

Adlake Signal Lamps Equipped with  
Decentered CORNING-LEBBY Mirror BULLETIN B-93A

# The Adams & Westlake Company

CHICAGO

General Office and Works  
ELKHART, INDIANA

NEW YORK

## Electric Signal Lamp

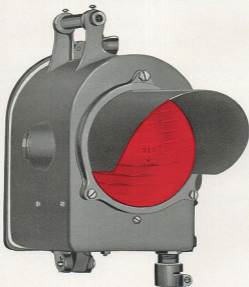
equipped with

Decentered CORNING-LEBBY Mirror

Adlake "LEBBY Focusing Device"

and

Deflecting Cover Glass



## Superiorities of Adlake No. 1142 and 1184 Signal Lamps

THE DECENTERED CORNING-LEBBY MIRROR is outstanding in efficiency which results in greater signal strength or lower operating cost. NO PHANTOM indication is produced by the mirror itself. However, certain types of incandescent lamps will cause troublesome reflections. If CT-7 or CT-8 lamps are used the reflection is reduced to a minimum and no phantom indication is produced which could possibly be mistaken for the usual signal.

THE ADLAKE-LEBBY FOCUSING DEVICE makes it possible for one man to easily align and focus these signal lamps in daylight. See pages 6 and 7. Precision or rebased lamps are not necessary.

THE SIGNAL LAMP HOUSING is made of cast aluminum for durability and light weight. A weatherproof ventilator prevents excessive sweating on the interior of the lamp housing.

### Decentered Corning-Lebby Mirrors and Deflecting Cover Glasses

The decentered Corning-Lebby mirror was designed with a very short focus in order to collect a greater angle of light flux, and its radii of curvature were selected to produce a beam of ample spread and high candle power.

Other projectors used in railroad signaling produce beams with the highest intensity at the center and with the light intensity decreasing radially from the axis of the beam. Fig. 1 clearly indicates the serious defect of this symmetrical beam distribution.



Fig. 1.

The Corning-Lebby mirror is "Decentered" to produce the ideal unsymmetrical beam as shown in Figures 2 and 3. Maximum efficiency for railroad signaling is obtained through the "Decentered" control of the projected beam.



Fig. 2.



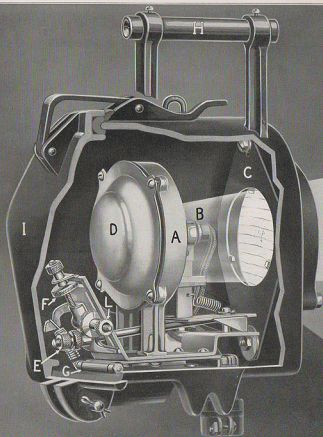
Fig. 3.

To make this optical unit as nearly perfect for railroad signaling as possible, special cover glasses were designed to provide additional downward deflection at close range. See "K" page 5. With these deflecting cover glasses, a characteristic, filled aspect signal is obtained at all points from the distant pick-up point to within fifty feet of the signal pole. Where extra spread is required, cover glasses can be furnished with 25° spread in addition to the downward deflection.

#### ORDERING REFERENCES

- No. 1142 lamp with 4½" Corning-Lebby mirror and 5¾" 40° deflecting cover glass or 5¾" 25° spreadlite cover glass.
- No. 1184 lamp with 6½" Corning-Lebby mirror and 6¾" 25° deflecting cover glass or 6¾" 25° spreadlite cover glass.

Specify rating of lamp bulb to be used, for accurate focusing before shipment.



This illustration pictures in detail the complete functioning of the Adlake No. 1142 Semaphore Lamp, equipped with Decentered Corning-Lebby Mirror and Adlake-Lebby Focusing Device. "A" is mirror housing. "B" is incandescent lamp socket. "C" is focusing diaphragm. "D" is cast aluminum casing, protecting back of mirror. "E" is knurled nut, controlling horizontal adjustment of incandescent lamp. "F" is knurled nut, controlling vertical adjustment of incandescent lamp. "L" is knurled nut, controlling lateral adjustment of incandescent lamp. "G" is hinge, allowing the focusing device to be thrown back for replacement of incandescent lamp when door is open. "H" is sighting tube for locating a pick-up point. "I" is weather-proof lamp case. "J" is image of primary beam. "K" is image of secondary beam.

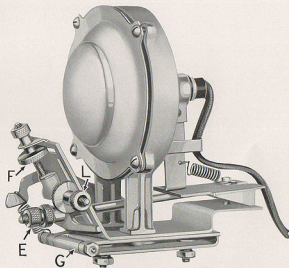
# Adlake Electric Signal Lamps Are Easily Focused

The beam produced by the Decentered Corning-Lebby Mirror with a C-2R "Bowed" Filament lamp is so sharply outlined that its diameter can be accurately measured on the focusing diaphragm



Focusing Diaphragm

"C" to determine correct focus. In the assembly of each signal lamp the beam is focused and aligned with the sighting tube "H". The diaphragm "C" is adjusted and the indices "M", "N" and "O" are marked to correspond with this correct focus and alignment. This method of focusing is unique with the Decentered Corning-Lebby Mirror. Installation and refocusing in service are easily accomplished by following the simple instructions on the next page.



Adlake-Lebby Focusing Device

# Directions for Focusing and Aligning Adlake Electric Signal Lamps A One-Man Job

First: Locate the pick-up point through the sighting tube "H" so that the beam will be properly aligned with the track. Tighten all bolts on the adjustable lamp bracket.

Second: By means of the focusing nut "E" move the incandescent lamp back or forth until the beam outline is completely visible on the diaphragm.

Third: Center the beam with respect to the indices "M," "N," and "O" by moving vertical adjustment nut "F" and lateral adjustment nut "L."

Fourth: Move the incandescent lamp by the nut "E" until the beam edge touches the black lines on the indices "M," "N," and "O."

Fifth: Tighten lock nuts on all three adjustments after beam is definitely centered.

The incandescent lamp is now in focus and the axis of the main beam parallel to the sighting tube.

To replace incandescent lamp or clean mirror, turn the focusing device back upon the hinge "G". See that focusing device goes securely back into place, and then check alignment of beam on diaphragm as explained above.

## Incandescent Lamps

Adlake Electric Signal Lamps equipped with Decentered Corning-Lebby Mirrors do not require either rebased or precision lamps.

(FOR MAXIMUM EFFICIENCY, USE STANDARD INCANDESCENT LAMPS WITH C-2R FILAMENTS (ROUNDED OR BOWED SHAPE.) Filaments that are any other shape or less concentrated produce a non-uniform beam of irregular spread and intensity. Frequently the beam candle power on the axis of the beam is only 30% to 50% of the beam candle power at the sides of the beam when other than C-2R filaments are used.

To avoid phantom we recommend CT-7 or CT-8 lamp bulbs. The CT-8 bulb has a further advantage in increased efficiency over CT-7 or S-11 bulbs.

The following table lists the average beam intensity and spread of various incandescent lamps with Corning-Lebby Mirrors and deflecting cover glasses.

Volts	Amps Watts	Fila- ment	No. 1142		No. 1184		No. 1184	
			S-11 Lamp	C. P. Spread	S-11 Lamp	C. P. Spread	CT-8 Lamp	C. P. Spread
2.5 V	.15 amp	C-2R	200	5°				
3.5 V	.12 amp	C-2R	200	5°	350	4.5°		
3.5 V	.30 amp	C-2R	800	5°				
8 V	.25 amp	C-2R	1600	5°				
10 V	.25 amp	C-2R	1700	6°				
12 V	.25 amp	C-2R	1700	7°				
13.5 V	.25 amp	C-2R	1700	9°	2700	5°		
8 V	5 W	C-2R	3800	7°	7100	5°	21000	3°
8 V	10 W	C-2R	6000	8°	11200	5.5°	37000	3.5°
10 V	5 W	C-2R	3700	7°	6900	5°	20000	3°
10 V	10 W	C-2R	5900	8°	11000	5.5°	35000	3.5°
10 V	18 W	C-2R			21500	5.5°	42000	3.5°

Data furnished by Corning Glass Works