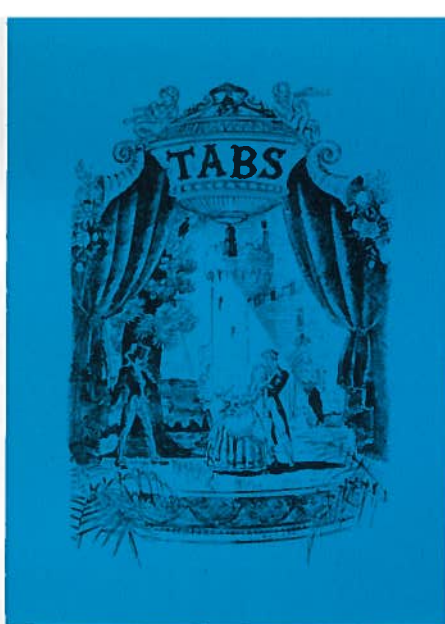


Tabo

Stage Lighting International
Summer 1975





TABS

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Light Training



In the redevelopment of the old St. Katharine's Docks in London, an opportunity has been taken to use lighting in a dramatic way.

The cover shows an 1828 warehouse lit in a manner to suggest that the warehouse is still in use with the odd windows and loading bays back lit and the cranes and old barges in the foreground highlighted to produce a rather dramatic effect reflected in the water.

The photograph above is an end-on shot of Ivory House which forms the centre piece to the yacht haven.

Photographs by: Chris J. Arthur of Transworld Eye.

Editor: Francis Reid

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It is the fashionable topic of the theatrical moment. Conferences—local, regional, national and international—find it an acceptable conferable problem and many are the resolutions to have more of it. But although there is much agreement that it should be done, there seems a lack of agreement on how to do it. "It" is the training of theatre technicians in general and lighting technicians in particular, and in the term *lighting technician*, we include anyone who converts electricity into light to create an environment for the projection of theatrical experience.

In the last 25 years or so developments in lighting design and lighting equipment have cross-fertilised one another to push the art forward. Many of the practitioners of stage lighting have been trained by growing up alongside the advancing techniques. It is much easier to grow up with something than be plunged into the end product. Or is it? The first training question must be whether we really should saddle the young technician with the product of our erratic thinking or just drop him in with a clear unprogrammed mind to bring fresh thinking to the problems.

For what can you programme with? Electricity is a small part of the story: the contemporary lighting technician must concern himself more with the light that comes out the front than the electricity that goes in the back. At the least, his electrical knowledge must be enough for safety; at the most, enough to discuss desirable improvements in a constructive way with equipment engineers.

There are two distinct components of the stage lighting process: the conception in purely lighting terms and the conversion into equipment hardware. Any training programme must concern itself with both these aspects for the aesthetic and nitty-gritty are complementary and neither is of any value on its own.

The two possible training formats are *in-service* and *pre-entry*. Informal in-service is the standard means of technical training. The informality being that any technician pitchforked into a theatre trains himself by watching and asking. In recent years this self-education has been simplified by the moving of lighting controls to positions with a view of the stage; relation

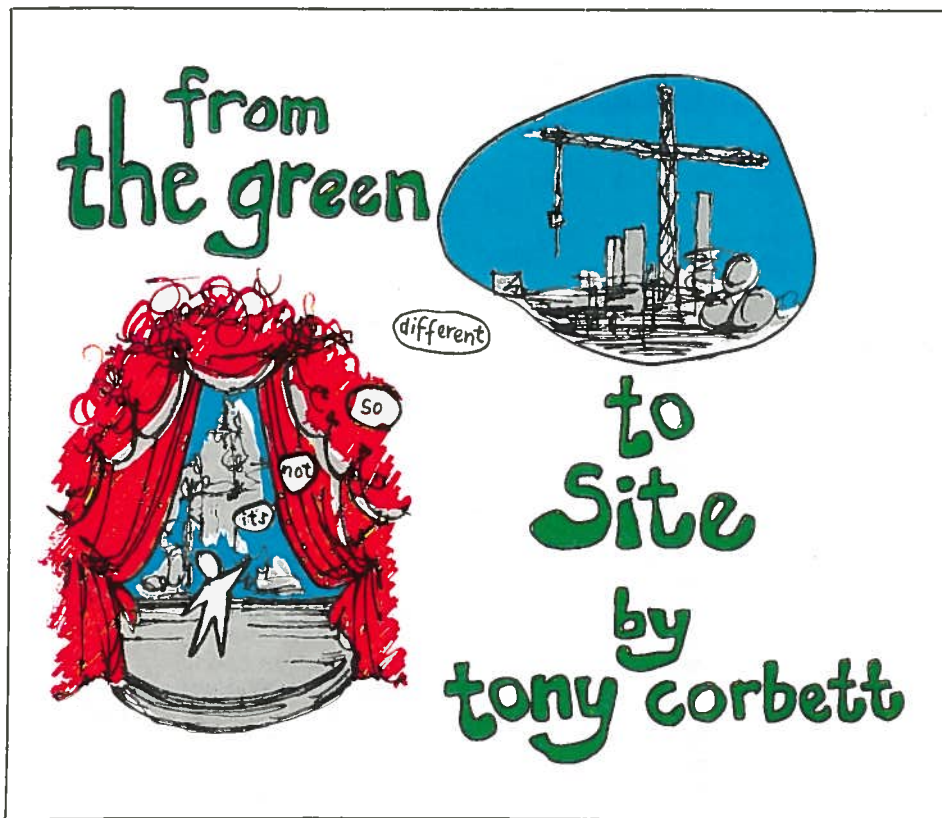
of cause and effect is probably the most fundamental method of learning the nitty-grittys of the lighting process. But the aesthetic purpose of the resulting lighting can remain a mystery enshrouded in a huddle of production desk figures.

Formal in-service training utilizing the theatre's own resources would seem possible within the larger theatre organisations, but does any major theatre ask its junior technicians to submit lighting plans for group discussion with the lighting designer before a new production and to join in a constructive post-mortem after opening?

Geographically it is difficult to organise day-release courses in anything but electrical basics. Short (two- or three-day) group seminars are attractive because they offer the possibility of a technician widening his experience of theatre forms and studying organisations with a different scope to his home base. But such sessions need to have an essentially practical format which is difficult to achieve in time/money budget terms even if suitable premises are available. Nevertheless, the ABTT have proved that it is possible to achieve something by basing such a seminar on the current production in a host theatre.

Pre-entry technical training suffers from almost always being a by-product of actor training. Drama schools have an inevitable show-case problem. Their effectiveness is judged on the short-term basis of student production quality rather than by long-term follow-up career assessment. Apart from the understandable compulsion to work towards audience satisfaction, the desire to show the student actor in his best light often involves a greater degree of direct staff participation than is desirable in a training situation.

And so what? We favour the establishment of a National Lighting Studio with equipment and staff where lighting can be demonstrated, and controlled exercises undertaken by both pre-entry and in-service technicians. The number and diversity of variables in lighting a production is too much for an embryonic lighting technician to assimilate in one go, but in a controlled situation, the problems can be increased gradually and the technician allowed to develop in an environment that remains in step with his evolution.



The restrictions and disciplines imposed on the architectural lighting consultant, very often have discouraged the theatre lighting designer from working in the architectural field, although he has often found himself involved in the exhibition or fashion worlds which are in many ways very akin to his work in the theatre. Any designer,* in whichever area he may be operating, has to conform to certain disciplines, and the theatre lighting designer is no exception to the rule. The disciplines vary from show to show and from theatre to theatre, but with the theatres becoming better equipped and taking advantage of the sophistication and development in modern stage lighting equipment, the designer is able to be considerably more adventurous in his visual thinking and general planning of the lighting layout from scene to scene. He can include many more of those ideas and touches of delicacy, which in the past had to be forgotten, to produce the ingenious lighting that can now be a major contribution to the success of a production. One is not attempting to paint too rosy a picture of the designer, because he still has his problems, many theatres remain badly equipped, and more is being demanded of him. The important thing is that there has been a major advance in the last few years, due to a realisation for the need for progress, producing a widening in the scope of the designer, making his life less awesome, and in a way helping to make the disciplines (although still very much present), become less of a burden.

The two major differences to working

in the architectural field are first, the unfortunate lack of advance in the sophistication of lighting equipment available on the market, especially in this country. Secondly, the means of suspension or fixing of the equipment and method of concealment. These, I am certain, are the two main reasons why the stage lighting designer rarely feels happy working within the rigid planes of brick, concrete and glass, along with the thought that the majority of fittings are to be embedded in twelve inches of concrete, and once set . . . there for life.

It is the single thought of this apparent inflexibility, and being unable to move it six inches along the bar, or add the odd one or two at a later stage, that creates the all too often fear of—leave well alone—when the designer is approached to design the lighting for a private residence or a restaurant. He is, however, certainly at an extreme advantage over the consultant being asked to light a professional production for the first time—no chance of survival, his first request would be for a complete set of curves (preferably containing photometric data), and a well oiled slide-rule, which might get him as far as the drawing board, but little further.

Adaptability is an important part of the lighting designer's make-up, able to work together and interpret other people's thoughts and ideas. Ready and prepared, all the time, for any changes that may occur, sets to be moved downstage by six feet, actors and whole scenes to be placed on levels never intended for their use, and directors that get to know those three or four circuit numbers. It produces an alert yet fluid mind, which through its apparent calmness and self-assurance (an absolute necessity) is able to produce the

most visually exciting and imaginative end result under sometimes extreme pressures. This discipline and versatility, combined with him always wanting to go one better, always wanting more and better equipment, never prepared to sit around and accept what is given to him, pushing and demanding all the time, is what is too often lacking in architectural lighting and is where the stage lighting designer can make a very important contribution.

The lack of sophistication in architectural lighting equipment has mainly been due to the lamp manufacturers producing very little in recent years that in any way has helped push architectural lighting ahead. It is worth remembering that in many respects the consultant is probably more dependent on the lamp source than the designer, since it is rare that he envelops it with specially designed reflectors, with great lens assemblies hung on the front to control the beam, because (a) concealment is usually a problem and hence the size of the unit is important; (b) heat build-up is always in the back of the consultant's mind—therefore the emphasis has tended to be on efficiency rather than on beam control; and (c) they can't afford it, both the initial capital cost, the running cost and maintenance cost. The two latter costs rarely need to be considered by the stage lighting designer, but for the consultant they are a major priority when designing a scheme, along with ease of maintenance. Unless it can be done relatively easily, the odds are against it getting done at all. This is the normal situation regarding maintenance, and it is well worth the designer remembering, if he moves out into the commercial world. Many designers have experienced this problem when working on exhibitions and have been extremely embarrassed, on taking their friends around (six weeks after the job was left for finished) and being confronted with something totally unrecognisable.

The only major developments in the lamp field in the last ten years (since the introduction of the 6 ft. fluorescent tube), has been in the discharge range of lamps, both mercury and sodium, producing more and more efficient light sources with more acceptable colour temperatures. . . . This has been great for the street lighting lads, the football pitch specialist, and the whizz-kids who have in the last year re-lit County Hall to such a high light level, that the astronauts these days even have to walk around the moon with dark glasses on, due to the vast quantities of wasted upward light. One would have thought the GLC to be more power conscious and more efficient in their use of resources. The tungsten-halogen lamps in both their linear and low voltage ranges have been the main innovation that has really assisted the architectural lighting consultant. There has been no development, of any significance, in the PAR range of lamps and it seems unlikely that there will be in the next ten years, with the present attitude of the manufacturers. But, it is also true, that they are not constantly being pressurised by the consultants, as the

* In order to avoid confusion, the Theatre Lighting Designer in places is referred to as the "Designer" and the Architectural Lighting Consultant as the "Consultant".

matrix programmer, but in the past it has tended only to be used in relatively large-scale exhibition and permanent display work. But with low voltage equipment appearing more and more on the market and being used in many differing types of installation, the dimmer switch not being able to cope with the situation, and with the price of good quality dimmers always on the increase, the small modular designed programmer unit allowing for easy expansion could start to find itself being installed in many situations, in order to keep the overall cost down and to get the required flexibility out of the installation. Many

each theatre, and each consisting of a series of large open spaces. The Olivier Theatre is served by six levels of foyer and the Lyttleton Theatre by three, and all the circuitry related to these levels has been brought back to a central control room, from where they are selected onto any of

Once the installation is complete, each programme is set up on a plug matrix, to give the desired lighting for each specific requirement.

Having spent a little time discussing the equipment situation, what procedure do we adopt and how do we use the equipment

OLIVIER THEATRE	
balcony foyer inc. bars	each level containing large open foyer space
foyer balcony inc. buffet bars	
main foyer inc. bars	LYTTLETON THEATRE
upper cloakroom	
restaurant	upper foyer inc. bar
CENTRAL CONTROL ROOM	int. foyer inc. bar * * *
lower cloakroom	lower foyer inc. box office cloakroom + bar
basement - to car parking	

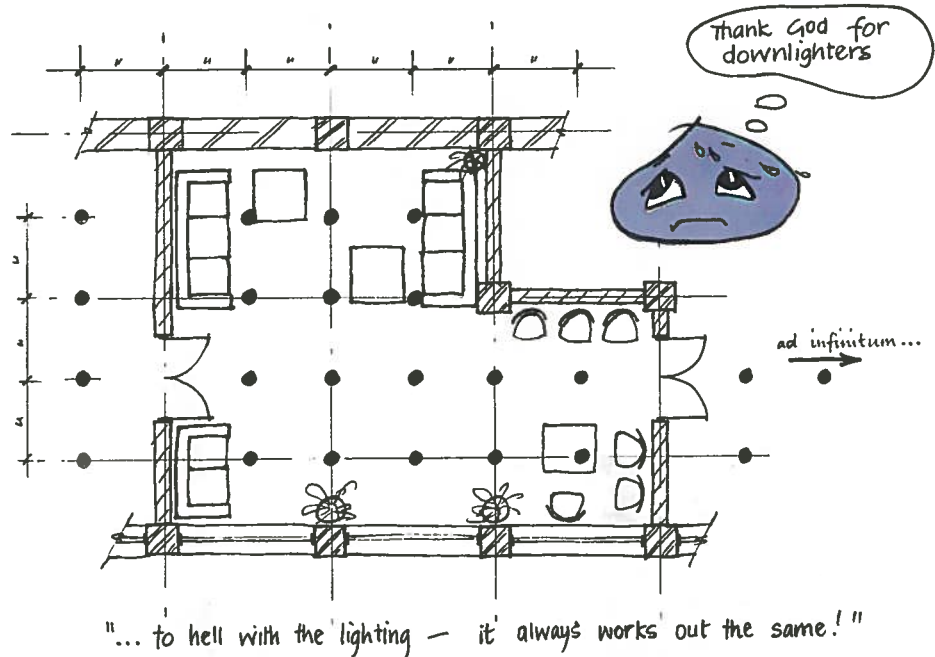
* night security	Olivier foyers 1	* * *	} programmes available
* cleaners	Olivier foyers 2	* * *	
* daytime ①	Lyttleton foyers 1	* * *	
* daytime ②	Lyttleton foyers 2	* * *	

* selection from stage door and central control
 * * selection from Olivier foyer and central control
 * * * selection from Lyttleton foyer and central control

PROGRAMME NOTES

- two daytime programmes for high ambient light level and low ambient light level.
- two programmes each for Olivier / Lyttleton foyers. One relatively low level during performance etc. and a second higher level.
- Programmes 3 & 4 can only be selected from central control.
- all corridor lighting leading to auditorium entrances, inc. lobbies, is controlled by the auditorium houselighting dimmers.

designers at this point may be getting worried with the thought of only three dimmer levels to select onto, with so many circuits of lighting doing totally different things. This is not necessarily a limitation, because a certain degree of the balancing can be done at source by either lamp wattage or colour. The simple programmer also has the advantage that in places such as restaurants, all the manager (or whoever's responsibility it is—which is, in many instances, questionable), has to do is to push a button to select whichever state he requires, i.e. relatively bright for the brisk lunchtime trade, normal evening lighting (a much lower and more relaxing state) with zero ambient light, evening lighting during the summer period for a relatively high ambient light level (if there are large areas of window), and maybe another state for parties or special occasions, etc. The overall visual result is then not dependent on how he sets it up, since it is all preset and is reproduced on selection of the appropriate push. On larger installations it becomes more and more essential to use some means of auto selection of circuit and level, and an example of its potential is in controlling the foyer lighting of the new National Theatre. The foyers are split into two main areas, one serving



eight programmes. The programmes are selected in the control room with certain programmes also being capable of remote control, i.e. night security and cleaners' lighting from the stage door. Programmes 1 and 2 are self cancelling on the selection of any other programme, but programmes 3-8 are additive and are operated through double action pushes. There are a total of approximately 160 circuits which are all fed via individual three-position switches OFF-MATRIX-ON, located adjacent to the programmer to enable manual over-ride. There are three types of circuits that the programmer is controlling:

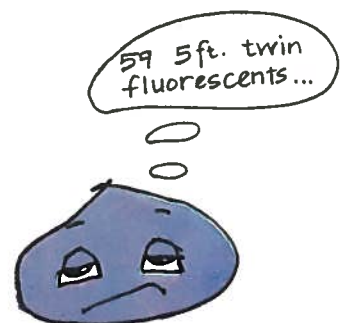
1. Switch circuits that the programmer is selecting either ON or OFF.
2. Direct dimmer circuits whose level is set on a preset pot for each programme, and the programmer selects the circuit to that level or OFF.
3. Indirect dimmer circuits where a number of circuits can be selected onto one of two dimmers or FULL. The dimmer levels again are set on a preset pot for each programme.

when designing the lighting for an architectural space, bearing in mind that the lighting may have to satisfy a number of differing uses and/or ambient light levels? As in the theatre, there are many different methods employed by the consultant, these generally falling into three main categories:

(a) Symmetrical Logic

The method of design most common to architects and interior designers. Plans of each space and level are examined in turn, and a series of blobs, representing lighting fittings, appear on an overlay grouped at about 8 ft. to 10 ft. centres outlining the form and shape of the architectural spaces, with little thought given to the visual end result when switched on. There then follows the inevitable thumbing through of catalogues to find the fitting that is the least obtrusive and will fit into the type of ceiling that has already been decided upon—what comes out of the front of the fitting is irrelevant, as long as the lines and rows of fittings

$$E = \frac{(4900)^2 \cdot 0.54 \cdot 0.8}{RA \cdot 5000}$$



adhere to a rigid pattern laid down by the architecture.

(b) Slide-rule Diagnosis

The most successful approach when designing the lighting for sports stadia and warehouse spaces. A technical approach, which has to be combined with an element of intuition and experience, to solve purely the technical and in no way the artistic problems in lighting. But this method is applied by many engineers and consultants to all lighting problems, irrespective of their nature. The area of the space is determined, an illumination level decided upon, the reflective value of all surface treatments evaluated, enough information for the slide-rule to produce an answer—a satisfactory answer to many.

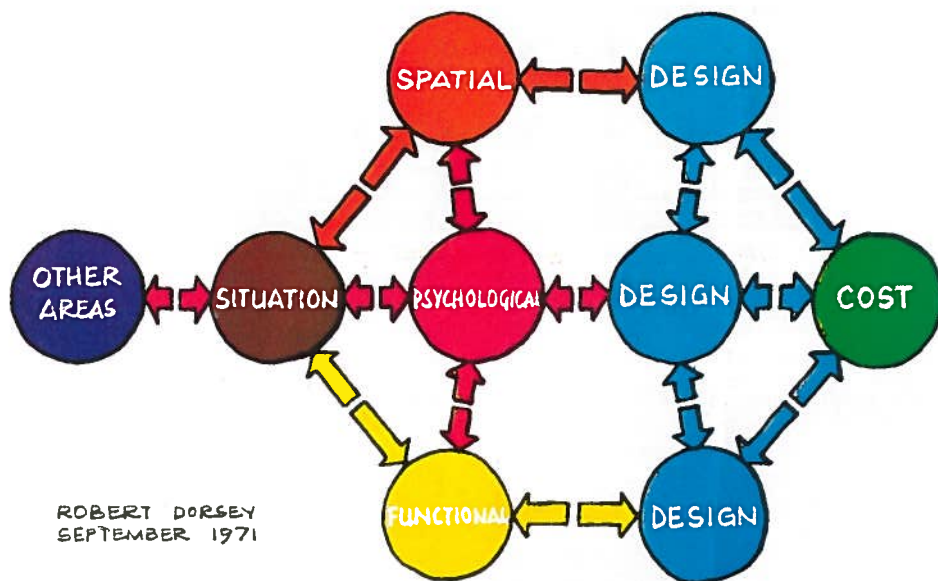
designer and other consultants to find out everything about the spaces imposed and requirements. The inter-relationship of spaces is examined and the architectural form understood. At this stage it is a series of volumes that are analysed as pieces of flowing sculpture; furniture and furnishings being considered at a much later stage. Major surface treatments are fed into the mind, together with important realisations such as the scale of each volume relative to that of the human being and step by step, the basic design philosophies emerge. Only the architecture and space usage have been examined, the initial thoughts being in pure accordance with the disciplines set by the master builder. Nothing has yet been put to paper and the catalogues have remained on their shelves.

Once this process is complete, some areas will relate fairly easily, others will present many problems, the total scheme is finally re-analysed to make sure the design with all its modifications retains fluidity and a relationship with its surrounds. Adjustments are made as necessary. Then comes the moment to put pencil to paper and to play around with methods and fittings to achieve the design thoughts, which are now implanted in the mind like a set of visual display cards. Consideration is given to illumination level, glare, running costs and all the other important factors, if only initially, to define the main type of source to be employed, i.e. tungsten, fluorescent, etc. Fittings are moved around like pawns on a chess board because the layout of fittings has to satisfy three main considerations, along with many secondary factors:

1. The layout must satisfy the lighting consultant's design concepts.
2. The layout must satisfy any limitations that may be imposed by the structure or other services, such as mechanical ducting, etc.
3. The layout has to visually relate to and become part of the surrounding surfaces and overall architecture.

And this is where the design process of the consultant and that of the designer (for a period) cease to run parallel paths. The stage lighting designer becomes the envy of any consultant, because he can hang lights virtually wherever he wants or from specially designed lighting positions, in any regular, or irregular pattern as required to satisfy the demands imposed upon him by the set, the positioning of the actors, the director's wishes, and the overall feel to the scene that has been worked out (occasionally negotiated) during the many get-togethers with the production team. He can even have some that follow the actors around—*c'est la vie*. All are hidden from the audience's view, if so required by dropping in the masking. And this usually takes second place if, when after the masking has been dropped in, a particular lantern can't get through to its target, after all attempts at brailing have failed.

For the consultant, the next stage is very much like setting out to do a jig-saw with, at first, nothing appearing to fit together, and yet after careful manipulation, and a degree of patience, it slowly pieces itself together by juggling the fittings around, and trying out different sequences and combinations. Either immovable objects like structural beams keep getting in the way, or the architect is insistent on all lighting fittings being recessed, and nothing surface mounted, and most common of all problems, not only do the spacing and layout of the fittings have to relate in some manner to the architectural form, but in many instances one is told, "You can't put anything there on that plane, because the architect wishes it to remain uninterrupted—but you can put them there," which is normally so far away and providing the wrong angle that it is of little use. However, the architect like the set designer, usually puts a great deal of



(c) Design Concept

A similar qualitative process to that employed in stage lighting. Where consideration is given to the overall form of the building, to its uses, and to the demands that will be imposed upon it. A scheme, as opposed to a rig, is drawn up to produce a harmony that embraces all these demands and disciplines and provide sufficient flexibility to enable a degree of change in use, etc., that that could happen at a later date—maybe not for four or five years.

There are many considerations, briefly touched on earlier, that are important factors in the final design prepared by the consultant, which rarely have to be considered when working in the theatre. They include the following, not listed in any order of priority:

1. Initial capital cost of installation.
2. Running cost of installation.
3. Maintenance cost of installation.
4. Ease of maintenance.
5. Illumination level.
6. Glare.
7. Heat build up.
8. Colour temperature.

The initial design process is very much one of detailed question and answer. Discussions take place with architect, interior

Time and the thought process then work in union, weighing up, and going over the broad outline proposals again and again, re-shaping where necessary, because the next stage of design is to take this series of ideas and apply them in greater detail to each area in turn. Individual requirements relating to each space are then analysed, fed into the network, and if necessary certain compromises applied in order to satisfy the particular set of new parameters, applying to each area.

Each space is analysed from the three important viewpoints:

1. The composition of the space (SPATIAL STATEMENT)
2. The character of the space (PSYCHOLOGICAL STATEMENT)
3. The use of the space (FUNCTIONAL STATEMENT)

At this stage the particular mood and feel to each area is considered, colours of fabrics and surfaces examined, focal points and highlights built into the scheme and elements of sparkle added if required. All the parameters effecting the design are gone over one by one, pulled apart and re-examined, in order to produce the total design concepts that then have to be translated into terms of equipment.

importance and emphasis on the lighting and comes back with other alternatives, and the problem to's and fro's from one camp to another, until finally it gets solved—maybe by working in some careful detail that is acceptable to the architect, or by accepting a compromise. At this stage, it is usual for there to be little or no information on where the furniture and furnishings (including wall hangings, etc.) are going, hence one's design must be fluid enough to

stage is important, in order to produce a scheme that can be adapted to take advantage of later information regarding design detail. One must mention at this juncture that although the consultant has the jig-saw problem with his design having to satisfy that, that and that, he does not have to contend with the actor, whom without the designer would have found his Utopia. Much discussion and thought must have been given to the perfect follow spot that produces a beam the shape of the actor's face, and controlled by radar, to follow the actor around wherever he goes producing the correct amount of light to balance in with the rest of the stage lighting.

The design process is best described by Robert Dorsey, in a paper that he gave to the CIE in 1971, by his design network which is shown. The important factor to remember is that each of these paths interact and proceeds to a design phase which then comes together to a conclusion. It is also important to relate each situation to other areas. Eventually all the paths converge on the quantitative process of pure evaluation. All cost criteria are examined and estimated and consideration is given to such things as the thermal and acoustical aspects of the total environment. And if necessary, i.e. if over budget or for any other reason, the whole design is reintroduced into the design network so as to achieve a final design scheme that satisfies all the conditions.

Too often even the basic design principles are ignored or forgotten in the preparation of the lighting layout, and as a result the final visual picture impaired. Downlighters are placed too close to vertical surfaces and untidy scalloping occurs; similarly wall-washers are often incorrectly positioned to give the required effect. Fluorescents concealed behind a pelmet are put too close to the surface or fabric they are to light, and all that is achieved is a narrow band of light at the top, and little or no light on the remainder of the surface. Continuous rimplighting is often broken at intervals with nasty shadows where the fluorescents join. These are all technical design faults and should never be allowed to occur, in fact they should be rule of thumb—but rarely are.

The consultant must consider lighting in terms of design and what he visually and functionally wishes to achieve, and not so much in terms of fittings. And in his overall concept scalloping on the wall or gaps between the fluorescents do not appear and hence must not in the final execution.

Finally, the fittings must be chosen for the quality and directional characteristic of the light they emit, as well as their decorative element, and the two have to be equally satisfied otherwise the design will suffer.

We all seem to have similar problems!

The author is Managing Director of Light Ltd. (a member of the Theatre Projects Group) specialising in architectural lighting design. Graphics prepared by Susan Eldridge of Light Ltd.

They Were No Stupider

By FREDERICK BENTHAM

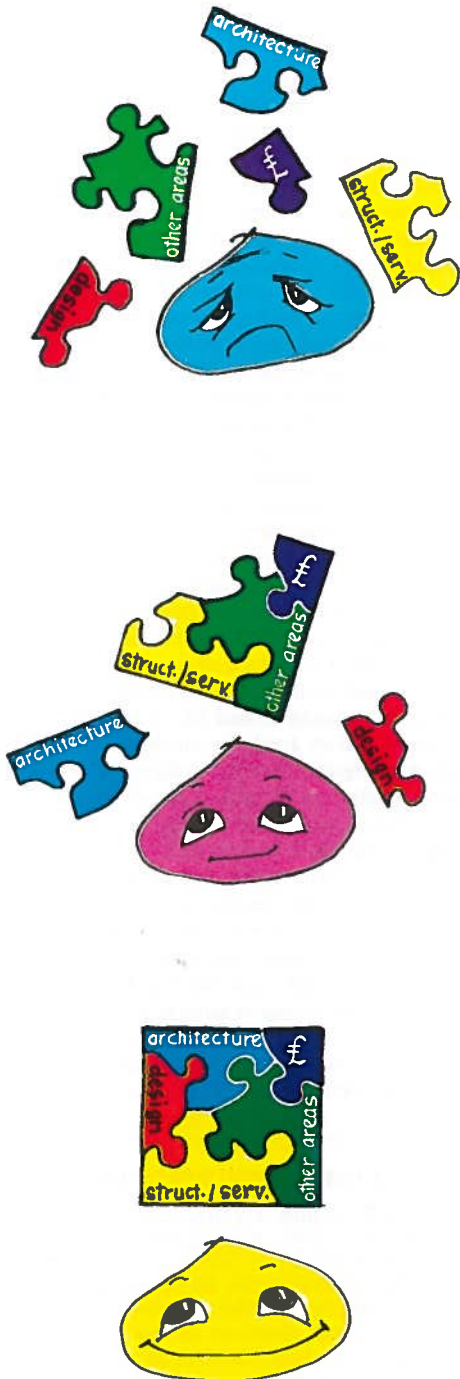
My eye was taken by an article by Cliff Dix* featuring the Junior 8 and at first I must confess to being slightly vexed; but then how could he know of the thought that went into the design and the whys and wherefores behind each feature. It struck me that readers of TABS would like to know the story as it comes straight out of the head of the man who was there and made it happen. It could well be that there is the making of a series for TABS to be provoked either by an article (as in this case) or a letter musing on the oddity of some feature or features of the old Strand Electric's range of antiques. Shall we say before 1964, the year when Modern Times began with the introduction of the Thyristor Dimmer. It is up to you the readers, therefore, whether there are any sequels to this memoir.

My title is taken from something "B" Bear and I put at the top of the last chapter of our Golden Jubilee TABS of March 1964. (Incidentally there are still copies available.) He says it comes from Aldous Huxley but has been unable to track it exactly. One could not help thinking, even at that time, of the long way round one had gone to do something which by then was quite simple. "Why did I not think of that before?" had to be answered either by the fact that technology did not permit or that the essential clues were not around.

To return to the Junior 8; we already had, and were doing well with, the H.A. Boards for the junior field (there's another story there?), but it had been copied. More important the flexes had to be heat-resisting because they were on top of the dimmers with more or less open terminal blocks, and I was unhappy at the way these rockbestos leads frayed. So there it was looking awful and being possibly dangerous. To abolish these wander leads I revived a circuit from my book of 1950† (Fig. 87, in fact). Nothing sensational but merely a method of switching either or both of two loads to one dimmer or to mains. The notion of switching a circuit

* *Dear Octopus*, TABS, Vol. 33, No. 1 Spring 1975.

† *Stage Lighting*, published by Pitman.



include for these details at a later stage. Similarly, the lighting designer, although he watches run through's (or at least has the opportunity to) to find out all the actors' moves, does not design an inflexible rig such that if any of the blocking is changed he cannot adapt his design to follow suit. It is a little more difficult with fittings built into ceilings, but one's persuasiveness when dealing with the architect at an early

to mains to release the dimmer had been a feature of Strand's automatic colour mixing drum dimmer in the thirties and thereafter which was based on an idea I had had when at the GEC for the ship the *Monarch of Bermuda*.

Thus far it was easy and so too was the decision to go for eight circuits—four dimmers. We had already found this better than six as the minimum for the H.A. boards. Now the problems began. Strand's time-honoured slider dimmer wound on heavy slate formers was hopeless as a basis for something that a man was to take in his arms and carry; but budge from slate the Works would not. Fortunately I discovered that W. J. Furse used a slider wound on white Sindanyo. I have a feeling



that Brian Legge told me this—it's the sort of information he has always been good at picking up. Anyway, one was purchased, and I took it down to Gunnersbury (no doubt Paul Weston drove it and me there) and placed it on Jim Jordan's desk. He was the Works Manager and later became a Director. Immediately he picked it up he accepted the challenge especially as he did not admire the design of the dimmer winding itself. After all he had used white Sindanyo for Strand's Sunset element dimmers for years.

The heart of the dimmer on the way to solution we got together with Bob Woolnough, then the head of my drawing office, and before long the now familiar slider dimmer emerged. Apart from the abolition of slate there were several other requirements. The dimmer fixings had to be internal rather than external lugs. On the old slider dimmer these were fragile castings. One of my first experiences of Strand, as a schoolboy amateur, was being charged seven shillings and sixpence on top of the three and six hire charge because I stood the thing down smartly when unscrewing a couple from the wall and the base plate promptly snapped. Next the dimmer knobs had to be recessed so that they too were not so vulnerable as they had been, but as they had to present a fair grip to the fingers the front covers were sloped inwards. Just enough of the knob had to protrude to allow the wooden rod mastering technique to be practiced.

Mounting the dimmers on the sheet-metal backplate was obvious, since safety demanded this protection at the back and ventilation the vertical position, but what to do with the switches and plug sockets? Strand had reached the stage at which it was more convenient to carton our common equipment both for storage and despatch. The unit, therefore, needed to be compact and for this and for subsequent use it had to stand up without need of fixing. Bending the panel into an L-shape not only reduced the overall height but also enabled the thing to stand up. Obviously the plugs had to be at the bottom front otherwise the flexes would go all over everything. The angling inwards of that part of the panel was partly for styling, but it was also thought to make the flexes hang better when the unit was fixed to a wall. Incidentally, Cliff Dix, if it makes loose plugs fall out that is a good but not intentional safety bonus.



The adoption of 5-amp circuits was quite deliberate. To save space we needed to abolish busbars and as overload could be serious with the PVC harness wiring we had then to use, the 5-amp was to proclaim load restriction even to those who knew not their electricity. The Junior 8 was aimed at a world of Patt. 23s and 123s with only an occasional 1 kW spot. The 5-amp outlets also saved money and so did the standard domestic 2-way and off slow break switches we used. Thus we had to have the dimmer to one side of the "off" and the "full-on" to the other side. If special switches had been possible would we have done OFF/DIM/ON as suggested? The answer has to be "no". Suppose an "odd" number circuit of a pair is held at half check and the "even" has to be switched from off to full-on or vice versa, then the odd would dip as it passed due to the momentary extra load on the resistance dimmer. In addition, electrically there is always the chance of an arc tracking across the short travel switch gap—a problem we had encountered with 2-way Miniac switches in the earlier days of the H.A. boards.

The biggest discipline in a design like this is cost. One does not—or at any rate did not—rail against this limitation, for it was a great stimulus to creativity. In this connection there is the curious incident of the handles on the Junior 8. Like the dog that did nothing in the night these achieved their significance by not being there. The cheapest handles which would take a man's hand comfortably were clod-hopping things completely out of style and difficult to fix. Anyway, these or something more sophisticated would prevent Junior 8s being butted together when two or three were needed as a permanent installation. Donking in the end plates to form a ledge to grip would complicate that part and be too much of a strain on the fingertips anyway. The solution was to instruct the bearer to carry the thing back to front whereupon the end two dimmers automatically became handles.

Bob Woolnough himself was photographed for the leaflet showing how it should be done. As he was a big man it all looked quite easy, though Valerie who appears elsewhere in the leaflet had, in fact, a couple of good reasons to put up against this. For a car boot to shove the Junior 8 and some 23s and 123s into we used Paul Weston's own Ford Prefect. Though Company cars were unheard of it would never have occurred to us or to him to use anything else.

Came at last the moment for another visit to Gunnersbury to find out the price. I had always had in my mind the aim of just under £50. I had not, of course, been ass enough to disclose this figure. What the Works thought I had in mind was £45. Sitting in Jim Jordan's office with both of us wearing our best poker faces he grubbed around among his top secret papers. These he always kept not under lock and key but under his blotting pad. After a short ceremony not unlike a returning officer announcing the election result he declared that the list price was £44 10s. Since I did not want the odd 10s. making the leaflet and advertising look untidy I graciously allowed the works to have it as extra profit margin. So it was that at £45 the Junior 8 made its bow to the unexpected, but I think grateful, world of 1962.

LIGHT DISTRIBUTION

Rank Strand Electric and Theatre Projects have merged their lighting hire activities in Southern England. The resultant hire service, operated by Theatre Projects Services Ltd. from their premises in the heart of the West-End theatre district, will have at its disposal what must be one of the largest (perhaps even the largest) lighting rental stocks in the world.

In Scotland, Rank Strand lighting will now be distributed by Northern Light Ltd., who will continue to offer service from the old St. Vincent's Lane, Glasgow premises as well as from their headquarters at West Mill Road, Colinton, Edinburgh.

An American View of the West End

By CHARLES H. FIRMIN

When one pursues the career of Stage Lighting Designer, he seldom has the opportunity to step back and have a look at the efforts of others in such a concentrated dose as I had during a recent trip to London.

I consider myself quite fortunate to have been able to make the journey and meet many practitioners of the craft while there. So it was with certain misgivings I agreed to provide your editor with my impressions of design and practice in the West End. I should like very much to visit London again and hope I won't have to register under an assumed name for what I am about to say!

During the latter part of November and December, I saw 42 productions, 38 of them in the West End. The extensive variety of drama, musical, ballet, opera and Christmas productions gave me the opportunity to see a good cross section of design work and lighting approaches. I was pleased with the acceptance of FOH positions in view of the audience which was the case in nearly every theatre I attended. American managers do a slow boil every time a new hanging position in front of the tabs is suggested. However, good as FOH positioning seemed to be, at least in terms of variety and numbers, many productions, in my opinion, suffered from a lack of side light on stage.

The front light was the major and only position in some cases. Many of the productions, being realistic in nature, did, indeed, provide good motivational reasons for introducing side light. I am not suggesting less front light, but added side light would help to model and separate the actors from the background.

My notes on various productions keep referring to the understated reality of the light in a realistic or comic circumstance. It is as though a pattern of light was developed quite independently of what was indicated by other production factors. It's as if many single set productions were lit by a formula devised to use the least amount of equipment.

In some productions, again realistic in nature, there seemed to be, coming through windows and doors, an abundance of sunlight mounted at a height just above sunrise. As the actors made references to times much later in the day, I found the early morning sun approach somewhat disconcerting.

These matters of detail may seem to be "nit picking" but I have always considered good lighting a matter of detail. Though the development of lighting cues for a production involves many factors, there seemed, in some productions, to be fewer cues than necessary to produce good compositions. I wondered if this might be due to the designer's lighting the show for the stalls and my viewing it from the balconies?

I am sure that the economics of lighting play as important a role in British lighting design practice as they do in American practice. If this is the problem, more imaginative solutions must be sought in order to provide better results.

If the equipment available to smaller productions seemed a little thin, this was generally not the case in opera, musical, and dance production.

With the higher latitude for design creativity indicative of these production styles, more equipment was used with a higher degree of results.

I am not suggesting all productions be fitted with 300/400 lantern rigs, but when they are and the results are successful, it is worth every penny spent.

Musical production lighting treatments followed established patterns to good advantage though I was surprised to see three productions which did not use followspots. I hope this was an artistic choice of the designers and not a financial one of the managers.

With the opera, ballet, and dance productions comes the electrician's nightmare of large scale lighting changeovers. The dilemma of making the FOH units serve all the productions without re-hangs, regells and re-focuses has led to certain stock lighting area layouts which don't always seem to be up to the task. Perhaps the lighting equipment manufacturers should take a second look at ideas for practical remotely controlled units which don't cost an arm and leg.

Six of the productions I saw were part of the current repertoires of the Royal Shakespeare Company and National Theatre. It was quite apparent that great effort was expended to produce lighting suitable for each production. The extent to which these efforts were successful seemed guided by the limits of the rig. The use of followspots as a time-saving device has merit if some subtlety can be built into the practice. Followspots as rover specials become a problem when their operation lacks the subtleties of dimming and soft edges. The CSI unit provides a good level of illumination, but can be over-powering when banged on during a subtle moment. The lighting could, at times, have benefited from a broader selection of acting area colour and instrumentation.

It is the repertory houses which prove the value of time and labour saving devices in lighting practice. There I noticed the greater availability of colour changers on instruments, especially FOH units. The practice of changing colour while the lanterns were on tended to be overdone as a production technique. Though the idea of one dimmer one circuit is fairly well known in British practice, the use of patch panels would seem to me to be useful in the Repertory situation as the hardwired

dimmer and circuit could be restrictive when instrumentation is moved around and between house and stage.

I had known that nearly all the West End theatres were using remote control systems with presetting and grouping capabilities, but was a little surprised by the lack of subtlety in some cueing situations. The miniature fader handles seemed to be attacked with the ferocity Yankee electricians reserve for their 14 plate resistance boards on a bad day. Perhaps I shouldn't be too critical of board operations since big mistakes were few and far between. British designers are fortunate to have resident electricians and house control systems which can provide flexible cueing possibilities.



The author's lighting for the 1974 fall production of the Sea Gull at the Pavilion Theatre of Pennsylvania State University where he is an Assistant Professor in the Department of Theatre Arts. Setting by William Bloodgood.

Common complaints of designers on both sides of the Atlantic seems to be the frustration over color media and its ever-changing batch colors. This aggravation has ramification for the big as well as the smaller purchase. Over the years blues have been getting greener until cold light seems to be growing moss.

Another common problem seems to be the lamp and its one hundred and one varieties which must be kept in stock to fit the lanterns one has acquired over the years. There is no problem if you could afford to discard old equipment for new every time the lamp manufacturers blessed us with a new source.

The variable beam angle ellipsoidals which are making their presence felt on both sides of the Atlantic look to be the most useful development of recent years, especially for Repertory Houses.

If one is to believe the manufacturers, memory systems will be household words

by the late seventies. Their advantages and disadvantages are discussed long and hard over pints and glasses. The only sure thing about control is that wherever one works and with whatever type, the control system cannot do the designer's thinking for him; remember his mistakes maybe, but good lighting will still be a matter of the right light arriving at the right moment.

Hardware for hardware's sake has never been an answer to the theatre's problems and with the tightening of our economies, changes in equipment and control will receive harder budgetary scrutiny than ever. I find myself looking at equipment more with an eye to considering how long it will last these days.

The close proximity of London's theatres makes the procuring of supplies a somewhat easier task than the hundreds of miles between me and a T12 lamp. Those little stores in King Street and Neal's Yard made me envious.

Speaking of parts and supplies and costs and budgets, I am getting concerned about the future of the craft and those who control the purse strings. With production budgets cut to the bone, it will be harder to justify lighting expenses and design fees. Good lighting is the best bargain a production can get. The recognition of the legitimacy of the lighting designer's contribution to the production will be attacked on financial grounds now more than ever. Designers must continue to provide results of superior quality under these conditions. The problems of making a living in this situation will mean having to do more assignments more quickly with less support from the front office. There may be the temptation to tailor the scope of the work rendered to the fee involved. I believe this would be a detriment to the betterment and advancement of the craft. To this end, the training of future designers and electricians must reflect the economic as well as artistic factors of the business. The theatrical trade unions in the States have helped make wages and fees reflect the creativity expended on productions, but even they cannot guarantee work if a sharp decline in theatrical activity occurs. It will behoove us all to keep this from happening to the theatre everywhere.

Once the production is launched on "the night", it is turned over to the stage manager and electrician. The longevity of a production is controlled by the demand of the public. Seldom does the designer return after a fair amount of time to see how his work is holding up.

As our names remain attached to that work it might be well to take a continued interest in the production even though we are not compensated for it. As two, three, four year runs are not uncommon, the designer receives the credit for what the production has become as well as what it was.

All criticism aside, a town with over 45 productions running and new ones being fitted up is a great place for a fellow tradesman to visit and my hat is off to all those clever builders who placed your theatres so conveniently near the "locals".

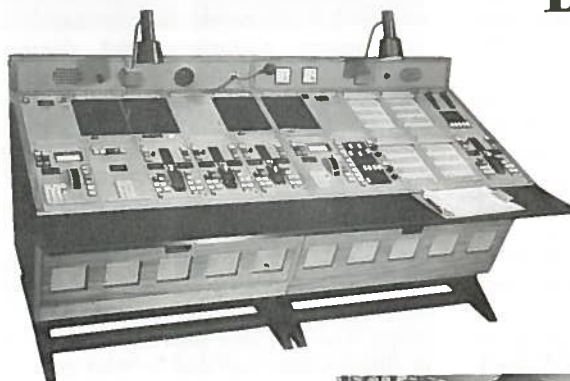
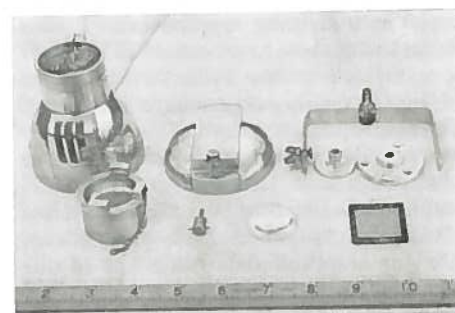
The Swiss have a rack for it

Eichenberger Electric AG. (Rank Strand's agents in Switzerland) have developed an interesting way of mounting Mini2 dimmer-packs. The rack is internally wired to provide plug and socket connections for distribution of power supply and control lines to each shelf. All wiring, including the load plug-tails from the individual dimmers, terminates in convenient terminal blocks for the contractor to make on-site connections in a permanent installation—yet one or all of the individual dimmer-packs can be quickly and easily unplugged for use elsewhere.



Something old Something new

Martin Scott gave a novel wedding present to a fellow Colchester amateur theatre electrician: Scale model Patt. 23 spotlights designed to produce the same beam angles as the originals and using A1/220 12 volt 50 watt Q.I. lamps as a light source.

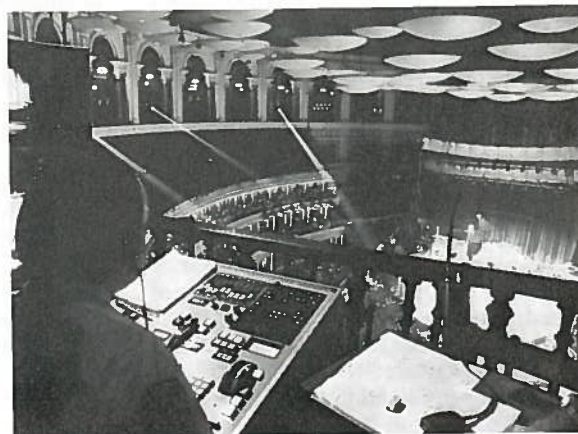


By and Large

MMS is appearing all over the world in a wide assortment of the many possible combinations of modules. The largest system so far has been this 480 channel model with particularly extensive playback facilities, one of a pair of con-

trols installed in the Congress Hall complex in Pyongyang, Korea.

At the other end of the scale, basic MMS facilities have been assembled into Compact Memory System. The prototype is seen here in use as a portable control for the BBC's outside broadcast from the Royal Albert Hall of the Miss World contest.





Hallelujah Hollywood

By MICHAEL KNIGHT

Mentioning Revue in England brings to most people's minds the small intimate shows in which a group of assorted talents affectionately lampoon various national characteristics and events of the current way of life. In the fifties and early sixties these pieces enjoyed great popularity but recently they have died out completely. *Deja Revue* successfully revived some of the best numbers from these shows.

Away from England, however, Revue is a quite different type of show. It is a non-stop spectacular of extravagant costumes, amazing effects, fantastic scenery with singers and dancers performing story lines that are merely excuses for the visual splendour of the shows. They could be described as the ultimate in audio-visual entertainment.

These extravaganzas originated in Paris before the turn of the century, evolving from dance halls like the Moulin Rouge. The stars of the day, immortalised for us in Toulouse Lautrec's evocative posters, were La Goulue, Jane Avril and Yvette Guilbert, who were supported by various speciality acts and always by a line of dancers. Gradually these shows, always in hot competition with each other, grew more and more elaborate and outrageous as the years passed. French music-hall tradition produced many great stars, Josephine

Baker, Piaf, Maurice Chevalier and the one who did most to develop the sumptuous style of production that characterises Revue today, Mistinguett. She was the first to be smothered in pounds of feathers and thousands of jewels combining to create trains and headdresses filling half the stage. She became the undisputed Queen of the Music Hall, the true originator of Spectacular Revue. Later as the managements of the Folies Bergere, Casino de Paris and the Moulin Rouge vied with each other to produce the most lavish show, less emphasis was placed on big name attractions. Since the last war, the Lido has joined the other three famous houses and is now probably the most popular show of all.

In Paris, all these shows have been created in existing buildings, adapted wherever possible with added mechanics, but all severely limited by extremely cramped conditions. So far no management there has been able to custom-build a stage with all the machinery and effects appropriate for the shows.

Revue has spread from Paris, however, and can now be seen in Beirut, Barcelona (see TABS, Autumn 1974), Las Vegas, and even Tokyo. This growth has brought about new buildings. The Casino in Beirut, built eight years ago, is the largest in Europe for shows of this type and was

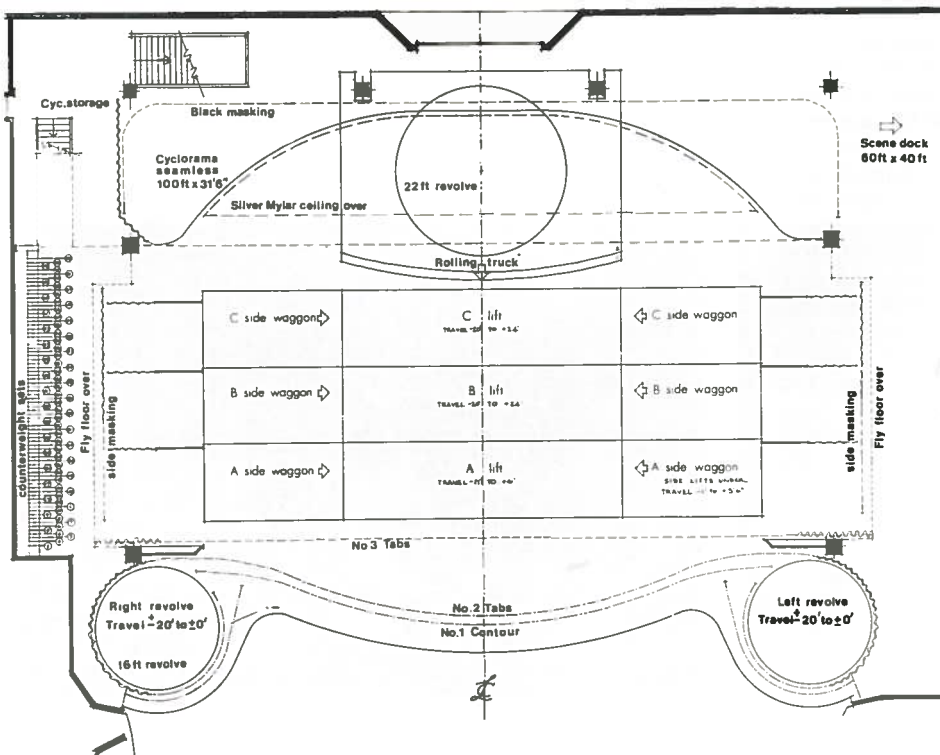
the first to be specifically designed for lavish effects. Lifts, floor waggons, treadmills, etc., are all incorporated in the stage structure and these are augmented by



Finale. Circular track which revolves, opens to semi-circle, and festoons up to 25 ft. in height, yet flies in depth of only 2 ft.

tracks and drops in the ceiling and a passerelle through the audience which can change to water or ice.

In Las Vegas where three hotels presented Revues there is now a new arrival, the MGM Grand Hotel. Even in Vegas terms it is a giant, with two thousand rooms, five restaurants, two big theatres,



Single Ceiling drop

a cinema, a casino one hundred yards long and all the shopping and recreational facilities needed to persuade you not to leave the hotel, but to stay and spend. One of the theatres is for top line stars with an orchestra and supporting acts, not needing much in the way of sets. This seats about twelve hundred people for dinner and drinks. The Revue theatre is far more complex and seats around one thousand people for drinks or dinner. Incidentally, the current price is fifteen dollars for three drinks and the two-hour show.

I jumped at the chance of working on a new stage specifically designed for Revue especially having suffered from assorted cramped and inadequate stages. In any show with five big production numbers you will have enough scenery and properties for five normal musicals. Each set will be designed in a completely different style so nothing can remain on stage. It must be possible to set any number in ten minutes or strike it in five. So all scenery must be designed with great mobility and the stage must be laid out with areas for setting and striking while the show is in progress. It was possible to accomplish this using the upstage area and the basement. I prepared a list of ideas which would help the speed of the changes and also be effective in themselves. By this time, however, the theatre was well into construction, all the structural steel was ordered and nothing could be done that affected the basic steel layout. Thus the resulting equipment was the inevitable compromise between what one would have liked ideally and what was possible within the existing structure. The answer is, as always, for anyone contemplating building any form of theatre to employ the best available specialist for the relevant type of show and to do it early enough. At the same time as the architect if possible and not when the theatre is half built. However, here is the detail of the equipment finally installed.

The proscenium opening is 72 ft. wide and 30 ft. high. At each side of this is a 16 ft. revolve which can descend to the basement for scene changes, adding another 32 ft. width to the stage. From these revolves there is access to the side stages, over 10 ft. up, which extend 20 ft. along the sides of the showroom. These again, can link to an enormous passerelle or bridge, which descends from the ceiling making it possible for the cast to do a complete circuit from the revolves to the side stages, across the passerelle and back via the opposite side stage and revolve to the main stage.

Also in the ceiling over the audience are three 5 ft. discs, two 11 ft. side ovals and a 16 ft. centre oval which descend carrying cast and scenic elements as required. Each of these pieces is only used once during the show so that the effect is not lost. Also above the audience is a track which in the current production is used to fly a clown from the passerelle area, right through the room, to land on the stage.

The stage itself has a maximum depth of 68 ft., but there is provision for flying from 14 ft. to 52 ft. only. Downstage of this is the forestage with curtain tracks and a living curtain. Upstage, due to a sloping back wall, there is only 30 ft. headroom. Stage right is a conventional fly floor with 75 single purchase sets at 6 in. centres. The extensive basement at -20 ft. holds three hydraulic lifts, 36 by 10 ft. Lift A is single stage and travels from -20 ft. to +6 ft. Lifts B and C are double stage, travelling from -20 ft. to +24 ft. When the lifts are down, the stage is filled by three rolling beams from front or back and three floor waggons from either side which move in to join at centre. When these are in place, the sunken floor either side raises to normal floor level. This gives a normal flat stage while the lifts are being loaded in the basement. Although the basement has only 13 ft. headroom, it provides space for scenic storage, a dolphin tank, and has access to the basement car park which proved to be a godsend in the final analysis. Back on stage there is a large motorised truck 36 ft. by 20 ft. which can carry sets all the way downstage. It stores upstage where scenery can be set and struck during the show. Off stage left there is a scene dock approximately 60 ft. by 40 ft. and 30 ft. high which is crammed floor to ceiling with scenery props and even hoop skirts flown out of the way. The lighting control system is a 120-way Thorn Q-File 2000 which was installed by Kliegl. Jules Fisher was the Lighting Designer and he has provided an explanation of his lighting plot.

Apart from the normal stage lighting several of the sets included hundreds of lamps as part of the scenic effect. A control unit to accommodate these was designed and built at the hotel. It was made in three sections capable of taking 5,000 amps each. With this three separate groups of lamps from any set could be made to freeze or chase, forward or reverse, separately or in sync. This proved to be a very flexible piece of equipment with plenty of space capacity. The most any set used was between 8,000 and 9,000 amps.



Prologue: Hollywood sequence



Kismet Number with lifts B & C at 24 ft. with cast preset but hidden in flies.



Finale. Operetta sequence showing circular track open to half circle



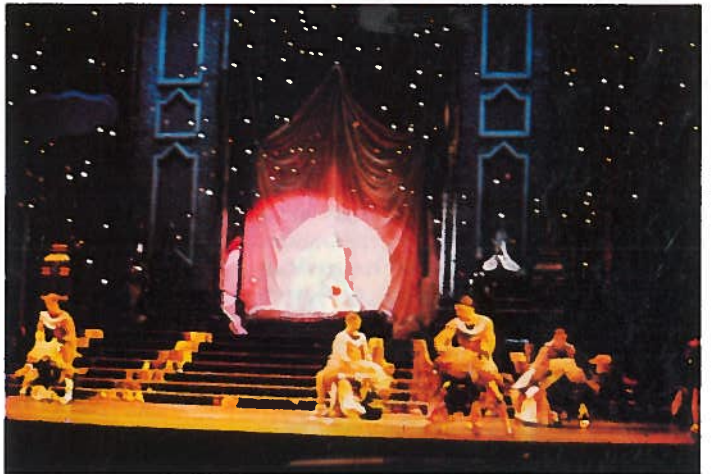
Beginning of Pirate sequence, boat at quayside



Boat sinking on lifts to basement with an accompaniment of dry-ice, fireworks, film flames and flaming torches.



Lifts and flies coming down during scene change midway in Kismet number



Lifts B and C now down to 4 ft. and joined by staircase coming up on A.



Finale: Ziegfeld staircase. Central section comes up on lifts



Finale. Central ceiling drop comes down over audience

For some years in America sound men have been trying to isolate the orchestra from the stage. It is always a problem with a loud live orchestra in a room with no pit. One half of the audience always needs ear-plugs. In this theatre the sound men got their way. The orchestra plays in a large sound-proofed room in the basement. Every instrument is individually miked and the conductor watches TV monitors. There are tape decks for backing tracks and on stage up to 14 hand-held radio mikes may be used at once. All this is mixed from a sound console situated in the middle of the auditorium. However, the system is monaural and the bank of speakers is central over the proscenium. This has the disadvantage that with a singer on either revolve 100 ft apart the voices are both coming from centre 30 ft. up in the air.

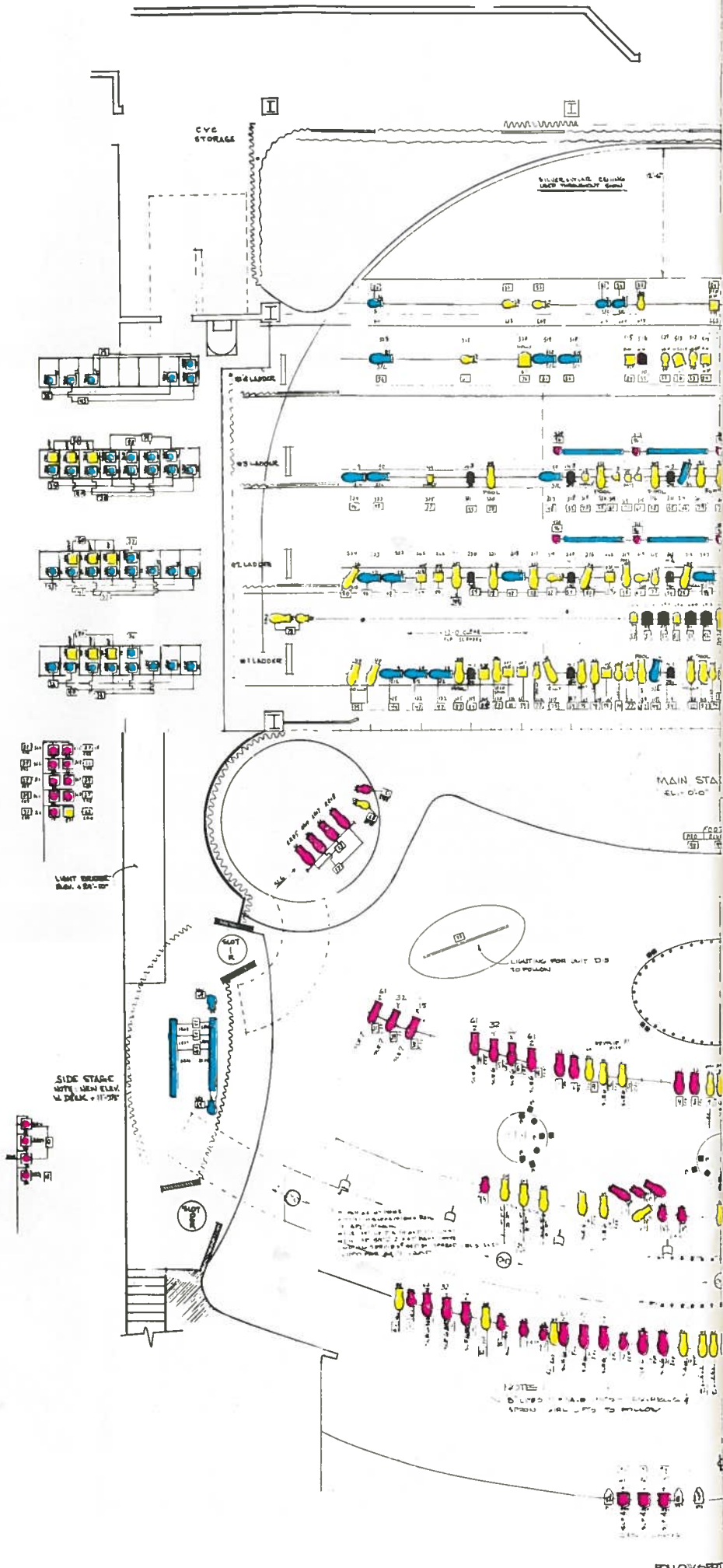
The whole hotel was built in nineteen months and the theatre was structurally complete when the hotel opened in December 1973. The smooth working of the lifts and the stage mechanics took some time to perfect and the show eventually opened at the end of April 1974. The show is now running successfully twice nightly seven days a week. It has a cast of over one hundred who perform five lavish production numbers all based on ideas from MGM musicals.

Contrary to general impressions, the shows are not subsidised by the gambling at the hotel. They have to repay their capital costs like any commercial show, but being in a tourist area they can guarantee a year-round audience. As these Revues generally run from two to three years any management has ample return on its investment.

If revues are a sound financial proposition what are the chances of seeing one in London? As the tourist season here is not year-round there would be no guaranteed audience. Also such a show needs either a purpose-built stage or one that was drastically altered to provide the necessary flexibility. This must of course raise the cost considerably. Above all, a great deal of money must be spent on production values with lavish sets and costumes; well spent though with everything giving value for money. And all this is presuming that you have the best director, designers, choreographer, composer and cast that money can buy.

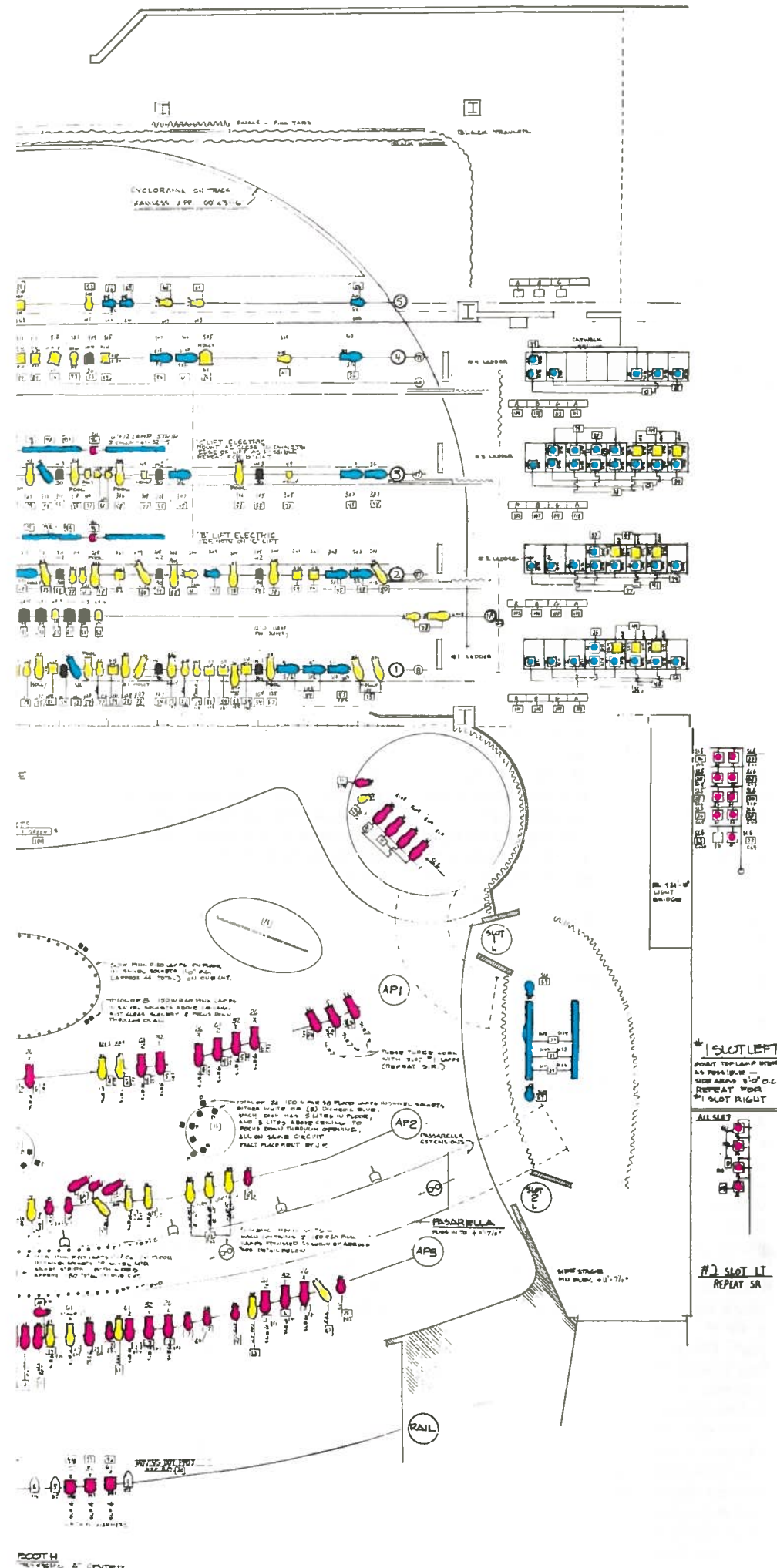
In view of the enormous capital outlay required and the current financial situation, it appears to be unlikely that we shall see any Revue in London in the near future. But just in case anyone is considering such a project I hope that I have been able to show that the ingredients for a successful Revue are far removed from the conventional theatre's backstage facilities and equipment.

Michael Knight is a Designer with wide experience of theatre and films. For MGM Grand Hotel he was Art Director and advisor on the stage layout and mechanics. Photographs by the author.



Postscript from the lighting designer, Jules Fisher

When one first looks at this light plot, it appears as if there are enough instruments to light two theatres. However, this is deceiving. The fact is that this Las Vegas showplace contains facilities and cubage to equal three standard theatres. There is not only a main stage that is as big as any in the US, but two revolving stages at the sides, three stages that drop down from the ceiling and acting areas that are not only distributed horizontally on the stage but vertically by the use of staircases, etc. Thus, the area to be lighted is tremendous. Unfortunately, because lighting is always left until last when all the money has been spent for the mechanics and equipment of the theatre, there was woefully few dollars left for the lighting. Because the scenery moves constantly and was designed in a wide range of shapes and elevations, any "special light" that was aimed for a certain set could rarely be used again for there was never another setting in that same place. To deal with this problem the lighting plot is broken down into the following functions. The lamps coded in red are basic area lights in one to four colour circuits. The main areas were lit with three separate colour washes that could be divided into 14 ft. wide areas. The lamps indicated in yellow are "special" lamps used usually for one particular moment in the show. The back light which provides the glitter for all the costumes and figures as they appear on stage is indicated by the instruments in black. The blue instruments were for side light which was necessary to model the bodies for all the dance numbers. All the other equipment is special effects projectors, strip lights, etc. Not indicated on the drawing, but very important is the fact that there were many lighting instruments attached to the various pieces of scenery and buried in the floor. Thus, if a large wagon rolled on stage up centre, it might have lamps on the back of it to light the cyclorama or it would have instruments within the unit to back light doorway and windows, etc. Frequently, where I had an exciting conceptual idea for lighting of a certain moment I found these ideas had to be abandoned to allow for the fast pace of the show as well as the hectic and fast movement of large scenic objects and flying pieces. Thus, if I was planning on having a strong back light at a certain moment in the show I found that it was prevented by other scenic units that were flying in behind the unit that was seen by the audience, thus blocking the back-lights. There were many instances where the lighting could have been improved had a lighting designer been consulted during the design phase of the theatre.



Diary of a Somebody

By FREDERICK BENTHAM

In returning to the pages of TABS after a year's sabbatical I find it an advantage in this instance that the journal is no longer as "restrained" in its references to the product of a certain manufacturer as it used to be in my day. When we published the TABS book *New Theatres in Britain*, for instance, someone (and I *do* remember who) remarked to me that "it was like my colossal cheek to print a schedule of all those switchboards without feeling the need to refer to the name of the firm who made them". It is true that in those days I automatically assumed everyone knew we always did the controls for all places with any claim to call themselves theatres. However, it was not cheek but extreme modesty amounting almost to shame. Strand Electric controls and I—Grand Masters and the Wood Electronic alone excluded—were inseparable. I was them and they were me, and in consequence it was as a public school man "bad form" to blow this trumpet in polite society. In the catalogue or in advertisements it was another matter—there claims could be made with aplomb when wearing one's copy-writing hat.

Where is this preamble leading us? The answer is to a walkabout, or rather, being me the more correct expression is "talk-about" down under. In the course of lecturing and attending the conference on "Building Theatres for Communities" in Adelaide, I had occasion to visit in just under a month just under forty theatres. All without exception were lit by Strand Electric (for such is the name under which they still operate there), and I found myself as the man who for so long had to do with the creation of and the making of the equipment known, literally basking as a *somebody* in their light. The whole became a great emotional experience. Of this I should now like to tell you—a kind of Pommie Swagman's Diary:

Monday, 18th Nov. Have taken to Perth during my two days' acclimatisation and shall be reluctant to leave. Here, out on the west coast, it feels—and is—a long way from everywhere, including the rest of Australia. Nothing had prepared me for the charm of the Australian variants of Georgian and Victorian architecture. The corrugated iron roofs everywhere really do fit and make a style quite their own. A particular feature is the cast iron railings, verandah and balcony fronts—and even the purely decorative use of the stuff as brackets and valances. Masses of it must have been shipped out and I was to find out later that it is not peculiar to Perth, nor was the takeover of the central area of that attractive city by tower office blocks which tend to make it look like yet another American city. An effect helped by the overhead wires. As with us, rather too late the conservationists are at last managing to get their story over.

Visited the new concert hall of about 2,000 seats—good of its kind attractively situated with a view over gardens and the wide river Swan (so shaped rather than so populated!). After a reception by the Lord Mayor—not for me but for the IES National Convention—at the new Civic Hall (lots of travertine equivalent about) went on to the Octagon Theatre (TABS, Vol. 27, No. 4) in the grounds of Perth University. A campus of buildings human in scale and style with a theatre that shows what an architect *can* do when short of money. Guthrie thrust stage but backed by a pros. which a set of red house tabs tends to stress. They were not intended but were going cheap. They often use the full depth to back up the thrust and fill it with scenery. Back to the city and the new auditorium with 8,000 seats for *Disney on Parade* and the like. It is *hugely* adaptable to both arena and proscenium work. In a sense a multi-purpose hall on this big scale is easier to design because no one is likely to think of putting on an intimate play there, whereas at 1,000 seats they will. The trouble with this one was that I did not like the architecture. The lighting is comprehensive and has a MMS control. Also visited Her Majesty's (30 ft. prosc., seats 1,567), a very handsome building outside with a deep stage. It is under threat and needs a lot of money spending on it.

In the evening gave my address to open the IES Convention which, according to Denis Irving their reigning National president, left them split pro and con for the rest of the week. Subject: "The Terrifying Power of Lighting", in which I form the conclusion that the only qualification the few but diverse practitioners in lighting have in common is that they are not frightened of it.

Shot off to airport to fly overnight to Sydney 2,000 miles away to the east—as the airplane didn't fly, since a detour for an early morning change at Melbourne was necessary. Just time to dump bag at King's Cross and then all over the Opera House; a tour which gave me no reason to revise my already expressed opinions. A marvellous site—and there alongside, the Sydney Harbour bridge! Went to a symphony concert there that night and William Gaskill's production of *Love's Labour Lost* three weeks later in the Drama Theatre—single-tier 550 seats in straight rows facing a 49 ft. wide prosc. opening only 16 ft. high. Evicted from its intended home, now the Opera Theatre, this place—although effective—is in fact a cramped makeshift entered from an insignificant side door.

In the afternoon saw the new Her Majesty's (prosc. 39 ft. 9 in. by 26 ft. high)—a thoroughly attractive practical commercial theatre for Williamsons to replace one destroyed by fire. Tight site leads to a deep balcony of 840 seats and stalls of 660, but that is a natural hazard of the

need to balance the books. The 120-way LP control in its nice wooden desk by Melbourne Strand Electric was described with photographs in the last issue of TABS.

After that a visit to the new Nimrod Theatre. Thrust stage with 300 seats in the corner of a near square space has vomitory for actors to enter front. Good practical conversion of a warehouse with foyer, dressing rooms and all other spaces on ground floor and auditorium above.

Had a marvellous time that night on the immense flights of steps and terraces after our Opera House concert. They are a feature in their own right, which is just as well since they cannot be used to get inside! Not many marks awarded for the exterior lighting of the shells and their approaches.

Wednesday. Up betimes and off in the rain to view the Seymour complex now under construction. A number of spaces for theatre, TV and music of which the York Theatre with 783 seats is representative in size and the most interesting. Guthrie type thrust stage but with a lift to shift the stage balcony. Roof not properly on yet but the concrete steppings gave a good idea of the feel. Opening to rear stage limited to 20 ft. which only I liked but no vomitory out front, which none of us liked.

Thence to Bathurst in a pair of charter six-seater planes. Our happy young pilot enthused over his work, and one could see how important it is for Australia. Lovely sunny day—once away from Sydney. Bathurst, 260 miles to the west (pop. 18,000), is an important historic city as it represents the breaking out at last in the early 1800s from the Blue Mountains which hem in the Sydney plain. Charming old and enormous courthouse and an ordinary if well finished new flat-floor multi-purpose hall just round the corner. The Mitchell College of Advanced Education is small in scale throughout with some nice old buildings and some horrible new ones. The 130-seat theatre is evocative of the original Questors' Theatre, Ealing, converted from a Scouts' Hall and, like that was, is of encouragingly small scale. The stage was set with Svoboda type ropes and slides focused on these from "overhead" projectors which worked well. This form of projection is a good substitute for Linnebach and takes up less room.

Happy in this place for twenty years they intend to set themselves problems by building what sounded to be an overlarge thrust stage with a wide prosc. one behind it. There is also a project for and a large model of, the original Swan Theatre (the others say it was the Globe) as the pedagogues envisage it. Anyway, an obvious date for a Sam Wanamaker company one day! Back to Sydney for dinner and to pose all of us for a typical press photo. Then off to Melbourne 450 miles to the south-east by the late plane—and it so happened the last scheduled flight before the airline pilots went on strike; the men in the big planes not so happy in their work!

Thursday. Arrive at luxury temporary site

office for the Victorian Arts Centre (TABS, Vol. 28, No. 2). The Art Gallery is already open complete with its Patt. 23s and pictures for them to light. The theatre site is being dug out at the moment—I am not quite sure why it has to be underground. Sir Roy Grounds in charge of all this, and us for the morning. Or nearly—for Helmut Grosser (Cologne) does not from bitter experience like one goods lift only, and I am not happy about power cuts in a building so largely below the ground. A ramp and a natural gas engine generator are conjured up eventually to satisfy us. A concert hall (above ground nearer the river) and art and music schools—plus any other items that will be thought up—are to complete this jumbo cultural conglomerate. Needless to say, the schools are to have their own theatres and concert halls. As usual the main aim of the trained will be to teach rather than to become professionals. In the conference the following week we were to be shown the very anti-thesis of this sort of approach in the buildings of Onno Greiner (Holland), where theatre or music was only one activity among many—some as diverse as shopping!

The afternoon consisted of visits to the National Theatre, St. Kilda, and the Camberwell Civic Centre, topped off with a near faithful reproduction of the London production of *Equus* in the Russell Street Theatre (one of the two used by the Melbourne Theatre Company: whose workshops were also visited on the way back to the hotel). The National Theatre proved to be an inspiring conversion of the former Victory Cinema—a large-scale super cinema which proclaims itself the moment one enters the spacious (unchanged) foyer from the street. The balcony becomes a single tier, stepped auditorium of 801 seats facing a prosc. stage of 31 ft. wide with orchestra pit for opera or ballet. The old stalls floor area below provides practice rooms, studio theatre and other facilities of excellent scale. The stage is also excellent, being an extension of the old one forward towards the balcony with a new fly tower over all. The old balcony front actually becomes the orchestra rail and the cinema decoration, seating and much else remains, allowing the budget to concentrate on what *must* be new.

Camberwell (TABS, Vol. 28, No. 2) has two novel ideas in its 500-seat theatre—the first a large long window on the right-hand side of the auditorium not only admitting daylight when required but a view of tree tops and sky. The second feature is the ability to floor over the stalls and form an extension to the large flat-floored civic hall to the left of the theatre. The acoustic separation of the removable dividing walls (two folding and separated by 8 ft.) was said to be adequate but was not demonstrated. The finish and lighting fittings of this relatively new civic complex were lavish. So was the sunlight outside and a dip in the pool on return to the hotel became essential.

Friday. An extremely bumpy and wobbly flight of two hours (300 miles NNW) in our

light aircraft with *donner und blitzen* effects and stormy amber lighting which failed to conceal a tendency to green complexions on our parts. Mildura when we did arrive turned out to be a delightful experience.

The local talent had devised a special nostalgic one night “At Home” revue in the 403-seat theatre (30 ft. prosc. with fly tower) which forms part of the new arts centre built in 1966 on to the old residence of the local pioneer (W. B. Chaffey). The auditorium is stepped with the exceptionally wide back-to-back continental seating centres we were to find common down under: Australians admit that they do not like to have to stand up to let people pass. Prefaced by a cold collation for all outside before and postscripted by a reception for “VIPs” after in the Art Gallery, the whole formed an unusual and “homely” experience which we all found it a privilege to share. It did give us an idea of what such centres can mean to isolated communities such as this town.

This isolation was even more marked the next day in Whyalla, two hours’ flight away to the north-west, where there is as yet no such facility. The population of 40,000 (growing) is spread out in bungalows in an as yet treeless steel and shipyard town but recently reclaimed from the bush; it is a real frontier town. However, man is very adaptable, as was shown by the Christmas decorations hanging across the main street in the blazing hot sunshine. A cinema for possible conversion to theatre was visited, also a new school hall with such a low roof and high stage floor that it put FOH lighting flat on. Another place there, the Viscount Slim Hall, literally had nothing except old fluorescent lighting and two unnecessary walls to choke up the wing space. Premier Dunstan of South Australia was to announce an extensive cultural building programme for this town among others at the Adelaide conference the following week.

Flying to Adelaide (an hour or so due south) the same evening, we were now poised to plunge into the conference but were mercifully allowed to do some plunging in the sea and in the Hardy wine cellars on the intervening Sunday first—the tonic stimulant of the content and acoustics of these cellars being ably demonstrated by the coincident outing thereto of the opera company.

Monday, 25th Nov. Put in to bat first, found myself deriving inspiration from the layout of the temporary seating in the studio theatre (70 ft. by 70 ft. square and known as “The Space”) in which the conference was held. Have for a long time had the theory that studios are not adaptable because everything one wants to do involves such a lot of work to set it up. A further theory—that to try to have a different layout for the day from that of the show at night is to demand the impossible—was also amply endorsed. The night show won hands down. Refused to be tied down by one Patt. 23 spot at the lectern, so neither a TV nor sound record could be taken. Posterity, and I, will never know what I did or said. However, it was

reported to me as a *tour de force*—just what was wanted for a stirring opening; perhaps a *tour du théâtre* would have been a more appropriate expression.

The night show in The Space involved five small orchestras, one in the centre and one in each corner, thereby fortuitously filling up the gaps at the ends which tend to haunt this type of bleacher seating. With slides and interruptions through the sound system these erudite groups pursued their arcane mysteries of combining and overlaying bits of Beethoven’s Ninth. Alas, I would have preferred it straight, but our two German delegates were as loud in their approval as they were in their disapproval of anything else musical we encountered over the weeks.

This only highlights the problem of fine product to match fine buildings and this is not peculiar to Australia—what was, however, was the way a toot on the magic flute produced koalas and kangeroos out of the forest. A less happy note was the use of black drapes for the sky in the last act of *Tosca*. It takes more than the DDM control in the Festival Theatre to produce a dawn under these conditions, so the bells kicked up their clangour while it remained obstinately midnight.

Not only the site in a park alongside the river Torrens but so much else about the Adelaide Festival complex pleases, and the contrast with the Sydney Opera House on the practical working side could not be greater. The distinctive concrete roofs never look heavy and everything under them is visually attractive—not least the female ushers (I cannot bring myself to call them “usherettes”) in their white blouses and long red skirts.

The Festival Theatre (1,992 seats) has been described in TABS, Vol. 31, No. 3, but the Playhouse has only just been completed and seats, 660 in stalls and a small balcony. The stage thrusts out from a 40 ft. opening among the first three rows as an orchestra/apron in the now familiar manner. The side seating blocks are angled to continue a sense of embrace and centre focus. The new play, *The Department*, was wholly staged on the thrust with the prosc. opening filled with set. *She Stoops*, which was in the workshops to follow, would be wholly behind the prosc. The sets for both plays were elaborate and naturalistic in style. Neither the Festival Theatre nor the Drama Theatre has an iron curtain—a water curtain being permitted as a substitute.

Tuesday. This was Australia’s day to describe their achievements and set out their problems. Of particular interest was Ross Thorne’s illustrated outline of the history of theatre in Australia. There was a lot of theatre.

Those were the days of commercial theatre with lots of “pros” of one kind or another around. Williamson’s still make a gallant stand with their chain of nine theatres in Australia and New Zealand. For the rest, it is subsidy and culture, with the ever present query as to what to do with the building at other times. Particularly difficult is the insistence on symphony

concerts—from time to time. Authority says there must be a minimum of sixty players with an audience of 1,000 and from this the wide platform, multi-purpose hall demand is born. Those theatre people, who at the other end despise anything not cradled in a “black box” with hard seats (if any) for the young, do not help either. All of us had our turn during Wednesday and Thursday, while sturdy characters like the Mayor of Rockhampton stood by, only too willing to find the money if he could be presented with the formula. Speakers and interveners in the various discussions included the eight international delegates, namely, Victor Prus and Wally Russell (Canada), Fritz Borneman and Helmut Grosser (Germany), Onno Greiner (Holland) and Roderick Ham, Richard Pilbrow and myself (UK).

What was noticeable was how people attended all sessions and turned up at extra-mural meetings as well. After the main business in the Space had perforce concluded at 5 p.m., further meetings were improvised elsewhere. Particularly noteworthy were the large gatherings to see the complete set of Onno Greiner’s architectural slides on Wednesday evening and to hear Richard Pilbrow and myself discuss Stage Lighting on Thursday evening.

Friday. Helmut Grosser gave a description of training of German technicians as it is now and as it was likely to be when revised to cope with the difficulties of staffing. He then followed with a plea for support of OISTT in Prague which left me, as usual, unconvinced that there was anything being set up except a bureaucracy to discuss its own procedures and then to go on and take a long time to do little. My long experience with the CIE fills me with gloom.

With a report on the ABTT from Richard Pilbrow and myself, the meeting went on to discuss and take preliminary steps to set up a similar *national* body for Australia—Southern Australia having already incorporated such a body at state level. At the conclusion of the conference the international delegates were entertained to a cold collation in a temple dedicated to the principal ingredient, wine, and with a total eclipse of the moon. Both of which continued deep into the night.

In spite of preoccupation with the conference, two other theatres were visited, both belonging to Adelaide University, which is happily situated but a short walk from the Festival Theatre and the centre of the city. The first is a 499-seater of 1958 (TABS, Vol. 17, No. 1) which both in style and plan now proclaims its date but which at the time must have seemed to have everything. The second, “The Little Theatre”, has just been completed and although for only 120 seats, is highly finished with wood panelling, proper decorative lighting, decent seating and good stage lighting. It is as unlike the usual studio theatre as is possible to imagine; the evocation is more of a modern council chamber. Indeed, that is the reason for its success—it presents a complete picture and

scenery, even stage lighting need not be used. There is a square thrust stage with curved edges and four rows of seating to correspond, backed by a *shallow* rear stage with balcony over. All the present show seemed to need was two brass bedsteads on the main stage and another on the balcony, and these fitted excellently in spite of the formal nature of the hall. Extra decorative lighting could be brought up over the stage should it not be wished to set up stage lighting. The fact that the room was square and the seating semi-circular left extra space to either side of the top tier for bands and other diversions. It struck me, not for the first time, that it is much easier to let your hair down in a formal rigid layout, than in a nondescript space where everything is lying around at the ready but has to be pushed into some kind of order for any show in question.

Saturday and Sunday. These were used to make the journey by road from Adelaide to Melbourne with an overnight stop at Bordertown. Even on a road like this between two principal cities (comparatively close in Australian terms—466 miles to the south-east) only a single lane each way is “sealed”, the outer lanes are just dust track—as are any roads off (when they occur). The single track main railway line runs virtually alongside; a short distance to either side and one is in the bush. A sheep station such as the one visited near Bordertown is enormous; it has to be to afford sufficient grazing. The house, cool and dignified under the corrugated iron, furnished to last, was an oasis in the blazing sunshine.

Ballarat, later the same day, represented another kind of theatre for they are reconstructing the original gold-rush town as a living museum in which only the ingredient which gave it life will be in short supply. The theatre, which as was not unusual formed part of the town hotel (shades of the Mayfair in London), is well advanced and will be as accurate as modern regulations allow, as it will be used for public performances. Some of this particular journey showed the great reclamation from virtual desert by seeding trace elements, a valuable addition to the other weapon—water. Cultivation frontiers are clear-cut. Approaching Perth by air from the east there it is, virtually a straight line, stretching as far as one could see. On one side man in control—just as if there were a wall.

2nd Dec. et seq. Three days in the old-fashioned Windsor Hotel (a nice change from motels) opposite the State Parliament building and excavation for Melbourne’s new underground railway. The main railway station down by the river is completely fraudulent: the palatial facade proves to be just “scenery” round the platforms. All concouring involves the pavement outside, from which one cannot stir without having chosen one’s platform entrance and paid the fare. Like Adelaide a splendid array of gardens or park runs across a large part of the city.

The other side of the river lies the new Art Gallery, first instalment of the Arts

Centre already referred to. Patt. 23s are used to supplement the lighting of the two main galleries devoted to International and National artists. Fascinated by a turn-of-the-century picture of a forest fire. Australia is haunted by this ever-present danger. The news bulletins include a danger factor like our daily pollen count in the hay fever season.

Added the other theatre of the Melbourne Theatre company to my list—the St. Martin’s. Very cramped single-tier house curiously situated in among residential streets. With its proscenium it compared unfavourably with the Parade Theatre of the Old Tote company in Sydney. There an end-stage single-tier house of much the same capacity allowed the seating to embrace and encompass the stage without effort for *Equus*. The fact that there was no prosc. and the auditorium was panelled in wood which then could be continued scenically on to the stage was responsible for the effect.

The 2,300-seat Dallas Brooks Hall (TABS, Vol. 28, No. 1) in Melbourne was mainly remarkable for proving that Strand Electric Melbourne *can* dim hot cathode fluorescent lighting well and that a three-manual Compton cinema organ console of pre-1930 vintage can still be pressed into active service—good as new.

An after-dinner talk was given to the Victorian branch of the Illuminating Engineering Society on Tuesday, 3rd December, and a pre-dinner talk to theatre people on the following day. Between whiles Strand Electric’s Burwood premises were inspected. While the factory there assembles equipment and parts made in the UK, a lot of work is original and to a high standard—so good indeed that much could be learnt back in the UK itself. The predominance of Strand Electric equipment in theatre everywhere (including the Sydney Opera House) is remarkable and a great tribute to the work put in by Denis Irving and others such as Reg Bartram in Sydney. The idea of service to theatre is prominent there.

Termination of the Australian adventure with a return visit to Sydney allowed me to visit the Parade Theatre, the Town Hall to inspect (and hear) the 64 ft. open on the organ, take a glimpse at one of the gambling/entertainment rivals to the theatre (Souths Juniors—which seemed to have more to do with one-arm bandits than with footballs) and spent a day with the Bartrams in the Blue Mountains. Two further lectures given, one to the New South Wales IES on “Lighting for Art and Architecture” (not my title) in the AMP Theatre, Circular Quay, and another on “Theatre” in the original theatre where the Old Tote Theatre company began and got its name, now a training school. The final act on my last morning before being driven to the airport by Strand Electric’s Hong-Kong manager Nick Dowling (a piquant touch) was to take the Manley ferry and back to see the Opera House as it should be seen—from the water.

The author describes four of these Australian theatres in the latest “Sightline” available from ABTT at 9, Fitzroy Square, London, W.1.

Get it in, Get it up, Get it on

MERVYN GOULD

Some time ago I bumped into the Assistant Electrician of a West End theatre who told me in passing that part of the equipment of his theatre were Patt. 43s—though, he said, they hadn't been used in the last six or nine months *much*.

On the rig of *The Good Companions* there are two dressing bars of obsolete equipment—daintily sprayed gold for décor purposes. These are listed at Patts. 30, 35, 43, 44 and Horizon floods. In yet another West End theatre, some home-made tin holders containing PAR 64/5s have been derigged and replaced by Patt. 76s containing brave old B1/4s.

So how dare anyone call this equipment obsolete?

Well, of course, sadly it is: but that doesn't help the lighting designer who has to use it, especially if he is too young to remember its heyday. For most shows on tour or in Town all the equipment is hired or bought. If the former it will probably consist of the usual tired old hire stock from one of the major companies. If the latter, orders will be subject to delay due to the economic situation or the shortage of steel. Or even, dare I say, that Kirkcaldy is not going to get around to making what you want for another eighteen months!

For the one-off show, or private work, though, the designer has to work with what he's got and is often not allowed to buy or hire any extra equipment. Even on tour anomalies arise, and in one date I had to use a Patt. 76 tilted at a strange angle for one important cue through lack of a Patt. 23—let alone a 264! In fact the effect looked better than it had before.

A few years ago Geoff Haley was so desperate for light from the No. 2 bar of a summer rep. season that he procured a rusty old car park Stadium flood, and hung *that* with my unwilling help. It took a whole sheet of No. 52 to gel it. Incidentally, it says much for that season that my LX store in the rival theatre had a lamp suitable for the Stadium flood!

Most of the West End and tour dates still have the delicious architectural addition of the Strand Utility housing decorating their parapets, usually housing the Patt. 83—a variant of the 53 with azimuth alignment and no outer casing. Sometimes they have the additional bonus of solenoid operated colour change: this has the happy refinement of announcing a lighting cue to the front row of the dress circle by a series of clicks and thumps. Another case of lighting the lights and not the show, perhaps?

Devotees of between-the-wars Cine-Variety architecture will know that the grand plans for the projection suite with integral lime boxes has now degenerated, through lack of staff knowing or caring about DC and carbon arcs, into filthy decrepit rooms. Ten to one the ceiling

leaks and the floor is ankle deep in carbon stubs, ash, gels, and empty Newcastle Brown Ale bottles. Apropos of this latter, while I was operating a CD during Panto some years ago there came a horrifying crash from the lime box next door. I dashed in between cues and found that one lime boy had over-balanced whilst reaching for another bottle of the aforesaid Brown and was spreadeagled on the floor. The Stelmar was still shining bravely on.

It was the same operator, by the way, who once came into the Console drunk and whilst talking to me, inadvertently blacked out the show. But that's another story.

The first lime I operated was a home-made effort: the basics being the lamphouse from a 1930 Kalee 8 projector and a lens assembly from an old slide lantern. DC and hand-fed, this lamp had many unusual design features not found on the more prosaic Sunspots and Stelmars. Whilst operating, the lamphouse sat conveniently on the left shoulder while the right hand could be extended near five feet to change colour, flicker and black-out—with a card of course.

One novel idea I saw once was to buy an old ex-Army searchlight and lug it up to the projection suite. With an eight-foot diameter mirror the idea was apparently to outdo every lime ever made. Seemingly, when the arc was struck the brilliant outline of the port was projected onto the entire prosc. wall: the machine was abandoned and was still *in situ*—rusty and completely stripped of valuables—by the time I arrived. Two Sunspots were still doing the job.

At the New Theatre, Boston (demolished 1962), the entire house feed came from two ex-traction engine dynamos driven by gas engines. Supply was 110v. DC and the public mains acted as the secondary supply. There were four 3-colour batters, a float, one lime—and four *water* dimmers, controlled by tracker wire and fed from uncovered knife switches on the board. Who says nineteenth century stage lighting ended a long time ago?

Actually, it was only two years ago that a touring stage manager handed me the plot for the week's show—on the back of two box office cards. Replete with terms like Segue and FUF the plot would have had Don Auty (Stage Manager of that extravagant touring revue *Girls in Cellophane*) and Francis Reid (feed in long forgotten graveyards of comedy like Luton Grand and Devizes Palace) weeping into their Dog's Noses with rheumy-eyed nostalgia.

I am delighted to record that two dates I have played: the Oxford New (1933) and the Skegness Gaiety (1940) have had auto colour mixing around the prosc. coving. That at Oxford still works, I am told, but when I visited Skegness this season the electrician told me he had stripped out the change cams and motor. Sacrilege! Perhaps Mr. Bentham would not approve of automatic colour music without an operator, but during the overture on Sunday nights at Skegness I would set the house to half, leave both banks of cove lighting on continuous change, and nip out through the pass door to admire the effect. Lighting design it certainly wasn't but what a rich feast of vulgar joy!



"On your feet Interface—some hairy data coming up".

BRIAN BENN

It may well be argued, however, that soon the most obsolete equipment of all will be the freelance Lighting Designer. Most reps. now have a lighting designer in that the Producer—oops, sorry, Artistic Director—no longer “does” the lighting. Instead the resident Sparks, glamourised under some new title, lights the lights instead of attending to what some old-timers consider his main functions: painting the leading lady’s dressing room and unblocking the loos.

It occurs to me that the masculine gender in the preceding paragraph should be neuter, to account for the growing tendency for lady electrical daymen.

Now TABS *International* and the ABTT guide us, and the drama schools turn out more and more stage hands who have learned the “correct” way to do everything but lack the enthusiasm and humility to get down to real graft. Those of us brought up in the old Variety traditions of “Get it in, get it up, get it on” (usually on

a five-hour Monday call as overtime was unthinkable and unpayable) are feeling the pinch and taking to the boats. As our spheres of influence grow smaller, our hair drops out owing to the internal beer rinse, and a major preoccupation becomes paying the bar bills. Oh! well. If we can no longer earn our living in the professional theatre, let’s go and teach others how to.

There is still a wee dram of comfort for us somewhere, though, before we go to rig and maintain those celestial AAs and Pageants and operate that Great Light Console in the Sky. For with the Grand Masters at the Duke of York’s and Oxford New, the Light Console at the Lane and the Manchester Palace, we have living proof that good equipment is never obsolete, not to mention all those seaside Bracket-Handle boards in Pier Pavilions.

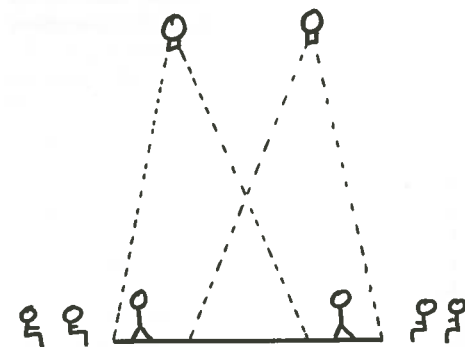
And as for lanterns, if you can still get a lamp for it, that old black box may well be recalled to use for the FUF in the Walk-Down!!

Angles For Thrusts

FRANCIS REID

In spring TABS I suggested that the primary requirements of smaller scale thrust stage lighting were *illumination* and *atmosphere* and that abandoning the proscenium frame relieved lighting of its standard obligations to create dimensional depth and control the audience concentration by a fluid selection of acting area. I suggested that thrust atmosphere was merely a matter of colour balancing—thus leaving that old friend (enemy) *illumination* as the problem. Any lighting man must have some sort of love/hate relationship with illumination: we all know that the actor must be seen, but the very process of making him visible works against so many of the other more exciting things in lighting. At least we can take comfort that sheer basic visibility is usually more compatible with magic when working on a thrust stage rather than within a proscenium arch.

So where do we position the lamps to cover the stage with illumination, yet have no light shining in the audience’s eyes? The easy way would be to light vertically; certainly the light does not go into the audience’s eyes, but unfortunately neither does it reach the actor’s eyes and this surely operates against the actor’s ability to communicate.



However, this is not quite such a major problem in a small theatre-in-the-round as it would be in a biggish conventional theatre because the audience is closer to the actor and there can be considerable upward reflection from furnishings and floor. But the message is not that vertical lights are ideal or even O.K.; it is that lights for an intimate thrust theatre can afford to be at a somewhat steeper angle than would be advisable in more traditional theatre forms.

So where do we angle the light from? Light from positions *outside* the stage will light the actor when he is on the edge of the acting area looking *outwards* to the audience.

CORRESPONDENCE

Shall We Thrust

Dear Sir,

After reading the article “Shall We Thrust” in the Spring ’75 edition of TABS I thought I should write simply to say that the article captured nearly all the problems I have experienced since joining my present company, TheatreMobile.

TheatreMobile is a peripatetic professional theatre company connected to the Mid-Pennine Association for the Arts and has been touring the area in a twenty-mile radius of Burnley for the past five years. The majority of venues that we play are school halls and we perform in the body of the hall purely because some venues do not have a recognisable stage.

In the beginning the company tried using stages where there were stages but found it virtually impossible simply due to the many problems that the article pinpoints. Nowadays we travel around—a minibus for the actors, a three-ton truck for the gear. We take all our own staging as well as sound and lighting equipment. Most of our lighting equipment is Rank Strand and we use the Mini-2 system with an eighteen-way board. I tend to agree with Mr. Reid in that the most useful lamp is the Patt. 123, although we also use Patts. 23 and 223.

As the article states, one of the problems is height for the lamps. I have overcome this by having metal squares constructed by a local college. The squares, which are capable of holding up to six lamps, are used in conjunction with Rank Strand telescopic stands.

As Mr. Reid points out, the problems of seeing the action from beyond the third row do show themselves in school halls but we hope we overcame this in the past by putting the audience on the stage. Our audiences, however, are now growing to such an extent that for our next production (*Hedda Gabler*) we are carrying with us rostra for raising the seating, so hoping to give all our audience a good view.

What are the ideal positions? What are the ideal angles? These are two of the questions asked in the last paragraph of the article. Positioning of the lights of course depends on the set and positions of the seats.

Hedda Gabler has been designed as a theatre-in-the-round set with four smaller acting areas in between the four main banks of seating. For this I am using three main stands placed nearly 120° apart around the main set. This provides me with fairly good angles to key and side light the smaller areas. The lighting

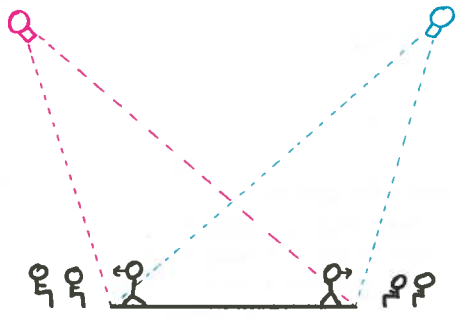


squares can reach a height of about 11 ft., so for lighting the flat floor this provides a fairly good angle. Problems arose on *What You Will* because of the main acting areas being raised to between 3 ft. and 4 ft. 6 in. To overcome this I elevated the lighting squares by putting them on top of tea chests. This seemed to compensate sufficiently except for the scaffolding tower. So I ended up side-lighting this with brightly coloured gels.

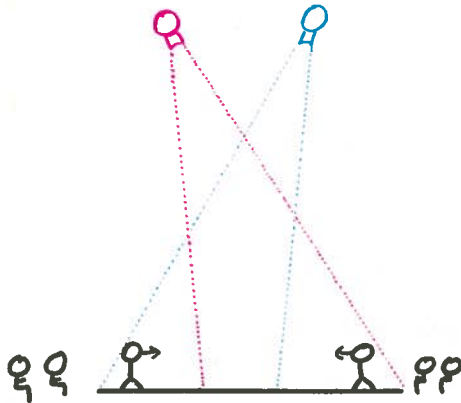
The main active rostra around the band, was lit roughly from 45° from both S.L. and S.R. This is the pattern I usually try and work to except for when we do theatre-in-the-round productions. But of course many other factors come into my lighting designs. Being a small company with limited resources we do not own a great many lamps. “How many lamps can I borrow” is usually one of the main factors behind a design. The shape and size of hall can also alter a design. The power available will also control the number of lamps I can use.

So to conclude I can only agree with what the article points out are the problems of school hall drama, especially from the professional point of view. It’s nice to know that our more famous lighting designers acknowledge the efforts of their poorer brothers struggling in school hall drama.

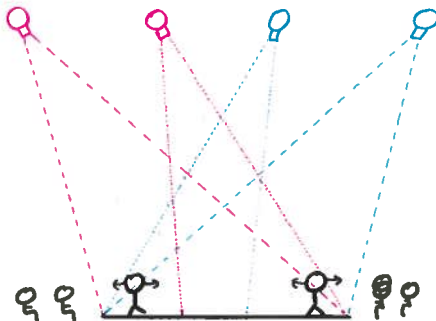
PETER HUSSEY
TheatreMobile



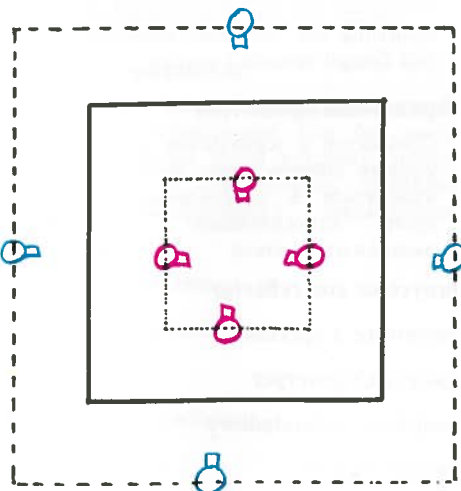
Light from positions *inside* the stage will light the actor when he is on the edge of the acting area looking *inwards* (i.e. across the acting area) to the audience.



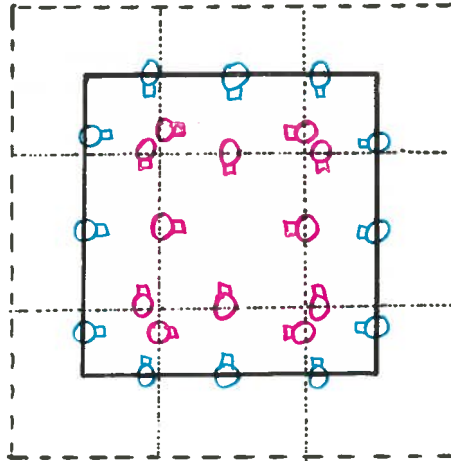
So we need both.



We have been looking at the problem in section. If we now look in plan, we find that we shall need something like this:



Or, more likely, to achieve a smooth cover, we should require:



This number of lamps would give a basic acting area coverage in one colour only. To give a complete two-colour atmospheric cover in warm and cool would require double the equipment, although it is possible to gain a lot of atmospheric control by using a basic cover for facial illumination and adjusting the colour tone with washes of positive colour from two or three hefty downlighting lamps.

It is possible to reduce the number of lamps required by using only three angles on the actor: i.e. three lamps with a separation of 120° between lamps rather than the four lamps with a 90° separation in the manner that we have been discussing. I personally find balance much, much simpler to achieve with the four-angle system, and balance is particularly important in theatre-in-the-round where all sections of the audience have a right to expect equality. But in a three-sided thrust form, it is almost inevitable that one audience block will be favoured by the actor and his director.

My own personal preference is to aim for four-angle coverage when the stage is enclosed by audience on all sides. But I am prepared to drop down to three angles when budgeting for enough equipment for the inevitably large acting areas of thrust forms where the stage is not completely surrounded by audience and where some members of the audience are accorded that second-class status which (and I stick my neck out) is inevitable in any theatre seating more than about 200 whether proscenium or more open form.

But please, please, please, do not let lack of lighting equipment stop you thrusting. Small scale theatre-in-the-round can make contact with an audience of around a hundred with no more light than a couple of domestic table lamps.

But have you ever tried just table lamps and no stage lighting on the average school proscenium stage?

Shall we thrust?

C.I.E. - 1975

What is the C.I.E.?

As Chairman of the C.I.E. Committee TC4.3 Stage and Studio Lighting, I am often asked what is the CIE and although I've been doing the job for twelve years, I don't find it easy to give a short answer. Well, this time your Editor has given me 900 words in which to explain. CIE stands for Commission Internationale de L'éclairage which translates less euphously into International Commission on Illumination. It was founded in 1913 and in its early days was largely a collection of scientists discussing photometry, colorimetry, spectral distributions and other technical matters. The CIE Standard Observer data sets the basis on which all measurement of light and of colour is based. The CIE colour diagram in its various forms is the internationally accepted and adopted method for specifying and defining colours. These are two of the undramatic but important contributions which the CIE has made to the science of light. In recent decades there has been a growing emphasis in the organisation on lighting applications.

How Does It Work?

Formally the CIE does not have individual members (although individuals can be associated with it). It is made up of the National Illumination Committees of its 42 member countries. The work of the CIE is done by 23 Technical Committees, covering such diverse subjects as UV radiation, discomfort glare, daylight and sports lighting.

There are additionally three Working Groups which have been temporarily set up to undertake study of a particular problem.

Who Are the Workers?

The stage and Studio Lighting Committee was first established at Scheveningen (Holland) in 1939, and amongst its earliest members were L. G. Applebee, Gillespie (Rollo) Williams and Scott Purdie. Since the war those who have served on the Committee have included S. L. (Johnny) Johnson, Bernard Bibby, D. R. Campbell, W. R. Stevens, (now President of the CIE) B. E. Bear, Francis Reid, R. de B. McCullough and Bill Lee. The longest serving member of the present Committee is Fred Bentham who officially joined in the middle 1950s but who had been active in CIE theatre matters from their inception. A worker behind the scenes for many years was another Strand man J. T. Wood (Woodie).

Membership of the British (NIC) TC4.3 at present is:

K. R. Ackerman (*Chairman*), R. G. S. Anderson (*Secretary*), J. H. C. Richards, P. Ward, F. P. Bentham, R. G. Brett, S. Futers, A. Hudspith, J. Bessant, J. Thornley, P. Rose, P. Balchin.

The control of each technical committee is given to a single country who provide the

Chairman and Secretary, and each other country is invited to nominate a member who should be expert in that subject. In addition the Chairman may invite individuals of any country to act as Consultants to the Committee. The National Illumination Committee of Great Britain (NIC) is the British organisation for working with the CIE. It is organised into a similar committee structure to the parent body. Three subjects are at present allocated to Britain, namely TC3.5 Lighting and the Environment, TC4.1 Interior Lighting and TC4.3 Stage and Studio Lighting.

What Do They Do?

Each technical committee is supposed to act as a continuous forum for the exchange of information on their subject among member countries and to work for the advance of the art and science in their area of special concern. To do this they are encouraged to limit themselves to specific tasks which can show results in a reasonable period of time. They therefore arrange as frequently as necessary meetings of expert members to discuss the tasks in hand. In addition, the CIE arranges a Sessional Meeting every four years to review progress and to encourage and spread the knowledge of experts from one speciality to another. These sessions usually last a week to ten days and active committees often arrange to hold their own meetings before or after the session. I have attended the last four which were Brussels 1959, Vienna 1963, Washington 1967, and Barcelona in 1971. The CIE last met in London in 1931 and, as many will know, the 1975 Session is to be held at Imperial College from 10th to 18th September.

Why Do They Do It?

As anyone who has taken part in international conferences and discussions will know, nothing happens very fast and discussions take even longer. TC4.3 is no exception and it does not claim many specific achievements to its credit. What it has done is helped spread the knowledge of different methods of operating, of different equipment and the reasons for the differences to a large number of member countries. Equally important it has introduced practitioners and manufacturers in different countries to each other and even more difficult it has had some success in getting theatre, television and film men in the same countries to talk to each other. As far as I know, there is no other organisation which provides an international forum for discussion for lighting people in these three visual arts.

What Subjects are Discussed?

Over the years discussions have covered many matters of common interest and at each four-yearly conference advantage is taken of the meeting to arrange for an interchange of views and news on technical developments and operating techniques in the various countries. TC4.3 has recently taken to producing once or twice a year a Newsletter which goes out to its international membership and to which they can

contribute. Our formal agenda has included:

- (1) Simple photometry of luminaires for comparative performance assessment.
- (2) Luminaire symbols and definitions.
- (3) Lighting control system terms and definitions.
- (4) Key to manufacturers' lamp and lampcap codes.
- (5) Standardisation of luminaire suspension spigots.
- (6) Standardisation of bar or barrel diameters.
- (7) Standardisation of luminaire pole operation connectors.
- (8) Systems for designating colour media on an international basis.
- (9) Flicker problems when using mercury halide lamps with film cameras operating at various speeds.

Some progress has been made on all these subjects except number (1), where we have given up in despair.

How Do I Find Out More?

If anyone has read this far and really wants to know more about the CIE, he can write to J. B. Collins, Hon. Secretary, NIC Building Research Station, Garston, Watford, or if they want to know more about the Stage and Studio Lighting Committee they should write to either R. G. S. Anderson or to me at the BBC, Henry Wood House, Langham Place, London, W1A, 4WW

K. R. ACKERMAN
Vice-Chairman

National Illumination Committee

C.I.E. Stage and Studio Lighting Committee T.C.4.3

Name	Country
K. R. Ackerman (<i>Chairman</i>)	Gt. Britain
R. G. S. Anderson (<i>Secretary</i>)	Gt. Britain
R. Schmidt	South Africa
H. Weik	Germany
D. C. Irving	Australia
R. Trink	Austria
J. de Backer	Belgium
I. Tortchanov	Bulgaria
C. W. Shearer	Canada
Dr. J. Pechar	Czechoslovakia
A. Tholle	Denmark
J. J. Baena	Spain
C. N. Clark	America
R. Maenpaa	Finland
G. Leblanc	France
I. Szabo-Jilek	Hungary
I. V. Benzio	Italy
G. Steinwitz	Israel
S. Ohba	Japan
R. Pendersen	Norway
J. Langewis	Netherlands
S. Brzozowski	Poland
A. C. Goncalves da Cunha	Portugal
A. Bailescu	Rumania
G. I. Ashkenazy	Russia
A. Nilsson	Sweden
H. Kessler	Switzerland
A. Petrovic	Yugoslavia

C I E APPROVED NOMENCLATURE FOR LUMINAIRES



réflecteur diffusant pour studio

Appareil d'éclairage dont la largeur angulaire de faisceau à mi-intensité excède 1,74 rad (100°) et dont la largeur totale n'est pas inférieure à 3,14 rad (180°).

studio floodlight

Lighting device with one-half-peak divergence exceeding 1.74 rad (100°) and with a total divergence not less than 3.14 rad (180°).

Studio-Fluter

Leuchte mit einem Halbstreuwinkel von 1,74 rad (100°) oder mehr und einem Öffnungswinkel von 3,14 rad (180°) oder mehr.

осветительный прибор рассеянного цвета для студий

Осветительный прибор, угловая ширина пучка которого (ограниченного половинной силой света) превышает 1,74 рад (100°), а угол прямого выхода составляет 3,14 рад (180°) или более.

projector de estudio

proiettore per luce diffusa

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naświetlacz sceniczny

ateljéstrålkastare



projecteur-réflecteur

Projecteur à simple réflecteur dont la largeur angulaire de faisceau peut être réglable par mouvement relatif de la lampe et du miroir.

reflector spotlight

Projector with simple reflector and capable of adjustment of divergence by relative movement of lamp and mirror.

Spiegelscheinwerfer

Leuchte mit Bündelung durch einen Spiegel ohne Linse. Der Halbstreuwinkel kann durch Änderung des Abstandes zwischen Lampe und Spiegel verändert werden.

зеркальный прожектор

Прожектор с зеркальным отражателем, угловая ширина пучка которого может изменяться в определенных пределах путем относительного перемещения лампы и отражателя.

projector con reflector

proiettore a specchio

spiegelschijnwerper

projektor zwierciadowy

spiegelreflektor



réflecteur diffusant spécial

Appareil d'éclairage dont la largeur angulaire de faisceau à mi-intensité (inférieure à 1,74 rad (100°)) et la largeur totale sont spécifiées.

special studio floodlight

Lighting device with a specified one-half-peak divergence (less than 1.74 rad (100°)) and a specified total divergence.

Spezial-Fluter

Leuchte mit einem bestimmten Halb-streuwinkel (unter 1,74 rad (100°)) und einem entsprechend festgelegten Öffnungswinkel.

специальный осветительный прибор рассеянного света для студий

Осветительный прибор, угловая ширина пучка которого (ограниченного половинной силой света) имеет установленное значение, меньшее 1,74 рад (100°); установленное значение имеет также угол прямого выхода.

projector de estudio especial

proiettore speciale per luce diffusa

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naświetlacz sceniczny specjalny

specialstrålkastare



projecteur à lentille

Projecteur à simple lentille, avec ou sans réflecteur, dont la largeur angulaire de faisceau peut être réglable par mouvement relatif de la lampe et de la lentille.

lens spotlight

Projector with simple lens, with or without reflector, and capable of adjustment of divergence by relative movement of lamp and lens.

Linsenscheinwerfer

Leuchte mit Bündelung durch Linse(n) mit oder ohne Spiegel. Der Halbstreuwinkel kann durch Änderung des Abstandes zwischen Lampe und Linse(n) verändert werden.

линзовый прожектор

Прожектор обычно со шлифованной линзой с отражателем или без него, угловая ширина пучка которого может изменяться в определенных пределах путем относительного перемещения лампы и линзы.

projector con lente

proiettore con lente

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projektor soczewkowy

linsstrålkastare



projecteur à lentille de Fresnel

Projecteur à lentille, mais avec une lentille à échelons donnant une délimitation plus douce du faisceau.

Fresnel spotlight

Lens spotlight with a stepped lens providing a soft edge to the beam.

Stufenlinsenscheinwerfer; Fresnellinsenscheinwerfer

Linsenscheinwerfer mit Stufenlinse zur weicherer Begrenzung des Bündels.

прожектор с линзой Френеля

Линзовый прожектор со ступенчатой линзой, обеспечивающей плавный переход от света к тени на границах пучка.

projector con lente de Fresnel

proiettore con lente di Fresnel

schijnwerper met fresnellens

projektor soczewkowy fresnelowski

Fresnel-strålkastare



projecteur de silhouettes

Projecteur donnant un faisceau bien délimité dont la forme peut être modifiée par des diaphragmes, caches ou masques formant silhouettes.

profile spotlight

Projector giving a hard edged beam which can be varied in outline by diaphragms, shutters or silhouette cut-out masks.

Effekt-Scheinwerfer

Leuchte zur Herstellung eines gleichmäßig ausgeleuchteten, scharf begrenzten Feldes. Die Begrenzung kann durch feste oder veränderliche Blenden oder Masken, die Schatten werfen, erreicht werden.

прожектор с проекционной оптической системой

Прожектор, имеющий усложненную оптическую систему, дающий световой пучок с резко очерченными границами, причем форма пучка может изменяться с помощью силуэтных диафрагм или масок.

projector de siluetas

proiettore a fascio sagomato

projectieschijnwerper

projektor konturowy

profilstrålkastare



diffuseur

Appareil d'éclairage de dimensions suffisantes pour produire un éclairage diffusé avec des limites d'ombre imprécises.

softlight

Lighting device of sufficient size to produce diffused lighting with indefinite shadow boundaries.

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Leuchte oder Beleuchtungs-Vorrichtung genügender Größe, um eine diffuse Beleuchtung mit weichen Schatten zu erzeugen.

светильник бестеневого диффузного света

Осветительный прибор достаточных размеров, создающий диффузное освещение с неопределенными границами тени.

projector difusor

apparecchio di illuminazione per luce diffusa

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oprawa światła wypieniającego

mjukljusarmatur



appareil à effets; projecteur de décor

Appareil de projection muni d'une optique conçue pour obtenir un champ uniformément éclairé et permettant, avec des objectifs convenables, la projection bien détaillée de clichés. Les clichés peuvent être soit d'effets de mouvements, soit d'effets statiques.

effects projector

Projection apparatus with optics designed to give even field illumination of slides and, with a suitable objective lens, well defined projection of detail. Slides can be of moving effects type or stationary.

Effekt-Projektor

Gerät mit Abbildungsoptik zur Projektion von feststehenden oder bewegten Dias.

диапроектор с насадками для эффектов

Проекционный прибор, в котором с помощью конденсора создается равномерное освещение диапозитива, применение объективов позволяет осуществлять статическую или динамическую проекцию.

projector de efectos

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diaprojektor

projektor efektowy

projektionsapparat

Tabman's Copenhagen Diary

Ei Blot Til Lyst

Not for pleasure only is the message over the proscenium arch in Copenhagen's Royal Theatre. Recent years have seen a lot of world theatre which has been clearly either not for pleasure *or* for pleasure only. But surely real theatre is a subtlety that includes pleasure but goes beyond: the Danes inscribed a fundamental truth on their proscenium when building this theatre in 1875.

Lysdesign

As ballet is the only theatre form that I have never worked in, I am relatively free from hang-ups and can normally settle back in my stall for a relaxing "forget-the-lighting" evening. No such chance at *Dodens Triumf* for there can be nothing relaxing about a Flemming Flindt dance drama with an Ionesco inspiration in a setting of scaffolding towers festooned with 264, 223 and 243. Jørgen Mydtskov's Lysdesign uses light in a concertante style where clean side beams reveal and conceal against a softlight continuo. The evening is a perfectly balanced triangle of light, sound, and movement.



Frøken Julie

I went to the Det Nye as a lover of theatre architecture rather than a student of Strindberg in the Danish language, but such was the compulsion of the acting that I was totally hooked for at least ninety of the hundred (no interval) minutes of the performance. All the exposed FOH spotlights are painted to match the auditorium décor—a technique that I would like to see used more often.

Dukketheater

Model stages preserve interesting details of scenographic history and Wilhelm Prior's toy theatre museum is international in scope. He also publishes splendid models of Copenhagen's Royal Theatre and (shown here) the Pantomime Theatre in the Tivoli Gardens where the performances

still use the original stage machinery dating from the nineteenth century.

Det Lille Teater

Squat with the under-fives and their mums on low bench seating in this black box theatre; basically end-stage but with colourful scenic elements and entrances around the walls. The play has all the essential ingredients: action, magic, masks, UV, with lots of pantomimic confusion stemming from doors and windows plus controlled participation (vocal not active). But the success stems, above all, from a total lack of condescension in the acting style.

Teatermuseum

To sit in the auditorium or stand on the stage of Copenhagen's old Court Theatre is a mind-blowing experience for a sentimental old bit of theatrical tat like me. Built in 1767 with the auditorium unaltered since 1842, it now houses a wonderful collection of theatrical ephemera. I now know that the only possible location for a theatre museum is a historical theatre. What a wonderful possibility for London's Old Vic.

Odense Og Horsens

Up at 5 a.m. to catch the ferry for a look at a couple of Danish theatres outside the capital. At Odense, famed as the birthplace of Hans Christian Andersen, the charming regional theatre dating from early in the century has a resident company for drama and musicals. Odense has a long tradition of Strand lighting with the Wood Electronic only recently replaced by an MSR Memory. At Horsens, there is a turn of the century painted ceiling but a less than adequate stage. However, while preserving the auditorium, this is the next stage to be updated by Bengt Juel-Nielsen of Skandinavisk Teater Teknik who have been responsible for developing many of Denmark's smaller old stages to enable them to accept the standard rig of National touring productions in addition to local presentations.

