COMMONWEALTH OF AUSTRALIA

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

NATIONAL STANDARDS LABORATORY

REPORT

ON

AN AERIAL SURVEY CAMERA OPTICAL UNIT

For:	Adastra Airways Pty. Ltd.
Reference:	Order No. K9761 dated 19th July 1963.
Description:	An aerial survey camera optical unit, type RC8 fitted with a filter.
Identification Nos.:	RC8 21 At 91 f = 210.07
Maker:	Wild Heerbrugg Ltd.

This optical unit has been examined at the National Standards Laboratory with the following results.

The calibrated focal length was chosen so as to minimise the largest absolute value of mean radial distortion within a semi-field of 25°. The value of this calibrated focal length was found to be 210.085 millimetres. This value is accurate to within 0.005 millimetre.

For this calibrated focal length, the curve of mean radial distortion is shown on the attached drawing No. M918-4, and the curves of radial distortion for each quadrant are shown on drawings No. M918-5 and No. M918-6.

The diagram on drawing No. M918-4 shows the nomenclature and system of coordinates used in referring to the fiducial marks at the corners of the film plane. The origin of coordinates, O, is the point of intersection of the straight lines joining diagonally opposite fiducial marks.

/The

F. J. LEHANY
Chief, Division of Applied Physics

Reference: NSL 22905
MCN 16431
Checked by: [illegible] Date: 27th September 1963.

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The coordinates of the fiducial marks, as measured on the photographic plate No. 210.07, are as follows

	E	F	G	H
x (mm)	0.0	-115.962	0.0	+115.953
y (mm)	-115.960	0.0	+115.962	0.0

These values are accurate within 0.005 millimetre.

The coordinates of the point of symmetry are as follows

x = +0.02 millimetre

y = +0.02 millimetre

These values are accurate to within 0.01 millimetre.

The coordinates of the point of autocollimation are as follows

x = +0.002 millimetre

y = -0.002 millimetre

These values are accurate to within 0.005 millimetre.

Notes and Conditions of Test:

1. The temperature for the test was 20°C
2. The radial distortion, v, was computed from the formula

$$v = r - f \tan \alpha$$

where r is the distance of the image point from the origin

α is the corresponding object space angle and

f is the calibrated focal length.

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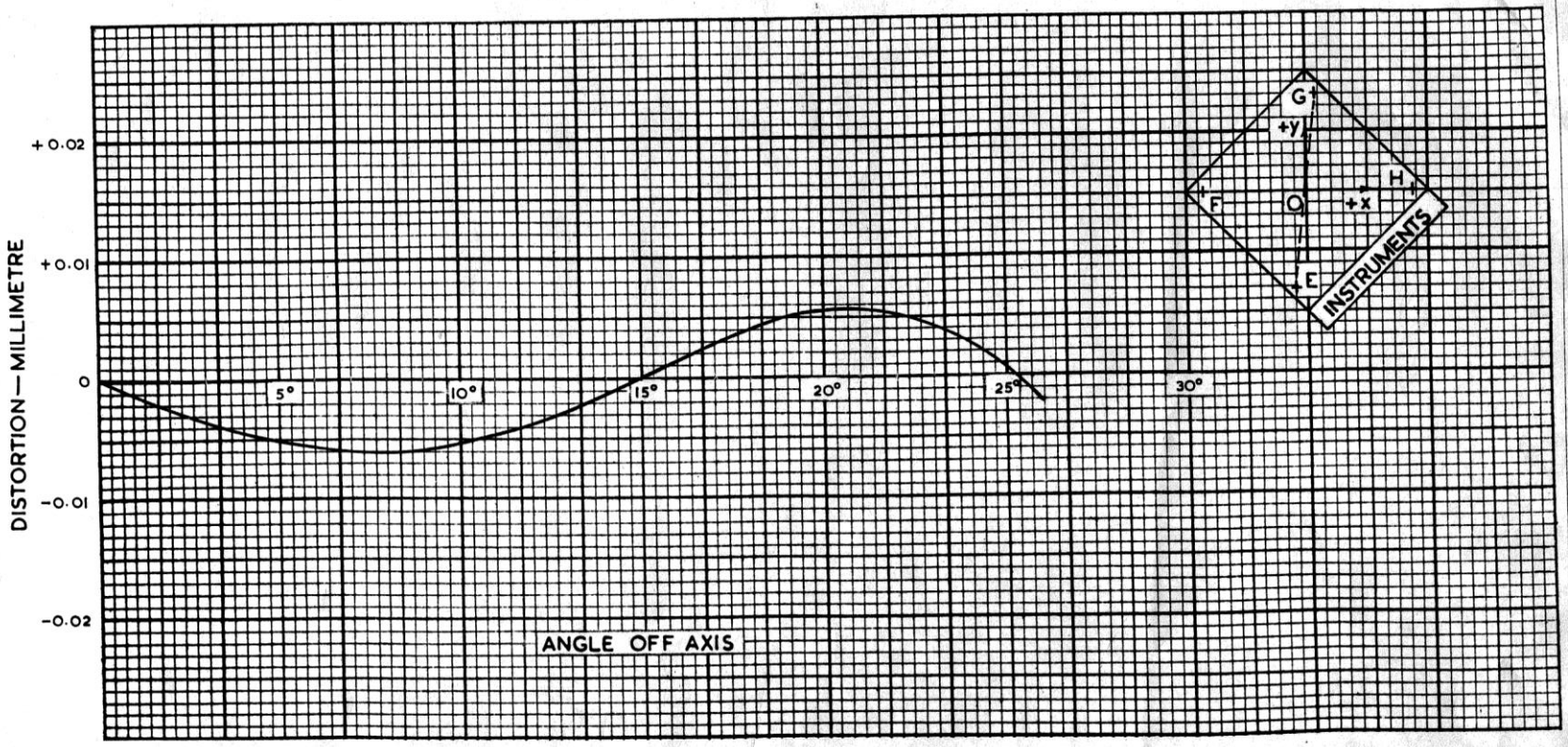
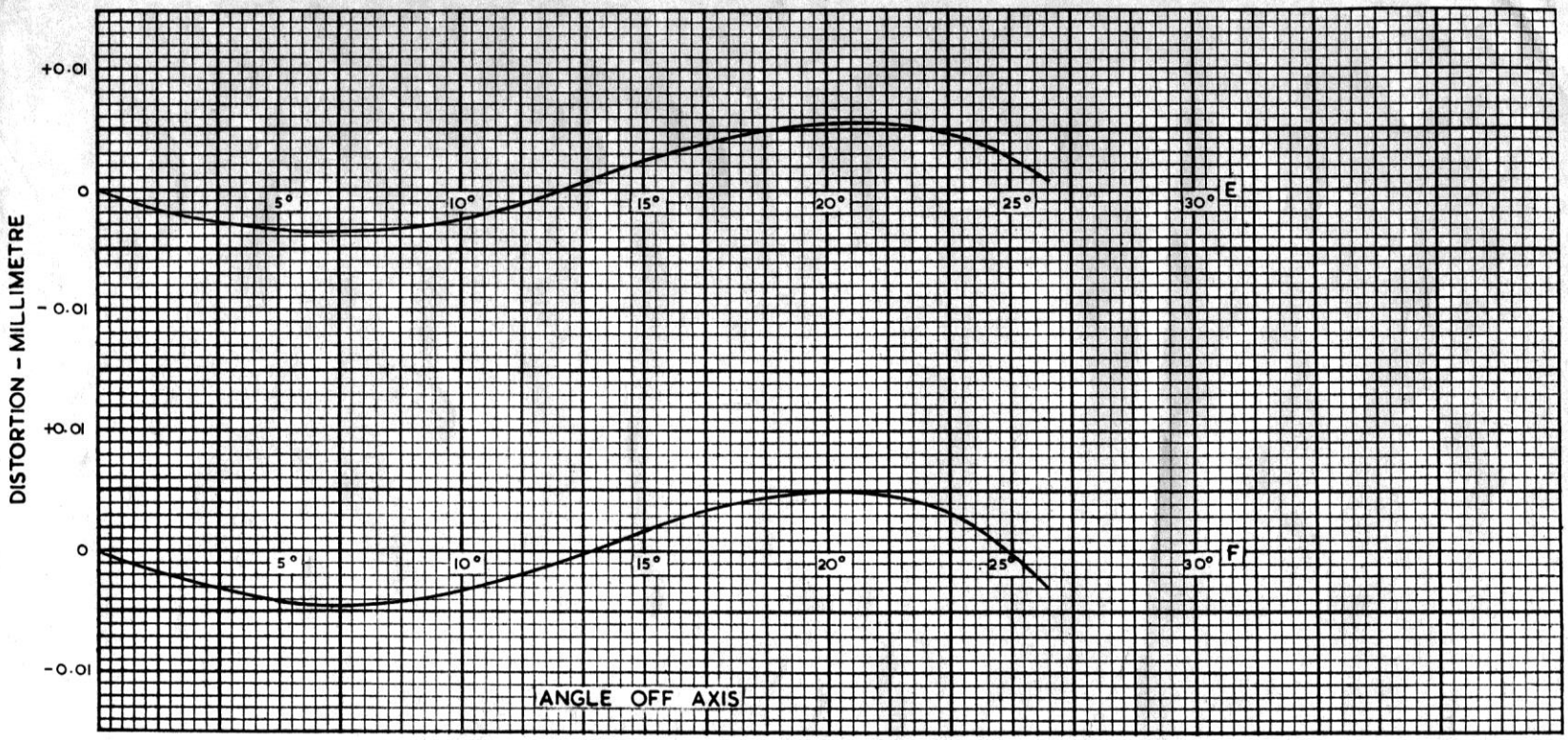


N.S.L. REF.: MCN 16431	AERIAL CAMERA N° 21 At 91 MEAN RADIAL DISTORTION CURVE FOR CALIBRATED FOCAL LENGTH = 210·085mm.	CHIEF-OF-DIVISION DATE 26/9/63	PASSED DRAWN TRACED S.G. 24-9-63 CHECKED 24-9-63 APPROVED 26.9.63	C.S.I.R.O. NATIONAL STANDARDS LABORATORY M918 – 4



N.S.L. REF.: MCN 16431	AERIAL CAMERA N°21 At 91 DISTORTION CURVES IN QUADRANTS DESIGNATED FOR CALIBRATED FOCAL LENGTH = 210·085mm.	CHIEF-OF-DIVISION DATE 24/9/63	PASSED		C.S.I.R.O. NATIONAL STANDARDS LABORATORY
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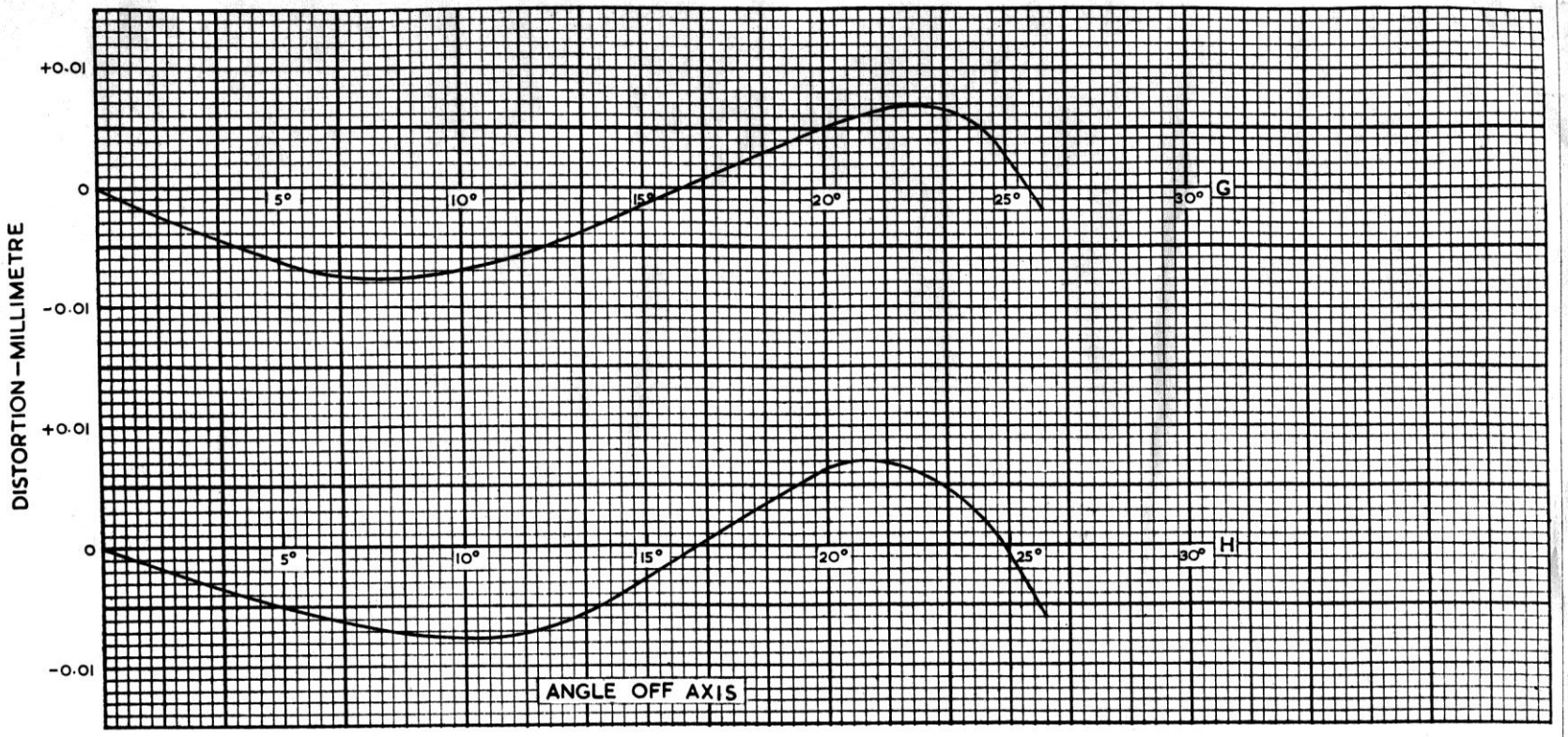
			APPROVED	26.9.63	



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