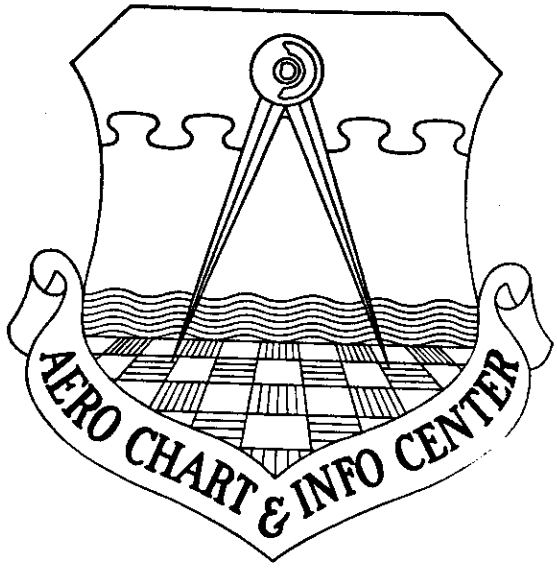
[redacted]

# CALIBRATION CERTIFICATE
# NO. 1

[redacted]




*Camera Type* - HR 732

*Lens No.* - PE 42

*Nominal Focal Length* - 24"

*This Certificate applies to the above reconnaissance camera with lens as stated herein. It was tested at maximum aperture.*



PUBLISHED BY THE AERONAUTICAL CHART AND INFORMATION CENTER,
AIR PHOTOGRAPHIC AND CHARTING SERVICE, (MATS)
UNITED STATES AIR FORCE, ST. LOUIS 18, MO.

[redacted]

# CALIBRATION CERTIFICATE

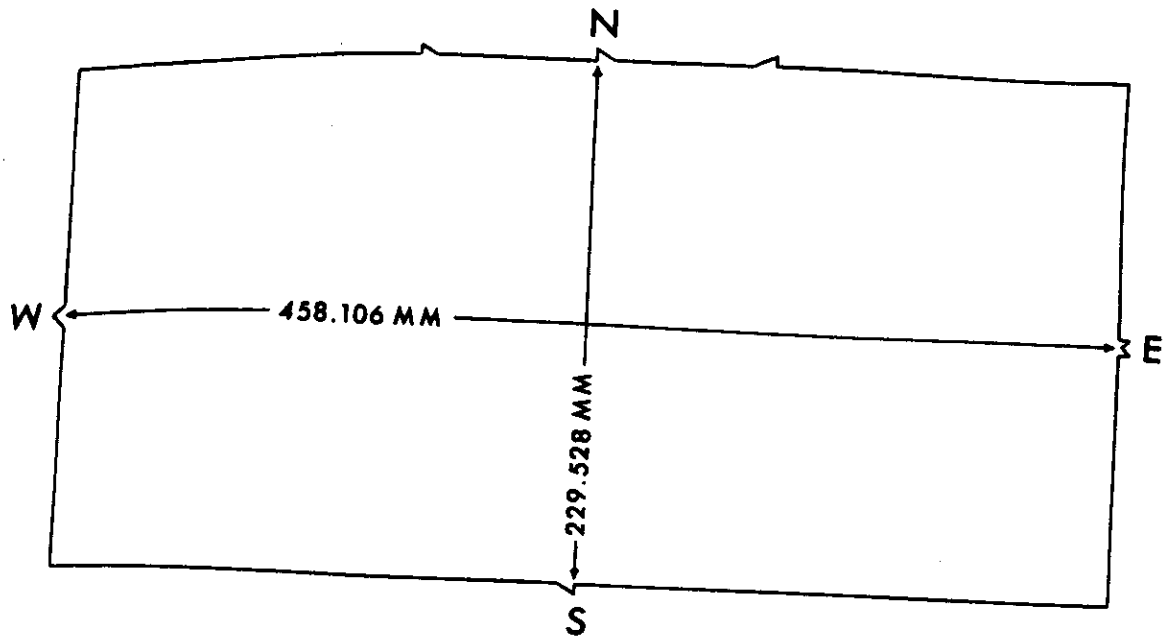
The data presented in this Calibration Certificate was developed from stellar exposures made on film located on a standard contour platen. It represents the resultant distortion of the lens specified when used in conjunction with the unique platen configuration characteristic of the specified series of cameras.

The stellar exposures and necessary auxiliary data was obtained by technical personnel under field operating conditions. The exposures are processed in accordance with good operating procedures and materials were forwarded to the Aeronautical Chart & Information Center for mathematical reduction.

A random pattern of stars were selected along the diagonals of each exposure. The stars were identified and reduced to their celestial coordinates at the time of exposure. The same star images were measured with a precision comparator in a plane coordinate system. The lens-platen distortions characteristics were determined by a transformation of the reduced celestial coordinates into the measured plane coordinates using a "least square" technique. The residual difference of this computation forms the basis for the distortion curve.

The distances shown on the diagram of the camera format are measured values across the stellar exposure from the edge of the exposed frame. A film shrinkage factor must be used in all applications of the data presented in this Calibration Certificate. The values for the point of symmetry are referenced to the principal point as determined by the fiducial marks registered on the stellar exposure. The calibrated focal length is based on measured coordinates from which the effect of the radial distortion has been removed. Date shown is actual date of exposure of the stellar photograph.

The curve graphically shows the amount and location of the radial displacement of images. The curve in the X direction is drawn to photographic scale. The values of distortion are measured in millimeters and indicate the radial displacement of the image from its distortion-free position. Positive values, area above the X axis, must be subtracted from the radial distances from the principal point; likewise the minus values must be added.




COORDINATES OF POINT OF SYMMETRY: X = .669 MM

Y = .023 MM

CAMERA TYPE: HR 732

NO.: 18

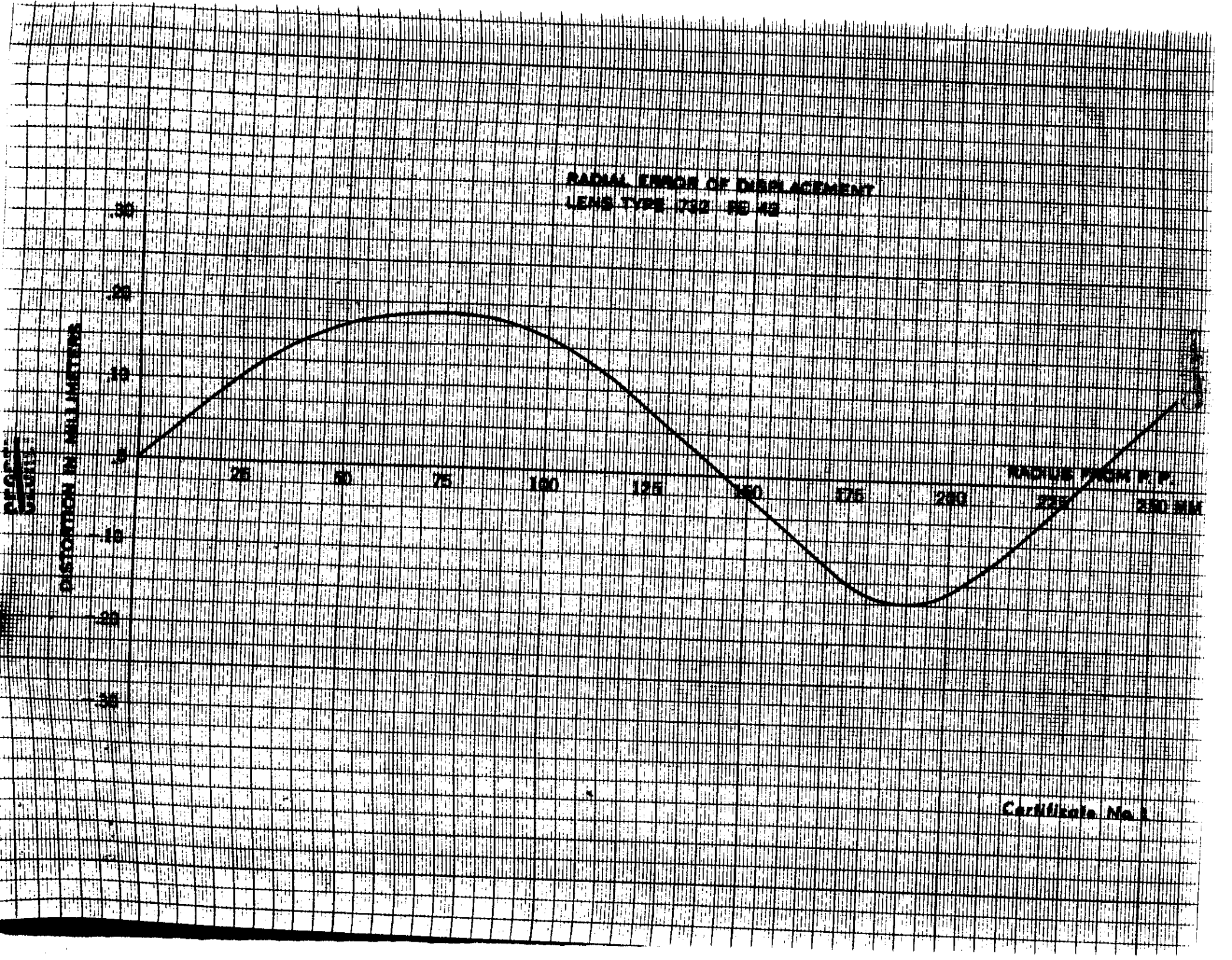
LENS TYPE: 732

NO.: PE-42

CALIBRATED FOCAL LENGTH: 607.946 MM

DATE: 6 MAY 1959

[redacted]


RADIAL ERROR OF DISPLACEMENT
LENS TYPE 732 RS 42
DISTORTION IN MILLIMETERS
RADIUS FROM P.P.
30
20
10
-10
-20
-30
25
50
75
100
125
150
175
200
225
250 MM
Certificate No. 1