

Odeon

LEICESTER SQUARE



BTH EQUIPMENT installed in the Odeon Leicester Square

BTH
EQUIPMENT

AT THE

ODEON
LEICESTER SQUARE
LONDON



CINEMA EQUIPMENT

IN the design and manufacture of electrical apparatus, British Engineers have always held their own; and to-day, British Cinema Equipments superior to any others on the market, are being designed and manufactured by one of the leading Electrical Engineering Manufacturing Companies in this country—The British Thomson-Houston Company, Ltd., Rugby.

A specially organized selling company—Sound and Cinema Equipment, Ltd.,—serves the Cinema Industry, and behind each BTH equipment are the resources, the extensive experience of specialized research engineers, and the reputation of this world-famous manufacturing organization. This presents manifold advantages to the cinema exhibitors, not only in the initial stage of the purchase, but also throughout the maintenance period; for the BTH service incorporates a large staff of specially trained and experienced engineers located in all parts of the country, who are capable of dealing expeditiously and satisfactorily with any difficulty that may arise in connection with BTH equipments when in service.

Incidentally, there are now over 1200 cinemas in this country alone, using BTH equipment; and this number is steadily increasing.

As representing the latest technique in cinema design, the Odeon, Leicester Square—the finest in the West End—is necessarily equipped with all apparatus that is most modern in the way of film-projection, sound reproduction and lighting. It is, in fact, a striking example of the extensive use of BTH equipment for the Cinema and Theatre.

In this respect, no other firm can offer the same facilities as the BTH Company, as this is the only firm that designs and manufactures for the Cinema the complete sound-film equipment and its associated apparatus; lighting control for the stage and auditorium; lamps for lighting effects;

contactor equipments ; control gear and motors for various services, such as for air-conditioning plant, etc.

The BTH Sound Reproducing system installed in the Odeon opens up a new era in the cinema industry. It is the result of many years practical experience, combined with the development and the research work in the Laboratories of the BTH Works at Rugby.

This new system, besides ensuring a uniform distribution of balanced sound and music throughout the entire seating area, incorporates an entirely new feature, a *Volume Expansion Circuit*, introduced to the cinema exhibitors for the first time by the BTH Company.

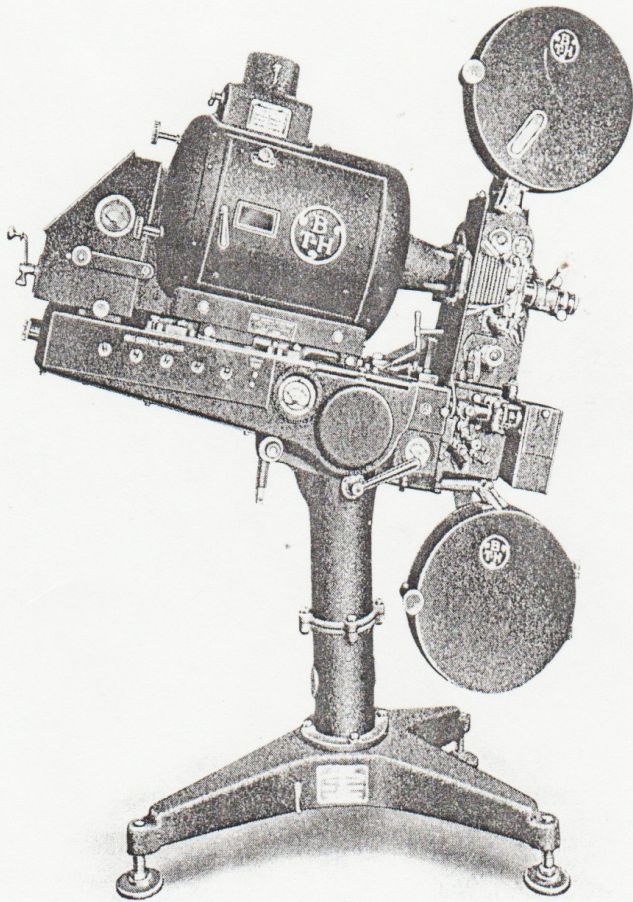
Volume expansion means sound reproduction with its full volume range. It is well known that with the present recording technique, the volume range has to be compressed in order to be accommodated on the standard sound-track, thus limiting the sound reproduction to a considerable degree ; *volume expansion* automatically compensates for this enforced restriction in the recording amplitudes.

Thus, this new BTH sound reproducing system not only faithfully reproduces the full frequency range, but also differentiates in true perspective between the quietest whispered speech and the roar of an angry crowd while retaining ordinary conversation at its natural sound level. The quality of sound, responsiveness, sensitiveness, and the feature of volume expansion is in advance of any success hitherto achieved.

Perhaps the most interesting part of a modern cinema is the Projection Room which may be termed the " nerve centre " of the cinema, for this is the seat of the main activity throughout the projection period.

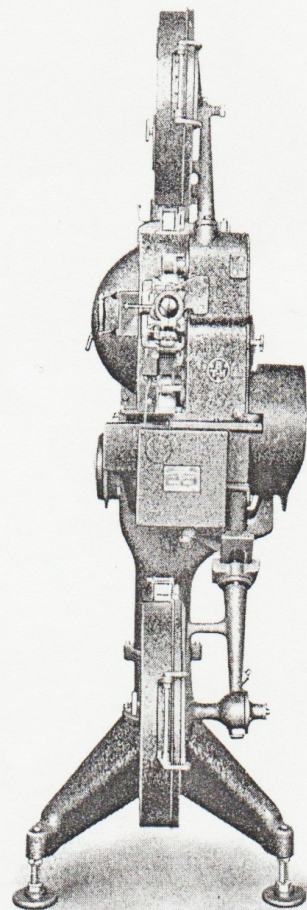
SOUND-FILM EQUIPMENT.

There are three sound-film projectors installed in the projection room, and it should be noted that the space occupied by each projector is the absolute minimum possible.



Complete sound-film projector.

Front of sound-film projector showing a clean outline and the extreme narrowness in width.



The projector stand that carries the lantern, the projector mechanism, the sound head, and the associated accessories, incorporates many unique features—all cables are concealed, all drives fully enclosed, and the arc control switches and meters are accommodated in the lantern table convenient to the operator.

The high-intensity mirror arc projector lantern has achieved a further notable advance in projector lantern efficiency.

This remarkable efficiency enables exhibitors to provide a very much improved screen illumination at a much reduced operating cost. The saving being due to the reduced consumption of current ; carbon cost is therefore less, and there is a further economy from the reduced capacity of the converting plant required, resulting in reduced capital outlay

The feed mechanism is fully automatic and easy to operate.

The Morganite carbons can be quickly changed without the danger of handling hot parts, and the self-aligning clamp prevents the possibility of a bent carbon jamming.

A double shell body ; maximum accessibility ; easy maintenance ; mirror and negative carbon adjustment control ; an arc image projector ; and a magnetic flame control are further noteworthy features.

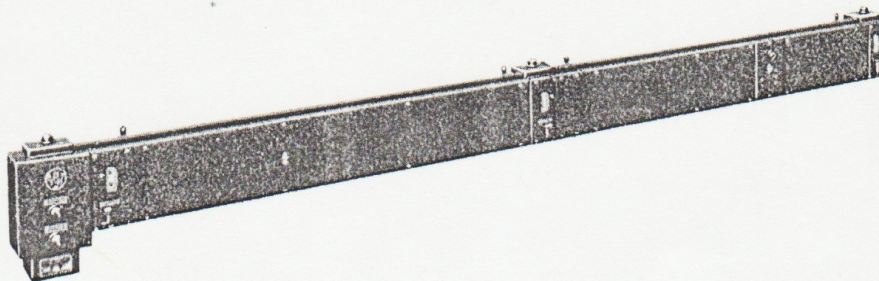
The projector mechanism, rapidly becoming popular, is suitable for use with high-intensity or low-intensity lanterns.

The distinctive points of merit are :—A special framing device for simple and accurate threading ; removable hinged gate for cleaning ; an efficient static gate cooling ; a rigid lens mount with micrometer adjustment ; a removable intermittent unit ; and a totally-enclosed drive.

The sound head fixed directly on the lantern table is arranged so that the projector mechanism bolts on to its top without any adaptation plate. The drive from the sound head consists of a single chain. The sound head comprises three sections ; the exciter lamp chamber ; a central

chamber housed in the optical system ; the sound gate, constant speed sprocket, and the lower speed sprocket ; and the photo-cell chamber that contains the Mazda caesium-type photo electric cell and transformer.

All the metal parts of the sound-film projector are chromium plated and the general finish is black crystalline, extremely pleasing to the eye. Provision is made for rapid and efficient inspection ; the lantern is turret mounted ; and the entire arrangement affords a very compact, narrow, and symmetrical projector assembly ; easily operated ; and due to its narrowness in width, allows maximum clearance between projectors.



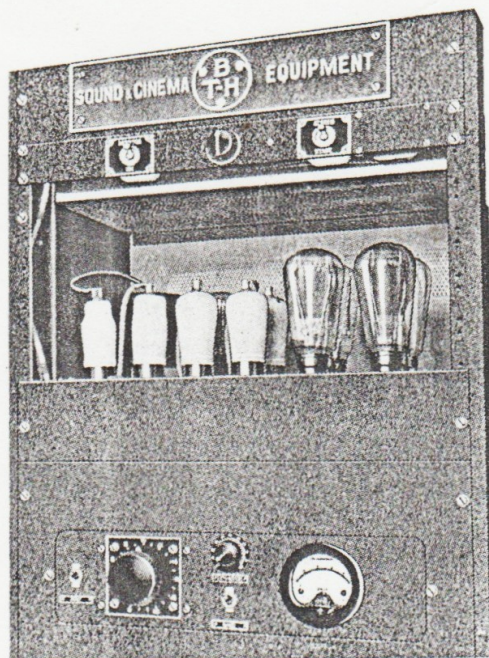
Three-way changeover unit.

On the wall, just in front of the three projectors, is mounted a *three-way changeover control unit (fader)*.

A switch located near each projector enables a rapid changeover to be made from one projector to the other ; the two projectors concerned being selected by means of switches on the fader so arranged that any combination may be used.

An electronic volume control is provided consisting of a stud switch operating from each of the control stations by means of a rotating drum and run-extension on the volume control spindle. This electronic volume control is connected in the amplifier circuit and not in the low impedance

line ; thus ensuring that all the signal voltage in the line will be a maximum and, therefore, the ratios of noise to signal are as small as possible.



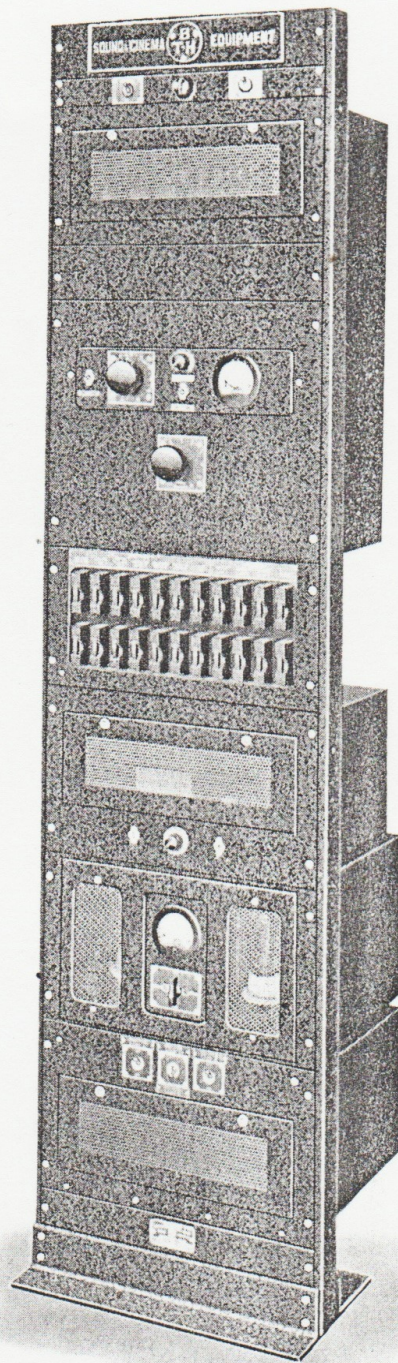
A close-up view of the upper part of the main amplifier rack—cover removed to show valves.

An additional switch enables either of the two amplifiers installed to be used on the screen speakers ; and a low frequency tone control is provided that can be readily switched in and out of circuit.

The output from the fader is fed to the main amplifier rack.

Just behind the projectors is located the *main amplifier*, built in rack and panel form ; the compactness and pleasing appearance may be observed from the accompanying illustration.

This main amplifier rack, as it is termed, carries the main amplifier ; rectifier for the main amplifier ; monitor control ; and amplifier for the supply to the deaf-aid head-phones ; rectifier for exciting lamps ; com-



Main amplifier rack assembly.

ponents for microphone attachment ; stage amplification speaker control ; and fuses for all the components of the complete equipment.

This arrangement dispenses with the rotating converting plant ; simplifies operation by centralizing all control ; occupies minimum space ; and its general black crystalline finish presents a pleasing appearance.

The type of valves used throughout has been selected to give maximum signal to noise ratio, and the resultant hum level is 80 dB. below signal.

The general mechanical construction of the main amplifier rack facilitates rapid and easy service. For instance, the main components such as condensers and transformers are mounted on the back of the tray that is vertical, and it is arranged so that the inside of the tray carrying the wire resistances is placed in front of the rack. The complete tray is carried on two horizontal pins so that it can readily be pulled forward and removed for service purposes.

The amplifier rectifier consists of two valves operating as a full wave rectifier.

The monitor control panel includes a volume control adjusting the output from the monitor ; a switch changes over the main sound output from the screen to the stage amplification speakers ; and a transformer for coupling the permanent magnet monitor speaker, located in the projection room, to the output of the amplifier.

Deaf-aid amplifier consists of one single power stage complete with its own associated rectifier.

Rectifier for exciting lamps. The supply to the exciting lamps and to the speaker fields is obtained from copper oxide rectifiers.

A standby amplifier rack, an exact duplicate of the main amplifier just described, is also provided.

Also to be seen in the projection room is a *non-synchronous twin turntable equipment* enclosed in a metal cabinet for playing gramophone records during intervals. Each turntable is driven by an electric motor designed for heavy duty. Piezo pick-ups are used.

A scratch filter is provided as a separate unit.



Non-synchronous twin turntable gramophone equipment.

Some eight sets of *arc-regulating resistances* are wall mounted in the resistance room that is adjacent to the projection room. These resistances are built up of non-corroding unbreakable resilient grids and they are light, compact, robust in construction, non-shorting through vibration, unaffected by temperature stresses, and comply with Home Office Regulations and licensing Authorities.

The BTH arc control gear, assembled in the resistance room, consists of a switchboard type of contactor panel, and it is remote-controlled from the projection room.

The electrical incoming supply to the Odeon is alternating-current, and as a direct current supply is required for the projectors some A.C. to D.C. conversion plant is necessary ; and for this purpose a *twin glass-bulb mercury-pool rectifier equipment* is installed.

This equipment consists of two sheet-steel enclosed single-cubicle rectifiers, each consisting of one air-cooled mains transformer with secondary tapplings ; fuses for incoming supply ; an ignition and excitation transformer ; a silent-running cooling fan ; the six arm glass-bulb rectifier supported on a withdrawable carriage ; and the necessary control panel.

The output of each unit is 220 amperes at 80 volts.

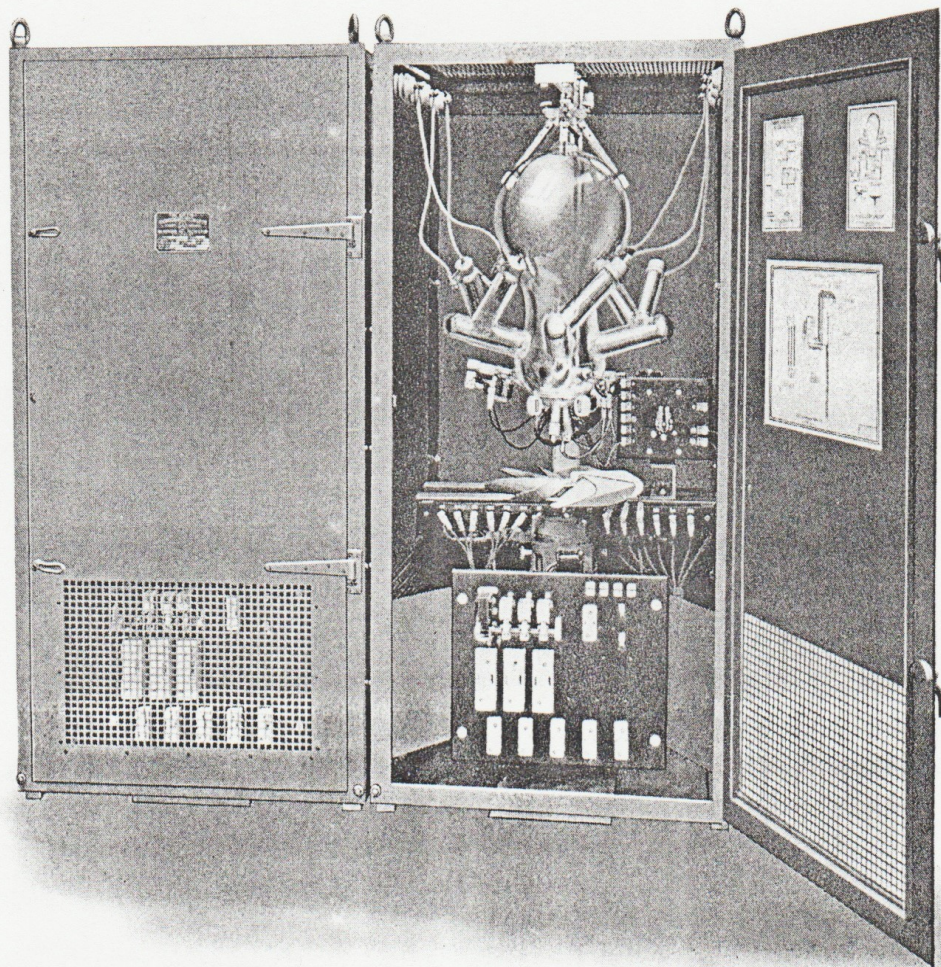
These two units are designed for parallel operation, or alternatively, the normal arc load of the cinema can be supplied by one unit ; they are also remote-controlled from the projection room.

An emergency-lighting rectifier, also housed in a sheet-steel cubicle, is connected in the secondary lighting system in accordance with the official regulations which demand that all cinemas should be equipped with an emergency-lighting system to minimize the risk of panic that might be due to a black-out in the event of a failure of the electricity supply.

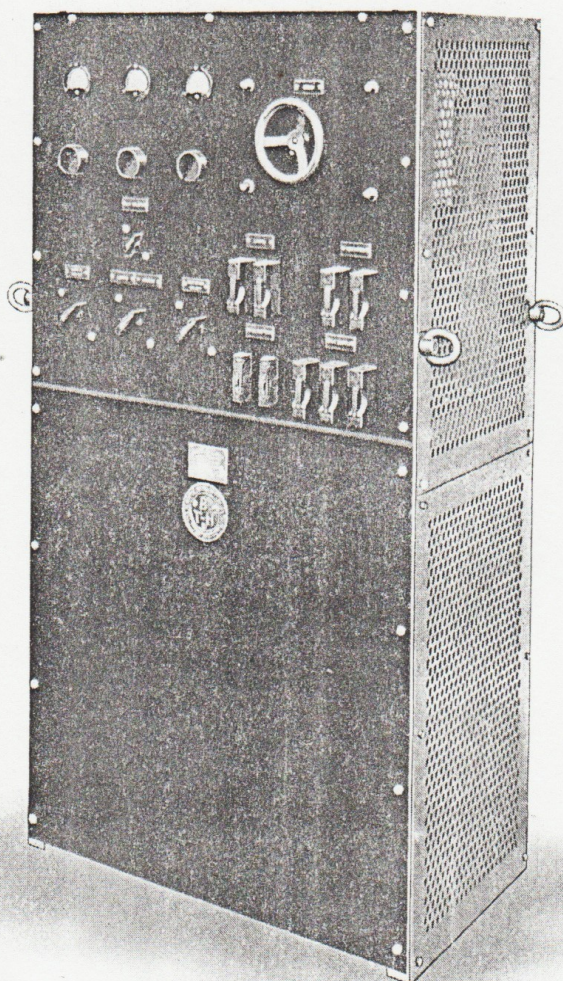
This is an extremely important unit, for besides providing the normal supply to the lamps, it must maintain the battery in good condition and state of charge, ready for emergency service.

A floating battery system is used and this emergency-lighting rectifier can be arranged to give a "lump" or a "trickle" charge ; it will deliver a current of up to 45 amperes at a voltage to suit the 48 cell battery.

The pilot lamp in the projection room with the indicator lamp and meters on the control panel of this cubicle enable the operators to ascertain that the rectifier is functioning satisfactorily, and consequently maintaining maximum efficiency.



Twin glass-bulb mercury-pool rectifier equipment.



Emergency-lighting rectifier.

The next point of interest is the back-stage. Here is the speaker combination consisting of four low-frequency speakers mounted in a common baffle ; and on top of which is mounted four high-frequency units on two multi-cellular horns.

The speakers are supplied from separate circuits to eliminate distortion, and it is believed that this system is used only in BTH equipment ; they cover the entire speech and music range. An interesting feature of this combination is that for stage shows it can be " flown " ; or, if necessary, wheeled off the stage.

Immediately in front of the speakers is the screen, the novel construction of which deserves special reference. It is a *Stableford metal screen*—now standardized in the Odeon Theatres—constructed in sections, each section being equal to the height of the screen itself and approximately 2' 6" wide. The sections are slotted with 9" length slots approximately $\frac{3}{8}$ " wide, the slots being arranged alternatively to prevent bowing.

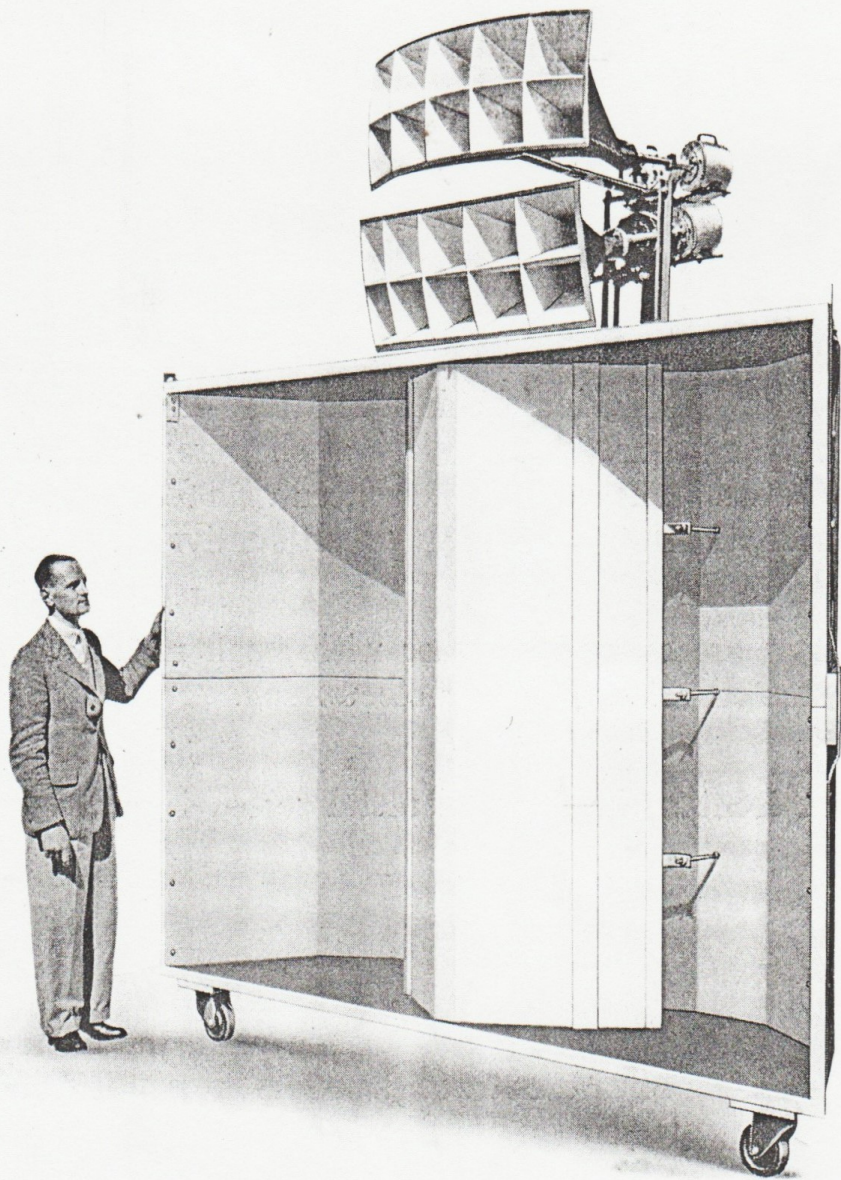
The sections are clipped together with small metal clips, and each section is erected under considerable tension.

The whole front surface of this metal screen is sprayed white after erection.

It is completely fireproof and everlasting in wear. The slots ensure that the sound transmission on the higher frequencies is considerably better than with the normal type of screen when the latter is new and this feature remains consistent throughout the life of the screen ; whereas the ordinary perforated screen passes, with age, less and less of the higher frequencies each time it is cleaned.

The reflective value is approximately 15 per cent. better than the ordinary perforated screen.

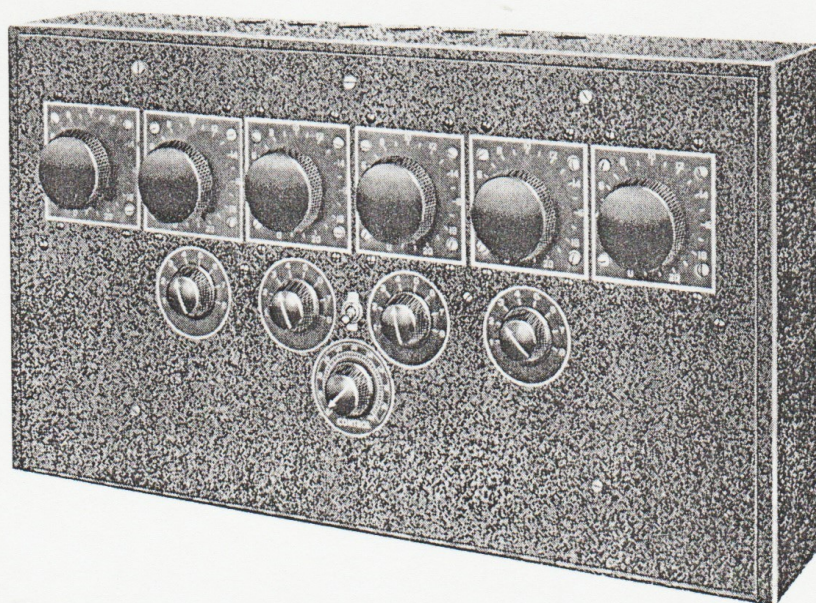
The stage amplification system has been designed to be as flexible as possible. There are nine microphones, including two portable units, and one on the organ console.



Cinema speaker assembly located behind the screen.

Six of the microphones are for use in a novel manner, three of them being fixed in conjunction with the footlights in such a way that they disappear below the stage level when the footlights are lowered to make room for the stage apron. The remaining three microphones are fixed on the stage apron and are brought into position by separate concealed lifts, which are operated by BTH motors that also disappear with these lifts.

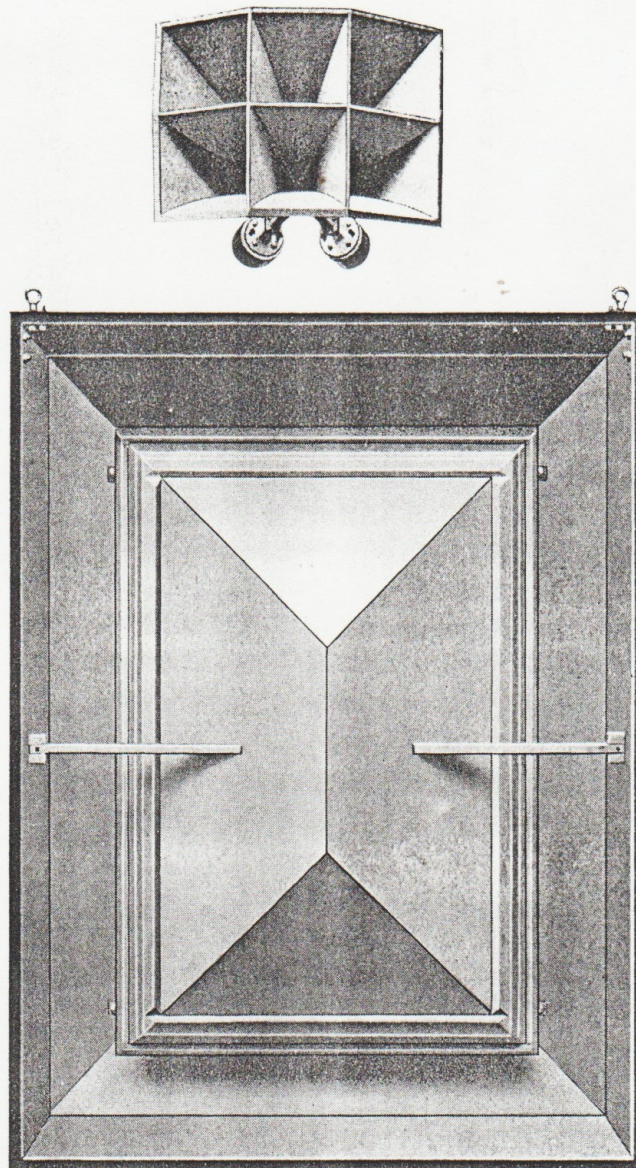
Incidentally, the footlights, orchestra, and organ lifts are also operated by BTH motors.



Microphone Mixing Panel.

The speaker system is entirely separate from the main theatre speakers, and a separate amplifier is provided which serves as a standby for the main theatre amplifier. The amplifier is fed from the microphones via a microphone mixing panel. This system consists of two combinations located one on each side of the auditorium, each comprising a low-frequency baffle containing two low-frequency speakers with a multi-cellular horn mounted on top.

The microphone mixing panel is situated at the back of the circle in the auditorium ; this panel is suitable for mixing any four microphones.



Stage amplification speaker assembly located
in the Auditorium — one on each side.

An Integrating Photometer and a *Sound-intensity Meter* are items of marked interest ; both are introduced for the first time by the Sound and Cinema Equipment, Ltd., and they are accommodated in the projection room.

The principle of the integrating photometer involves the focussing of an image of the Cinema Screen on to a photo-electric cell of the generator type, the output current from the cell being measured by a sensitive reflecting galvanometer.

The two main components are a light camera and a galvanometer. The camera is enclosed in a metal box with a 4" diameter lens in the front, and a cell fitted in the back on the lens axis. The camera looks out through a porthole towards the cinema screen, and the galvanometer is mounted on the rear wall of the projection room so as to be visible from any operating position.

The purpose of the integrating photometer is to enable the operator to check, every night, the readings from each of the three projectors ; this being done at the termination of the programme while the projectors are still warm—with no film in the gate. There will only be a permissible difference allowed, and the result of any adjustment is immediately shown on the galvanometer. In this manner a check can be kept on the arc carbons, arc mirrors, alignment of mirrors for best light on the cinema screen, and finally on the cinema screen surface.

The sound-intensity meter is for the purpose of obtaining some indication of the actual volume at the back of the cinema, and thus guide the operator as to the fader setting required for a different number of people in the auditorium. It consists of a special form of microphone, located in the auditorium, connected through a suitable metal rectifier circuit to a sensitive galvanometer mounted in the projection room.

The sound output from the speakers gives a continuously variable reading on the galvanometer.

SPOT, COLOUR LIGHT, AND SLIDE PROJECTORS.

The projection room would not be complete without its complement of spot, colour light, and lantern slide projectors. The Odeon, Leicester Square, projection room equipment includes two projectors with high-intensity lanterns and one projector with a low-intensity lantern as a spare.

The two high-intensity spot and colour light projectors are located one on each side of the sound-film projectors; and the stand-by projector is adjacent to one of the former two.

The high-intensity spotlight projector is of an entirely new design; therefore a brief description is possibly justified.

It is capable of producing a remarkably powerful and sharply defined light beam.

The lantern used is the famous BTH high-intensity arc.

A specially designed iris diaphragm is used giving a variable diameter of $1\frac{1}{2}$ " down to $\frac{3}{8}$ ".

The light passing through the iris is focussed on the stage by means of lenses of various focal lengths so that the spot size is continuously variable from 3 to 48 feet diameter; or rectangular spots can also be obtained by the use of vertical and horizontal shutters—barn door type—mounted adjacent to the iris diaphragm.

The adoption of the high-intensity mirror-arc gives about 100 per cent. more light at 50 amperes than a condenser arc working at 80 amperes; and, as may be expected, the problem of heat dissipation required very careful consideration. This problem was solved by the design of a special 12 sector iris; barn door shutters; and coloured filters.

The projector itself is equipped with all accessories likely to be required in service. A removable colour wheel and a 3-way colour magazine

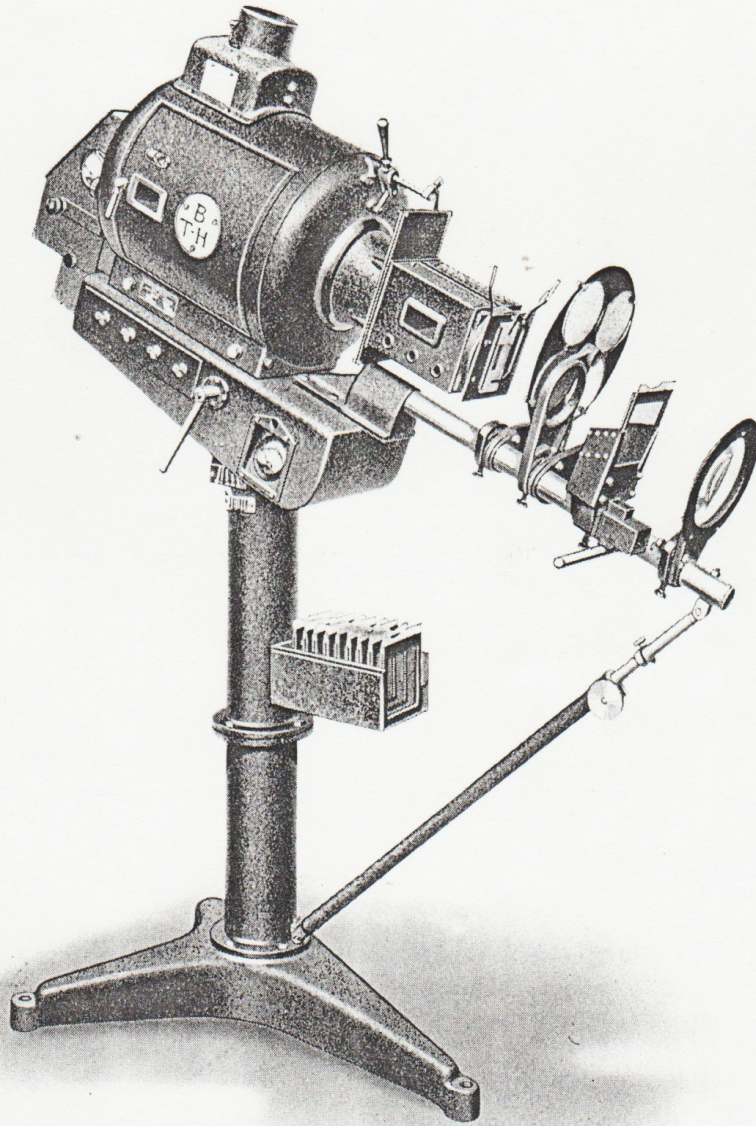
for colour mixing is supplied ; a useful accessory for the latter is a reserve magazine mounted on the stand in an accessible position, and carrying a reserve of 12 colour slides.

An easy and ready method of pre-setting the beam has not escaped the attention of our design engineers and devices are fitted for pre-setting with either a *brightly lit or a dark stage*; this is accomplished in the following manner.

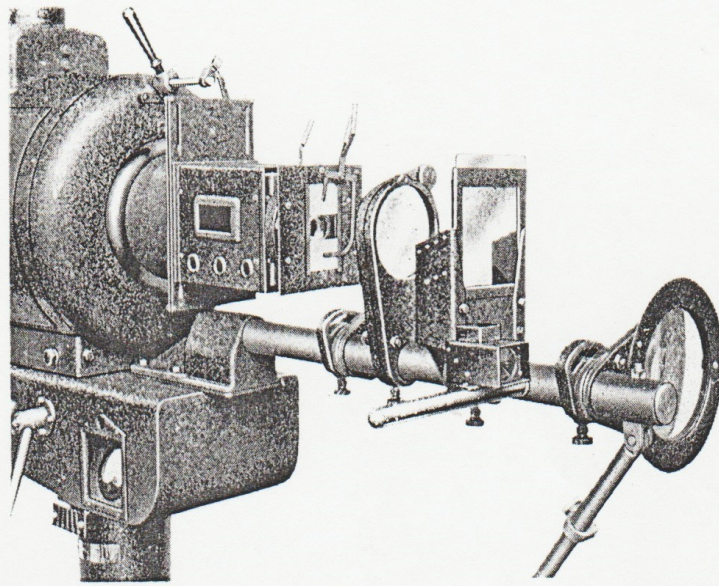
A *periscope* mounted on the horizontal handle attached to the arm of the projector enables an artist on the stage to be followed and properly "spotted" at the correct moment, and a *tilting and slewing index* fitted between the table and the column affords the same facilities when the stage is in darkness.

Instantaneous and rigid clamping is available to cover angle of tilt, and also for rotation sideways. Incidentally, the available range of motion in these directions is ample for all requirements.

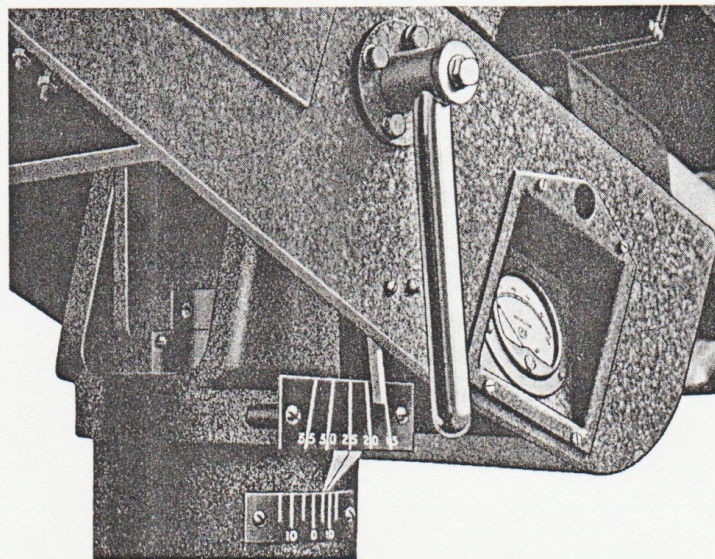
Finally, every facility is available for easy and correct operation of the lantern. Automatic feed is of course fitted and an arc voltmeter and ammeter are mounted on the lantern and stand. The ammeter is recessed in the table and is indirectly illuminated by a lamp which also acts as a pilot light for the equipment.



Complete high-intensity spotlight projector.



Spotlight projector. A close-up view showing the periscope, iris diaphragm : the projector is set for colour slide projection.



Spotlight projector. A close-up view showing the tilting, slewing, and indexing arrangement.

STAGE AND AUDITORIUM LIGHTING CONTROL.

The stage and auditorium lighting control system in the Odeon, Leicester Square, is yet another outstanding achievement of the BTH Company.

It is generally recognized that controlled lighting is essentially a highly important factor in auditorium decoration, and in obtaining the most spectacular effects for a stage production.

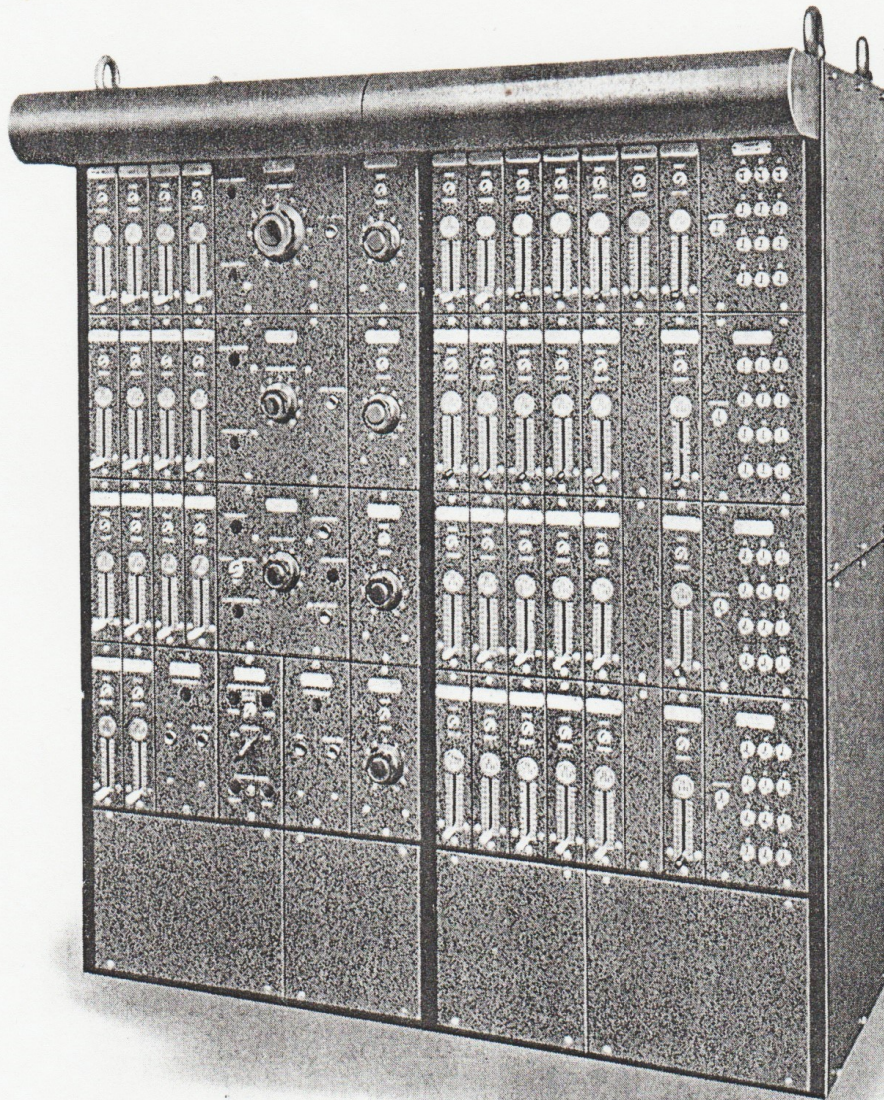
Heretofore, resistances have been inserted in the lamp circuits, in order to vary the intensity of illumination, involving a large number of heavy moving contacts, usually hand-operated with considerable effort. As a large number of lamp circuits are frequently required to change their intensity at the same time, but in varying degrees, a resistance-dimmer for stage work in large theatres often demands a compromise between the lighting effects actually required and those that can be achieved by one or two operators. Among other disadvantages of the resistance dimmer may be mentioned its inability to change, smoothly, the lamp brilliancy; and the large amount of space required for the operating board.

The BTH Company has, therefore, developed an entirely different system of lighting control, consisting primarily of variable reactance instead of variable resistance.

The reactances in each lamp circuit can be controlled, smoothly, by small manually operated devices readily located, where desired, in any part of the Cinema or Theatre.

This system of lighting control has been made possible by the development of the *Thyratron*, which is a special type of rectifier, in which the rectified current is governed by the voltage applied to its grid circuit. The rectified current from the thyratrons energises the saturating windings on the reactors; thereby, varying the amount of reactance in each lamp circuit.

The entire equipment is known as the *BTH Thyratron Reactor Dimmer*, and the equipment in the Odeon is the largest in Europe and the British Empire—incorporating control features which are not to be found in any other form of dimmer equipment.



Thyatron reactor dimmer. Master control board
located in the projection room.

The Thyatron Reactor Dimmer is so arranged that the lighting can be controlled either from the stage or from the projection room. This equipment controls fifty-two stage and fourteen house circuits, representing a total load of over 180 kW.

The dimmer can be controlled instantaneously from either board by depressing a push button.

As the Odeon will be used for both cinema and stage shows, two control boards are provided. The stage master control board is located in a perch on the left-hand side of the stage. This board enables the stage lighting to be fully controlled. In addition to the individual control levers for each of the 52 circuits, colour and grand masters are provided ; also scene pre-setting which will be described later. Grand master control of all the house circuits is also available.

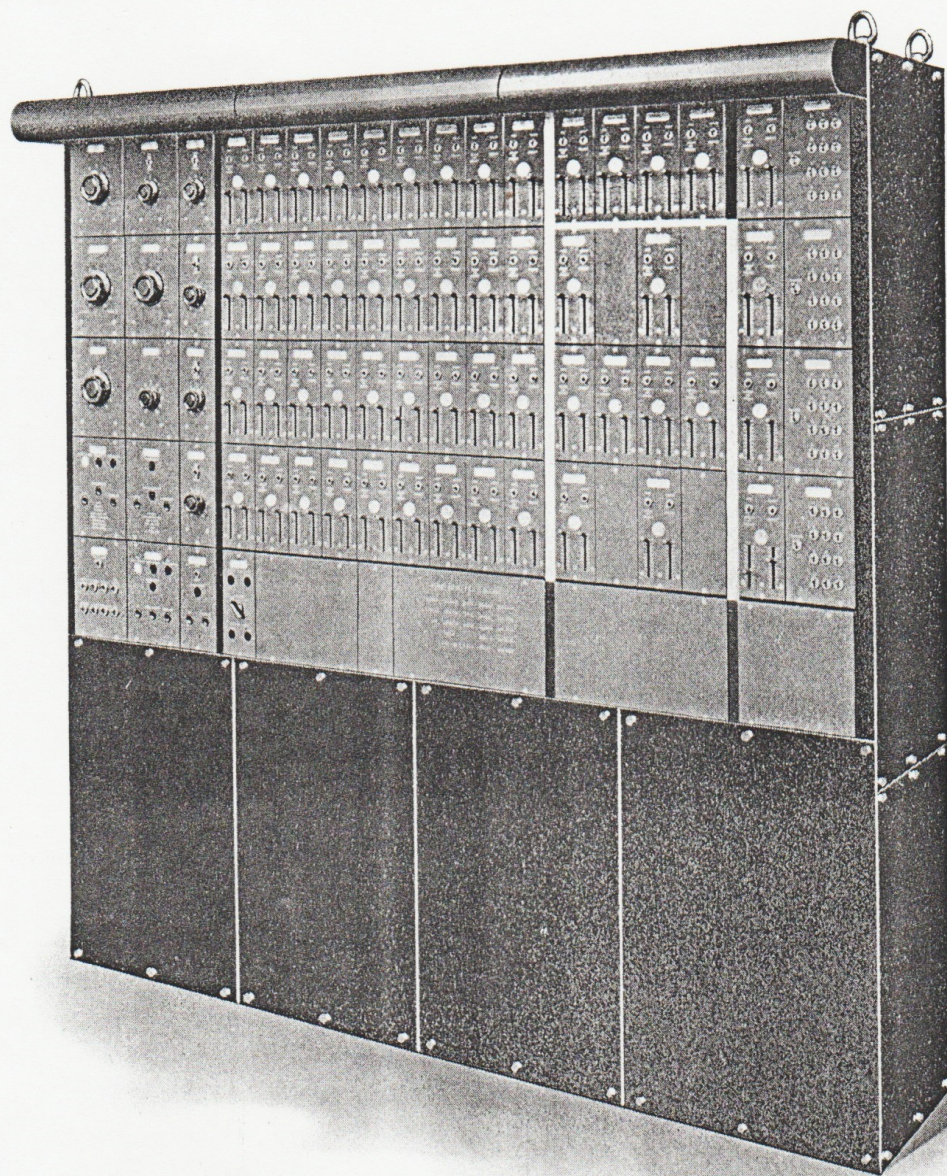
The master control board located in the projection room gives individual, colour master, and grand master control for 25 of the stage circuits ; together with individual, master, and automatic increase and dim control of the auditorium lighting.

In addition to the manually operated levers for the auditorium cove lighting, etc., automatic increase and dim is provided.

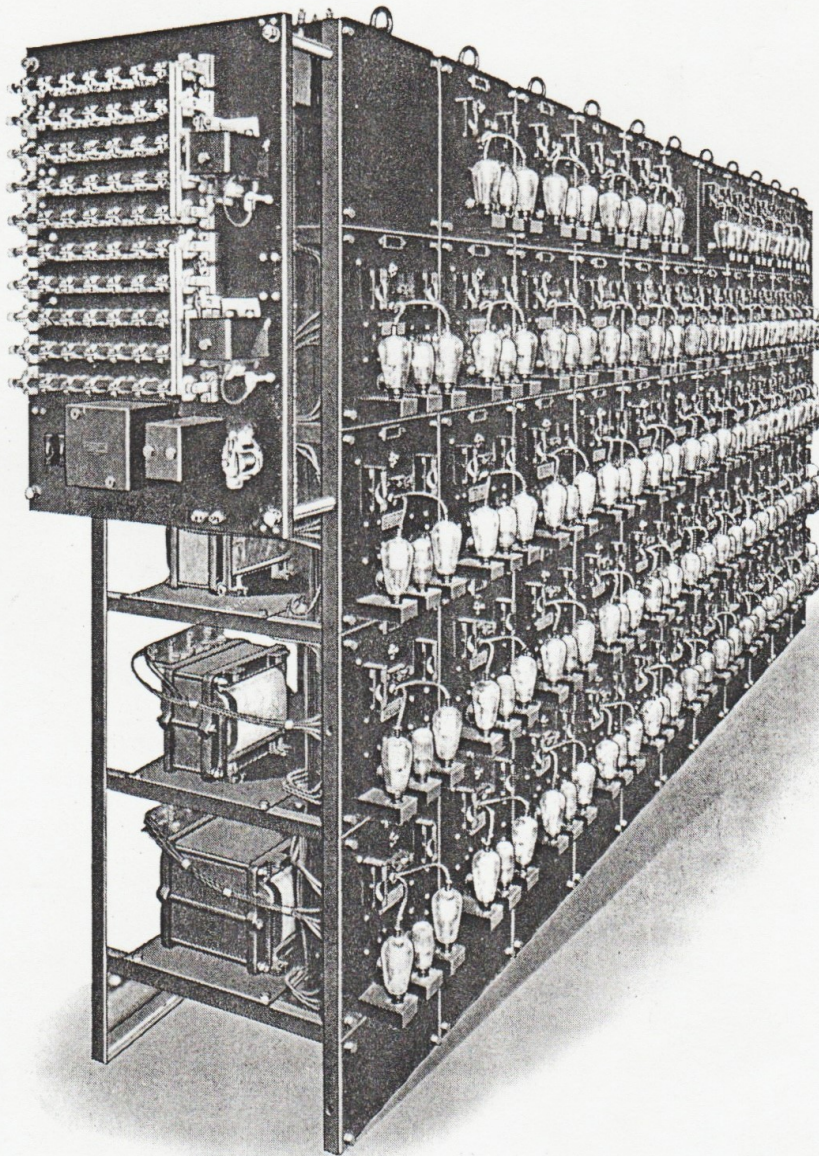
By means of a motor-driven cam system, the various circuits are brought up in a certain sequence to give the optimum artistic effect. This control is brought into action by a single push-button, while the rate of increase is instantaneously adjusted from the master control board.

Scene pre-setting on the stage master board allows all the stage circuits to be set up in advance to any degree of dim, without interfering in any way with existing circuit intensities. In other words, during scene 1, for instance, the operator pre-sets the circuits for scene 2. When a change of scene is signalled, a *single control* causes as many circuits as is desired to change to the new lighting intensities ; the duration of the transition period being under the control of the operator.

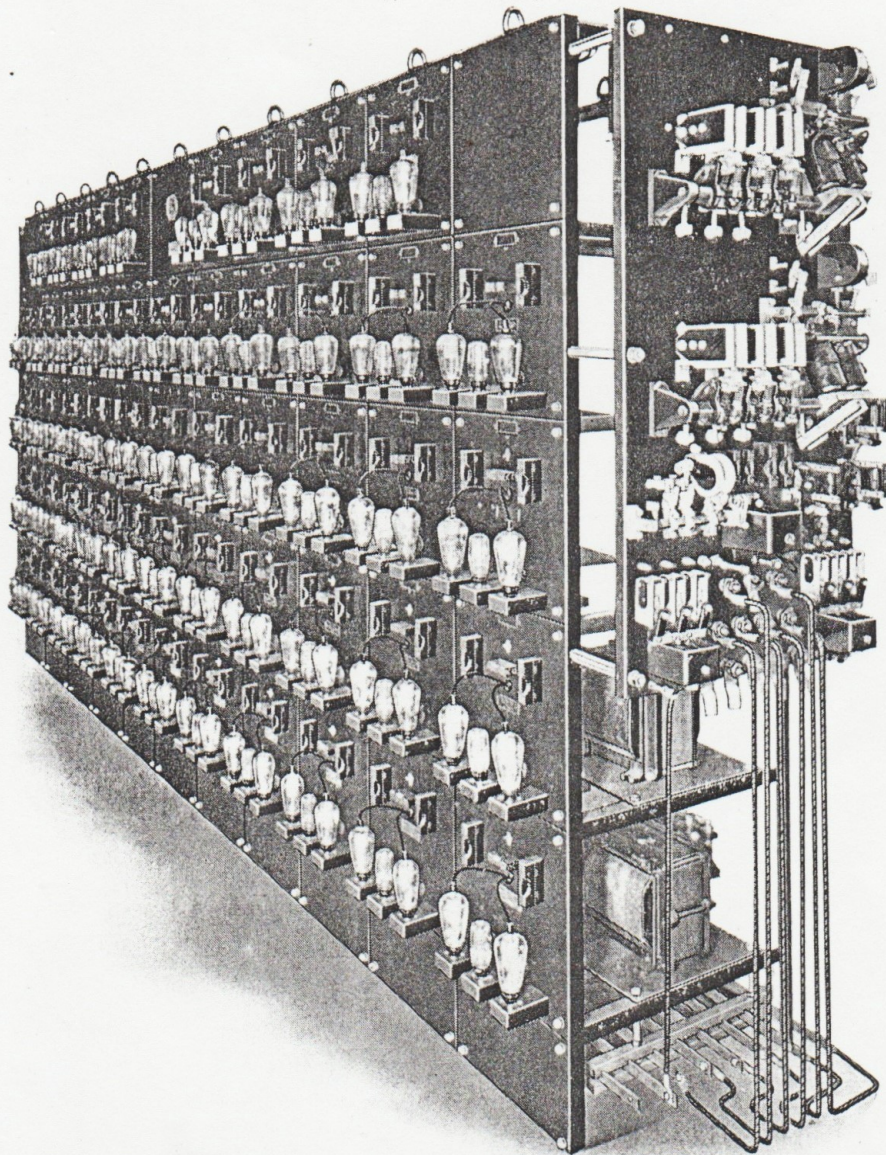
It should be noted that the BTH Thyatron Reactor Dimmer is the only form of dimmer on which a large number of circuits can be pre-set to any degree of dim.



Thyatron reactor dimmer. Stage master control board located in a perch on left-hand side of stage.



Thyratron reactor dimmer. Stage dimmer reactor rack showing stage to projection room changeover relays.



Thyratron reactor dimmer. Stage dimmer reactor rack showing the contactors for controlling incoming supply.

LIGHTING EFFECTS.

Approximately 6000 Mazda lamps of various types and sizes are used for the general, decorative, and spectacular interior lighting effects of the Odeon, Leicester Square.

The carefully planned auditorium lighting scheme introduces a most pleasing style of concealed indirect lighting from the coloured wall and ceiling surfaces.

For the stage and proscenium arch, spectacular colour effects are featured, and these are obtained by the use of special colour screens on the fittings containing Mazda lamps.

Extensive use has been made of Mazda Light Tubes for the lighting of Foyers, etc. The main characteristic of these lamps, is that the filament runs from end to end along the centre line of the tube, thus producing a continuous line of perfectly diffused and low-intensity light whatever the length or shape of the tube.

This method of construction makes it possible with Mazda light tubes to form an almost infinite variety of geometrical and conventional patterns, which are patterns, not merely of glass, but of light.

The entire lighting scheme—automatically controlled by the BTH Thyatron Reactor Dimmer—is unique and it is undoubtedly one of the finest decorative lighting installations yet evolved.

It may be interesting to note that Odeon Cinema Holdings Ltd., use Mazda lamps, exclusively, throughout their circuits as the importance of efficient and reliable lighting both from the artistic and safety point of view is appreciated.

AIR-CONDITIONING PLANT.

The air-conditioning plant installed by Vacuum Refrigeration, Ltd., is considered the most comprehensive plant at present available for making the interior atmosphere of the cinema healthy, clean, and comfortable.

The BTH Company have supplied all the motors with associated control gear—aggregating 360 H.P.—for the necessary electric drives; all the motors are designed for silent operation.

This Cinema will accommodate some 2,300 persons; therefore, the vast amount of heat and humidity liberated calls for some adequate provision for removing this moisture.

Twelve hundred cubic feet of fresh air per hour is allowed for each occupant.

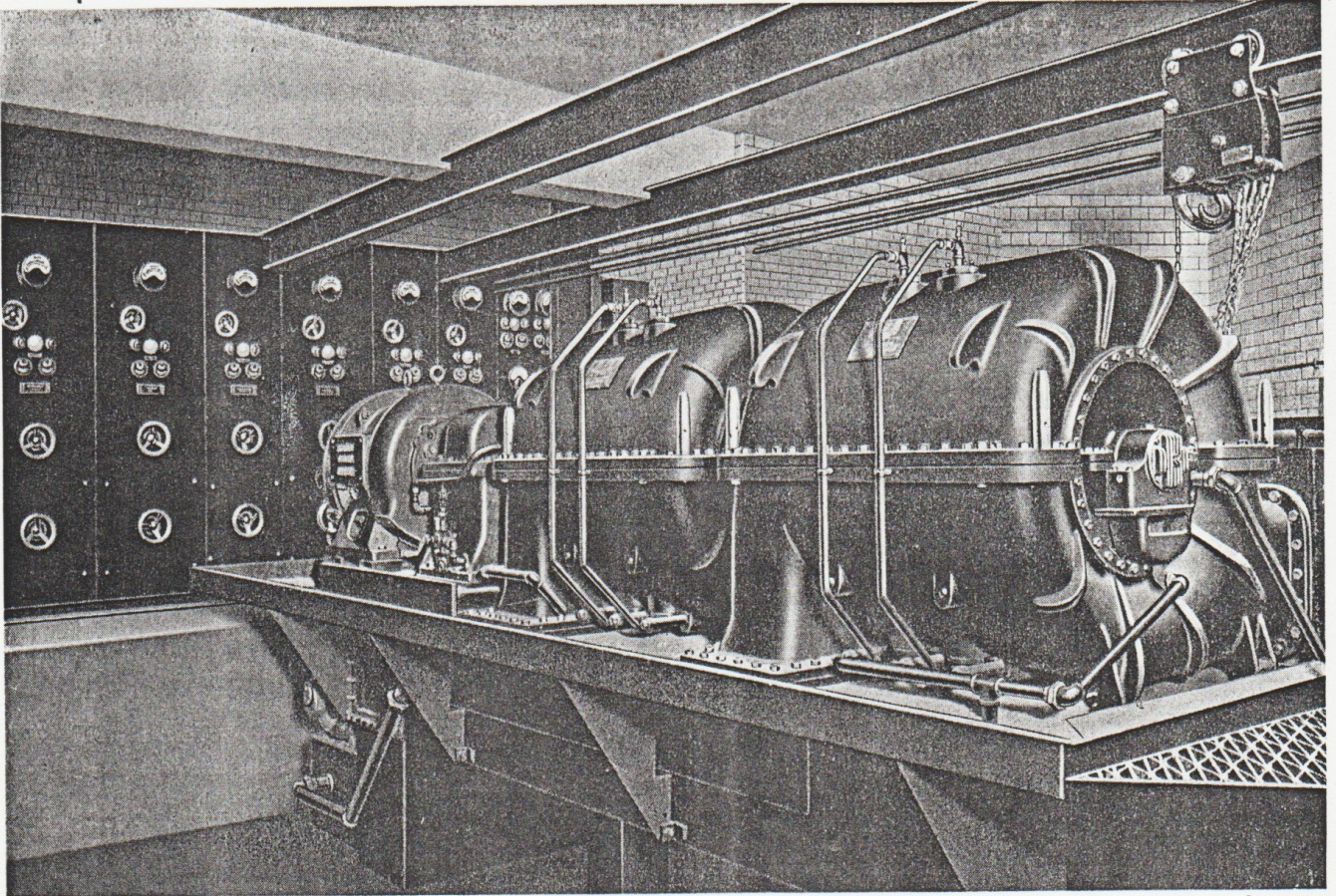
Vacuum Refrigeration, Ltd., claim that the advent of water refrigeration offers 100 per cent. safe system of refrigeration, by means of which the chilled water required for the spray washing plant can be obtained by circulating the water through a vessel maintained under high vacuum. Under this treatment the water boils, the heat required for the partial evaporation being extracted from the remainder of the liquid, which consequently drops in temperature.

In this system, water is the only refrigerant used; and as the plant operates under high vacuum, the risk of explosion is entirely eliminated.

The rotary water vapour refrigerating plant comprises a centrifugal water vapour extractor and compressor—similar in construction to a normal turbine blower—driven by an electric motor operating through a speed increasing gear; a flash type water evaporator; a surface vapour condenser; a dry vacuum pump for air extraction; and a cold water extraction and delivery pump, arranged integrally with the flash evaporator.

Since the vapour volume varies largely with a slight difference in temperature, the plant automatically regulates itself, and practically floats on the load.

AIR-CONDITIONING PLANT



Centrifugal water vapour refrigerator unit operated by a 200 H.P. slip-ring induction motor. This motor and all the motors required for the various drives along with the black cellulose sheet steel switchboard—seen in the above illustration—were supplied by the BTH Company to the order of Vacuum Refrigeration Ltd.

The plant for this Cinema will eliminate 2,400,000 B.T.U's per hour, equivalent to the melting of 200 tons of ice every 24 hours at 32°F.

The compressor is operated by a BTH 200 H.P., 3-phase, slip-ring induction motor; and it is controlled by a BTH contactor equipment comprising essentially a triple-pole stator contactor; rotor accelerating contactor; three hand re-set overload relays; together with additional overload protection that will be inoperative during the starting period, but will operate approximately 20 seconds after the motor has attained full speed. The starter is arranged for five starts per hour, 35 seconds accelerating period, and to be equipped with a separate protected type unbreakable grid resistance.

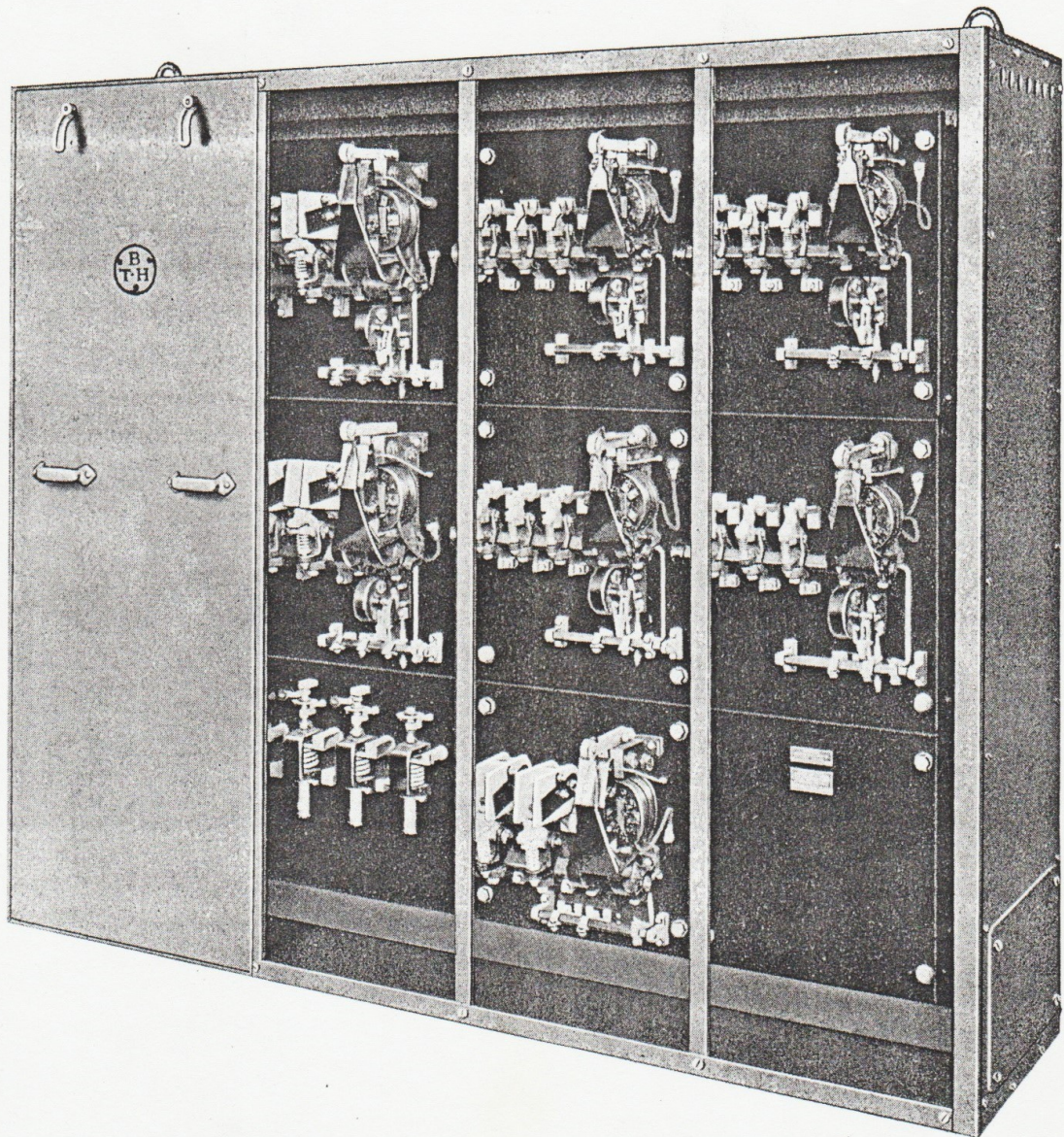
The main supply to this motor, and for all the other BTH motors driving the various pumps and fans is controlled by a BTH cellulose finished sheet-steel switchboard, which can be seen in the illustration on the opposite page.

The question of central control for the entire equipment required very careful consideration.

The chief difficulty was to group together all the indicating and control gear. Added to this was a further complication due to the necessity of arranging certain motors for sequence starting to comply with L.C.C. regulations. Other regulations also called for several motors to have their speed regulators coupled in order that speed variations should be simultaneous on the fans operated by the motors in question.

The conditions partially precluded the use of remote operated contactor gear. However, a compromise was effected whereby the BTH contactor starters for the BTH fixed speed motors situated adjacent to the motors are to be controlled by push-buttons from the switchboard already referred to; the remaining variable speed motors having their rotor leads brought back to the switchboard in order that face-plate starters and coupled speed regulators will be used.

The scheme evolved now gives centralized operation which will comply with the L.C.C. regulations, and at the same time maintain a comparatively simple arrangement.



BTH Contactor equipment for controlling the 200 H.P. motor operating the centrifugal water vapour refrigerating unit supplied to the order of Vacuum Refrigeration Ltd.



The Trade-Mark
of a Manufacturing Company
famed throughout the world for
ELECTRICAL PRODUCTS
of every description.



ODEON

LEICESTER SQUARE

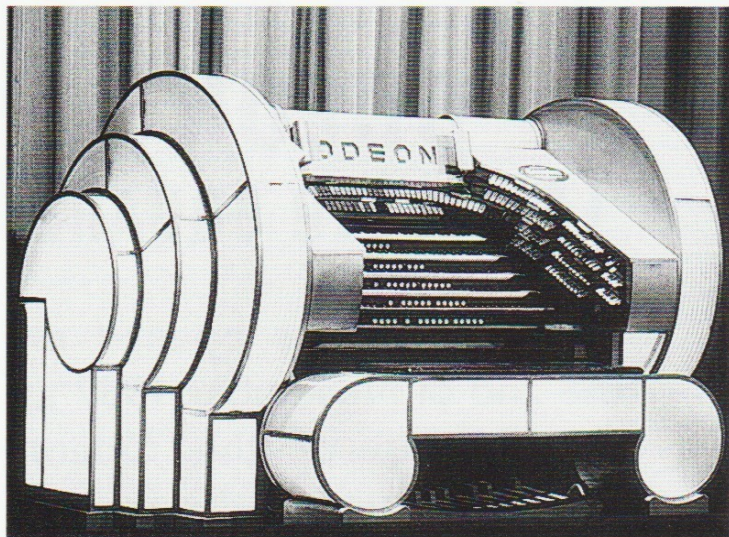
The cinema was opened on the 2nd of November 1937 as the flagship of the Odeon circuit. Its up to the minute art-deco interior proved an immediate success with both the film companies and the film goer - this is still 'the place' to watch the latest blockbuster film.

The cinema replaced the Alhambra Variety Theatre and Oscar Deutsch, founder of Odeon Cinemas, wrote "we have built a theatre which is well suited to carry on the tradition of being the centre of London Entertainment".

Over the past 61 years this has been the case, and the Odeon has played host to many a star studded premiere.

In April 1998, the Odeon closed its doors to the public, in order to undergo a £3.5 million refurbishment scheme. Allowance was made in the budget to recreate the famous 'flying ladies' on the side walls of the auditorium, which were removed in a redecoration scheme in 1968. The new scheme also allowed for the cinema to be equipped with the latest in sound and picture technology - making the Odeon Leicester Square the ultimate venue for cinema entertainment. The cinema seats have been covered in leopard skin moquette - which recreates the original design.

The stage area was refurbished but still contains the original stage lifts complete with the Compton cinema organ. Another unique feature is the highly decorated safety curtain - normally hidden from the audiences' view. The coving above the auditorium is fitted with 47 miles of fibre optic light cable to enable the mood of the auditorium to be changed at the flick of a switch. In 1998, a balcony was created on the front of the cinema, to allow stars to greet the crowds on busy premiere nights. The cinema's reputation is known worldwide and Hollywood has affectionately named it 'The Cathedral'.

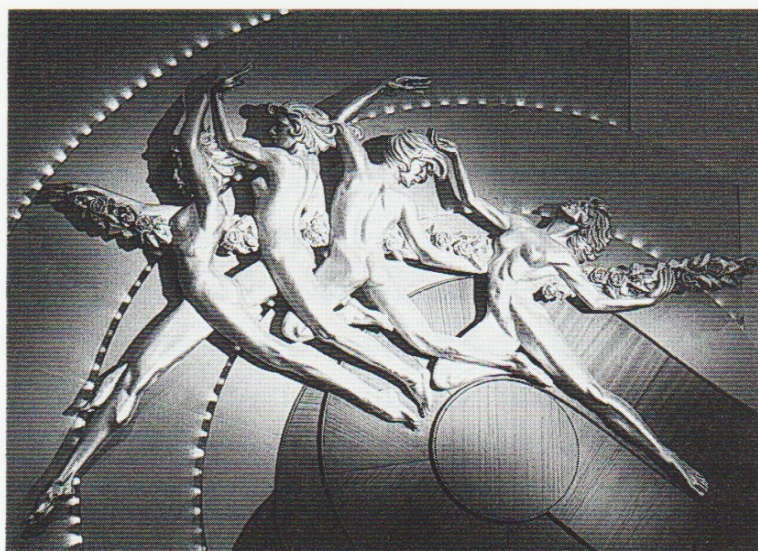


THE COMPTON CINEMA ORGAN

The unique console surround was designed to be a part of the cinema's original decor. The instrument has 17 sets of pipes and over 300 stop controls. In addition it is equipped with a glockenspiel, xylophone, non-tonal percussions, marimba, and a Melotone (electronic device).

THE FLYING LADIES

These plaster figures, flanking the auditorium's side walls were originally the creation of Raymond Briton Riviere. They were destroyed in 1968 during the redecoration scheme, but have been faithfully recreated by a sculptor, using photographs of the originals.



MAKING MUSIC ON THE MIGHTY COMPTON

Affectionately named 'The Duchess', by former resident organist Gerald Shaw, the organ is an integral part of the Odeon. Since 1993 Donald MacKenzie has been resident organist and has appeared at many Premieres including performances in the presence of Her Majesty The Queen. The organ has been featured numerous times on radio and television and two compact discs have been recorded by Donald MacKenzie.

Bill Weir, the Odeon's General Manager wishes to acknowledge the support of the Cinema Organ Society over the past years in promoting 'The Duchess'.

For further details about special events, telephone 0171 930 6111.