

Date: 3 April, 1967

Report No. ARIQ:467.....

TEST OF AIR SURVEY CAMERA  
TO  
SPECIFICATION FOR AIR SURVEY PHOTOGRAPHY

for

Lockwood Survey Corporation Ltd.,  
1450 O'Connor Drive  
Toronto 16, Ontario

Author: H. Brown

Approved: *[Signature]*  
Director

Manufacturer: Wild  
Nominal Focal Length: 6 ins  
Optical Unit No.: 15UAg270  
Date of calibration: 13 Mar 67  
Camera received: 24 Feb 67

Camera Type: Rc8                      Lens Type: Universal Aviogon  
Maximum aperture: f/5.6              Body No.: UAg270  
Lens No.: 15UAg270  
Calibration aperture: f/5.6  
Order received: 1 Feb 67      Test finished: 16 Mar 67

FILM PLANE (Section 1.1.1.5):

Defined by: fiducial frame              Deviation from flatness:  $\pm 0.005$  mm.

FILTER (Section 1.1.3):

Number: 2771                              Type: 2X, minus blue, anti-vignetting  
Maximum deviation: 1 seconds.  
Maximum change of deviation: 1 seconds.  
Maximum departure from parallelism: 2 seconds.

FOCUS (Section 1.2.2.1):

Focus setting: Satisfactory

A

211 995

IMAGE ILLUMINATION (Section 1.2.4):

Minimum 40% to 42.5° off axis.

FOCAL LENGTH (Section 1.2.2.3):

Calibrated focal length: 152.39 mm.  
Equivalent focal length: 152.43 mm.

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## RADIAL MEASURED DISTORTION (Section 1.2.2.4):

Unit = 0.001 mm

Angle Degrees	Distortion at Semi-Diagonals				Average Distortion	Reference Distortion
	1	2	3	4		
5.62	+5	+2	+3	+5	+4	+5
11.25	+7	+4	+6	+6	+6	+8
16.88	+11	+5	+7	+9	+8	+8
22.50	+9	+3	+5	+7	+6	+6
28.12	+7	0	+2	+4	+3	+2
33.75	+2	-8	-8	-4	-5	-7
39.38	-2	-9	-11	-6	-7	-7
42.19	+5	-3	-2	-2	-1	-3

Maximum departure of average from reference 0.002 mm to 42.5°, - mm to 45°.

## ASYMMETRY ABOUT PRINCIPAL POINT OF AUTOCOLLIMATION (Section 1.2.2.5):

Maximum asymmetry 0.007 mm to 42.5°, - mm to 45°.

## ASYMMETRY ABOUT PRINCIPAL POINT OF BEST SYMMETRY (Section 1.2.2.6):

Maximum asymmetry 0.003 mm to 42.5°, - mm to 45°.

## TANGENTIAL MEASURED DISTORTION (Section 1.2.2.7):

Maximum tangential distortion 0.004 mm to 42.5°, - mm to 45°.

## CAMERA SHUTTER (Section 1.3.3.4):

Operation: **Satisfactory**

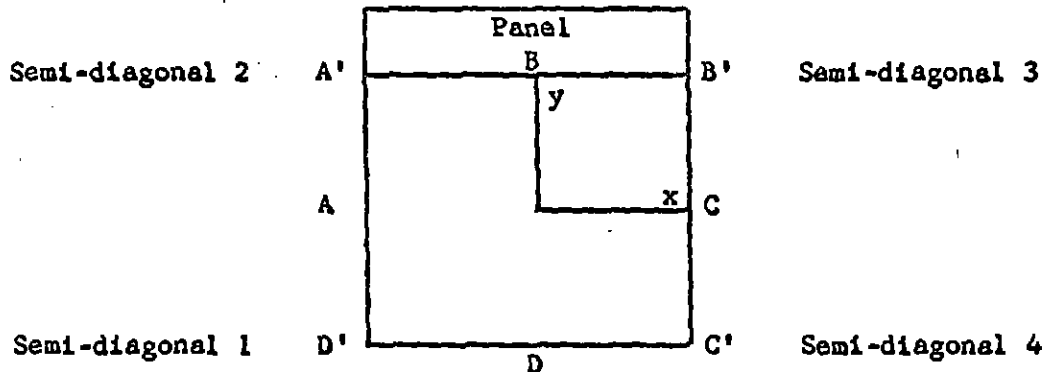
Speeds:

Mark	200	300	400	500	600	700
Total time Seconds	1/160	1/260	1/370	1/470	1/560	1/680
Effective time Seconds	1/200	1/330	1/450	1/560	1/670	1/810

## RESOLUTION (Section 1.2.1):

Average resolution /mm.

## FIDUCIAL MARKS (Section 1.1.1.6):



Angle between  $AC'-BD'$  is  $90^\circ \pm 10$  seconds. The fiducial centre is within 0.01 mm. of the point of autocollimation. Distances between fiducial marks are as follows:

A'-B'	212.00 mm	C'-D'	211.99 mm
B'-C'	211.99 mm	D'-A'	212.00 mm

The positions of the principal point of autocollimation and of the principal point of best symmetry are given in a rectangular coordinate system as shown, with the fiducial centre as origin.

Principal point of autocollimation ( $x = -0.01$  ,  $y = 0.00$  ) mm.  
 Principal point of best symmetry ( $x = -0.01$  ,  $y = 0.00$  ) mm.

## SUMMARY:

The measured properties of this cone meet the requirements of Category A of the Specification.

The cone will remain Category A, in use, only if it is supported in accordance with Section 1.1.1.1 of the Specification .