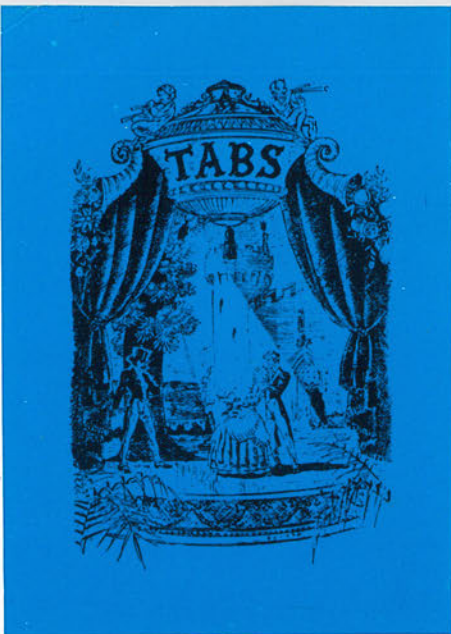


Tabbs

Stage Lighting
International

Autumn 1976





TABS

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Hearing the Light



The recent refurbishing of the *Theatre des Varietes* has restored 19th century Parisian standards of comfort and elegance to both sides of the curtain including Foyer (above) and Dressing Room (cover). One part of the building, however, remains untouched: the flies must be replaced rather than restored. The cover photograph gives a last look at the 1807 timbers before wood gives way to steel. The history of the *Varietes* was described by Georges Leblanc in Summer TABS and their MMS was pictured in the Spring issue.

Editor: Francis Reid

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There seems to be no limit to the technological progress of stage lighting. Every wish can be granted, every whim fulfilled. Label a control knob with the desired function, call up the electronic genie and before you can so much as utter the magic words *Modular Digital Logic*, a wondrous new facility has been acquired. The luminaires may not develop quite as fast as the stuff in the control room, but remember life before the TH lamp, the fresnel lens, and the eight shutter profile—for a visual jolt, go see a performance in any theatre which has the misfortune to be still equipped with simple plano-convex focus spots. Unless, that is, you like your lighting with raw edges. If projection is your scene, then there is a special genie who resides in Vienna's Candle Street. Even the humble gel is on the march: the editor's bouquet goes to Cinemoids 71 and 77 as the technological achievement of the year. With a sepia and an equivalent to double 50 his bliss would be complete.

To where is all this Tabular rapture leading? Back to an old chestnut that has already produced editorial thoughts (TABS, Summer 1975)—the training of lighting men (by which we mean lighting persons) to use all this wonderful technology in the service of the theatre performance.

There are signs that we are moving away from the old apprenticeship system towards more formal educational methods. Formal education produces formal qualifications and formal qualifications depend on formal examinations. These examinations can only assess skills that are measurable. The measurable skills, being factual, are also easier to teach. Thus that cornerstone of formal education—the *syllabus*—tends to be an exercise in the possible rather than the desirable. The syllabus is constructed from subjects that can be both taught and examined. The objective craft rather than the subjective art. But the craft and the art are inseparable: they are as interdependent as gin and tonic or Morecambe and Wise.

There is no objection to craft examinations—indeed, qualification by examination is a necessary component of safety. What is to be resisted is that art, because it cannot and need not be examined, should be accorded a reduced status in the syllabus.

The craft is becoming easier to teach. The joy of the new equipment is that it places

technology increasingly at the service of art: operational dexterity is acquired more quickly on an MMS than on a manual preset, a grandmaster, or even a Junior 8. Much of the old craft was concerned with techniques of overcoming the inherent problems of the older equipment. The removal of these technological restrictions opens the lighting man's horizons to the point where everything is technically possible. How shall he be helped to develop a feeling for what is artistically desirable?

We have no magic answer, but have been searching our own past for clues. Who taught Tabulus?

DIRECTORS like Günther Rennert who with a muttered "too much apparat" would demonstrate the value of clean directional economy. Michael Redgrave who could pinpoint the quality of a scene in a throwaway such as "Are we remembering that gaslight is green". Hilton Edwards who knew so much that he asked only the possible. Clifford Williams who could see a random flash of light and develop a major idea. The two Francos: Zeffirelli for varnish, and Enriquez for contra luce. Above all, Carl Ebert who treated his technicians like he treated his actors—never superimposing, always drawing out: grabbing one's elbow on a musical modulation with a wide-eyed *Can you hear the light?*

CONDUCTORS like Vittorio Gui who, having worked with Debussy, would delight in explaining the detailed significance of light in the score of *Pelleas et Melisande*.

DESIGNERS like Reggie Woolley who can say everything with a single positive key light and minimum fill. Luzzatti for texture, Howard Bay for unflappable wit and wisdom, and Peter Rice for that friendly encouragement which the lighting man needs most but gets least.

PAINTERS like Charles Bravery who explained the light in the paint and Henry Bardon who felt how to carry that light through from the paint to the acting area.

COMPOSERS like Malcolm Williamson who consciously include the light plot in their scores and others, like Mozart and Handel, who did it subconsciously.

Is there a connecting thread in all this? None of these were lighting men and most of them would have been unhappy at the prospect of so much as changing a plug.



Horseshoe Intimacy in Inverness

FRANCIS REID

It is some years since I last wrote in *TABS* about a new theatre in Britain. Since then I have seen many, admired several, been stimulated by a few, but excited by none—well, not sufficiently excited to reach for my architectural pen.

British theatre has settled down into building small playhouses on the lines of the fan-shaped mini-cinema with vestigial forestage and a proscenium formed from the natural termination of roof and walls, both slotted to meet the requirements of updated-McCandless light design.

This concern for lighting angle has been fundamental, often given very high priority among the basic design criteria. This is hardly surprising when one remembers that the first generation of Theatre Consultants were lighting designers called in to rectify some of the lighting installation horrors of the late fifties and early sixties—and gradually asked to look at other aspects of theatre planning.

But there is a more fundamental reason. Lighting angle provision is a logical follow-through from the number one sacred cow: *purity of sightline*. Everyone to see everything from a relaxed sitting posture in every seat.

There has been much talk of the actor \rightleftharpoons audience relationship and clear sightline is fundamental to this. Less concern has been



Eden Court Theatre, Inverness.

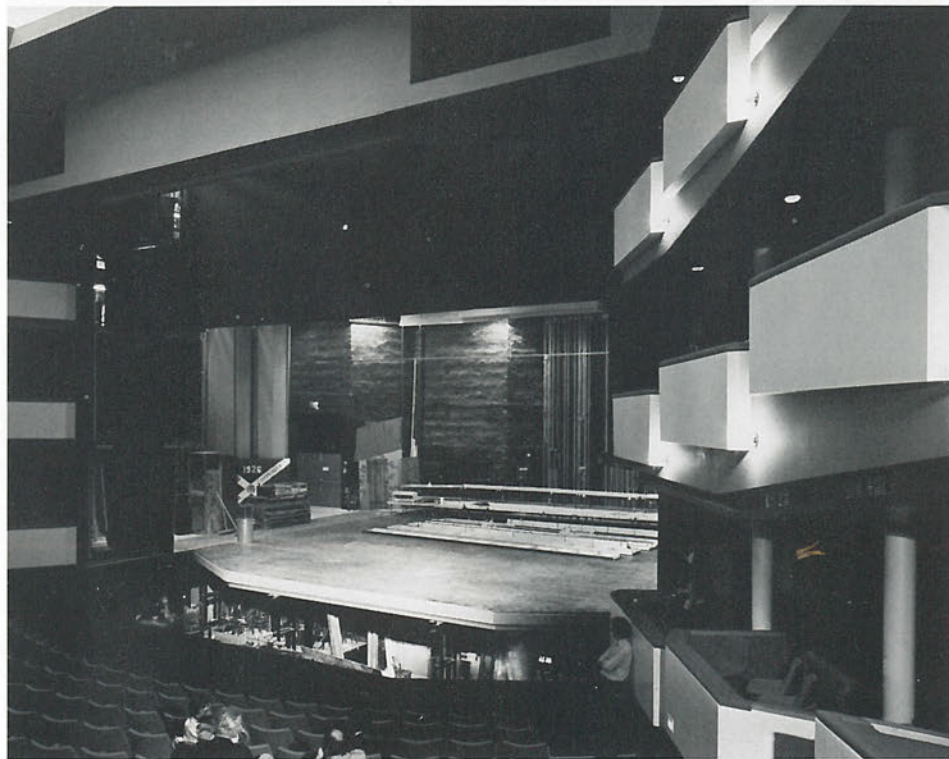
shown for that other relationship: audience \rightleftharpoons audience. The theatre magic only works when the individual members of the audience form a communicative bond, not just with the actors but with each other. An audience

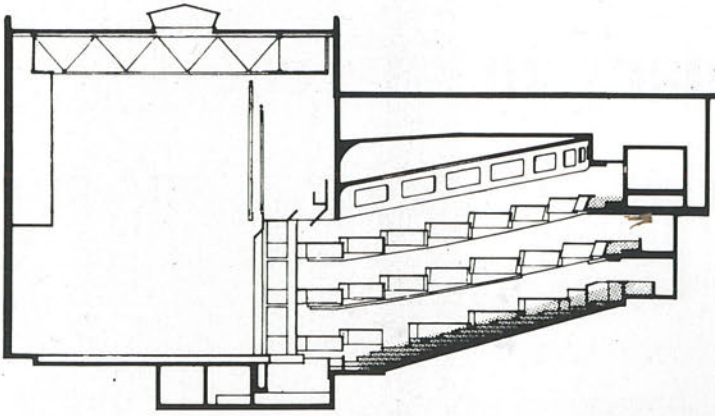
must be a corporate body: something much more than the mere sum of its individual members.

For this to happen, the individual audience members must be aware of each other: but good sightlines place individual members of the audience in isolation, so there is a conflict. As soon as one member of the audience is enabled to become aware of other members, then someone (either that person or another) has a less than perfect sightline. Paper the walls with people and intimacy is improved for the main seating blocks without impairing their sightline. The people hanging on the walls benefit from the intimacy (with both fellow audience and stage) but cannot see the stage very well: this is compensated for by pricing.

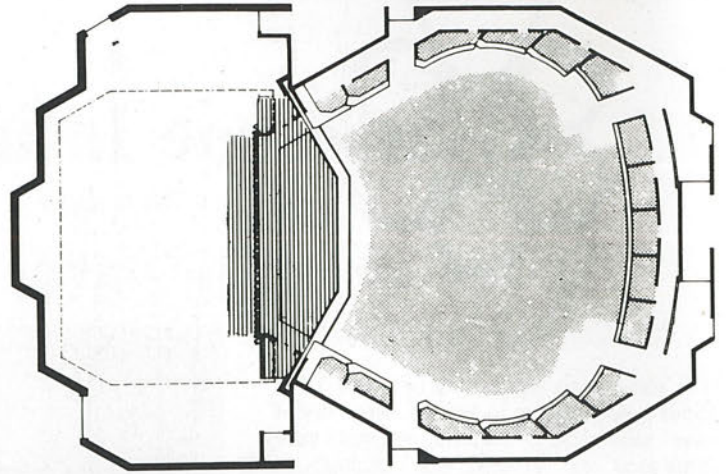
There is nothing revolutionary in this concept: it was the basis of older theatre architecture and it only went wrong when the desire to increase capacity led to the depth of the tiers being increased to the point where the seats lost intimacy as well as vision.

Hear now the words of Iain Mackintosh: "*The design of the Inverness theatre is not determined solely by the two-way relationship, the contact between performer and theatregoer, but also by the three-way relationship: performer, you the theatregoer, and they the other members of the audience who, as well as you, have decided to be present at (or, as the French sensibly say 'assister à') the same theatrical celebra-*





Section



Opera/Ballet

tion. In every seat at Eden Court you will be conscious of the audience as well as of the stage."

So I set off for Inverness and I was not disappointed: here was the elusive excitement that I have been seeking for more years than I care to count. By taking a constructive backward glance, Inverness has put intimacy back into the 800 seat auditorium—and has done so within the idiom of contemporary aesthetics.

This new theatre is called the *Eden Court*: a silly name for something that justifies a revival of the grand old title *Theatre Royal*. Or why not *Royal Highland Theatre*? Theatres have to be Grand! Eden Court sounds more like a housing development or a health farm. (Yes, yes I know that there is a reason, a good reason for the name. But, please, in theatre, logic is not enough.)

The theatre is grandly sited. Some theatres are good to look at, some are good to look from. Some are neither. The Eden Court is both. Approach the open riverside site on foot to appreciate the hexagonal



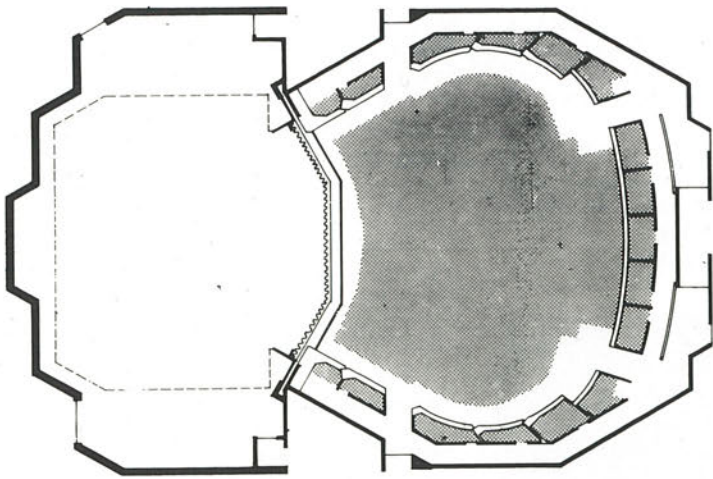
Opening night Gala performance.



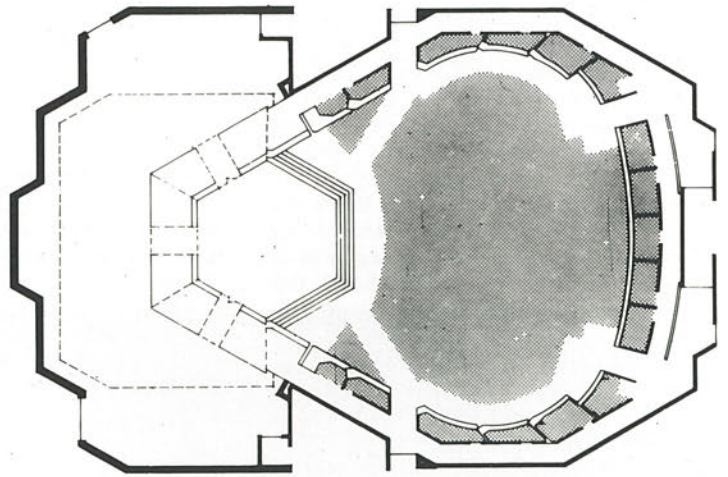
juxtapositions of glass, slate, and dark flinty aggregate. I can vouch for the feeling of mounting anticipation in summer sun, but I suspect that it looks just as enticing in misty rain: slate is very responsive to subtle changes in light. Once inside, from foyers, stairs, bars and restaurant, eyes are drawn to the outside and the feeling is of a temporary intimacy encapsulated within a permanent outer world. After all, every performance is the assembly of a special group of people who, for a few brief hours, will share a creative experience before being dispersed, never to reassemble in quite the same form.

I visited the Eden Court in the way that I like to experience any theatre, old or new. Arrive with the audience, see the show, sample the catering and then make the Grand Technical Tour on the following morning.

The show was the Scottish Opera *Merry Widow* and for each of the three acts, I sampled different parts of the house: first the steeply raked stalls and then a couple of the boxes in the enwrapping horseshoe tiers. In



Drama Open End Stage



Drama Platform Stage



the stalls, contact was aided by the people papered on the walls around me—and when in turn I hung up there, I felt like something out of Rowlandson.

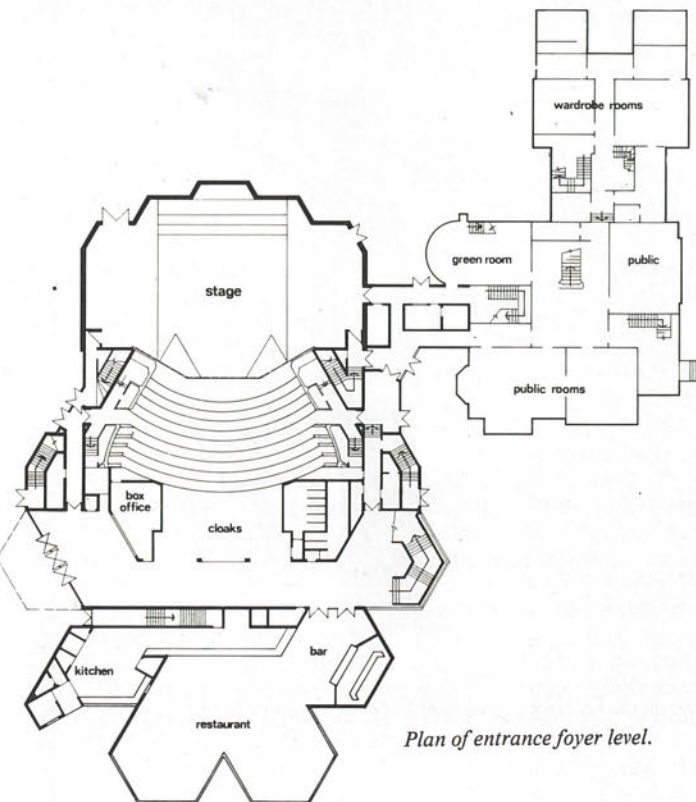
As the orchestra played the Act 3 entracte, the whole audience participated in Vilja: no single person actually vocalised but the corporate *thinking* of the musical theme produced a barely perceptible sound. The feeling was good, it was physical, and it was with me for days.

The sightlines from the side seats are imperfect and were so planned: on the other hand, as the seats become higher and cheaper, the pit orchestral sound becomes richer although remaining in balance with the stage. Was this calculated or even predicted? Certainly if I were a citizen of Inverness, desirous of the best opera seat, I would take a cheap box. In the tiers there are never more than two rows and at the sides there is but a single row of chairs which can

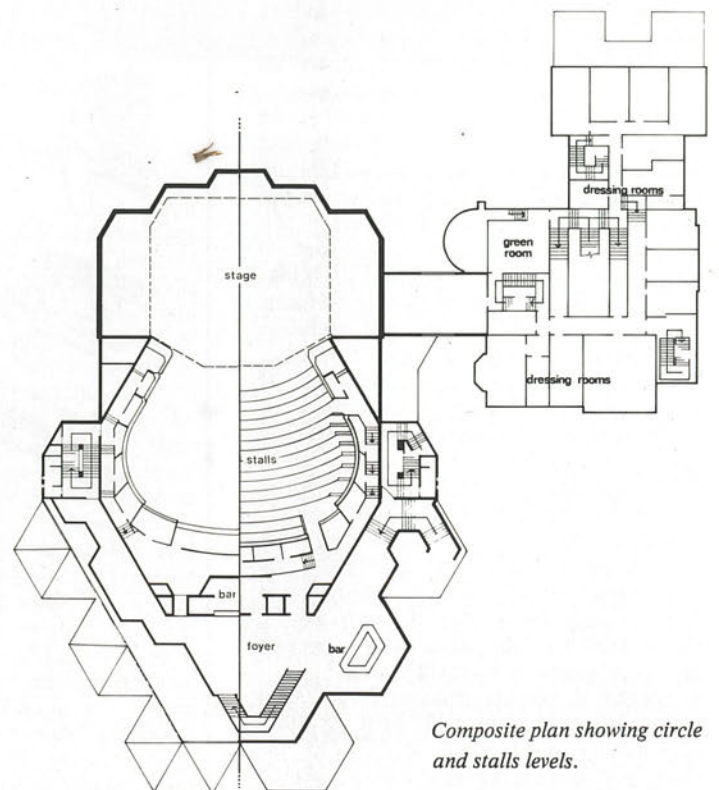
be arranged in any chummy formation to personal taste.

The single unsatisfactory element in the auditorium is the houselighting. As a rethink of candle brackets, the large decorative bulbs just do not say enough—at least not without a bold statement from the missing gorgeous central chandelier on a hexagonal theme for which the whole auditorium just cries out *please!*

The architectural concept of the theatre grew from a consideration of the 120° angle of the hexagon. The logic is fascinating to read, but fortunately it has provided a creative impulse without dominating the final result. Geometric shapes, whether they be polyhedral or drum, have inspired some theatre architecture with unhappy results because the geometric idea has become obsessive to the point of superimposition. Here, the hexagon, having inspired, works as a subconscious unifying element, making



Plan of entrance foyer level.



Composite plan showing circle and stalls levels.

only occasional conscious but always unstressed visual appearances.

The adaptability of Eden Court is indicated in the plans. As it is mainly a touring theatre without its own acting company, excursions into the *Drama Platform Stage* mode are likely to be infrequent. Apron adjustment to thrust the stage or reveal the pit is made in an unorthodox way: the entire acting area is motorised to slide forward over the pit and form a forestage. This sounds simpler in theory than it is in practice, because sliding the stage to reveal or conceal the orchestra pit also opens and closes a corresponding void at the back of the stage and this has to be filled manually with chunky floor sections. Moreover quite a lot of manual effort is required to reorganise the towers which rest on this moving floor to form the proscenium opening. These adjustments will normally be made with a tired crew after a get-out and so any capital cost savings in avoiding a more traditional orchestra lift will soon be eaten up in running cost—to say nothing of the muscular effort in passing a touring orchestra's music stands and instruments up and down into the pit rather than by raising and lowering the lift. It has to be said that both Theatre Consultants and Scenic Designers are currently relying too much on the muscular goodwill of theatre technicians.

The acoustic shell for orchestral concerts, however, is a model of how to arrange such things with a minimum of manual effort.

The safety curtain and main house tabs fall on the extreme downstage edge of the stage (ie on the orchestra rail), and there is a second set of house tabs positioned at a more traditional setting line.

There is a particularly attractively positioned lighting bridge over the forestage (ie immediately upstage of the safety curtain and main house tabs) and side lighting galleries (divorced from the fly galleries—nice!). Socket outlet boxes are convenient for feeding lighting flown as required on any of the counterweight sets.

The main Foh lighting position is an encircling tier above the second circle and from a box on either side of the auditorium at first circle level. This is all rather flat but there is a possibility of positioning a few lanterns on the balconies of the proscenium towers. The auditorium form, in fact, brings back some of the side Foh lighting problems associated with older horseshoe auditoria built before the days of fluid directional lighting. Having welcomed the return of the tiered horseshoe with such enthusiasm, I can hardly also plead for the retention of the wall slots of the fan-shape! Some of us—and I think I can include myself with the present technical staff of the Eden Court—would willingly amend our lighting ideals wherever possible to preserve the quality of the auditorium. But for a touring theatre this is not a realistic philosophy and time will no doubt introduce the usual quota of Foh stands, brackets, bars, clamps etc.

Theatre is compromise and the next horseshoe auditorium will have to compromise its purity just a little in the interests of more comprehensive Foh lantern provision.

No prizes for guessing the type of lighting control: the old cliché "every theatre should have one" is rapidly becoming "every theatre has got one". Yes, it's an MMS (120 channel).

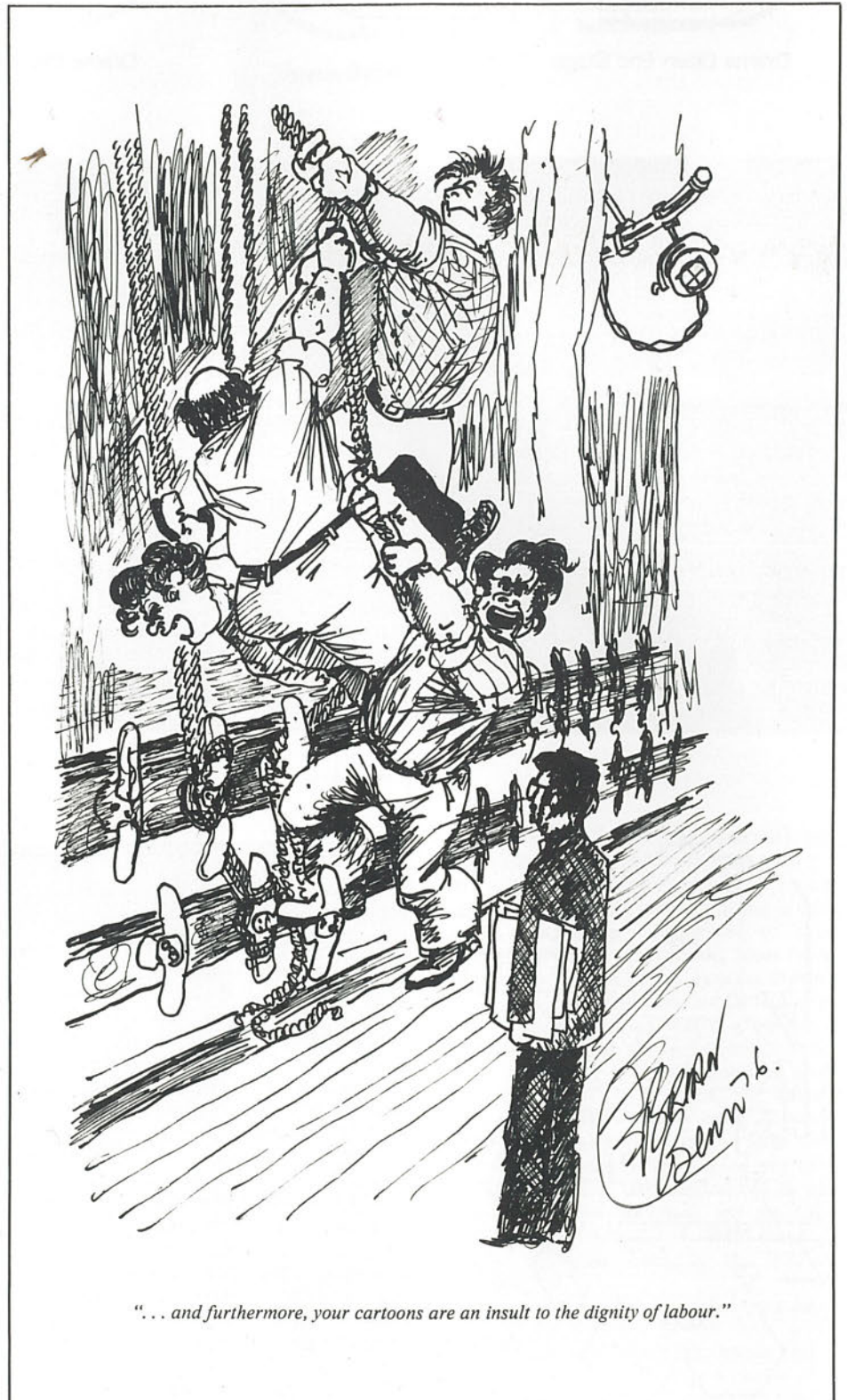
The theatre adjoins the former Bishop's Palace which provides dressing rooms, administrative offices, an exhibition space, and what is surely the only green room ever to be sited in an Episcopal Bishop's private chapel.

And so the verdict is *A Super Theatre*—let's have more in this form of

an intimate tiered horseshoe. And *Congratulations* to the whole team led by Graham Law, John Wyckham and Iain Mackintosh. May they have their just reward: a financial go-ahead for the studio theatre and that auditorium chandelier.

The Design Team

Architects: Law and Dunbar-Nasmith
Consultants: John Wyckham Associates
Quantity Surveyors: Soutar and Jaffrey
Main Contractor: Crudens Ltd.



"... and furthermore, your cartoons are an insult to the dignity of labour."

Let Newton be! and all was light

TONY CORBETT

Lighting, we know, can play a crucial role whether it be linked to the Arts, or in more common terms as part of our everyday life, of us and all things surrounding us moving slowly around the sun. A building is brought to life with light; natural light brought by the sun thrusting its energy and piercing rays through windows, across open courtyards, creating projected forms and shapes on the surfaces it finally comes to rest on. Light and shadow are brought together to produce focus and contrast. The energies are transformed into a conformity in which all the disciplines are maintained, highlights and shadows all conform, and a strength and vitality is produced.

The National Theatre is such a building where great use is made of natural light. Massive panes of glass provide stunning views over the river. In some areas, afternoon sunlight filters through producing a soft tranquility of warmth and stillness. In other areas a more diffuse light spreads over the space giving a cooler, less accentuated feel, but vital in its contrast. The quality of the light in such a series of spaces as the foyers, is the essential property that has to be established from the outset of the job. Exposed concrete finishes were ordered by the architect which had to be softened and "warmed-up" by careful use of light. A combination of uplighting troughs at the base of all main columns, and wall mounted lighting bars have been provided to both gently uplight the columns and give the appearance of the structural elements rising out of the vast horizontal planes, and warm slashes of light cutting across and emphasising other structural planes.

The whole has been linked together with continuous concealed lighting, in the form of S.E.F.T. (Scintered Electro Fluorescent Tubing), around all the cills, the bar and cloakroom fronts, and winding its way up the main staircases. Areas of focal importance, such as the bars and display areas have been emphasised with either small exposed reflector lamps etching out the shape and providing an element of sparkle, or secondary lighting bars on which are mounted Par 36 specially designed display lighting fittings.

Downlighters are provided for toplight, with a saturation towards the main entrance areas to the foyers and two auditoria, with interconnecting flow patterns in the main body of the foyer spaces.

The design is based on straightforward and simple fundamentals, because it has been the building, with its series of spaces and volumes, that has set the parameters to which we have worked. The architect, from our very first meeting, demanded that the lighting must work with the building and never against it. The lighting must be part of



Foyer of London's new National Theatre.

Photos: Chris J. Arthur, Transworld Eye

the building and not imposed upon it. A simple but difficult brief—a space for people—everything else to be considered incidental. Very little furniture or furnishings were to be employed, and no great areas of plants or pieces of sculpture. Even the walls were to remain bare. The lighting was designed and set out without knowledge of any furniture or furnishing layouts for any of the spaces, including the restaurant.

This required a disciplined approach. An understanding of the spaces and their relationship to each other was essential before any thoughts could be put to paper. No false ceilings, the *in situ* diagrid ceiling throughout every area, allowing little flexibility to be built in to allow for anything requiring light that might come in at a later stage. This has produced its own problems because inevitably some of the walls have been used for display and advertising material, small exhibitions are being mounted, all with their own particular requirements. Fortunately spare circuits were included, and these have been

facilitated to solve the problem. There obviously had to be a limit to the spare capacity to be made available because of the sheer scale of the spaces and the possibilities of use are infinite.

The control of all foyer circuits is by a central programmer unit, providing quite a large dimming capacity, mainly via pin-patching. Many circuits are directly switched by the programmer, but all circuits playing on concrete surfaces, are capable of being selected via a dimmer. There is also the facility to group circuits together which require the same level on a particular programme. To ensure correct circuit selection and level for each state of light it is essential for such a type of control. All circuits are provided with manual override, so areas can be switched on which might not normally be called up by the programmer.

Eight states of light can be selected, all from the central control point, and some from local control positions. This enables the night security and cleaners states to be switched on from the stage door, and two states, each

relating to the Lyttleton and Olivier Foyers, to be selected locally. The latter facility provides for many of the circuits to be deselected when the audiences are in the theatre, and to be reinstated during intervals etc.

All corridors leading to the auditoria entrances and associated lobbies are controlled by the houselight dimmers, in order to give an indication when the curtain has gone up. It should also help to keep late-comers quiet!

Perhaps one of the most interesting aspects for stage lighting designers, is the use of American Par lamps. The pressed aluminium reflector lamps available in this country are limited to the Par 38s and 56s at 240 V and the Philips Par 36 pinspots operating at 6 V/35 W. General Electric of America have a remarkable range of Par lamps, of which we have heard a great deal about in the past, but which have rarely been used over here in the UK, apart from the 1,000 W Par 64 now widely used for pop concerts etc. The range includes Par 36s, 38s, 46s, 56s and 64s operating at 5.5 V, 12 V and 120 V, with a number of variable beam angles. Also Quartzline versions are available in many of the sizes, giving increased output and up to 4,000 hours life. The problem, of course, is the operating voltage. It would be so much easier if they were designed for 230/240 V use. But the reason for the American Par lamps being so superior in every respect is partially due to the lamp voltage and also to the large range available.

From Ohms law, we can simply see the advantage of operating at 120 V or 12 V.



Alternative viewpoints: bar and bookstall areas in the National Theatre foyer.



$$1. V = iR$$

Where

V = lamp voltage
i = lamp current
R = resistance of filament

and

$$2. R = \frac{\rho l}{A}$$

Where

R = resistance of filament
ρ = resistivity of filament
l = length of filament
A = cross sectional area of

From 1. Consider i as a constant K_1 ,

$$\therefore V \propto K_1 R$$

or the voltage is directly proportionate to the resistance of the filament. This means if we reduce the voltage from say 240 V to 120 V, then we have to reduce the resistance of the filament proportionally, to maintain constant current.

From 2. Consider ρ as a constant K_2

$$\therefore R \propto \frac{K_2 l}{A}$$

or the resistance is directly proportional to the length of the filament, and inversely proportional to the cross sectional area.

Hence to reduce on R, we reduce on the length of the filament and increase its cross sectional area. Thereby producing a more compact filament, and less of the "washing-lines" common to lamp filaments designed to operate at 240 V. And the smaller the voltage the more compact the filament

becomes. Thus we are approaching the pin-hole camera situation, and with a simple reflector or Par lamp considerably better beam control will be achieved.

A good comparison is with the 150 Par 38 SP:

Voltage	Luminous flux	Max C.P.
120	1,740	11,500
240	1,500	7,000

The 120 V lamp, due to its smaller filament size, is pushing more light energy into the useful zone, i.e. between peak and half peak, with a more rapid fall off to 1/10 peak and considerably less wasteful light, often referred to as "splurge". All in all, producing much better beam control and more light where one wants it.

Enough of physics lessons. In the foyers Par 36 and Par 56 units have been used, both operating at 12 V, giving the following beam characteristic:

Lamp	Voltage	Max C.P.	Beam angle to $\frac{1}{2}$ P.k.
25 Par 36 VNSP	5.5	30,000	4.5° × 5.5°
50 Par 36 NSP	12	5,200	10° × 12°
50 Par 36 WFL	12	960	23° × 35°
50 Par 36 VWFL	12	450	35° × 42°
240 Par 56 VNSP	12	110,000	6° × 8°
1,000 W Patt. 264	240	62,500	17° × 17°

The Patt. 264 is providing considerably better beam control, and flexibility of beam control than any Par lamp could ever produce but relatively inefficient due to the optics involved, and expensive. There must be considerable application where intensity and price are a greater priority than accurate beam shaping.

Some examples of other lamps:

500 W	PATT. 23	240 V	17,000	20° × 20°	200 hr
1,000 W	PATT. 764	240 V	82,000	14° × 14°	200 hr
200 W	PAR 46 NSP	120 V	35,000	5° × 7°	2,000 hr
Q500 W	PAR 56 NSP	120 V	100,000	4° × 7°	4,000 hr
Q1,000 W	PAR 64 NSP	120 V	200,000	4° × 9°	4,000 hr
Q1,000 W	PAR 64/1	120 V	400,000	4° × 7°	400 hr

The above figures are only approximate, but considering the high capital cost these days of profile units etc., it must make sense, especially for amateurs, to look into the alternative.

The author is Managing Director of Light Ltd.

Exeunt:

Candle Snuffers and Lamp Tenders

From *Theatre Royal, Norwich: The Chronicles of an old Playhouse* by Bosworth Harcourt. Published in 1903.

Researched by
ALICK WILLIAMS

Gas Lighting—1836

In the Assize Week, 1st August, Mr. and Mrs. Yates were engaged, and appeared in "The Jewess", with all the "splendid pageantry", but more memorable than all it was—the final exit of all "candle snuffers", of all "lamp tenders", of the grease drippings known and endured from time immemorial by all the house, both before and behind the curtain, and the bill of the night announced "That the Theatre would reopen after complete redecoration," and "that, in compliance with the public wish, the manager introduces upon a most complete and splendid scale the 'Gas'". We can hardly realise that all the brilliant achievements of the local stage up to this date had been carried out, with all their boasted scenic effects, only under the dispiriting and gloomy surroundings of the tallow candles, or the scarcely more brilliant oil lamps of that day. When we see in the prompt copies of the old plays the instructions given "lamps up" or "lamps down" we scarcely believe that the result was not gained as now by the touch of a button or the turning of a tap, which in a second gives the desired change, but by the concerted action of many people at different points, who lowered their respective illuminants as best as they could, and the stage was very gradually lightened or darkened as the scene demanded, and the effluvia of the smouldering wick must have been at times painfully obnoxious in the house, especially in the stage boxes, which were in such unpleasing proximity to the wings and the footlights. But these were the days of large fans and "vinaigrettes".*

* Smelling bottles.

Fire Risks

... As to the time the Theatre has been in existence, without fulfilling the destiny of all theatres and suffering destruction by fire, I suppose is in itself an almost unique reputation to possess. I don't know the length of life the tables of the fire insurance companies attribute to a theatre, but I imagine they possess such tabular guidance, based on constant observation, and, I think, they would tell us probably that our old Theatre has survived its natural limit. When we think of the number of performances given year after year. When we consider their nature—take that most risky and inflammable of all stage productions, a pantomime, with its numerous gas jets, connected with every part of the scenery by rubber tubing, necessarily hastily adjusted and as hastily removed, the "flies and sky pieces" almost baked by the heat beneath them; nothing but wood and canvas around, and the stage crowded with girls clad in gauze and muslin, all orderly, yet of necessity quick and bustling in their actions—when one looks on at this, we can only wonder at the great immunity from fire the old house has been allowed to revel in through all these years. Outside pantomime, there are the dramas in which the leading and attractive incident has been the burning of a house or mill, when rather large quantities of gunpowder have at times been used—through all these almost provoked and courted disasters, the old house is still "scot free".

I remember once assisting my dear old friend, the late John F. Young—then manager—for nearly a week in the production of one of this class of drama, the name of which even I quite forget. I was not a very prominent or conspicuous assistant. I only know my volunteered duty placed me

behind the "set" of a cottage porch (in one scene only), with a mop and a pail of water, and when the villain of the play, threatening vengeance on somebody or something, applied a match to the bits of tow adroitly wired to the inside of the frail wood and canvas porch, followed immediately, of course, by the altogether impossible, but dramatically effective, blaze of the whole structure. I know that the anxious manager, Young, was terribly nervous every night, and that George Howard, the prompter (and most useful actor) had severe instructions to ring the curtain down the moment he saw the blaze. I know, also, that my mop and pail, Mrs. Young's mop and pail, and as many of the company who were "off the scene", also wielded mops and pails, and that, though the curtain, called technically a "quick one", did come down so, many of the audience could perfectly well see us at our precautionary work before the roller reached the stage...

Programmes/Bills

... Bills were not sold in the House in those days, and programmes were not invented. The bills one saw over the box fronts were, I believe, begged from the shopkeepers who exhibited them in their windows, for which they received occasional "orders", distributed by the bill-posters, Church and Stangroom. The bills used in the dress circle, where the occupants were embellished with white kids, usually left unmistakable evidence of their recent "inky" births on gloves, frequently transferred to the cheeks, nose, and sympathetic tear bedimmed eyes, and not by any means adding to the beauty of the "face divine". Ink seemed much inkier in those days than now, and never dried; and, naturally, the more tearful the play the inkier the face became.

What's New in MMS

DAVID BERTENSHAW

Since its release over two years ago the Modular Memory System (MMS) has maintained its original design concept of modularity and flexibility to ensure that advances in lighting style and technology can be incorporated into new and existing installations. Previous additions have ranged from additions to channel control and playback facilities to a tape module for long term repertoire storage of shows. The latest modules now offer improvements in memory number selection, printout facilities and a stalls control system.

The first addition is a new module with a lengthy (but explicit) title; the MMS Recorded Sequence Memory Number Selector. This is a module offering the same memory number selection facilities as at present; keyboard memory number selection, Auto-Mod store facilities, All Record and Clear Store facilities but with the ability to pre-record the order in which the memories are recalled when in sequence. This is achieved by the addition of three extra pushes to the keyboard GO TO, GO BACK and STEP. In normal use, when

Sequence is selected, then the Memory Number is just incremented by one in the usual fashion, but this can be changed by the GO TO and GO BACK pushes. When recording a memory, say 10, if GO TO 45 is pushed on the keyboard, then when memory 10 is reached in sequence the memory number will automatically jump to 45 after 10. If a similar process is applied to memory 45 with a GO TO 11, then effectively memory 45 has been inserted between memories 10 and 11.

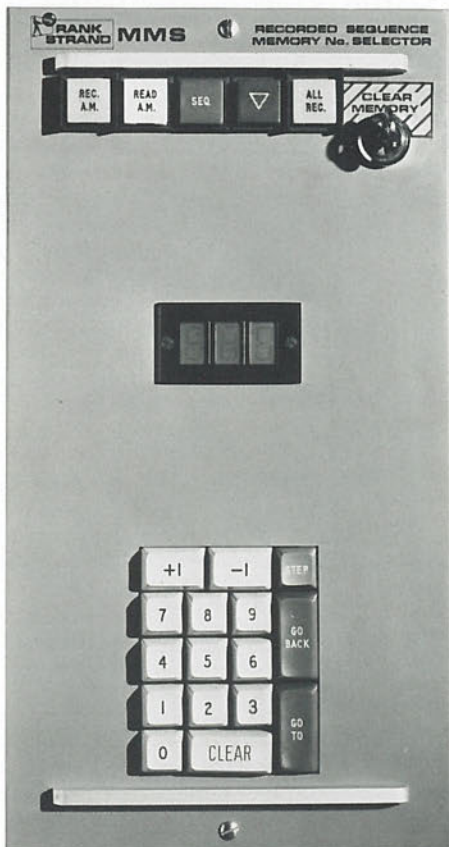
However, this only allows a memory or sequence of memories to be inserted once. Should a memory need to be inserted in more than one place in the main sequence, then to avoid having to make copies of it for duplicate insertions the GO BACK facility is provided. This allows that if GO BACK had been pressed, when the inserted memory was recorded, then when the inserted memory is reached in sequence, the memory number automatically jumps back to the point at which it last left the main sequence, thus continuing the main sequence.

By these two simple additions, memories or memory sequences can be inserted in one or several places in the main sequence, and the astute will have realised by now the ease with which chases or recorded loops of cues

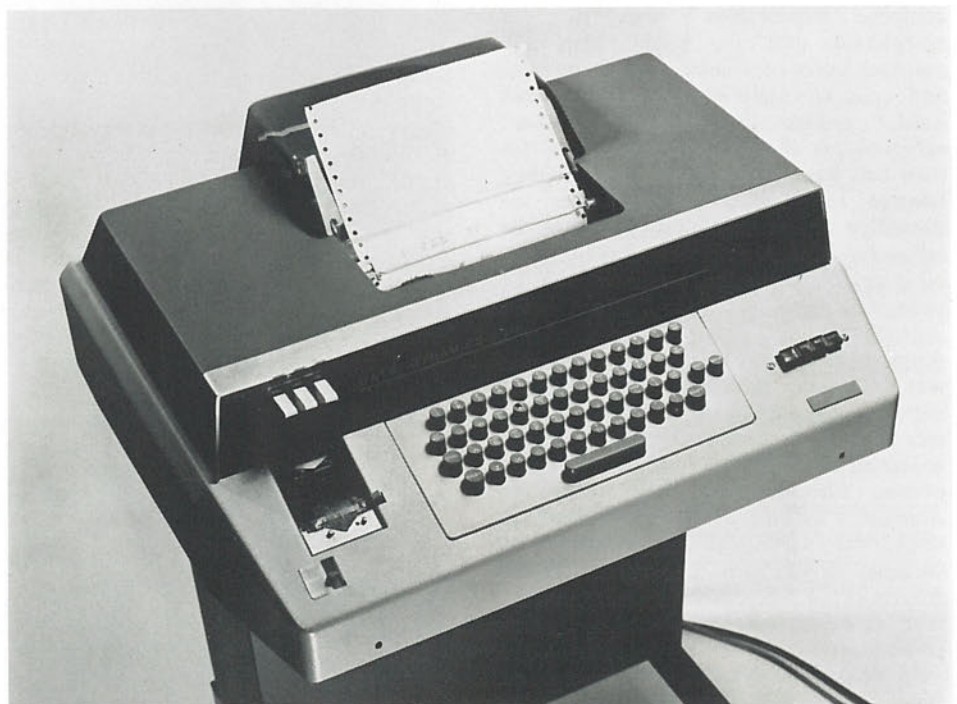
can be made. The last facility is the STEP push which just steps the memory number on by one in the recorded sequence and can be used for testing the sequence in rehearsal and for advancing it in performance.

The next addition to the range is in fact an extension to the MMS Tape Module to produce the MMS Tape and Printout module. As its name implies, advantage has been taken of the use of a micro-processor (a recently developed very small computer in one integrated circuit) in the tape module to incorporate a print-out facility through the medium of a standard computer teletype, or any other compatible keyboard printer. Printout can be achieved from tape or memory on to plain or "customised" pre-printed paper.

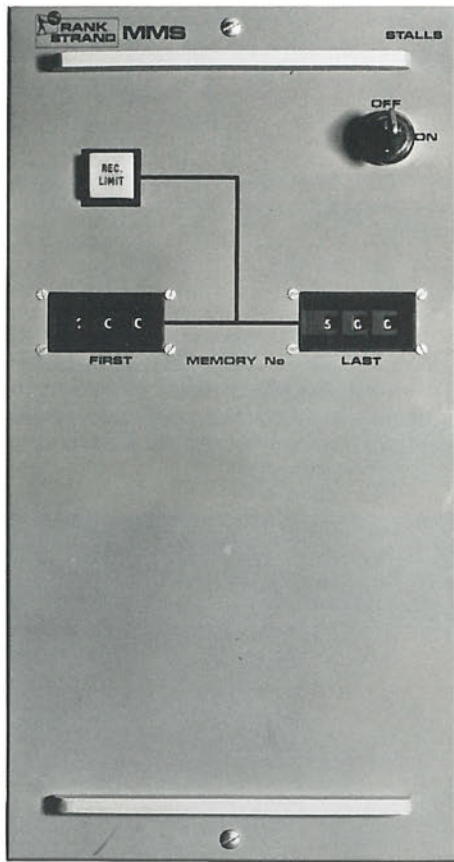
Operation is achieved without any extra module controls, all the instructions being entered on the printer keyboard. After starting the printout program, questions are printed relating to system size, source of memory data, memories to be printed, printout style and an optional show title. To all these the operator types a simple reply on the keyboard (instruction card provided), then printout commences, printing each channel that is on and its level. The speed of printout is dependent on the customers



MMS recorded sequence memory number selector module.



MMS keyboard and printout facility.



MMS stalls control system module.

choice of printer, but for a normal teletype, a 120 channel memory would take 1 to 2 minutes to print.

The facilities do not stop there though, as an alternative Type-in program is also fitted. This novel idea is the logical complement to printout, enabling an operator via the printer keyboard to type in channels at various levels, make corrections, list all or part of his (or her) entries and thus build up in an electronic store a "paper" lighting state. This can then be recorded onto the magnetic tape. It is also possible to recall memories from tape to the store for modification, and for a state in the store to be used to modify an existing memory on tape.

Its real value though is expected to lie in the ability for a designer, having planned the layout, to be able to type in a rough plot of the intended cues before any lighting equipment, scenery or actors become available on stage. Thus when they all finally appear, he can settle down with a printout of his rough states which can be replayed instantly on stage ready for balancing, saving the time needed to build the state from scratch, channel by channel.

Lighting designer oriented facilities naturally brings one to the latest module, MMS Stalls. This much heralded development is not so much a module as a sub-system. In its entirety it consists of one module which is fitted in the desk, up to 1 km of fixed or temporary signal wiring in the theatre with as many outlets as required and one or more MMS Stalls Terminals containing the actual lighting controls.

In detail the stalls module has few controls, only a keyswitch to enable the remote terminals use, and a pair of thumb-wheel switches which can set upper and



MMS stalls terminal.

lower limits for recording to prevent enthusiastic operators from obliterating someone else's cues. The Terminal is contained in a normal "executive" style briefcase with the controls and electronics in the base and extension cables in the lid. The signal cable is only twin screened microphone cable and is thus very easy to handle. Power is by 220-240 V mains (110 V optional) or from an internal battery which provides up to 5 hours continuous running on an overnight recharge, and there is an on/off keyswitch to conserve the battery when not actually in use, which does not disturb the lighting.

The lighting controls are based on one multi-function keyboard which serves as channel, memory or level selection depending on the operation. The first step is to specify the control function required by use of a K key which enables selection of one of nine functions on the keyboard. These consist of direct channel level control, channel control but simple on/off to a preset level, control of a recorded group of channels defined by a memory, crossfade to a new memory with optional sequence facility, move fade (add with latest levels taking precedence) or dim fade (channels in memory go to zero) on a memory, recording the resultant lighting at any time and some special control functions. It is possible to add and subtract channels and groups together to form composite groups which can be balanced, and to similarly combine memories to achieve the composite effects of pre-balanced lighting.

Having decided the function required, further operation of the keyboard selects the source channel or memory number, then the

use of an @ key enables a level to be selected, either as a direct level, or as an increment or decrement to the existing level on a 10 or 100 point scale. The keyed function, source and level numbers are displayed above the keyboard, but no action takes place until the ENTER key is pressed so that the display may be checked for prior correctness and the effect actioned on cue. As an alternative to selecting a level, a fade from 1 second to 60 min may be selected, and started on pressing ENTER.

The special control functions consist of a general clear all channels to zero, return similar to that on MMS Channel Control modules to undo mistakes, blackout and blind working with the ability to come out of blind working and either see the changes or to continue with the existing lighting. In addition it is possible to connect up to three terminals in parallel and maintain independent working, providing up to three simultaneous fades in the extreme situation! From this it can be seen that MMS Stalls is a powerful lighting system in its own right.

A development like this would not have been possible in such a small size without full use of the technical advances in micro-processors which have enabled a lot of intelligence to be achieved in a small space. Also the advances in lighting control techniques pioneered by Lightboard have enabled this intelligence gained to be used to simplify the controls without sacrifice of flexibility, producing a design fully capable of future development in style and size to match the continuing evolution of lighting techniques.

The author is Assistant Chief Engineer for Rank Strand Electric.

Bright Caravan of Light

The National Iranian Radio and Television Service have acquired what must surely be the world's most sophisticated Mobile Lighting Control Vehicles.

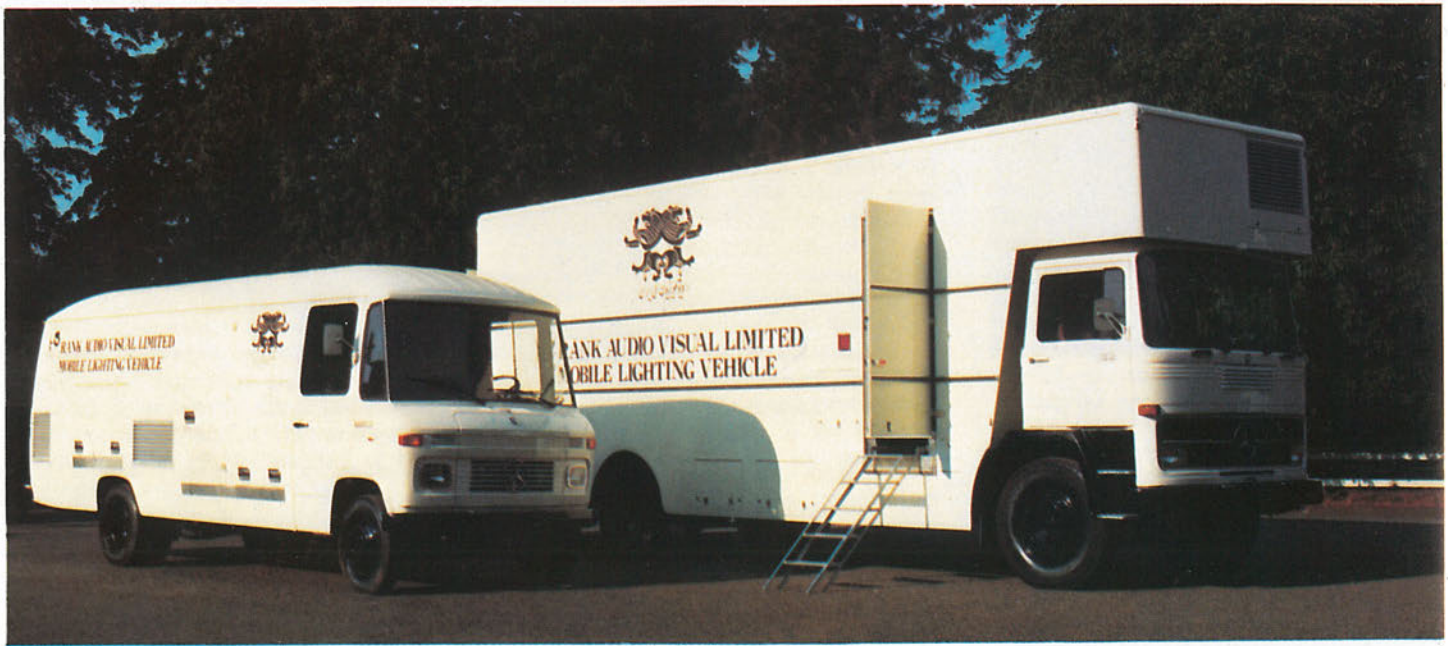
Three of these vehicles are fitted with Compact 80 memory controls and the fourth has a Compact 120. The dimmer racks (STM C-core 5 kW max) are fitted into the vehicles which have comprehensive air-conditioning to maintain sympathetic working conditions for both technicians and equipment.

Input and output connections are located in recessed lockers in the underfloor level and there are external access doors for quick easy connection. Three hundred amp panel mounted sockets and plugs are provided for generator input and there are also studs for connection of public electricity supply when available.

All vehicles contain standard production facilities such as colour monitor and terminations for audio, talk-back, etc. The larger vans have special storage for the

luminaires, stands, accessories which have been supplied as an integral part of the package.

The vehicles were custom-built on Mercedes chassis by Mercury Mobiles, and the technical outfitting was a joint effort by these two complementary divisions of Rank Audio Visual: Rank Strand Electric and Rank Film Equipment.





1. Main generator power input through 300 amp panel-mounted sockets and plugs. Studs are also provided for connections of town mains, when full loading would be possible.
2. Output sockets mounted in lockers, include 10 non-dim sockets for HMI, CSI and special effects lighting. Includes facilities for exterior usage of control desks.
3. Compact 80 lighting control system of 200 memories.
4. 80 STM 50C 5 kW (maximum) dimmers mounted in special racks in banks of 10.
5. Power distribution rack and panel, where power is distributed through 250 amp circuit breakers to each dimmer rack, it also contains circuit breakers for air conditioning and technical services, i.e. compact 80, vision audio monitoring and talk back, etc.
6. General facilities rack containing, monitor bridge, alarms, audio and talkback terminations; full power metering.
7. Expansion fan coil behind dimmer racks (not shown).
8. Thermostatic environmental control, switching and smoke overheat detectors; monitoring indicators mounted in operational area.
9. Colour vision monitor.
10. Insulated sandwich of aluminium, permastic compound, fire-resistant form, marine ply finished with heavy duty woven carpet or heavy duty laminate at working level.
11. Flooring heavy duty vinyl tiling with panel access for maintenance.
12. Condensing units for air conditioning.
13. Air conditioning units.
14. Rear access to vehicle to facilitate unloading and loading luminaires and cables.
15. Storage for a variety of luminaires and stands etc.
16. Room for spares to the control systems.

Soundboard ?

GRAHAM WALNE

You know, there just aren't the elbows around any more. Or feet either, for that matter. I mean—how can you keep nimble while operating a sequential cross-fade push?

But nimble fingers do have their uses. Apart from anything else, they need to have the precision of a surgeon to operate most sound desks these days—finding their way accurately around these miniature pots (and pans!). There is a popular rumour that has the next desk come with a free issue magnifying glass.

The unfortunate truth is that, tape operators apart, there are only a handful of good theatre sound mixers around. Such a paragon needs a retentive memory, a good ear, and an understanding of basic sound and musical theory. These people are hard to come by.

Let us assume, though, that we have found this man. Actually, it is more likely to be a "person": they are usually far better at it than us, I'm afraid. We have positioned the control correctly in the auditorium, not in some Concorde-like suite where the only contact with the real sound is through a tastefully designed monitor speaker which can't be too big or else it won't match the architecture.

Leaving aside, for a moment, the question of how many channels there are to control, let's look at what we have to control on each channel.

Farthest away from us is the *sensitivity* control: this decides just how much sound the channel is going to play with. Too much from say a trumpet and overload might occur, too little from say a violin and we might not be able to obtain a good balance. If set correctly, this control allows us to use the whole fader travel without getting into howlround (that high pitched squeal often called feedback), and it lets us balance different microphones so that we can operate them with equal fader travel. If our channel is serving the same mic and singer or instrument all the time, then this control probably won't need much alteration. But that's unlikely, so we may have to come back to it from time to time.

The next set of controls deal with the tonal quality and they are usually known as *equalisation*. There should be at least three steps: treble, mid, and bass with controls to boost or cut at each level. In a good system, we can also select the frequency that we wish to operate at. Unless the channel is serving the same source throughout the

show, these controls will need much attention. A good boost of mid and a little of treble whilst cutting the bass, helps the consonants in the voice that make for clarity, and helps to avoid feedback and "boominess".

As you can imagine, there are an infinite number of possibilities that can be achieved with these settings, and there is a real need to have some base to refer the altered sound to. So most good systems have an *equalisation cut* switch which compares the altered tone with the normal or flat tone.

Moving further down the channel, and a little nearer to the operator, there are three controls known as *Auxiliary*. Two of these will usually be used for foldback. Not to be confused with high pitched howl (feedback), foldback is a separate mix fed back to both orchestra and singer via special speakers so that they do not have to rely on the back-echo from the theatre in order to hear themselves. The singer for example might wish to hear his own voice and the bass guitar, or the piano and drums. The orchestra need to hear the singer and their own colleagues. Often these controls are provided with a "pre" and "post" switch. This means that a signal can still be folded back irrespective of the position of the channel fader. The third control in this section is *echo*, sending the signal to some external device for added depth before it is returned back to the main output. Again all these controls will need to be altered during the show.

The final section before the channel fader itself is concerned with *routing*. It is helpful in musicals to be able to group certain channels together and bring them in on a master fader like a preset group. The orchestra falls into this category and so do the microphones along the footlights used for general pick-up. There may be others that are built into a scene which could be grouped. There is a simple *pan* control which routes the signal to left or right for stereo working. Nearby a small button marked *PFL* allows the operator to listen privately to the channel to check if it is working or if the artist is ready. This device has enabled many a sound operator to get a glimpse of his star's private life, especially if the star is wearing a radio mic which he can't or doesn't switch off in the dressing room!

Nearest to us is the control that we are all familiar with, the fader controlling the actual volume of the channel.

A look at the above will show that each channel can have at least 15 controls to be operated during each show. Now let's look at how many channels we might need.

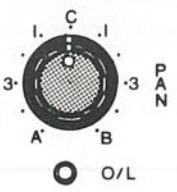
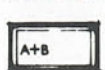
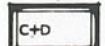
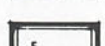
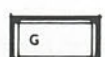
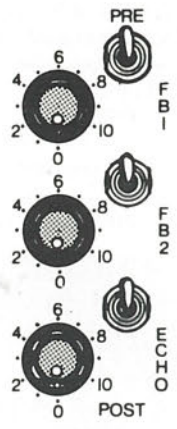
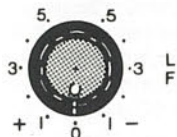
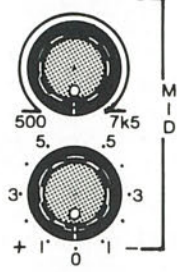
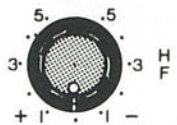
Firstly, we just have to realise that we are much more sound conscious now than ever before. Even in our home there are many devices that can give us a very sophisticated sound. Stereo and quadrophonic records and tapes, better quality television sound through a HiFi system—and stereo Tony Blackburn too. Some of this may not be thought an improvement, but it is all the result of a very complex exercise in the recording studio.

Popular music is not recorded on one track in one take. In fact, it is the product of many hours of splicing together multi-track recordings made by the best musicians available: the session men. If this song becomes popular then we're all going to want to see who made it, aren't we? So a nationwide tour is embarked on, and that is where the problem starts.

Let's assume that our star can sing well and knows how to use a microphone correctly, though I don't know why I should assume such a rarity. Our first problem is that those session men from the recording studio have been replaced by Fred and Bill and Jack. Except that Fred can't do Tuesday's and Thursday's shows, so he sends Ron who has not seen the show before. Bill always blows harder after a few pints and Jack has been taught that he should go through a set of skins each week. You really must not think that this is an exaggeration: one show that I have just worked on had a different orchestra each night for a week.

Next we have to work out how our £4,000 sound system that the theatre manager thought expensive and would not require replacement before the year 2000, can obtain the same sound as the £100,000 sound system in the recording studio. One way to attempt this is to provide a microphone for each member of the orchestra and then assume responsibility for the overall orchestral sound. Add to this say a half dozen or so float mics, perhaps four stand mics in the wings, four radio mics and one or two for special effects and spares: we can quickly get to a big number, at least by sound standards. It is not unusual to find people writing musicals with this sort of rig in mind; after all, *Superstar* was first made popular on record, and that sound had to be painstakingly recreated in the theatre necessitating the use of 67 microphones. *Billy* at Drury Lane used 34 mics and the recent Julie Andrews—Bing Crosby Palladium season needed a rumoured 50.

So here we have a sizeable desk, say with at least 30 channels and each channel having at least 15 "quality controls"—and we have not yet mentioned the loudspeaker routing.



This is a typical sound channel: a typical system may have upwards of 30 such channels under the fingers of one operator who, sooner or later, will need the assistance of memory. But which functions shall we memorise? How shall we display the information? And how shall we provide instant access?



Assuming that the theatre has stalls front, stalls rear, circle and balcony, and that each has left and right then we have eight circuits plus perhaps six backstage for foldback and effects. This will be minimal. Each of these needs to be capable of being served from each of the output groups so that complete flexibility is maintained even in breakdown.

It's no exaggeration to say that here we have a desk with possibly 500 controls on it. Now I'll admit that they don't all need to be changed for every number, but the facility to do so depends not upon the system but upon the dexterity of the operator. And this time elbows and feet are out. Its fingers only. So all you lighting men, what's the remedy?

One answer of course is to follow the same path that lighting controls have taken. Already the States has some automated mixing desks and simple preset versions, exactly like the one that I have just described but duplicated and operated through master faders.

The logical step, if we follow this argument, is to go full *memory*. But that is not quite so easy in sound as it was in light since it is not just a matter of recording what the expert sets up in rehearsal and then pressing the sequential crossfade button for eternity. Remember Fred, Bill and Jack? They can play havoc with your levels at each performance. The star too. One show I have just done with a star with a weak voice had him singing louder each time his relations were in front. Unfortunately we couldn't persuade them to come to each show. This is apart from the weather and the size of the house.

So we need easy access to each part of the system in a way that does not compromise the eventual aim. Certainly the memorising of routing and speaker selection will save us much headache, but how are we to display the information? Sound men are used to thinking in terms of names rather than numbers, though this might have to change if the systems get any bigger. There are some useful side effects of lighting memory that, though attractive to us, are difficult to fit in. For example, did you know that the Lightboard has a bleep if it thinks you have made a mistake? Or that the bleep gets louder if it *knows* that you have made a mistake. With some of the sound operators that I know, the system would be making more noise than the show.

Two things are certain. Firstly, that something has to be done to make sense of current practice; and, secondly, that elbows and feet have truly had their day.

The author is Systems Sales Director for Theatre Projects Services Limited.

CORRESPONDENCE

No View of the Stage

Dear Sir,

Many years ago we talked our way backstage at La Scala; for another 50 lire tip, we were led along the tortuous climb to the lighting box. After a little confusion at the door (my wife-interpreter didn't know stage jargon in Italian; the lighting man didn't know it in English) we were welcomed in, and shown the racks of thyatronns lining one wall, the rows of Germanic, mechanically interlocked dimmer handles on another, and, in the far corner, the hole about a yard (914 mm) square through which an agile electrician, suitably counterweighted, could just catch a glimpse of a quarter of the stage. Despite the marvellous results we were later to see from out front, it was clear that this was territory just waiting to be conquered by Strand Electric.

In the last issue of TABS I see that the conquest has finally been made by Rank Strand. The old lighting box has given way to a carpeted Control Room in soothing green, and curtains covering ... oh no! ... a hole about a metre (39.37 in.) square, through which, etc. etc. Check quickly with the text: "The operator has no view of the stage. ... Lighting cues are given by a member of the lighting staff who sits in the control room." *O tempora, O mores!*

What has happened to the dogma of Operator as Artist? Where has the Friendly (or is it Lovable) switchboard gone? Will Francis Reid have to eat still more words? On a more practical level, how do they cope with: "In the silence, Tincaballo crosses the darkened bedroom and reaches for the light switch" (from the new opera *Pietro Pan* by Giacomo Matteo Grotti)? Worse still again, think what a precedent has been set for the theatrical architect who is short of space: "In the rebuilding of Covent Garden, the operator has no view of the stage, being situated in the disused basement of 29 King Street. The Nibelung who operates the Rank Strand DDDMMMSS receives cues from a microswitch under the conductor's left foot."

This must be stopped; operators of the world unite; to perdition with this new-fangled Memory; bring back Fred and the Light Console.

DR. K. E. MACHIN

CAMBRIDGE

Theatres Must Be Theatrical

Dear Editor,

I wonder why Larry Isacoff thinks I should not like him? I think it most probable that I should find him quite ingenuously agreeable once I had recognised that the scruffy sweater and patched jeans were merely the popular class-conscious uniform, not to be taken as a deliberate insult to Montreal's Place des Arts and its patrons.

Had he read my frivolous chatter a fourth time (or perhaps less aggressively the first time) he may have been able to "decode a few points", including the reference to white tie and tails, rather more intelligently.

I do not share his apparent confusion of "realism" with proletarian poverty. The seamy sides of either poverty or affluence can be equally thought provoking if treated with theatrical artistry and competence. I was directing plays about both over 50 years ago and could accept the challenge of either, with or without (usually without) the gilt and red wrappers.

Think not, my dear Larry, that ye are the first to discover and resent life's inequalities; and don't let resentment destroy your sense of proportion ... or sense of humour.

PERCY CORRY

Theatre among the Fiords

FRANCIS REID



Den Nationale Scene, Bergen.

FESTIVAL can be one of the more debased words in the language of the performing arts. It is not enough to assemble a collection of fine performances: there has to be something catalytic about the setting. A festival city should be compact, geographically unique, architecturally fascinating, and possess an artistic heritage involving composer, dramatist, and performance.

BERGEN is all this: an ideal among Festival Cities. A harbour city cradled by mountains on whose precipitous sides the houses hang like audience must hang on the walls of a large but intimate theatre. Every step, every corner, reveals a new vista: of steep and twisted cobbled lane with painted wooden gables or perhaps open boulevard with children's wind-band on the march. Sky, water and mountain at every turn.

Bergen's Theatre—DEN NATIONALE

SCENE—was Norway's first National Stage, founded in 1850 by the initiative of Ole Bull, Bergen's famous fiddler. The Directors have included Ibsen and Bjørnson. The present house dates from 1905 and subsequent refurbishings have produced an intimate 470 seater which was just right for the Festival's opera performance of *Frøken Julie*. A Danish Opera Company (Den Jyske Opera, Aarhus) performing a Swedish classic turned into an opera by an Italian composer who has become a Norwegian citizen: an occasion tailor-made for a Scandinavian international festival. A new opera, but one already scheduled for performance in several important houses around the world. Frankly, apart from the Benjamin Britten, it is the first opera written in the second half of our century that I have actually enjoyed. The only possible apparent flaw in this *Frøken*

Julie is that, at first hearing, some orchestration came across as graffiti rather than as an intrinsic part of the musical language. But that may only be an impression of a first hearing which shall certainly not be my last—for I intend to seek out performances of this *gesamkunstkammerwerk*. I will be lucky to find another Julie and Jean with the musical and dramatic talents of Edith Guillaume and Ingolf Olsen. Indeed, in a solo recital in the 13th century Hakonshallen, Olsen gave further demonstration of star-quality, virtuosity and sheer musicianship as singer and guitarist whether in Baroque aria, Bach chaconne or Britten's *Songs from the Chinese* which came close to a one-man fusion of Peter Pears and Julian Bream. All in the summer evening's ambience of a softly fluid lightshow on the long stone walls of the Hakonshallen produced from single celestial source gobbed by trees and leaded windows.

A puppet performance by Jytte Abildstrøms Teater from Copenhagen of *Tobias og Engelen* was less satisfying. Perhaps it was the surroundings: as a child I always stuck on top of the vaulting horse and so I am turned off by the use of a gymnasium for theatre performances. But the healthy athletic children in the audience would have had no such conditioning: yet they did not seem to be anything like totally hooked. Certainly a production opting, as this one did, for a magic style could have made more imaginative use of the lighting resources available.

But the emotional experience of any visit to the Bergen Festival must be a morning concert at Grieg's house at Trolldhaugen. To sit surrounded by memorabilia in his cool timbered drawing room high above the fiord for song settings of Ibsen and Hans Christian Andersen; to hear the *Peer Gynt Suite* on the composer's own piano; to visit the little composing house by the water's edge, then the grave let into the rock face. This is the stuff that joy and tears are made of.

The tourist map of Bergen shows the GRIEG CONCERT HALL described as being



Grieg's house, Trolldhaugen.

for "opera, ballet and concerts". The building presents an elegant profile to the world but it is a shell awaiting internal furnishing. An exhibition of sculpture by Harry Bertola presented an opportunity to enter the spacious triangular glassed upper foyer. Passing through the cement dust of a lower foyer stacked with builder's where-withal, there were sounds of constructional activity. On a Sunday? No. It was musical sculpture. Metallic construction to be stroked, rubbed or just bashed. And for the inhibited there were small boys a-plenty to provide a necessary thump to keep the sound flowing.

I leaped the barriers and peered into the unfinished auditorium. The proportions are good, the stage is big. The Grieg Hall will complement the other existing auditoria in the City to give Bergen a complete range of ideal accommodation for performing art of every style and on every scale.

Do I make my point? On all counts Bergen is an ideal among Festival Cities. And the halibut is delicious.

Even arrival and departure is dramatic. I opted to arrive by train and depart by hydrofoil. The day's rail journey from Oslo passes over the roof of Norway and it seems like the roof of the world. Above the tree line. Amid the summer snows. Through timber snow sheds. One thousand two hundred metres above sea level. With an ascent and descent tunnelled through some mountains and along precarious ledges on others. And everywhere the cycloramic vistas of horizontal water and near vertical rock—sometimes so vertical that the trees stand I know not how.

There are four major theatre organisations in Oslo, NATIONALTHEATRET (National Theatre), DET NORSKE TEATRET (the Norwegian Theatre), OSLO NYE TEATER (Oslo New Theatre), and DEN NORSKE OPERA (the Norwegian Opera).

The Opera House is a little unexpected.

Most of the world's opera theatres have a flavour of pre-1900 or post-1950—they either belong to the age of guided plaster or functional concrete. The Norske Opera, however, has a distinct air of 1930 cine-variety. But lighting positions are better than is usual in this type of theatre and include a lighting bridge over the orchestra rail. This position is standard in most Norwegian theatres and gives a useful angle that helps to minimise the differences in sculptural quality between on-stage lighting and more traditional flat foh positions. The acoustic from my front circle seat was good and the orchestra provided some richly rounded tone in *En Natt in Venedig* although lacking that ultimate touch of flirtatious phrasing that can make listening to Johann Strauss such a physically sensual experience.

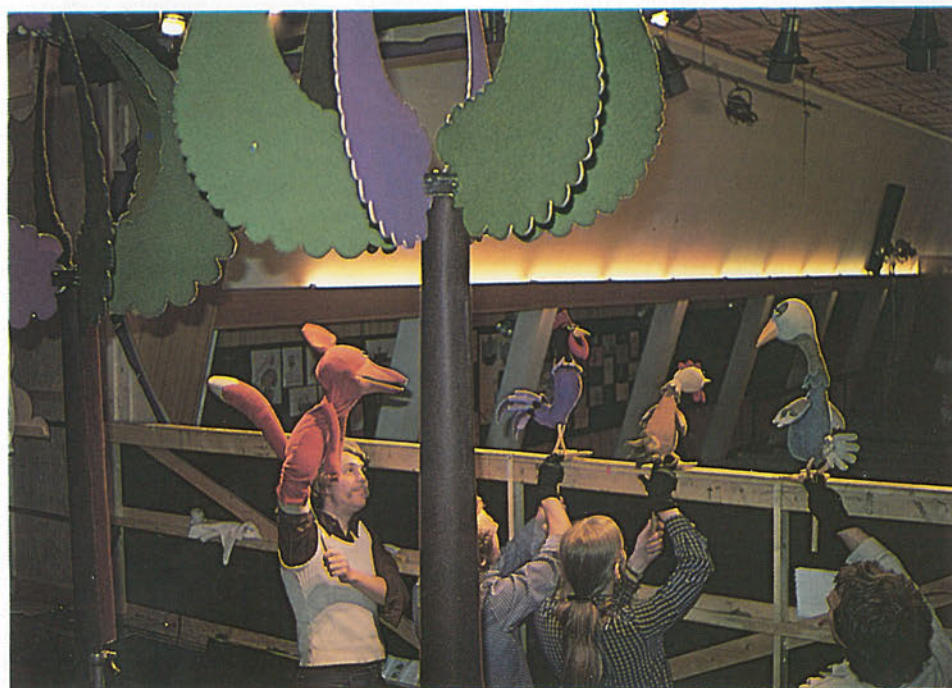
The National Theatre, on the other hand, is a perfect turn of the century opera house—quite large but quite intimate. It is, however, a playhouse: not just for the great Norwegian classical writers whose names feature prominently on the facade—Holberg, Bjørnson and Ibsen—but for the best of world drama both past and present. I was able to see the National Theatre Company in a performance of the Brazilian playwright Ariano Suassuna's *Hundens Testamente* that was beautifully paced within its consistently styled vigorous yet poetic production. Although I have no command of the Norwegian language, speech rhythms and intonations are similar to the fishing communities of my Scottish childhood. Indeed I keep finding myself enjoying *good* performances across the world despite language barriers: although not appreciating the detailed argument of the play, one is sufficiently attuned to the profile of the sound to participate in that intangible actor/audience relationship which so often transcends mere verbal understanding.

The National Theatre is a text book demonstration of how to fit modern lighting



Musical sculpture.

equipment into an auditorium built before the days of modern spotlighting. Every conceivable position is used to provide a selection of angles including boxes, gallery



JP control modified to allow formation of 3 separate groups within each of the three Presets, with optional selection to Crossfader—Unge Nye Theatre, Oslo.

slips, back of gallery, bar over apron, and the fascias of the circle ends. There is even a pair of Patt. 264 tucked into the chandelier.

The National Theatre has an interesting studio—the AMFISCEN—high up in the roof of the main building. The company maintain a repertoire on both stages.

The NYE theatre also has two acting stages. Repertoire working in the main auditorium is aided by a system of elevator stages raising acting-area-sized trucks from



MMS, Stavanger.

an all-over pipe grid. Like most studio theatres intended to operate in a non-scenic way, Scene 2 has seen the usual growth of scenic units and multi-screen projection techniques.

In addition to traditional theatres, Oslo has its quota of other performance spaces including the STUDIO in the Sonja Henie-Niels Onstad Arts Centre—a fine example of contemporary environmental architecture. On a bigger scale is the CHAT NOIR (being refurbished with an MMS during my visit). And what can be more theatrical than the SKI JUMP. Is it perhaps the world's largest thrust stage?

And so to Stavanger, reached by a four-hour hydrofoil dash through the fiords from Bergen. I must find future time to travel the gentler way by leisurely ferry, and indeed to carry on up the coast towards the arctic circle: to see the theatre in Trondheim (Norway's oldest theatre building) and perhaps catch the itinerant RIKSTEATRET in some fishing village in the land of the midnight sun.

Stavanger's ROGALAND theatre has a permanent company presenting play seasons with an occasional musical. The theatre has been modernised recently and now has comfortable wing space, although the un-counterweighted grid is rather low. An MMS has been installed to control a generous lighting rig and the theatre's former PR dimmerboard soldiers on in the INTIMSCENE, an adaptable black box studio within the Rogaland building.

The Rogaland had closed for the summer and for some surgery to improve the sight-lines from the stalls, so I took wing across the North Sea from the symphonic grandeur of the Norwegian Fiords to the chamber delicacies of my Norfolk Broads and the ever demanding TABS typewriter. What overall impressions stood out enough to find themselves on the first blank sheet?

Intimate auditoria, workable stages, generous lighting rigs, stylish productions, enthusiastic audiences. And all on a human scale: that's what I liked most.

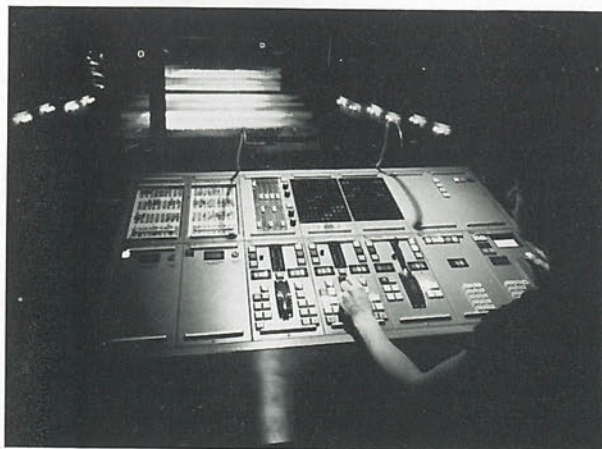


The world's largest thrust stage?

a deep scenic basement. The Nye's second stage is the UNGE NYE or "Young New": a title which suggests the influence of Frank Dunlop who is indeed a guest director. This is a turn-of-the-century theatre which has been through many phases including TV studio and bingo hall. It has now acquired a full thrust. The green room of Unge Nye, incidentally, is Oslo's oldest theatre-space and dates from 1760.

There is a third NYE stage: the DUKKETEATRET for puppets. Unlike most puppet stages, this is not a temporary fit-up but is a purpose-built permanent theatre with correctly scaled auditorium and extensive technical facilities. This is real live theatre with live timing: the puppeteers talk and so their puppets are not slaves to a tape.

The NORSKE theatre is the third of Oslo's dramatic theatres. The main stage has an interesting revolve where the drive is transmitted to the centre rather than the circumference: unorthodox, but it starts and stops smoothly. Another inviting auditorium. The Norske has a SCENE 2 with adaptable seating, flexible acting space and



A Chorus Line, possibly America's most successful musical ever (in both artistic and box-office terms), was the occasion for the unveiling of a new MMS system to replace Drury Lane's historic Strand Light Console.

The Numbers Game

FREDERICK BENTHAM

Someone writing in the ABTTs Newsletter a little while ago reflected whimsically on the new T-Spot. It was not the spot itself nor its performance but its title that provided the stimulus. What! No Pattern number? Did this indicate the end of an era? Curiously I had not noticed the omission and had assumed that in any case some frightful numbers devised for the computer lurked around. Sure enough they do. One of the T-Spots is a 21 21 009 and the other a 21 22 006. Why I have no idea but it is not my intention to tilt at "non-lovable" computers here. That was done in TABS some years ago* when these order codes first reared their heads—they belong with WC2E 8JH or BS12 4HG and other hardships of our time.

What I thought TABS readers might like to know is how the "Patt. Nos" came into being and what, if any, system they were based on. Well, there was a system and it might be called Pelmanism. What is more a trace of it does linger on with the T-Spot for in addition to the order codes the 22° beam spread model is known as "64" and the 30° model as "54". At first sight these numbers unrelated as they are to *degrees, watts, mm* or even *kg* seem as crazy as anything that ever went before. This is not so for, to initiate, a clue is to be found in the figure "4" which is common to both numbers. This "four" is very significant indeed because it equals "eight".

Let us start at the beginning. "This system has been designed for the purpose of enabling the operator to increase or reduce at will the strength of the light of a stage Arc lamp by a combination of an achromatic screen and a mechanical contrivance directly attached to the lamp. In the past, attempts have been made to obtain the effect by means of metallic or carbon resistances, but such methods rendered the result more unsatisfactory and they have been abandoned. It is generally admitted that much finer effects may be produced by the use of my Patent System of Arc lighting than could be produced by Gas Limes. My lamps are now in use in a large number of West End Theatres, London, in the principal Theatres in the Provinces and in many places abroad."

The author of the above proud claim was a certain Thomas J. Digby and it appears in an introduction to his catalogue of *Digby's Stage Lighting Apparatus*. He operated by then from Gerrard Street, London W1 or London W1P 6AE as we should now so neatly put it.

The apparatus, made in large part of teak, follows with one item per page and behold, in the Digby catalogue I have before me, Section 1, Sheet 1 begins with "Pattern No 20" at £16-16/-. There follows sheets

* TABS Vol. 30 page 1. March 1972.

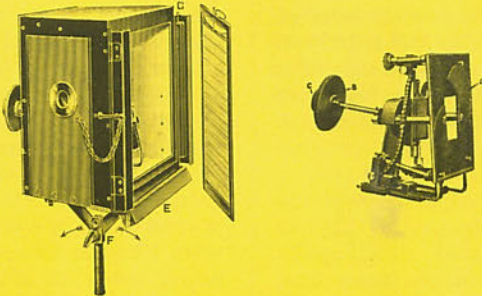
SECTION 1. Sheet 3.

DIGBY'S STAGE LIGHTING APPARATUS

The Digby Patent Stage Arc Lamp

Flooding Type (with shutters)

Pattern No. 23.



C. Handle for feeding carbons.
D. Shutters operated by B.
E. Hinged stop to permit of use of long multi-coloured screens.
F. Swivel Iron for tilting box at any angle.
G. Side medium Carriers, hinged so as to be turned back if required.

Dimensions of Case :

Height 12½ inches ; Width 13½ inches at front ; Depth 9½ inches, exclusive of Trunnion Iron ;
Weight complete, 18 lbs.

Lamp complete in fire-resisting case as illustrated fitted
with frosted glass medium in metal frame £14 : 14 : 0

LINE RESISTANCES : Sheet 6. GELATINE MEDIUMS : Sheet 7.

THOMAS J. DIGBY, GERRARD ST LONDON, W.1

Digby catalogue c. 1908.

2 and 3 with the "Pattern 25" and the —best known number in all stage lighting—"Pattern 23". This last cost £14. 14s 0d—also guineas you will note. This, the first recorded Pattern 23 was however a "Stage Arc Lamp (Flooding Type) with shutters" so at least it had shutters of a kind but these were part of the "mechanical contrivance directly attached to the lamp" referred to in Digby's introduction and enabled "the operator to increase or reduce at will the strength of the light."

Dimming of a carbon arc—the first electric light—was almost as big a pre-occupation as keeping the flame steady by feeding the carbons. Digby's first patent of December 1899 provided horizontal movement of the bottom carbon for the first aim but by 1908 he had taken out one to cover the use of shutters (as depicted above). The same year George Applebee* patented a dimmer using sandblasted mica behind a clear lens. It is curious to reflect that with CSI and HMI lamps the mechanical dimming problem is back with us and the

* George Applebee was George Edward's electrician at the Gaiety theatre in the Strand. His son Leonard George was to become a dominant force in the Strand Electric.

current Pani solution is to use two neutral density wedges of glass (servo-operated) in the case of their BP4 HMI Scene projector. Applebee eventually devised a diamond shaped shutter Strand Electric were to find useful.

Digby's use of the word "Pattern" was ubiquitous, everything was patterned so to speak, and it was always spelt out in full. There was a Pattern 56 Half-watt† Batten in Section 2 of his catalogue and a Pattern 85 Optical Attachment—just a lens and a slide carrier—in Section 4. I wish there was something to date this catalogue exactly but all that can be stated with certainty is that the firm of Digby preceded Strand Electric by many years and when the latter firm first produced its own catalogue it was shamelessly modelled on that of Digby.

Only one lantern—the Patt. 20—exactly challenged Digby, number for number, sheet for sheet, and purpose for purpose—dimmer shutter and all! It was even made of teak (lined with asbestos) and was probably the only Strand lantern that was. Incidentally

† When gas-filled instead of vacuum lamps were first introduced they became known as "half watt lamps" i.e. roughly speaking half watt per candle-power.

Strand's price for *their* Patt. 20 was £12 complete which maybe provides one indication of their success but a better indicator for the future in those far off days was their Patt. 23 (Sheet 3) which could take an arc or a half-watt lamp. This lantern at £4 plus lamp tray at 18/- soon became the basic workhorse for stage lighting in this country. It was an awfully crude affair and by the time I joined Strand in June 1932 they had added a Patt. 43 to the range in which the same optics were encased in a somewhat more attractive octagonal housing. There was also a Patt. 44 which was the same sort of thing but 500 W. This could not be much smaller physically because the wretched lamp manufacturers, entrenched as they were behind their ELMA ring at the top of No. 2 Savoy Hill, insisted on using the same glass bulb for the 500-W filament as was used for the 1,000-W size.

So there I was, about to introduce new lanterns—"luminaires" had not been heard of—and to tidy up the existing ones, define their beam angles and so on. The foundation to build on was largely as follows:

1,000 W spot (Focus lantern)	Patt. 23 and 43
500 W spot (Focus lantern)	Patt. 44
250 W spot (Focus lantern)	Patt. 27 and 45
1,000 W spot (Profile type)	Stelmar (no Patt. No.)
500 W spot (Profile type)	Stelmar (no Patt. No.)
1,000 W flood (Medium angle)	Patt. 49 and 30A
500 W flood (Medium angle)	Patt. 30
1,000 W Arena flood (for use vertically but very wide angle)	Patt. 35
Optical Effects Projector (arc only)	Patt. 33

There were a couple of Arc follow spots Patt. 22 and 42 but they were not important since the growth area was obviously going to be with tungsten filament lamps. A curiosity was the use of "Patt. 30" to serve both 500 W and 1,000 W merely adding an "A" for the latter although the housings and the reflectors were quite different in size and shape. One was known as the 12-in. Sunray and the other as the 17-in. Sunray. The word Sunray was the name of the Patent silvered glass reflectors used—in this case with a hole slap in the centre for the lamp to stick through. The Patt. 49 used the 17-in. reflector but without a hole and the lamp hung vertically in front, much as today.

The observant will have noticed that only arc lamps were available for optical effects and that the sole vertical flood in the range had a reflector with a very wide angle indeed which made it quite unsuitable for that purpose over a stage or even to light the Bertram Mills Circus arena for which it was originally intended and used. I *began* with this reflector and put it in a new cyclorama flood housing and also in the Patt. 30 housing. This last I called Patt. 60 as it was twice the beam angle of the Patt. 30. So far so obvious but for some odd reason I called the circular cyc version Patt. 55.

Now the most important lantern to design to go with this last was a proper vertical flood—a narrow beam affair with spill-rings and I called this Patt. 56. Fifty-five for the cyc flood and 56 for the acting area lantern.

The final "six" then got identified with this type and turned up again in the Patt. 66 and after the war there was the Patt. 76 (hair-dryer) Strand's first lantern to use modern construction; in this case all spinnings.


We had to have something cheaper than the Stelmar and so our first Mirror spot the Patt. 73 was the result. The "3" was already identified with the 1,000 W spots and, since this was a brand new one, to jump from the numbers in the forties to the seventies had some logic. It also gave room to retain the Stelmar in the catalogue in case anyone still wanted it and with a Pattern No. at last—Patt. 63.

A narrow beam lantern was necessary to use horizontally to complement the Patt. 56 Acting Area. The beam had to be narrower still because the distance across the stage was bound to be longer than that vertically downwards from a bar over the stage. A near-parallel beam optical system was available (made specially to light a pageant held in the moat of the Tower of London) and when fitted with a properly designed set of spill-rings it became the Patt. 50—the famous Pageant lantern. It is a fact that one of the difficulties in getting the lantern accepted was its harsh and pungent light. We had to supply it with diffuser glasses. Yet when I had to kill the Pageant off in 1961 people hated the diffused light from the

pinned-down Fresnel they were expected to use as a substitute; they longed for the old crude light which once upon a time they or their predecessors would not tolerate.

The various new types and the spruced-up versions of some of the older ones were all gathered together in my first catalogue of May 1936. These catalogues are now collectors items, the close examination of which can be revealing. It is possible for example to detect that the Patt. 73 Mirror spot came later than the others. The photograph is of a prototype and the pairs of horizontal and vertical shutters linked to two levers never went into production. Indeed there is no colour runner shown in the photograph. The Patt. 74 Baby Mirror spot for 250 W got made but never really lit up. The final "4" of its Patt. No. gives a clue. This would have equated with the Patt. 44 as a 500 W version had a compact tilttable lamp been available; but that did not turn up until the early 1950s. Even then the Patt. 23 (as it had then become) Baby Mirror Spot had to be soft-pedaled as a 500 W model for some time. The catalogue leaflet of March 1953 which introduced it for the first time says "500-W class T round-bulb when available". In August of the same year space is made to declare in bold print; "Normally for 250 W lamps. For extra strong beams 500 W may be used provided the lantern is not alight

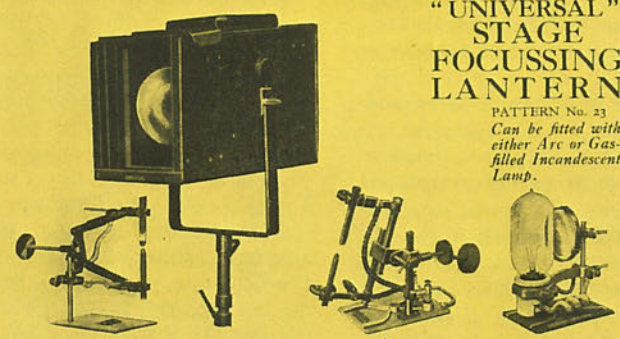
Sheet No. 3



MODERN STAGE LIGHTING APPARATUS

**"UNIVERSAL"
STAGE
FOCUSSING
LANTERN**

PATTERN No. 23
Can be fitted with
either Arc or Gas-
filled Incandescent
Lamp.



SPECIFICATION—Planned Steel Lantern, Asbestos Lined, fitted with Special Louvre Ventilation (Registered Design), Duplex Glazed Spyholes, Standard Pattern Removable Steel Lens Frame with Best Quality 6" Dia., 8" Focus, Ground Plano-Convex Lens, Tilting Fork on Trunnion Pivots with Lever Screws, Sliding Back Shutter, etc. Aluminium Sliding Tray fitted with adjustable all-china "GOLIATH" E.S. Lampholder, Asbestos covered, linking Flexibles and Brass Terminals. (This Lantern will take 400-1000 Watt Projector filament gas-filled lamps burning "Pip" upwards.)

Price, Lantern only	£4 0 0 each
"Scissors" Movement Arc Lamp, 10-15 ampères, with Tray as illustrated (a)	1 10 0 each
Best quality, 15 ampère, Square Rack and Pinion Arc Lamp, with elevating, tilting and lateral movements, as illustrated (b)	5 15 0 each
Aluminium Sliding Tray with Adjustable "GOLIATH" Lampholder	18 0 each
Ditto, fitted with 4" "Mangin" reflector in adjustable carrier as illustrated (c)	1 13 0 each
Linen Bound Millboard Colour Frames, size 10 1/2" x 7 1/2" with 6" Circular opening	9 0 per doz.
Complete with Gelatines, assorted colours	12 0 per doz.

N.B.—When this lantern is ordered for use with Gas-filled lamp only, Spyholes are not provided.

The
STRAND ELECTRIC & ENGINEERING CO. LTD.

Telephone: REGENT 7464 (3 Lines) Head Office & Works
Telegrams: "SPOTLITE" 19-24 & 28 FLORAL STREET
"SPOTLITE" LONDON LONDON W.C.2

ENGINEERING
Works:
66a ST. MARTIN'S LANE

Strand Electric catalogue c. 1920.

STRAND SPOTLIGHTS

PATTERN 73 MIRROR SPOTLIGHT, 1000 Watt



This lantern employs optical principles never before applied to stage spotlights. An 8 in. diameter silvered glass mirror projects an intense beam of light on a variable gate. This is focussed by a 6 in. diameter step lens. By this means rectangular spots of various sizes can be projected with an intensity of over double that obtained from a standard spotlight of the same size and wattage. Masking, to spot irregular objects on the stage hitherto impossible, can now be easily accomplished. This lantern is particularly suitable for circle front or batten spotting in the legitimate theatre.

SPECIFICATION

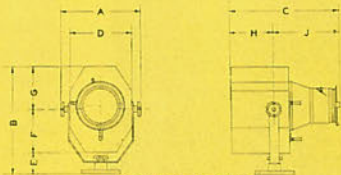
Lantern constructed in sheet steel, efficiently ventilated, cast aluminium front and back. Type 43 tray, 8 in. diameter silvered glass reflector, 6 in. diameter, 9 in. focus step heat-resisting lens. Independently operated horizontal and vertical barn door shutters with heat insulated operating handles, runner for additional internal mask if required. Front runner to take square millboard colour frame or circular metal frame. Rockbestos tails, tilting fork and quadrant with 3 in. diameter locking wheels. Finish, black crystalline enamel outside, matt black inside.

PRICE (exclusive of Lamp) £12 12 0

	£	s.	d.
C. 243 Circular metal colour frames (6½ in. diameter) ...	1	1	0 per doz.
C. 241 Ditto, with assorted gels	1	7	0
C. 242 Ditto, with assorted "Chromoid" colours	1	19	0

Beam Angle:
Vertical ... Maximum 19°
Minimum 3°
Horizontal ... Maximum 19°
Minimum 3°

Lamp: 1000 watt Class A1 Tubular or Class B1 Round Bulb Projector.



DIMENSIONS PATTERN 73

	Fe. in.		Fe. in.
A	11	E	5
B	14	F	4½
C	7½	G	6½
D	10	H	6½
I	6½		

Nett weight 30 lbs.

Telegrams: Strand Electric Co. Ltd.
Telegraph: Address: Strand Electric Co. Ltd., London.
FLORAL STREET, COVENT GARDEN, W.C.2.

Strand Electric catalogue 1936.

continuously, hangs free of anything which could impede ventilation...". It was not until June 1954 that such warnings vanished from the catalogue and Patt. 23 became 500-W more often than not.

It can be seen by now that *system* in numbering is something that can hardly be claimed but there is *for the man bestowing the numbers* (myself) a tenuous thread which aids an otherwise poor memory. This is where the "Pelmanism" referred to earlier comes in. Between the wars there was a much advertised correspondence course, run by something called the Pelman Institute, which was supposed to aid the memory. People who know me well will realise that I never took the course. One gathered however that the technique employed association of ideas and upon this slender link and upon the rickety array of pioneer numbers inherited, was built the whole eccentric edifice which was to spread world-wide.

The main recollection of those early days is of creativity in isolation. There were none of the regular meetings to discuss, rather one-sidedly perhaps, R & D ideas. The guiding force in those far-off days was the new catalogue. To the young myself this became a work of art in its own right. It had to be complete as a book—it had to look right and read well—and complete in the range of technical equipment it offered. This combination showed in odd ways. One item was added for completeness—the Patt. 61 a specially powerful effects projector, priced at 19 guineas (the Patt. 51 was only six!). This was never made at all yet it had a whole page and a faked photograph. On the other hand a most useful stage lantern, the 150-W

Baby Flood was relegated to three lines and no illustration on page 97!

Looking back my numbering system hardly warrants a "gold" but in effect that was the result. The new catalogue when it appeared took the directors by surprise and so pleased were they that they had me up in the office on Christmas Eve 1935 and gave me the gold watch which I still wear. What is more when it needed an overhaul last year I was able—exactly 40 years after its purchase—to take it to the very jewellers, on the corner by the London Coliseum, where it originally came from.

The absolute end is represented by Strand's (and Rank Strand's) most popular lantern the Pattern 23. No numerology suggests that it was introduced in 1951 or that it is 500 W. I suppose I wanted a small number for a small spot. Anyway quick reference in the head showed the number as that vacated by the long obsolete half-watt focus lantern. Manufacture of these had been discontinued in 1933 but not, as was to be proved in 1960, their use. For there at the time of Strand's rewiring of the Savoy Theatre and the installation of the CD control six Patt. 23s were espied on the No. 1 Spot Bar—bare terminals and all.

The Patt. 23 as a 500-W spot should have ended in a "4" like its ancestor, the still-born Patt. 74 of 1936 but it didn't—goodness knows why. However, the Sign of the Four was to achieve a greater significance. The eight shutter Bi-focal spot was created out of the then current 1,000-W Profile spot—the Patt. 263. The next number "264" was conveniently to hand for this version and so it came to pass that *four equals eight*.

BOOKS

THE STAGE LIGHTING HANDBOOK
Francis Reid. Pitman Publishing, 39 Parker Street, London WC2 & Theatre Arts Books, 333 Avenue of the Americas, New York 10014.

What must be said first is that this is not a handbook in the sense of being a work of reference. Its purpose, and I am sure one carefully chosen by the author, is to serve as a primer, a painless introduction to the art of lighting the stage, designed to fill the gaps between the magnificent but awe-inspiring professionalism of Pilbrow* and the virtual avoidance of the problem by Bentham.† So, the justification for the title must lie in the other definition permitted by my dictionary: the guide book for travellers.

The journey, it seems, is the first adventure in lighting the school play or perhaps the annual performance in the village hall; indeed any amateur or professional occasion that is small in scale and do-it-yourself. An afternoon walk rather than a trans-continental exploration.

Regular readers of TABS will need no introduction to Francis Reid, nor will they be surprised that his down-to-earth ideas about lighting often printed in these pages have been reshaped into book form. His audience, or to keep the metaphor a little while longer, travelling companions, are clearly presumed to be quite green. So, after a short uplifting chapter on the Aims of Lighting, the commoner species of British Lighting Equipment are described and dissected. Since this is only a recreational tour, the descriptions are brief and interesting rather than factually memorable. Clearly any attempt to question statements about the relative hardness of shadows from fresnel and profile spotlights, or whether the beam from a beamlight is really truly parallel will be postponed for debate in the pub when the tour is over so that arrival at the really scenic features of the journey shall not be delayed.

First, however, comes the equivalent of the Country Code, a chapter on rigging and electrical connection and safety. Then we get to the start of the real interest of the book, lantern placement and lighting design. I suppose most guides responsible for leading these first steps of discovery begin by taking one lantern at a time and talk about lighting areas rather than actors. When a small box set is being used and with little need to create areas of darkness this is probably both logical and forms the beginning of a basic and necessary automatic routine. My views are influenced by the special problems of teaching lighting for the round and I come back to these later. Certainly Francis Reid uses his chosen method well and builds up his basic rig with panache.

* *Stage Lighting*. Richard Pilbrow. Studio Vista.
† *The Art of Stage Lighting*. Frederick Bentham. Pitman.



Komt Dat Zien! A 19th century Amsterdam Fair

be facing and a standard routine for the area will work without further thought. In the round the moment by moment direction of play has to be established and then faces lit along this line. The rest depends on the moves chosen by the director and whether the style of the play demands stark contrast or general bright cheerfulness. Undeniably everybody in the audience sees different views, but Mr. Reid's fear that some views must be second class is only valid if his director cannot get out of the habit of grouping his actors for favoured areas of seating.

The journey is now more or less over. Many interesting topics are bypassed to be sure to be home before dark, and appropriately, the book ends with a review of effects and fireworks.

I am sure that this book will fill an important gap. I do not know what the drama schools use at present as a textbook for basic stage lighting, but the visual and practical design approach and organisational routines emphasised in this work make it well worth serious consideration for future courses. A lot remains unsaid and a lot could be learned by looking closely at the truth of some of the things that are said. Graduates of the theatre will have to look elsewhere for factual detail and advanced techniques, but the beginner could do much worse than to start his journey into the world of lighting in the capable care of Francis Reid.

BOB ANDERSON

Chapter 5 is the first of the book's bonuses. Here the essential idea of tidy focusing is introduced and emphasised. The author rightly says that merely pointing a light from the right direction is not enough, each must also blend into the contribution from other lights and into the boundaries of set and stage to produce a tidy and unobtrusive whole. Everyone will have their own priorities in this field and I would have liked a word on the avoidance of double shadows, especially as the "how it should look" illustration has an example that is slightly too obtrusive to my eye. But one lesson to be quickly learned is that too much attention to detail can kill the whole concept.

Chapter 6 makes a good try at writing seriously about colour in stage lighting. Many before Mr. Reid have avoided or rushed this stretch of the route. To know whether the advice is good I would need the opportunity to try out his ideas and this, alas, has not been possible.

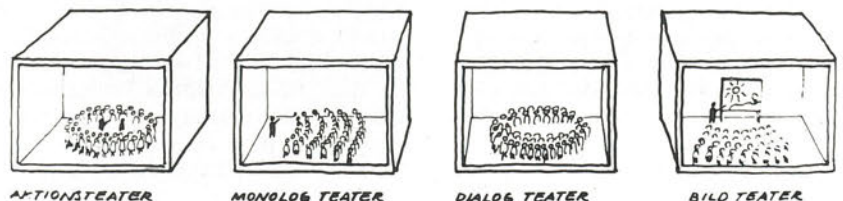
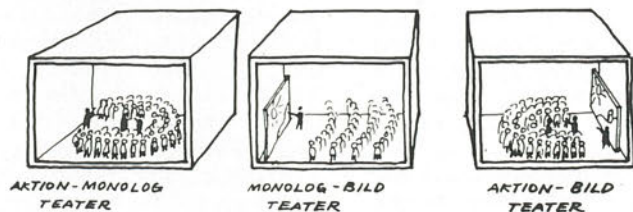
Chapter 7 is another bonus. We now reach the concepts of Organisation and Planning, two more fields through which a lighting designer must be able to navigate with confidence. The need to visualise and write down the plan of campaign are well described and, most important, preparation of everything possible in advance emphasised so as to be able to make use of every scrap of time available from the start of the get-in. What other theatre department habitually gets its first sight of a working script only hours before the dress rehearsal and little or no subsequent chance to practise and memorise the performance of dozens of cues before the first night audience arrives?

Chapters 8, 9 and 10 cover in more detail lighting a play, lighting a musical and, significantly in this context, lighting thrust stages. My own recent experience happens to lie mostly in this field and, while the advice given is sound, it is very sketchy and gives the impression that Mr. Reid is not really happy with this form of theatre. His reason seems to be that thrust or round stages allow little variation and give no lead to the placing of lanterns. This seems to me to result from his method of lighting areas rather than actors. My belief is that this difficulty justifies teaching lighting in terms based on lighting actors' faces in the spaces in which they are known to be moving and speaking. On a proscenium stage the result may be no different because once an area is identified as containing an actor, there is little doubt as to the general direction he will

RUM OCH TEATER

Per Edström & Pentti Piha. Published by Per Edstrom, Renstiernas Gata 37, Stockholm 11631.

The authors are a Swede and a Finn; the text is in Swedish. But the volume is really a picture book about every conceivable form of relationship between audience and actor. The number of graphics (photographs, engravings, plans, diagrams, sketches, cartoons) must approach a thousand in number but each one has something positive to say. The authors' persuasive and witty argument moves towards the logic of a *neutral theatre space*, but whether or not the individual reader agrees with their conclusions, this is a valuable source book.



KOMT DAT ZIEN!

Marja Keyser. Toneelmuseum, Herengracht 168, Amsterdam.

Step right up, Folks! would be the English title of this book published in parallel with this summer's exhibition in Amsterdam's Theatre Museum on the theme of 19th century Amsterdam Fairs. I cannot read the Dutch text, but I was so enthralled by the exhibition that I bought the book for its illustrations. The Fairs of the 19th century were popular theatre in the widest sense: actors and acrobats, physicists and conjurers, physicians and quacks. The wonders of science and the wonders of nature. Stage and arena. Education and entertainment. A valuable look into a historical period which had that wider theatre experience that we are seeking today. And a glimpse of the robust showmanship that we certainly ought to be seeking: hands up any Arts Administrator who stands nightly outside his theatre to shout *Step right up, folks!*

AFRICAN THEATRE TODAY

Martin Banham with Clive Wake. Pitman Publishing Ltd.

Because dance companies are the more readily exportable part of African Theatre, we tend to be ignorant of that continent's drama. *African Theatre Today* is about the dramatic literature of West and East Africa and includes many script excerpts. A fluid and free-ranging form with an actively participating audience: some of the things that the rest of the world's stages are striving hard for already exist in Africa. African Theatre will repay study and this book is a good starting point.

THE SELECTIVE EGO

The Diaries of James Agate newly edited by Tim Beaumont. George G. Harrap & Co, 182-184 High Holborn, London WC1V 7AX.

I was too young (only just) to read James Agate as a weekly critic but, in my teens, I went straight through the nine *Ego* volumes during a Christmas holiday. In retrospect, these diaries must have been one of the influences that finally pushed me towards a life in the theatre. It was not that I had thoughts of being a critic but I was excited then, as I still am now, by peeps behind the scenes of theatre persons. Agate was consciously writing for posterity and so he filtered and shaped his material to project a desired self-portrait. But ephemera, however carefully filtered, are the bricks of history and this is the true value of the Agate diaries. In making this new selection, Tim Beaumont has contrived to keep some of the ephemeral trivia as well as the more obviously significant entries. *The Selective Ego* will entertain many theatre people and lead quite a number of them back to the original. Surely the purpose of any successful digest.

F.R.

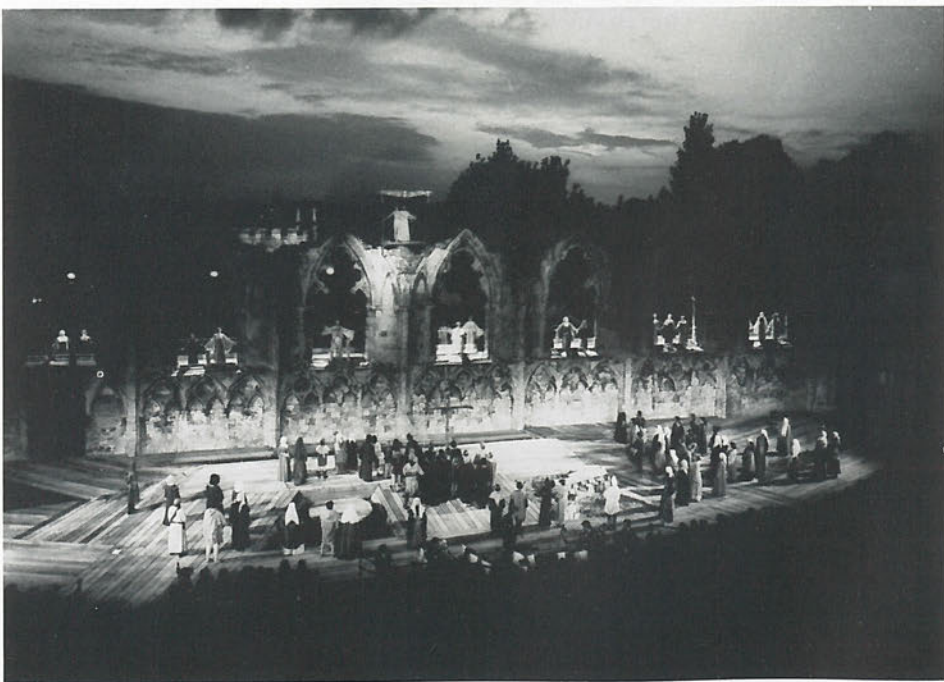
Tabman's Diary

a personal view

Horse opera

In a year that all Tabman's pocket money has been spent on Handel opera recordings, it was inevitable that the prospect of *Orlando* in the Riding School at Hovingham Hall should become the focal point in planning a summer schedule. There was no disappointment despite Orlando's personal descent from counter-tenor to sprechgesang by intervention of the demon laryngitis. Perhaps only an English Gentleman would build a Riding School to serve as an *entry* to his Palladian country house. Thomas Worsley who built Hovingham Hall (like that other great English gentleman opera house builder, John Christie, Worsley was his own architect) must have known Handel since they were both officials at the court of George II. The programme claims that Worsley was an opera lover and so it is easy (and satisfying) to conjecture that he may have attended a performance of *Orlando* under the composer's supervision. What he saw would have been more scenically spectacular than this performance and, indeed, *Orlando* must remain a prime candidate for a revival of scenographic painting. But the simple platform staging, with divine intervention from a high window, made all the dramatic points and the trumpeting of baroque oboes combined with the twang of gut strings to make a ravishing sound. Ambience continued throughout the interval with wine on the cricket ground while the sun set on a landscaped pastoral infinity. Festival Opera has no need of the traditional trappings of a theatre designed for the needs of year-round repertoire.

The York Mystery Plays 1976.



The sound of safety

With-it safety curtains now fall on the orchestra rail to give scenic freedom on stage aprons. But lost is the traditional acoustic barrier separating the mutually incompatible sounds generated by set-up technician and rehearsal musician.

York Mysteries

I went to the York Mystery Plays more out of a desire to fill one of the many gaps in my theatrical education rather than with any expectation of an evening's enjoyment. But Jane Howell had directed with a well paced mixture of poetry and swashbuckle—keeping the mediaeval feeling but employing the whole modern panoply of smoke, velcro, and White Light. Theatre Consultants please note the use of a dancing dragon to scoop up the deceased and their props: every wide and/or open stage should have one.

Why (A)symmetric?

Karlsruhe follows a recent German trend in having an asymmetric auditorium. Is this a manifestation of some deep new philosophy? Tongue-in-cheek responses to my *why?* included "because we live in an asymmetric society" and "because it's different". But the deepest reason I could find was *why not?* And why not indeed: if the auditorium looks good and feels good, why should it necessarily follow the symmetric tradition.

McBean in retrospect

Is stage photography completing a cycle of fashion? The formal photo call which gave way to action shots seems to be making a come-back. Will it go full circle to the tripod camera and special lighting of Angus McBean? A *McBean Retrospective* mounted by York's Impressions Gallery of Photography gave a reminder that show photography once tried to capture the atmosphere of an entire scene, not merely provide actor close-ups. History will find a less than adequate pictorial record of the theatrical achievements of recent decades. But McBean has documented his own period superbly: apart from the production photographs, he has recorded the great performers



Streetcar Named Desire, an Angus McBean photograph 1949.

in their great roles with a portraitist's eye which, although a touch formal, tells us much more than do the warts on any action close-up. Gielgud, Leigh, Richardson, Olivier, both Hermiones, Scofield, Helpmann—they, and more, all were in the exhibition. And with them it was good to see McBean's portrait of Joe Davis without whose light no star of that period ever shone.

Looking for trouble

A white set in a white surround for an extended tour of minor theatres. A single candle to motivate a light-build filling every corner of a full-stage set. Recent examples of Director's sado-masochism. Self-infliction of insoluble production problems may give a Director his kicks, but why bash the poor lighting man (and the audience).



Gemütlichkeit in Karlsruhe

Das Ist Alles Möglich! was the title of Frederick Bentham's thoughts in TABS (September 1972) following a visit to the 38th Bühnentechnische Tagung in Düsseldorf. The phrase, for which he suggested an English equivalent *It will be able to do everything*, he found to be on everyone's lips "proclaimed with enthusiasm and devotion, indeed conviction". The phrase expressed faith in the limitless possibilities of the mechanised stage—about which Fred had some doubts.

That the article was immediately reprinted in the *Bühnentechnische Rundschau* (something unthinkable even half a decade before) indicated that there were also possibly some doubts in Germany. Perhaps *Alles* was no longer thought to be quite so universally *Möglich* as it appeared to be on the surface.

Visiting this summer's 40th Bühnentechnische Tagung in Karlsruhe, I certainly found little euphoria. Fundamental questioning was in the air. The future was being treated as something that had to be rethought from basics, rather than as something that would automatically follow-through from the traditional philosophies.

Certainly the profession of *Lighting Designer* is poised for take-off in the German theatre. The younger lighting technicians are anxious to contribute art as well as craft to the productions, and the younger directors are behind them. The movement started in Ballet, is extending to Drama, and will reach Opera in due course.

But re-thinking was not confined to the young or to the lighting. As we toured the technical wonders of the new Karlsruhe theatre complex, think bubbles could be seen floating above many a think tank which had been silvered or tinsured by a lifetime in theatre technology. My own attitudes to stage machinery remain fairly clear cut: it is justifiable to build machinery into a large scale repertoire theatre to do the physical humping from one show to another. By this I mean the standard cruciform stage or a revolve so wide in relation to the proscenium that one quarter represents a full stage area. But to build what might be termed production machinery is surely to inhibit imaginative use of the stage rather than encourage it.

I find Karlsruhe's revolve (little wider than the proscenium) to fall into this class. As a piece of engineering it is fantabulous: concentric circles coming and going in any permutation of direction and speed. As a method of moving actors and scenography as a visual production device during a show it will be absolutely super. Once or twice.

But overused in a theatre where a large proportion of the audience are season ticket holders, it is likely to become first a bore then an alienation effect.

The theatre's brochure has the now obligatory sketches showing variations of the stage/auditorium geometry. I suspect that whatever you do, it will remain what it is: a good modern comfy clean-sight-line opera house. Nothing wrong with that—it is just that one feels sorry for the technicians who have been denied a good working stage for the theatre's quite splendid and varied repertoire. This includes, next season, 25 operas and 6 operettas not to mention 15 major plays shared with the smaller stage plus a whole host of concerts, experimental and children's performances. Incidentally nine of the operas (including the Ring) are new productions. Now that lot takes some shifting around between rehearsals and performances.

So. Was it a Tabman's dream, or did I detect at this Bühnentechnische Tagung a general feeling that perhaps stage machinery has fallen so much into the hands of the theorists that it is beginning to work against, rather than for, the practical technician.

The Bühnentechnische Tagung is a good event. Held every two years at the end of the theatre season, it brings together, in a new theatre, a large representative group of German theatre technicians to view new equipment and to discuss mutual problems both formally and informally. With memories of a quite splendidly lavish gastronomic and alcoholic Black Forest garden party given by some of the main technical contractors to the Karlsruhe Theatre, one can say that, whereas *Alles* may no longer be quite *Möglich*, *Alles* is quite certainly *Gemütlich*.

Exhibition postscript

Pani's stand was a feast of waltzing remote-controlled profiles and ergonomically satisfying follow spots. There was a projection lens giving a better than 60° beam, and Hermann Sorger used the HMI projectors on the theatre's mainstage to give a stunning display of projection scenography by Annelies Corrodi. Rank Strand (Germany), in addition to all the standard range, had some special product including MMS modules for Geographic Mimic and standard channel levers: this latter being an additional record facility for quick plotting by touring staff unused to the more versatile MMS digital channel access (NB levers for plotting only, not for modifying recorded states). Phönix had some excellent mobile modular stages for school halls and the like. And the most interesting general lighting trend is that Jumbo PC lens focus spots seem to be on the way out.