that Barcelona offered solid prospects for theatrical pleasure. A theatre sleuth pores over the small print accreditations in illustrated books and several reproduced images suggested that the *Museo de Arte Escenico* (also known as *Museo Arte Y Espectaculos*, because Catalonia is bilingual) is not only a collection of goodies but is dramatically housed in a Gaudí palace.

A 1980 tourist brochure carried the warning 'closed for reforms', so I telephoned the Tourist Office in Barcelona. They confirmed that the museum was open and gave me the visiting hours. *Opera* magazine's listings promised a *Seraglio* performance at the Liceo and so I was off. On arrival in Barcelona, the listings in the current 'Guia del Ocio' (a weekly what's on) confirmed the opening times. These were also displayed, somewhat dustily, at the closed entrance to the Palacio Guell whose facade was scaffolded and shrouded. The gentleman in the tourist office, although sympathetic, could only point to his printed information.

Now whereas others might mutter, gnash and even palpitate, the theatric tourist sighs and finds a bar with a good sightline to the nearest box-office to await its opening at the end of siesta. My reward was an alcoholic haze and a seat for the Gran Teatro Del Liceo.

The Gran Teatro Del Liceo is a grand opera house in the truly monumental league. All is gilt, red plush and grandeur. Some of the grandeur, particularly in the box passages is faded, even slightly tatty, and all the more theatrical as a result. Opened in 1847, incinerated in 1861 and rebuilt in 1862 — always in April — the Liceo appears to remain close to its original form apart from the formation of stalls boxes in 1883 and some new decorative treatments particularly to the proscenium arch in 1908 and foyer ceilings in 1945.

The Liceo is one of a rather small and special group of the world's theatres: the ones which are properly appreciated for

their architectural merit. Historic theatres generally — and their interiors particularly — are often neglected by those who are in a position to influence or even formulate civic pride. But there appears to be no such lack of appreciation of architectural significance in Barcelona. A large format hundred page paperback with two hundred colour illustrations is published in many languages including English, and you do not need to attend a performance or track down a specialist bookseller to buy it. The book's illustrations are particularly strong in architectural images with some ninety photographs, prints and paintings showing architectural detail.

There can be no denying the accuracy of the photographic eye and we must surely all wish that the camera had been available to record the fullness of history. However it is frequently the artist's eye that offers a more perceptive understanding of the past since its image selection is influenced by all the varying circumstances and attitudes then current. It is not so much what succeeding generations saw that is so important as what they thought they saw. With a building basically unchanged over a long period, it is the engraver and the painter, juxtaposed with plans and photographs and our own eyes, who give us an insight into the intagibles of performances long past.

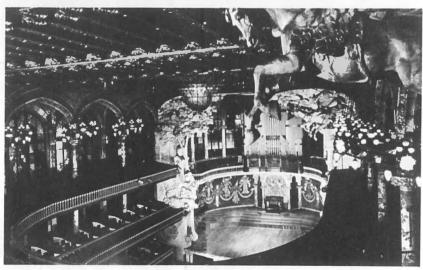
As always, it is auditorium lighting which causes most difficulty in trying to achieve one's personal perception of the ambience of a former age. The houselighting is today very bright and it all comes from 9-light hanging branches liberally bestowed upon all tier fronts. Old illustrations show chandeliers for balls. But performances?

My stalls seat was splendidly comfortable

– a cast iron frame, much lacquered in
brown, supported red plush which was as
generously padded as my own person – and
there was a foot rest to compensate for the



The Gran Teatro Del Liceo - all in gilt, red plush and grandeur



The Palau concert hall - a stimulating house for performances



The delightfully original pay box at the Palau

combination of chair height and the rake of the black varnished bare floorboards. The prompt box and the float trough are very ornate and the pit rail an exuberant essay in wrought iron — yet the proscenium arch is surprisingly unstressed in comparison with many younger theatres designed with proscenium barrier breaking in the brief. The tiers are, of course, shallow and the boxes contain the fruits of a century's exploration of seating ergonomics.

A welcoming theatre: even such intimately fragile Mozart as El Rapte Del Serrall survives (if only just) despite the vastness of the house. The Liceo is no theatre for wasting your interval in the bar. It is much more fun to watch the foyers and corridors which reek with historical atmosphere arising from the detailing of every fixture and fitting. Of particular delight are the glimpses of the anterooms to the boxes, each generous in space and individual in furnishing — exuberant temples of the woodcarver's and upholsterer's arts.

But Barcelona's most stimulating house for performances is the 1908 *Palau* concert hall. It boldly embraces every decorative art, particularly those of mason, plasterer, glazier and ceramicist. A straight line is never used if a curve is even remotely possible. Presumably geometric architects dislike it as much as I dislike geometric architecture? Palau renewed my belief in the importance of a non-structural decorative approach to theatre architecture.

And as to that performing art which is particularly indigenous to Spain? . . . well, the *Museo Taurino* was closed. I walked twice around the Bull Ring and could not even find a sign to the museum. (Yes, I know that there are two bull rings and I was at the right one, the *Monumental*, and I walked round the other one as well, and I did it during published opening hours!)

I will continue stopping over in Barcelona from manana to manana until I find the Theatre Museum open and report again. Meanwhile, would anyone passing through that city, please let me know how the builders are progressing.

STAGE DESIGN

DAVID FINGLETON

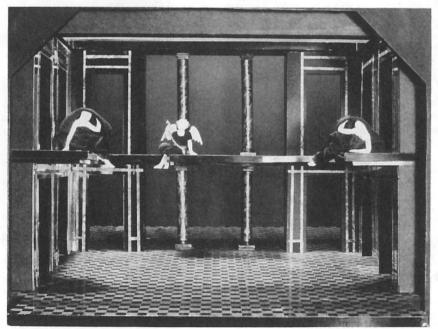
A triumph of documentary design at Glyndebourne; style and glamour at Sadlers Wells, but a disappointing Aida at Covent Garden.

As Roy Strong makes clear in his authoritative and stimulating essay 'The Rule of Taste' in Glyndebourne: A Celebration (Jonathan Cape £12.50), published to celebrate the 50th Anniversary of the founding of the Festival Opera, design was not initially Glyndebourne's strongest suit. This could be seen very clearly in the excellent exhibition of design at Glyndebourne over the half century to be found in the opera house's foyer during the festival season. Those original, rather dim designs by Hamish Wilson and Kenneth Green took some little time to give way to the altogether more imaginative work of first Caspar Neher, then Rolf Gerard, Oliver Messel, John Piper, and Leslie Hurry. But from the fifties onwards, although there has naturally been the occasional failure (Erté's Der Rosenkavalier was a recent and conspicuous case in point), Glyndebourne's reputation for the quality of both design and execution has been second to no opera house in the

It is pleasant therefore to report that this 50th anniversary season has well maintained the level of excellence. Both new productions have benefitted from the sheer quality that sets Glyndebourne apart from other less painstaking opera houses, and both designers were working at the peak of their very considerable powers. For Sir Peter Hall's new production of

Monteverdi's L'Incoronazione di Poppea he and his habitual designer, John Bury, had sensibly avoided the temptation to set the opera in ancient Rome, and instead had plumped for Venice, the composer's city, in his own period, the mid-seventeenth century. John Bury's elegant galleried setting was thus classical Venetian baroque, the costumes likewise, and Bury himself was responsible for the exquisitely subtle lighting which, combined with his very strong sense of colour and period costumes were enormously impressive conjured up impressions of paintings by Tintoretto and Tiepolo. There is no question that over the past fifteen years Hall and Bury have achieved their finest work at Glyndebourne: one only had to see the immensely strong revival of their marvellous 1973 production of Mozart's Le Nozze di Figaro to be reminded of the consistency of their visual intelligence, and as I write their enchanting production of Britten's A Midsummer Night's Dream still awaits its August revival. If only the two men could work at this level at the National Theatre, but conditions must, alas, be rather different

Glyndebourne's other new production was their first ever staging of Richard Strauss's *Arabella*, produced by John Cox and designed by Julia Trevelyan Oman, who was working there for the first time. It



Set model - The prologue L'incoronazione di Poppea. Director: Peter Hall, Design and Lighting: John Bury. Photograph Guy Gravett

isn't always a good idea to aim for realism in the opera house - often dangerous to do so in fact. But on this occasion Miss Trevelyan Oman had done her research very fully and offered us a valuable visual lesson in mid-19th century Viennese social history. In a fascinating note she explained that she had decided that the Viennese hotel in which Arabella opens is the centrally placed Hotel Munsch, near the Neuer Markt, with a casino on its ground floor to provide for Count Waldner's obsessive gambling, and her research had likewise elicited that the 2nd act 'Fiaker' ball would have been held in the Sperl ballroom which was fashionable at that time.

Using contemporary paintings and prints of both hotel and ballroom, which she found in Vienna, Miss Trevelyan Oman presented three strikingly vivid and realistic sets. The Waldners' hotel apartment with rather shabby "Biedermeier detail on earlier 18th century decoration" was precisely right for an aristocratic customer, down on his luck, being done a favour by a hotel which had likewise seen better times and needed his patronage. Likewise the ballroom, with its fine rococo staircase and dancefloor tucked away beneath it, right upstage, and with its gas globes and very bourgeoise decor was precisely right for the ball in question. The final act, back at the hotel, used the staircase again as the centre of a bustling and credible hotel foyer, complete with café section, stage left, with newspapers on mahogany frames hanging from the wall after customers had finished reading them. Every detail, as this one, throughout the opera, seemed totally accurate: the furniture, carpets and curtains, ornaments, bottles and glasses (those very Austrian ones with large bowls and chunky green stems), and of course the costumes too were impeccably

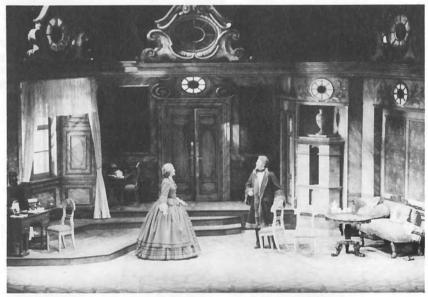
Amor, the God of Love looks down as Poppea rejects Ottone.

judged and equally good to look at. Robert Bryan's lighting was on a similar level — one truly had the impression of looking at gas-lit rooms, and I have seldom sat in a theatre and been so utterly convinced of the truth of what was taking place on stage. This was a triumph of documentary design.

Unfortunately the Royal Opera's final new production of the season at Covent Garden of Verdi's Aida was not a triumph of any kind, and certainly not of design. Indeed it surprises me that Jean-Pierre Ponnelle's truly wretched set designs were ever permitted by the management to get beyond the drawing-board or model, or that that same management should have ever permitted a director to do his own lighting when he was so manifestly ill-equipped to do so. The hideous papier mâché head of, presumably, Phthah, the succession of scruffy daguerrotype gauzes, and the trumpet concerto followed by gymnastic exhibition given by knicker-clad youngsters in front of one of them that constituted the

Triumphal Scene, might have been laughable had top-price seats not been costing almost £50, and had not Nicolas Georgiadis' perfectly serviceable sets for the previous production not still been extant. Why a new production of Aida anyway when new stagings of Verdi's Othello, Rigoletto, La Traviata, and Il Trovatore are all far more urgently needed? It is also a sad commentary on the state of design at Covent Garden that the coming season offers new productions of Wagner's Tannhauser and Richard Strauss's Ariadne auf Naxos, both produced there in the past decade in stagings so awful as to have been incapable of revival. We need better housekeeping than that in these harsh economic times, and perhaps Covent Garden could do with a design committee to reduce the risk of this kind of wastage.

It was a blessed relief after Aida to visit Sadler's Wells Theatre and see New Sadler's Wells Opera's latest Gilbert and Sullivan production, designed by Tim



Richard Strauss's Arabella produced by John Cox designed by Julia Trevelyan Oman. Every detail was researched and seemed totally accurate.



Arabella Act II. Robert Bryans lighting really gives the impression of looking into gaslit rooms. Photograph Guy Gravett.



Verdi's Aida at the Royal Opera House a new production designed and lit by Jean-Pierre Ponnelle. Photograph Clive Barda.





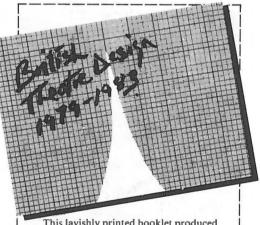
Costume design ideas by Pet Halmen for Aida. Photograph Donald Southern.



New Sadler's Wells Opera's latest Gilbert & Sullivan production HMS Pinafore. Set & costume designs by Tim Goodchild. Photograph: Fritz Curzon.

Goodchild for what must be a fraction of the cost of any opera seen at the Garden. Yet his sets and costumes for H.M.S. Pinafore had enormous style and glamour, as well as great wit and intelligence. Both the Pinafore's quarter deck, which served for most of the action, and the glorious final tableau of Trafalgar Square brimmed with inventiveness and highly skilled practicality, and his costumes were gloriously drawn. As both The Mikado and The Gondoliers, likewise designed Goodchild, were on a similar level of style and invention it can be seen just what an asset he is, not only to NSWO but also to stage design in general. That this is so could be appreciated by visiting an exhibition of his work at Merrifield Studios in Hampstead where Goodchild's designs for Gilbert and Sullivan, the Regent's Park open-air Midsummer Night's Dream, a Danish production of La Traviata, an Egyptian one of Antony and Cleopatra, Rice and Oliver's Blondel, My Fair Lady at the Adelphi, and even The Two Ronnies at the London Palladium could all be thorougly enjoyed.

Another recent source of enjoyment, as always, was the visit of Dance Theatre of Harlem to the London Coliseum. Their trademarks are enthusiasm and exuberance and so it is with their design. Geoffrey Holder's work for *Firebird*, transferred from Russian forest to tropical jungle with a glorious Douanier Rousseau backcloth and brilliantly coloured costumes, and for *Banda* with its immensely powerful atmosphere of Caribbean and Latin American Voodoo were cases in point. Not subtlety but colour and drama dominate, admirably complementing DTH's own dance style.



This lavishly printed booklet produced to coincide with the Theatre Design Exhibition presents a wide selection and a permanent record of British designers' work over the past four years. It contains more than 100 art reproductions of models of set designs, photographs of sets in performance and costumes, several in full colour.

A limited number of copies are still available at £4 including postage and packing from CUE, Kitemore House, Faringdon, Oxon. SN7 8HR.

REIDing SHELF

Would you like to CREATE YOUR OWN STAGE PROPS? With the help of Jacquie Govier I believe that even I could have a go. Words are used sparingly and instructively. Every page is liberally illustrated with tightly captioned line drawings and not one of these is there as mere art editor's graffiti. While there are specific instructions for making a wide range of specific props, the real worth of the book is in triggering the imagination by suggesting techniques. We are in that lovely old theatrical world of illusion and deception. In some staging fashions, only the real object is admitted; but glue, paper, string, plaster, polystyrene, paint and the ubiquitous egg box can create an artist's view that transcends mere reality. Prop making is an alliance of creative eye and skillfull hand. Jacquie Gover stimulates the latter and will be welcomed not just by embryonic stage propmakers but by anyone hoping to audition as a presenter for BBC TV's 'Blue Peter' - or indeed any parent trying to support a child motivated by that programme into being creative with the cardboard tube from a toilet roll.

I am tempted to review ALL TOGETHER NOW (An Alternative View of Theatre and the Community) by entering into debate with author Steve Gooch. But that debate might well fill this magazine (which would be an antisocial act towards its community of theatrical readers) and so I will merely recommend it most strongly as a thought stimulant for anyone with concern for drama's recent developments and future directions. Although Gooch argues from a firm stance. this is no aggressive polemic in the style of, say, John Pick's recent attempt to demolish the west end — reason rather than cynicsm is the flavour. Although I personally would gain little pleasure from being either audience or worker in Steve Gooch's ideal community playhouse, I believe in the need for such a theatre. But I would wish to see this achieved by development and expansion rather than by the restructuring that he suggests. Theatre is a wide church with room for an infinite variety of gospels. As a gospeller, Gooch is logical and persuasive.

A new edition of Lisa Appignanesi's definitive CABARET takes the story of this most undefinable of the performing and political arts into the eighties - Alexi Sayle et al. With an 1881 emergence in Paris, cabaret's first half century of development is particularly associated with Munich, Vienna and Berlin where every technique of the actor, singer, musician, artist and journalist joined in every possible mix in order to entertain and comment in an atmosphere that combined informality with a finely tuned appreciation of the erotic. More recently, its reaction against the formality of the mainstream established stage is echoed in today's 'alternative' or 'fringe' which employs many of the devices first explored in cabaret.

Lisa Appignanesi's positively illustrated book includes many lyrics. On reading material that was risked in more repressive times, one can only conclude that satirists have lost some of their bite. Surely it cannot be that extreme radical comment is no longer considered necessary?

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PRODUCT NEWS

CCT wins top Production Engineering Award

A ballot among 13,500 of Britain's senior Production Engineers gave CCT Theatre Lighting of Mitcham the top award for "the most innovative use of Production Automation".

John Schwiller, CCT's Research Director, received the award at a gala dinner



CCT's design team, John Schwiller (Director of Research) with Roger Beckett and Andy Gibson.

in Birmingham on June 19th which coincided with the first day of the International Machine Tool Exhibition at the National Exhibition Centre in Birmingham. This exhibition, one of the world's most important occasions for manufacturing technology, is held in the U.K. every four years. This is the first ever Production Engineering Award. It emphasises that production innovation is just as important as innovative design in helping Britain regain its leadership in manufacturing excellence. The awards were sponsored by *Machinery and Production Engineering Magazine* and editor Chris Powley echoed this thinking when discussing the competition.

The award to CCT centres on their use of a computer controlled automated punch press and bending machine, both of which are supported by a computer aided design system, developed by CCT in association with RADAN. These manufacturing and design resources help CCT not only to speed their manufacturing methods but to achieve the high quality of their product. There is little that CCT now manufacture which does not involve some aspect of this new technology.

Before the national ballot, entrants for the *Machinery* award were shortlisted by a panel of leading industrialists, chaired by John Collins, OBE, Director of Manufacturing Technology at TI Group Domestic Appliances. The awards were presented by Sir Alan Veale, Vice President of the Institution of Production Engineers.

As a major manufacturer of theatre and television lighting equipment, CCT products are exported throughout the world. Their computer controlled systems came on-stream in February 1981 and comprise a

RADAN Computational Software package, AMADA CNC Turret press and a K. & B. CNC Press Brake. CCT worked closely with RADAN, a British company, to develop design software tailored to the needs of light engineering.

Over a period of a year and a half an original and revolutionary sheet metal working technique was developed, appealing in its apparent simplicity and elegance, even to the Japanese press manufacturers.

The origami-like process enables a complex metal blank to be produced that can then be bent up by hand. Allied to this is a method of producing small components so as to reduce the labour required in subsequent processes to a minimum.

The expertise gained by CCT in this area has now become well known in British industry, and was one of the reasons why the Department of Trade and Industry selected them to take part in the CADCAM Awareness Scheme. This enables other U.K. industrialists to visit CCT's Mitcham factory for a day to learn first hand about the benefits of using computers in the design and manufacture of a bright new range of imaginative products.

For further information contact Philip Rose, CCT Theatre Lighting Ltd, Windsor House, 26 Willow Lane, Mitcham, Surrey CR4 ANA. Tel 01-640-3366.

Total "Eclipse" in Holland

"The Eclipse is a wonderful machine, so simple and quick to use. It never puts a foot wrong . . ." This is how Fritz Blomsma of Flashlight, Utrecht, describes the stunning performance of the Zero 88 Eclipse control at this year's Eurovision Song Contest. Flashlight of Holland supplied the 2 × 60-channel Eclipse desks and Rackmaster dimmers used for the programme including cartridge effects panels and programmable chasers.

Further information from Zero 88 Lighting Ltd, Hart Road, St. Albans, Herts AL1 1NA. 0727-33271.

A smile at the end of the 'phone

This is how Canford Audio describes its technical sales staff. Well might the customer smile too. Possessed of a catalogue like the latest one it becomes a pretty simple and straightforward operation for the sound man to identify exactly what he wants in this Aladdin's cave of sound equipment.

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supply most items from stock. To get on the mailing-list write to Canford Audio Ltd., Stargate Works, Ryton, Tyne and Wear NE40 3BR.

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105 Orange 106 Primary Red	Strong red effect	
107 Light Rose	As for 104	
109 Light Salmon	Interesting back lighting	
110 Middle Rose	Pleasing effects for theatrical lighting	
111 Dark Pink	Good for cycloramas	
113 Magenta	Very strong - used carefully for small areas on set	
115 Peacock Blue	Pleasing effect on sets, cyclorama cloths backlighting (ice rinks, galas, etc.)	
116 Medium Blue Green	0 0	
117 Steel Blue	Night effect used on sets – cycloramas	
118 Light Blue	Strong night effect	
119 Dark Blue	Mood effects – jazz clubs etc., back projection. Travelling matt blue	
120 Deep Blue 121 Lee Green	Pleasing effects for theatrical lighting Cycloramas	
122 Fern Green	Cycloramas – good for mood effect	
124 Dark Green	Cycloramas – good for back lighting	
126 Mauve	Cycloramas – good for back lighting	
127 Smokey Pink	Cycloramas – set lighting, disco's	
128 Bright Pink	Cycloramas – good for back lighting – strong effect	
130 Clear	Used in animation and projection work	
132 Medium Blue	Set lighting - travelling matt blue	
134 Golden Amber	Set lighting – amber with a touch of pink	
136 Pale Lavender	Set lighting – the subtlest of the lavenders	
137 Special Lavender	Set lighting – lavender with blue overtones	
138 Pale Green	Set lighting – less than half strength 121	
139 Primary Green	Set lighting	
141 Bright Blue	Set lighting – slightly darker than 118	
142 Pale Violet 143 Pale Navy Blue	Set lighting Set lighting – reduces intensity without too much blue	
144 No Colour Blue	Set lighting	
147 Apricot	Pleasing effects for theatrical lighting	
148 Bright Rose	Set lighting – half the strength of 113	
151 Gold Tint	Pleasing effects for theatrical lighting	
152 Pale Gold	Set lighting – subtle warm effect	
153 Pale Salmon	Set lighting	
154 Pale Rose	Pleasing effects for theatrical lighting	
156 Chocolate	Cyclorama cloths – ¾ back for dark skin tones	
157 Pink	Dance sequences. (Useful for softening white costumes without affecting skin tones)	
158 Deep Orange	Fire effect – sun sets	
159 No Colour Straw 161 Slate Blue	Warm effect – pale tones Set lighting – a very cold blue	
162 Bastard Amber	Set lighting – half the strength of 152	
164 Flame Red	Disco effect – developed for hell fire scenes	
165 Daylight Blue	Set lighting – keylight for moonlight effect	
166 Pale Red	Good for light entertainment	
170 Deep Lavender	Set lighting – disco's – theatres	
174 Dark Steel Blue	Set lighting - creates good moonlight shadows	
176 Loving Amber	Set lighting – pale pink enhances skin tones	
179 Chrome Orange	Combination of 1/2 CTO & double strength 104	
180 Dark Lavender	Pleasing ffects for theatrical lighting	
181 Congo Blue	Theatre and television effect lighting	
182 Light Red	Theatre and television effect lighting	
183 Moonlight Blue 184 Cosmetic Peach	Theatre and television effect lighting	
185 Cosmetic Burgundy	Pale tints complimentary to Key lighting Pale tints complimentary to Key lighting	
186 Cosmetic Silver Rose	Pale tints complimentary to Key lighting Pale tints complimentary to Key lighting	
187 Cosmetic Rouge	Pale tints complimentary to key lighting Pale tints complimentary to Key lighting	
188 Cosmetic Highlight	Pale tints complimentary to Key lighting	
189 Cosmetic Silver Moss	Pale tints complimentary to Key lighting	
190 Cosmetic Emerald	Pale tints complimentary to Key lighting	
191 Cosmetic Aqua Blue	Pale tints complimentary to Key lighting	
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LEE FILTERS

ADVANCING ART THROUGH ADVANCING SCIENCE

Lee Filters Limited,

Central Way, Walworth Industrial Estate, Andover, Hampshire SP10 5AN England. Tel: Andover (0264) 66245 Telex: 477259

Lee Northern, Old Wellington Road, Eccles, Nr. Manchester. Telephone: 061 707 6000

Lee Enterprises, 128 Wembley Park Drive, Wembley, Middlesex, HA9 8JE.
Telephone: 01 903 9811

