For Better Lighting
and Brighter Pictures -

The answer is

NEVELECTOR

G. B-KALEE LTD

Head Office

MORTIMER HOUSE, 37-41 MORTIMER ST., LONDON, W.1

Telephone: MUSeum 5432. Telegrams: GEBEKAY, WESDO, LONDON

London Branch and Showrooms

NATIONAL HOUSE, 60-66 WARDOUR ST., W.1. *GERrard 9531*

Branches at

BELFAST
43 Donegall Street
Telephone: 27065

BIRMINGHAM
57 John Bright Street
Telephone: Midland 2351

★

CARDIFF
9 Park Lane
Telephone: 28861

GLASGOW
211 Hope Street
Telephone: Douglas 0601

★

LEEDS
17 Wellington Street
Telephone: 20597

LIVERPOOL
11 Commutation Row
Telephone: North 1896-7

★

MANCHESTER
5 The Parsonage
Telephone: Blackfriars 1428

NEWCASTLE-ON-TYNE
2 Cross Street
Telephone: 23038

Nevelin RECTIFIER

'Over 2,000 Nevelectors now in World-wide Service'

NEVELECTOR—

Your finest investment

It is the quality of picture put on the screen that will determine how successfully the Cinema—your Cinema—survives the competition of alternative means of public entertainment.

You cannot show a crisp convincing picture unless the carbons in your arc lamp are suitable to the job, are correctly trimmed and, above all supplied with a properly smoothed current which can, at any moment, be adjusted by your operator to suit his requirements.

The principle of supplying each arc with its own rectifier, introduced by Nevelin originally, has become the accepted operating practice of to-day.

It is economical because it is flexible. At any moment you are consuming only so much current as is needed to run the arc.

If you are running on Low Intensity Arcs, Nevelector will give the exact current and arc volts required and provide a steady clear light giving a crisp brilliant picture year in year out.

If you contemplate going over on to High Intensity (permanently or occasionally) in order to get the best out of both black and white and coloured films THE SAME NEVELECTOR will give you the required current merely by turning the regulating handle.

Because Nevelector was designed in the first place in conjunction with the makers of Arc Lamp Carbons and those of Arc Lamps, it is ideally suited to its work and is not an "adaptation" of a rectifier originally designed for other purposes.

Do not risk a falling-off in your box office returns and do not risk the break-down of your old conversion equipment at an awkward moment.

Invest in Nevelector to-day—and draw dividends in a clear picture for years to come.

The Nevelector

Model 5

General Description

Several minor, but important, modifications have been made to the Nevelector since it was first introduced six years ago. These are incorporated in the Model 5, of which we give an external view on the opposite page and exploded views overleaf.

Model 6 is the same as Model 5, except that the control panel is separate and thus providing for remote control.

The essential features remain unaltered in that the current from the A.C. supply mains is reduced to the appropriate voltage by a sturdy double-wound transformer and converted into direct current by the mercury-arc rectifier bulb. The characteristics required for operating the arc are selected by means of the two switches seen below the instrument dials on the flood-lit panel.

The right of these switches selects coarse gradations in three steps and that on the left selects in four finely graded steps. By using these two switches in conjunction, the output range of the Nevelector is divided into 12 steps giving increments of about $2\frac{1}{2}$ amperes each. Since this selection is made by tapped chokes, it follows that only the required voltage is applied to the bulb—there is none of the wasteful method of dissipating unwanted line voltage by heating up a ballast resistance. You use what you need to run the arc and no more.

It has been shown by experiment that the D.C. arc (both LI and HI) is particularly sensitive to the smoothness of the current supply. Not only is the arc more stable on a well smoothed feed, but the consumption of carbons per watt consumed in the arc is much less. For this reason the smoothing unit on the Nevelector has been the subject of very careful design and assembly by our engineers.

Taken in conjunction the choke method of control and the smoothing unit result in a rectifier that not only gives current of the exact value necessary for running the arc in any conditions, but also secures exceptional economy both in current and in carbons.

This matter of economy in installation and in operation forms one of the outstanding claims of the Nevelector of importance to every exhibitor. It is covered more fully on a later page.

Two exploded views of the Nevelector 5 are shown on page 6 and a glance at them will be sufficient to convince the reader that in this new Model 5 the important matter of ventilation has received its full share of attention.

These "exploded" views show how the Nevelector cabinet can be stripped down in a matter of seconds giving complete accessibility to all wiring, switches and instruments.

Ventilation

Although the entire cabinet measures overall less than 44 inches high by 24 in width and 18 in depth, the various component parts have been carefully spaced out so as to allow maximum air flow around each. The sloping top and the louvres combine to allow the cooling fan to induce a strong flow of air not only around the bulb itself, but also around the transformer and other components.

The effect of this is to ensure that even in the most adverse tropical conditions (where some hundreds of Nevelectors are in constant use) the working temperature is always maintained at a figure compatible with maximum efficiency.

Before this additional ventilation was provided the Nevelector, including its mercury bulb, could be counted upon for a very long life; these latest provisions will now extend that life indefinitely.

Accessibility

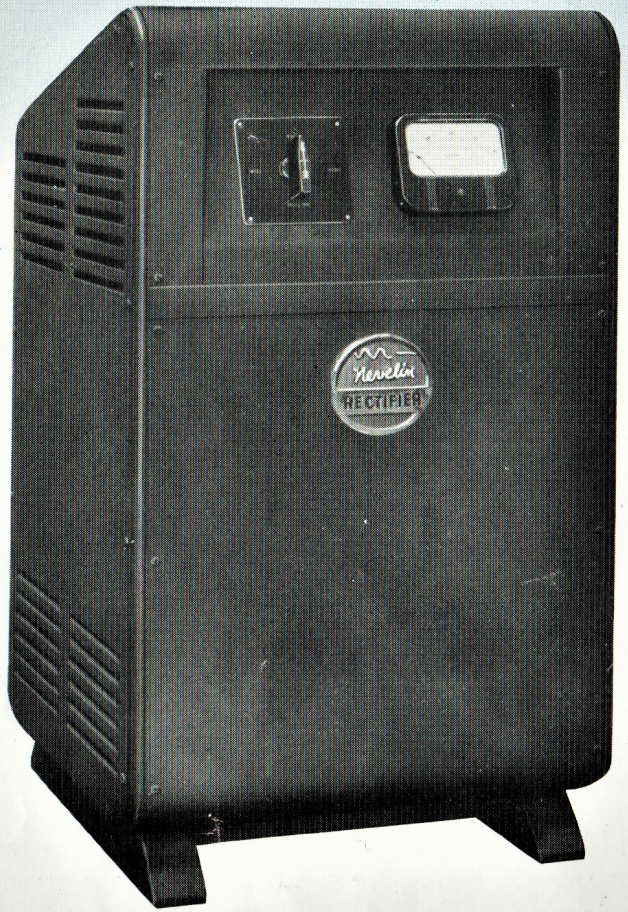
The re-arrangement of the components has, however, introduced a further important improvement. Each component is now individually accessible for repair or replacement in the event of any failure—no need to remove or disconnect one part to get at another.

As will be seen, the flood-lit panel carrying the two instruments can be dropped out for inspection, leaving the two switch barrels in position on the chassis.

Instruments

This is a matter to which we have devoted especial care. Particularly in the case of modern high intensity arcs with their sensitive automatic feeds is it of paramount importance for the operator to know the exact amperage and arc voltage in his lamp. He cannot hope to do this if instruments of the ordinary switchboard type are used. Not only are such instruments liable to error, but, unless they are looked at "dead on" it is often impossible to take accurate readings.

Allowing for the possibility of only small errors in each instrument, and for false "parallax" readings it is easy for the operator to miscalculate the actual wattage in his arc by as much as 500 watts either way—or one kilowatt in all!



Nevelector Junior

Possessing the main features of Model 5 but designed to meet the needs of the smaller cinema.

Height 36″; Width 19″; Depth 20½″. Weight 345 lbs.

Characteristic curves for this model are given on page 15.

Nevelector instruments have a fine needle lying close to the dial and moving over an open scale. They lie immediately under the operator's glance and tell him the truth at all times—economy once more!

Output Characteristics

Although the new Model 5 shows modifications in the layout of the components and has been rendered even more robust and reliable in the matter of switches, relays and other items of equipment, the output characteristics remain unaltered and, therefore, the various models are completely interchangeable.

In an emergency, therefore, and to cover the possibility of any breakdown or accident, a spare Nevelector can be hurried to the site by van (the working weight of the Model 5 is only 450 lbs.) and connected up at short notice.

Since the output characteristics cover the requirements of any D.C. arc from 25 to 65 amperes, Nevelector is entirely suitable for running spots and slide lanterns and it is usually a simple matter to arrange that whichever Nevelector is not in use for projection can be switched over to lantern or spots.

Installation

As well as being compact, easy to handle and economic in floor space, Nevelector is very simple to instal.

It is merely connected on the input side to the A.C. supply mains (preferably through a fuse-loaded switch of adequate capacity) and on the output side to the arc lamp, or to the distribution panel supplying the projection arcs and spots.

As will be seen from the illustration on page 11 Nevelector can fit neatly at the rear of the projector pedestal, with its switches and instruments ready to hand at all times.

Economy always!

Granted that the quality of the picture on the screen must be and ever remain the first consideration, the next most important feature about any conversion equipment is its Economical aspect. We must have low first cost (including installation) and we must have low operating costs.

First cost In no sense is Nevelector built down to a price. The equipment throughout is in accordance with a very high specification and the factor of safety, both mechanically and electrically, is considerably in excess of any statutory requirements.

On the other hand, no item has been included, or ornamentation provided that is not justified by the results secured—Nevelector is essentially a business proposition.

As regards installation we have already seen that Nevelector is economical in space, calls for no structural alterations to the cinema and is simplicity itself to connect up.

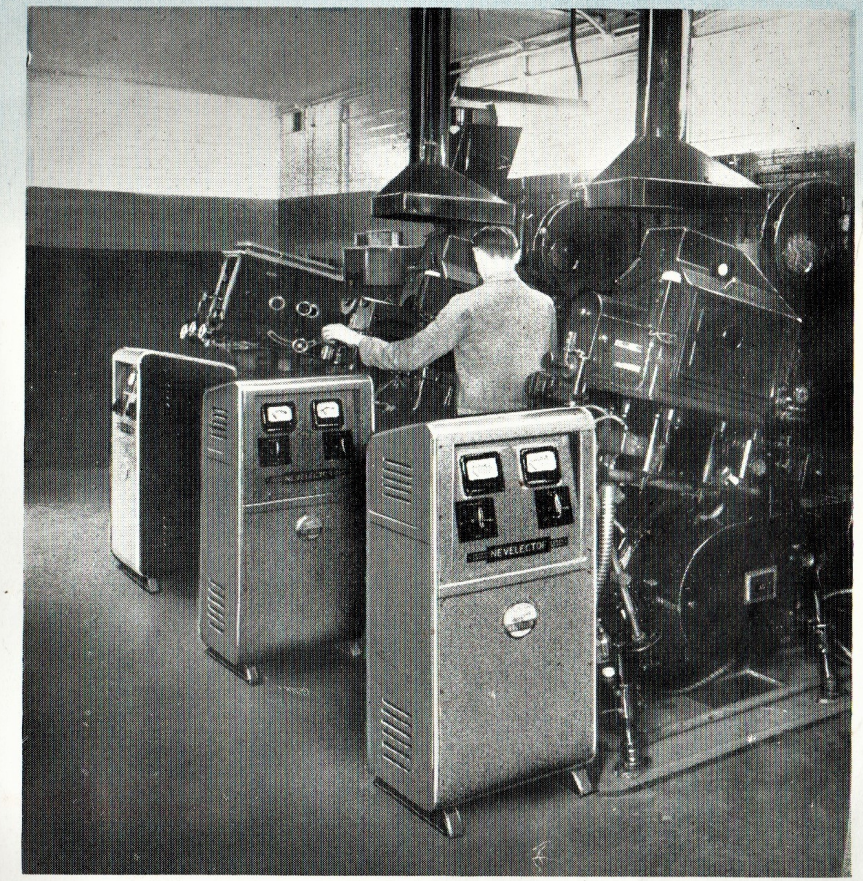
Low operating costs Overall conversion efficiency is a high-sounding term!

What we mean is that Nevelector gives you, at the arc lamp terminals, a very high percentage of the current it takes from the mains.

There are several reasons for this:

1. The conversion equipment in a cinema must be powerful enough to supply both arcs on full load (at change-over). If you use a single big rectifier or motor generator capable of handling this double load in safety then for most of the time (when only one arc is going) the equipment is under-loaded and, therefore, working at low efficiency.

By supplying each arc with its own rectifier you keep that rectifier working continuously at a high point on its efficiency curve. And the other rectifier is taking no current at all until it is needed for action.



2. The usual procedure of drawing current from the mains and then wasting a lot of it in heating up a ballast resistance is like driving a car with the brakes on.

When you set the Coarse and Fine switches on Nevelector the choke controls will only let through as much current from the mains as is necessary to run the arc at that particular loading. In other words you make the best use of the current you pay for.

3. The mercury arc type of rectifier as used in Nevelector is not only of high efficiency when new, but it retains that efficiency indefinitely throughout years of service. Some types of rectifier are liable to serious damage if overloaded and have to be protected from overload by costly apparatus. Even so they gradually deteriorate on normal load and require replacement periodically.

The replacements we have been called upon to make (apart from rectifiers being allowed to fall down stairs!) amount to less than 0.1% out of all the thousands of Nevelectors that have been installed.

4. The transformers, chokes, switches, instruments and other components fitted to Nevelectors are to a very high specification with a very liberal factor of safety, which is still further enhanced by adequate ventilation.

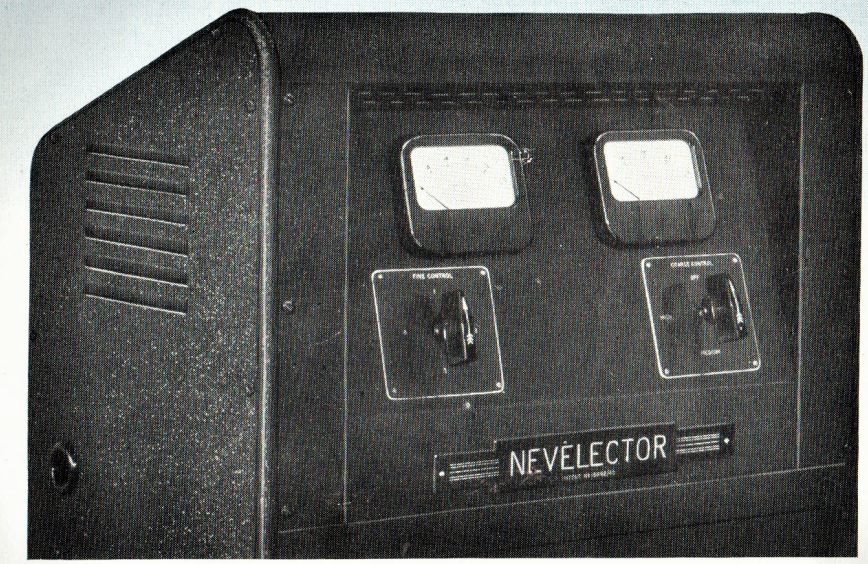
5. The highly flexible output of the Nevelector as controlled by the two switches enables your operator to strike his arc on low load and form perfect craters before opening up the dowser; to step up current for a dense print, foggy atmosphere, etc.; to compensate for low mains voltage due to local fluctuations; and, where required, to run normally on LI, but have enough reserve to run an HI trim for colour film or other special feature.

How to operate

This close-up shows the arrangement of the flood-lit control panel.

Of the two rotary barrel switches the one on the right serves as an ON-OFF switch and also to supply approximately the desired current. Fine gradations of current are secured from the left-hand switch.

Since there are three "live" positions on the Coarse Control or right-hand switch, and four positions on the Fine Control, it follows that the Nevelector offers a progressive series of twelve finely graded steps, enabling the exact conditions of arc current and



***HOW TO OPERATE**—continued*

voltage to be selected to handle any D.C. trim, LI or HI up to 65 amperes.

All that is necessary, once the unit is wired to the mains and to the lamphouse, is to move the Coarse Control from OFF to LOW and strike the arc.

The act of striking the arc automatically brings the rectifier bulb into operation and the full current and voltage, as indicated by the controls, is instantly available—there is no "warming up."

In general, the Fine Control enables the current to be stepped up in gradations of about 2½ amperes, and the Nevelector thus gives all the advantages of current control associated with a motor generator, but without, of course, wasting a large amount of current in a ballast resistance.

The versatile Nevelector!

Some idea of the versatile performance you can expect from your Nevelector is given by the characteristic curves shown on the opposite page.

The twelve lines correspond to the twelve switch positions (e.g. 3–2 means Coarse Switch at 3, Fine Switch at 2).

A. For Low Intensity trims eight positions are available, giving from 25 to 52 amps. at 50 arc volts. This will cover 10 and 7, 12 and 8, 13 and 9, or 14 and 10 trims at appropriate loadings.

B. For 6 mm. HI Pos. and 5 mm. HI Neg. seven positions are available covering currents between 35 and 45 amps. and arc voltages of between 31 and 38.

C. The 7 mm. HI Pos. and 6 mm. HI Neg. trim is covered by four switch settings giving 45/55 amps. at 33/37 arc volts.

D. For 8 mm. HI Pos. and 7 mm. HI Neg. again four positions are available, giving 55/65 amps. at 33/38 arc volts.

It will thus be seen that from the one Nevelector you can ring the changes at any moment between 10 by 7 LI to 8 by 7 HI and, whatever trim you are using at the moment, the current and arc voltage can be instantly adjusted over a wide range to suit the exact needs of the arc.

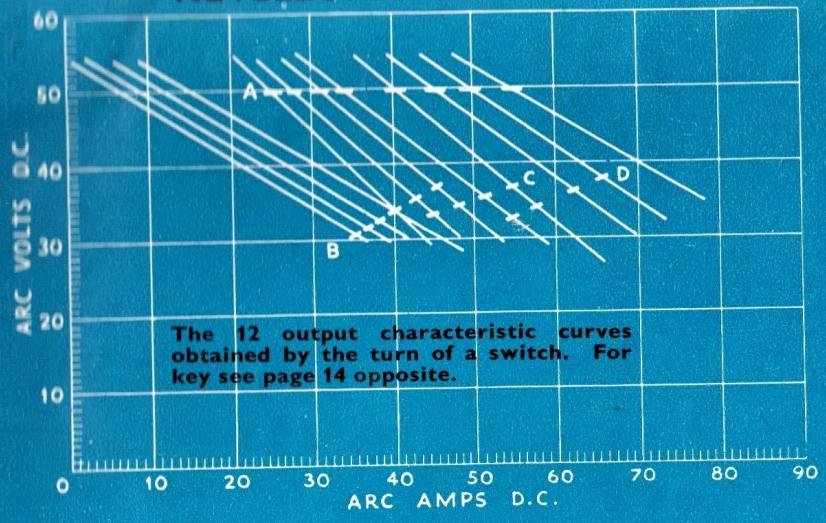
It will be noticed that the characteristics of the three HI trims, "B", "C" and "D" overlap.

Thus settings 2–1 and 2–2 represent the maximum for the 6 mm. x 5 mm. trim and also a low loading for the 7 mm. x 6 mm.

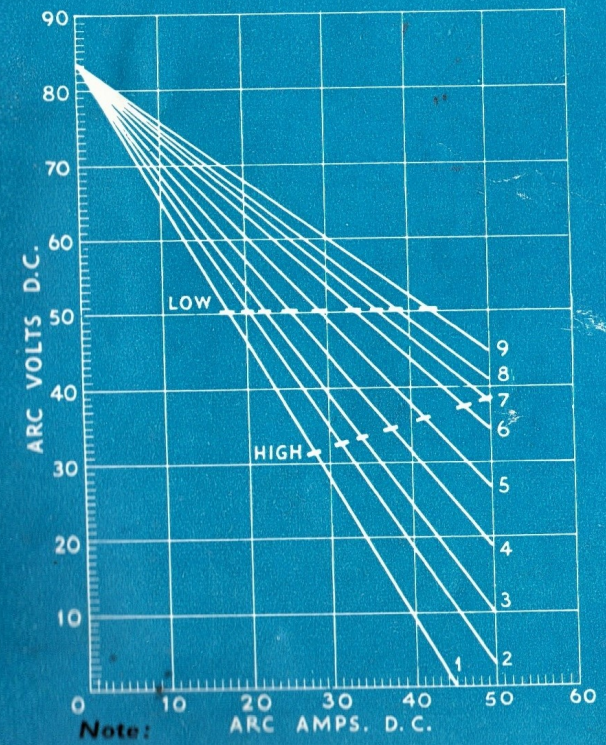
At all settings the projectionist sees at a glance from the illuminated and accurate Ammeter and Voltmeter exactly how much power is being fed to his arc and he is able to vary this instantly as occasion may demand.

CHARACTERISTIC CURVES

NEVELECTOR Models 5 and 6



The 12 output characteristic curves obtained by the turn of a switch. For key see page 14 opposite.



NEVELECTOR JUNIOR Model 2

At installation a choice of any one of three main tappings is provided. These are shewn on the graph by the curves 1-3, 4-6 and 7-9.

The single control switch has 3 positions giving 1, 2 and 3 for first tapping, 4, 5 and 6 for second and 7, 8 and 9 for third.

Low Intensity Trims 18/40 Amps: 50 Arc Volts.

High Intensity Trims 30/45 Amps: 32/38 Arc Volts.

Note: *The Carbon Manufacturers' burning recommendations should be consulted in respect of any given trim.*

List No. N.30.GB

Nevelin RECTIFIER

For Brighter Pictures