

lamp is comparable with a 1000-watt double-ended tungsten halogen lamp. These are important advantages in designing luminaires for the new light sources. The quartz lamp envelope has great inherent strength, and there are no fragile internal parts to break loose.

The ballast units needed for the early models of HMI lamps not only increased the weight of the lighting units but also reduced lamp efficiency. Flicker problems were encountered also in the early stages, produced by a "beat" between the film frame frequency and the rise and fall of light output with power line frequency. Another limitation is the warm-up time needed – two to three minutes – to reach full light output and colour stability.

Recent reports indicate that most of these problems can be eliminated. The Keller Co. has announced that a new electronic control has been developed that replaces the ballast unit and gives constant light output (no flicker) as well as automatic ignition. However, it is unlikely the warm-up time can be reduced significantly with this type of light source. Restriking of the arc must take place while the lamp is near its operating temperature or it must be allowed to cool down before the arc can be restruck. There is a possibility that this problem can be avoided with what is called a "hot restrike" circuit.

The initial cost of HMI lighting units is relatively high, mainly on account of the need for a ballast and high voltage ignition, or alternative

electronic control unit. Replacement lamps are also fairly expensive – about 50 cents per hour of operation for the 200 and 575 watt models, according to one calculation in the technical reports.

When a 200-watt battery-operated HMI unit becomes available – prospects are good according to latest reports – light output should be comparable with four conventional battery-pack tungsten halogen units. This would enable filming to be undertaken in otherwise impossible situations. A 1200-watt HMI lamp can be operated from any available convenience outlet, and give light output equal to a nine-light FAY unit, rated at over 6000 watts. □

## EQUIPMENT NEWS

*Note to Canadian distributors: We would like to include the names and addresses of Canadian distributors of equipment and services mentioned in this section. Please ask your suppliers to give Canadian sources in their publicity releases. Ed.*

### Arriflex 16SR Camera

At the October meeting of CSC in Toronto, Steve Cook of Braun Electric Canada Ltd., demonstrated the latest model in the Arri line – the Arriflex 16SR camera. This is a very compact camera, weighing only about 12½ lbs. It fits comfortably into an ordinary briefcase with magazine and battery attached. The crystal controlled motor is driven from a 12-v NC battery. The camera has a symmetrical design so that the viewfinder can be swiveled either to the right or left hand side, for right or left eye viewing. Operation is so quiet that a blimp is not needed. An electronic device stops the mirror shutter in viewing position when the motor switch is turned off. A built-in exposure meter can be used as a spot meter with the lens in the telephoto position covering an image area of only three percent. An automatic diaphragm enables focusing with wide open iris, and then it stops down to the predetermined taking aperture when the camera motor is activated. Exposure control can be fully automatic, or semi-automatic using a matching needle technique where the lens aperture is adjusted manually. An indication of plus or minus two

f/stops in the viewfinder allows scene-to-scene control of exposure.

### Minolta 7.5 mm f/4 Fisheye Rokker-X Lens.

The Minolta Rokker-X Lens is a meter-coupled auto-diaphragm fish-eye that produces a proportional circular image and requires no mirror lock-up. It takes in a full 180-angle of view and features a maximum aperture of f/4, yet is as light and compact as an ordinary ultra wide-angle lens. Six built-in filters include four for colour and one for fluorescent light.

Also available from Minolta is the world's first lens featuring variable field curvature – the 24mm f/2.8 MC VFC Rokker-X. Its curvature of field can be changed continuously from concave through flat to convex by simply moving a control ring on the barrel. It can be used also as a high-quality conventional wide-angle lens. Available from Anglophoto Ltd. with offices in Montreal, Toronto and Vancouver.

The Educational Technology Branch, Department of Communications, Ottawa, has issued a bulletin, "Airport X-Ray Inspection of Luggage – Will It Fog My Film?". The bulletin gives results of tests made by the Technical Research Division, National Film Board of Canada, at Dorval Airport, Montreal. Copies of the bulletin are available from the Ministry of Transport and Air Carriers.

### What Happens to Your Film at the Lab?

Motion Picture Laboratories, Memphis, Tenn., has just issued Part 3, No. 8, in its Table Talk series of informational brochures with the subtitle "The Optical Sound Track". This is an informal presentation, describing the procedures employed in handling sound tracks in the laboratory, with special emphasis on mixing. Included is a section on various forms of distortion, modulation and azimuth setting. Previous issues in the Table Talk series are:

1. So You Think You Know How to Splice?
2. The Art of Splicing.
3. Elements of Sound Recording for Motion Pictures – Part One: Developing Good Acoustics and Selecting a Microphone.
4. Elements of Sound Recording for Motion Pictures – Part Two: Microphone Placement.
5. Leadering and Labeling Materials for the Laboratory.
6. What Happens to Your Film in the Lab – Part One: Original Processing and Work Printing.
7. What Happens to Your Film in the Lab – Part Two: The Trial Print.

To have your name put on the mailing list, or to obtain free copies of previous issues, write to Frank McGeary, president, Motion Picture Laboratories Inc., Box 1758, Memphis, Tenn. 38101.