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AN IMPROVED SLIDE ILLUMINATOR

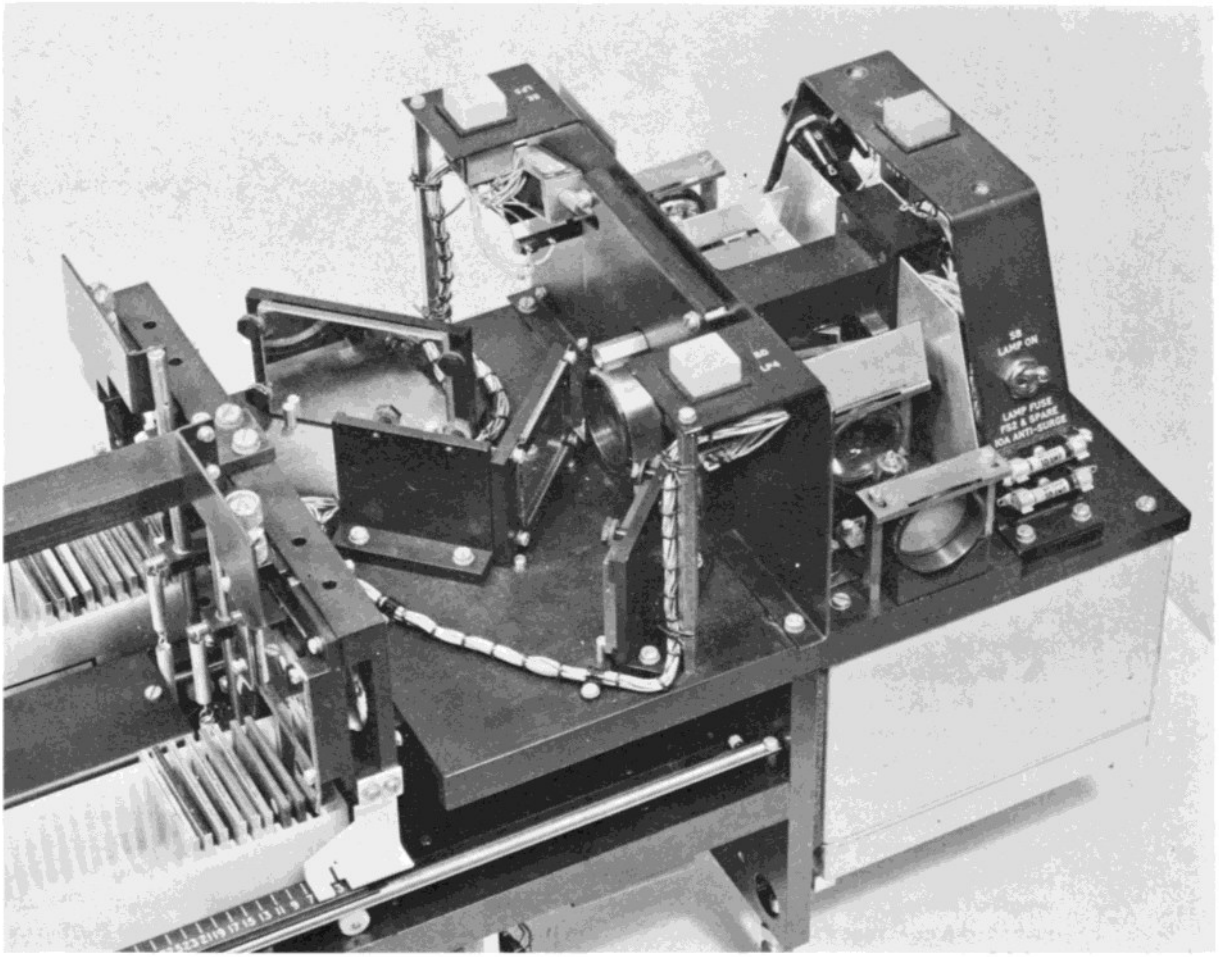
The B3442 Dual Slide Projector, which is part of the Full-Facilities Colour Telecine System, is to be superseded by an improved equipment to be known as the Dual Slide Illuminator, type B3443.

The new Dual Slide Illuminator is virtually a direct replacement for its predecessor and performs the same basic functions, uses the same slide magazines, employs a similar optical system and is mounted on an almost identical pedestal.

The mechanism is strongly constructed from accurately machined aluminium plates and a hole, slot and plane arrangement is used to mount it on the pedestal. This type of three-point mounting allows the mechanism to be removed for maintenance and to be replaced in exactly the same position, thus obviating the need for realignment of the optical system.

The two moulded plastic magazines are supplied with index sheets and transparent lids and are therefore useful for slide storage. Each magazine has a capacity of 30 slides.

The two halves of the dual mechanism are identical and each is powered by two small a.c motors. Each magazine is mounted on a carriage which runs beneath the slide gate. One motor is used to position the carriage, by means of a lead-screw, so that the required slide is under the gate. A second motor transmits power via a crank to a ram which then pushes the slide up into the gate. The ram travels over top dead centre and the slide is held in the gate by friction; in this way the accuracy of the location of the slide is not dependent on the position at which the ram stops. The slide is held firmly against the front and one edge of the gate by leaf springs and its vertical position is determined from its top edge; it is therefore located according to SMPTE recommendations. Slides are forcibly returned from the gate to the magazine by



The Slide Illuminator with covers removed showing the gates and lamphouse.

an ejector coupled to the slide raising mechanism.

Illumination is provided by a single integral lamphouse which is identical optically with those already in use in the B3402 telecine system.[1] Immediately after the light has passed through the graded neutral density filter it is split into two paths by a special splitting mirror thus providing the two gates with illumination of equal intensities and colour temperatures.

Slides are shown alternatively from the two magazines, 'on air' optical cuts being achieved by means of the multiplexer. The local control panel provides for forward and reverse changes, reset to slide 1, load A and load B. On selection of load A the slide in gate A is returned to its magazine and the carriage moves to a position convenient for changing the magazine. The basic logic functions are performed by TTL logic elements while relays are used to provide the interface between the logic circuitry and the motors and other parts of the telecine equipment.

High reliability is assured by the simplicity of the mechanism. During its development the motion of all the moving parts was analysed by means of high-speed cine photography and prototypes were successfully subjected to extended life tests.

REFERENCE

1 D. A. Pay: Full-Facilities Telecine; *Sound and Vision broadcasting*, Vol.9, No.1, Spring 1968.