

Date ..... 6 May, 1969 .....

Report No. .... APIO-630 .....

TEST OF AIR SURVEY CAMERA  
TO  
SPECIFICATION FOR AIR SURVEY PHOTOGRAPHY  
for

Range Aerial Survey Ltd.  
Calgary, Alberta

Author ..... H. Brown .....

Approved ..... *[Signature]* .....  
Director

Manufacturer: Wild                      Camera Type: Rc8                      Lens Type: Universal Aviogon  
Nominal Focal Length: 153 mm      Maximum aperture: f/5.6      Body No.: -  
Optical Unit No.: 15Uag345      Lens No.: 15Uag345  
Date of calibration: 28 Apr 69      Calibration aperture: f/5.6  
Camera received: 25 Apr 69      Order received: 24 Apr 69      Test finished: 29 Apr 69

FILM LOCATION SURFACE (Section 13.11.2.2.1):

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

FILTER (Section 13.11.2.11):

Number: 2985                      Type: 2X, minus blue, anti-vignetting  
Maximum deviation: 2 seconds.  
Maximum change of deviation: 0 seconds.  
Maximum departure from parallelism: 4 seconds.

FOCUS (Section 13.11.2.1):

Focus setting: Satisfactory

A

IMAGE ILLUMINATION (Section 13.11.2.10):

212.002

Minimum 38 % to 42.5° off axis.

FOCAL LENGTH (Section 13.11.2.3):

Calibrated focal length: 152.642 mm.  
Equivalent focal length: 152.673 mm.

## RADIAL MEASURED DISTORTION (Section 13.11.2.4.1):

Unit = 0.001 mm

Angle Degrees	Distortion at Semi-Diagonals				Average Distortion	Reference Distortion
	1	2	3	4		
5.62	+5	+1	+2	+4	+3	+5
11.25	+9	+4	+4	+8	+6	+8
16.88	+11	+5	+3	+11	+7	+8
22.50	+11	+2	+1	+7	+5	+6
28.12	+7	0	-4	+1	+1	+2
33.75	+2	-6	-12	-2	-5	-7
39.38	+2	-6	-13	-10	-6	-7
42.19	+11	-2	-10	+2	0	-3

Maximum departure of average from reference 0.003 mm to 42.5°, - mm to 45°.

## ASYMMETRY ABOUT PRINCIPAL POINT OF AUTOCOLLIMATION (Section 13.11.2.4.2):

Maximum asymmetry 0.011 mm to 42.5°, - mm to 45°.

## ASYMMETRY ABOUT PRINCIPAL POINT OF BEST SYMMETRY (Section 13.11.2.4.3):

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

## TANGENTIAL MEASURED DISTORTION (Section 13.11.2.5):

Maximum tangential distortion 0.003 mm to 42.5°, - mm to 45°.

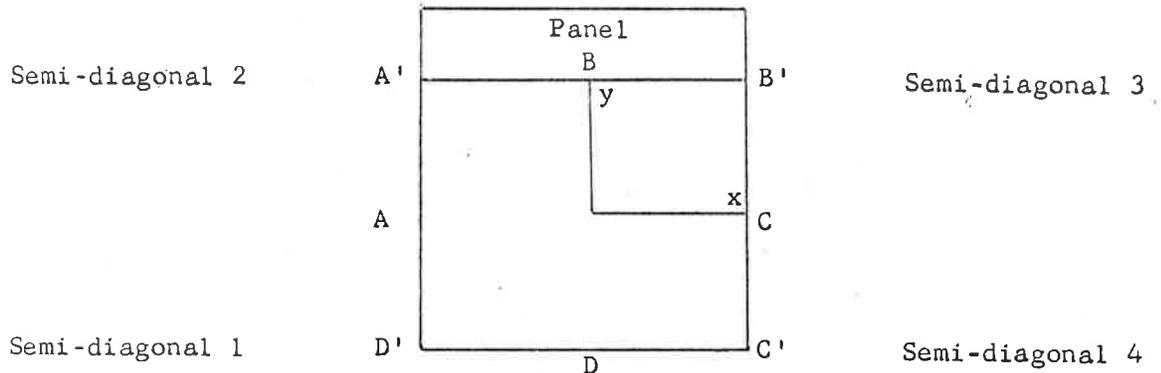
## CAMERA SHUTTER (Section 3.7.2):

Operation: Satisfactory

Speeds:

Mark	f200	300	400	500	600	700
Total time Seconds	1/175	1/290	1/380	1/470	1/550	1/650
Effective time Seconds	1/210	1/350	1/470	1/570	1/670	1/800

FIDUCIAL MARKS (Sections 13.6, 13.11.2.6, 13.11.2.7, 13.11.2.8):



Angle between A'C' - B'D' is  $90^\circ \pm 5$  seconds. The fiducial centre is within 0.015 mm of the point of autocollimation. Distances between the fiducial marks, and also between the marks and the principal point of autocollimation, P, are as follows:

A'-B'	212.005 mm	C'-D'	211.999 mm	A'-P	149.916 mm	C'-P	149.903 mm
B'-C'	211.996 mm	D'-A'	212.008 mm	B'-P	149.905 mm	D'-P	149.908 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 = +0.013, y = -0.004) mm.  
 Principal point of best symmetry (x = +0.011, y = +0.011) mm.

#### SUMMARY:

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