



The author as a young man at his first lighting control.

rather than used to follow. They and this particular usage were to remain a feature of Covent Garden lighting for many years. The Pageants (beam-lights), Patt 73 Mirror spots and the Patt.56 acting areas were not to appear for a year yet; and neither was my Light Console. And there lay the snag from my point of view. The original wiring diagrams and console layout are dated 17/3/33 but this 70-way prototype was not ordered until late autumn. Such techniques were out of the question for a rush job on the great scale and of the importance of the opera house. Something more basic had to be provided.

The key man was Moss Mansell, the inventor of the magnetic clutch which Strand and I were going to use in one form and another for three decades. At that time the largest successful installation was of *nineteen* ways in the Regal cinema Uxbridge early in 1932! In a personal letter to me of April 30th 1957 Mossy, as we knew him, says of his clutch "I do not think it would have been used at Covent Garden had not Basil Davis seen its advantages over the 'Grand Master'. The then directors of Strand Electric (excluding the Junior) did not think much of it or in fact any of the ideas of said Junior." The "said Junior" was Mansell, the other two were the joint managing directors Arthur Earnshaw and Philip Sheridan. The firm was a private company until 1936. Mansell had put money in Strand very early on but still ran his own firm Mansell & Ogan manufacturing arc resistances, dimmers and other equipment mainly for the cinema industry. Among this the Uxbridge job for my ex boss Basil Davis as consulting engineer which was also his role at Covent Garden.

The two separate small works moved out of the Covent Garden area in 1932 to a new factory in Power Road Gunnersbury. Mansell became works director and his own team under Jim Jordan became the shop for 'advanced' work while the Strand engineering shop under Miller did the Grand Masters and the traditional stuff. The machines, which they shared, stood with the overhead shafting drive as a kind of steelhenge between them. There was a further shop, of Strand origin, to do sheet metal work including floats, battens and the various lanterns.

Mansell and his foreman Jordan (later to become in his turn works manager and then director) played safe. All circuit switching, blackouts and the rest was off-loaded, so to speak. A direct-operated switchboard, made by Miller's shop of course, was mounted on the same perch but further off-stage. It included all the live (phase) side, the dimmers downstairs in the basement being in the neutral return. This was a pre-war practice derived from the old DC days when switching was in the positive and dimming in the negative. My book of 1950* declared firmly that "The regular practice in the past of putting them in the neutral is inexcusable." That old prac-

tice had been taken for granted by Ridge and Aldred, very responsible consultants, in their book of 1935.†

The difficult problem of a remote motor drive with a large variable speed range was overcome by not having one! The clutch drive shafting was extended right up to the perch to terminate in two pairs of capstan wheels just under the control panel. The vertical capstans were for slow motion and the horizontals for 'fast'. Free-wheel gear was fitted to prevent reversal of the shafts which did facilitate the extra slow inching much in demand in opera but meant a lot of work if a chorus of lights had to reverse. Each dimmer way had a flush-mounted 2-way and off switch. Up to raise, down to dim and centre to stop. These would be set appropriately, followed by a slight stoop to the capstans to move them. The tempo was essentially lento. Fast work resetting lots of switches and lugging round the two capstans locked as one was out of the question. Some masters were fitted, to inert groups quickly when a small change had to follow a large; and the, all too likely very slow, cyclorama sky changes came off different shafting from the rest.

Indication of dimmer position came from a rear-illuminated dial above each switch. (These were re-calibrated Rolls Royce petrol gauges!) Two operators were used at the time and the second man's role, except when there were a large number of switch change-overs, was really that of an 'electric' motor thereby allowing the chief to concentrate on hitting the required levels. To those today brought up on Memory systems, or at any rate Preset boards, this will appear crude indeed for our famous opera house. But if the equipment had to be made in Britain this was beyond question the best solution in the time at the time. To keep the record straight the Americans did have the General Electric multi-preset thyatron reactor by now but the remote panel would have had to go under the stage as in the 'old' Met. in New York‡ and both cost and delivery would have put it right out of court.

The 12-volt DC Mansell magnetic clutch was to survive unchanged (even the boss on the casting which carried a handle at Uxbridge for manual operation, in case!) until 1954. The re-design then reduced dimmer centres from 8 inches to five and at last a spring was

incorporated to clear the pole-piece from the wheel and remove the gentle scraping and jarring sound characteristic of a 'Strand' clutch job with its motor idling at the ready. The clutch was a very simple device but it worked — any problems were solved very early on, except one. This was the limit switch at each end of travel. The clutch had no inertia, the moment the current was cut it stopped dead. We had to make our own limit switches for years and all sorts of things were tried — gravity mercury, mercury with trigger spring, silver contacts ditto and without and so on. The trouble was that it had to operate both at speed and at the slowest of slow crawls. The mechanically-minded TABS reader can imagine the problem; it was as though in its way as that other perennial, lantern shutters which can move freely but stay put! Even when the Burgess micro-switch turned up post war, to solve the problem for us, we encountered trouble with a few on the 215-way Light Console banks at the London Coliseum. With immense patience this was traced by Burgess to female assembly on *certain* days of the month, believe it or not.

But that was 1952; what of the Light Console in 1934? To that young me it took a hell of a time but eventually Comptons delivered the relay, main cable and console and after an eternity our own works delivered and assembled the 35-way dimmer bank and all that remained was to wire the two together. I stayed behind late when no one was about and joined one pair of clutches to the silver wire relay contacts to see what sort of spark there was. Having checked that my theory, never till then tested, was OK I could relax. Next morning the men from the works set about joining the relay to the clutches in the same way that they had done at Covent Garden — running standard twin double cotton covered and waxed bell wires and ringing each out. At least the Seecol theatre dimmer room was small and the relay was actually in it whereas the Opera House they had to run all the way from dimmers in basement to panel on perch. However, Compton's man Roy Skinner stood about an hour of this before saying "let me show you the real way to wire this job". We sent out for a bag of ovals (nails), he measured up the bank and nailed them out using our one foot high wooden forestage as a bench! Before very long there was the complete cable tied out with macrame twine ready to be lifted off and placed in posi-

tion. The very first Strand Electric (or Mansell & Ogan) job to be jig-wired; something that was to become so common as not to be worth a second thought. The adventures of that very first console, destined to sire so many progeny, rate a separate article. Suffice it to say that its inaugural recital June 13th 1955 even made the national press — happy days!

As far as publicity went it left nothing to be desired; the problem was to sell it! Unlike that someone ranting and raving across the channel I really had "missed the bus"! A number of jobs were quoted ranging from a tiny one-manual 53-way, for an Ashley Dukes Mercury theatre project, to a four-manual 172-way as part of a re-wiring scheme for Drury Lane. Needless to say, neither that wiring or that console were ordered; but we were to achieve both those at the Lane in 1950. The Gaumont Chelsea (66-ways), the Vaudeville (128-ways), Whitehall and Winter Garden were all abortive quotes still in my files of the thirties. But the most intriguing one was the Alhambra Odeon as it was then called. A. C. 'eebe had quoted a full installation with a 59-way Grand Master for this prestige house going up in Leicester Square. However, we were asked by Odeon to quote for our "lighting console" instead. There was a very good chance of pulling this 68-way off; unfortunately Oscar Deutsch, the genius of Odeon then, was a director of B.T.H. and they chose this moment of all moments to try to market the G.E. thyatron-reactor system over here. Inevitably, a 52-way 2-preset (one ahead) G.E. type board went in. Post-war it was soon removed and a second-hand Grand Master substituted because of the difficulty in obtaining spares.

Who knows the fun we might have had with the Light Console if that had been chosen. It could have survived in the pit lovingly maintained by enthusiasts, as has been the 5-manual Compton pipe organ ("The Duchess"). We could have had duets of Colour Music not only way back in 1937 but today. Curiously, if the console had been one year earlier and had gone into Covent Garden in 1934, it would have got a chance to show its colour music paces too — especially its 'Hot Rhythm' techniques. The reason for this was that for the whole of each winter season the Opera House used to be converted into a dance hall. As a postscript; it has to be remarked that if we did not *sell* a light console in the thirties, we did *hire* one to see them out in our flashy way, shortly before war was declared. It was a very large job with a special dimmer bank of 72-ways 230-kW and its sole purpose was the playing of Colour Music — but that is yet another story! ■

FOOTNOTES:

* *Stage Lighting Pitman* 1950 etc.
† *Stage Lighting Principles & Practice Pitman* 1935 & 1940

‡ The immortal of this type of control is still working in Radio City Music Hall