

MIT WORLD PEACE UNIVERSITY

Basics of Civil Engineering  
First Year B. Tech, Trimester 3  
Academic Year 2021-22

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INTRODUCTION TO PHOTOGRAMMETRY AND  
DRONE SURVEY

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EXPERIMENT 7

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## GCE · Experiment 7

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Aim:

- ① To study the mirror stereoscope
- ② To determine the air base distance for the given aerial photographs

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Instruments Required:

- Mirror stereoscope
- Pair of stereo photographs
- china glass
- pencil
- plate, etc

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Procedure:

(I) To study the mirror stereoscope

1. The stereoscopic <sup>fusion</sup> ~~function~~ is facilitated by the use of stereoscopes. The principle function of stereoscope is to accommodate a wide range separation of the point in the left and right photograph, to the fixed length of the eye base.

→ In mirror stereoscope 2 mirrors are used.

→ The aerial photographs are also called stereo-grams. Mark central point at intersection of straight lines connecting fiducial frame work.

↔

~~Now~~

inbow

→ Now place both the photographs below stereoscope in the direction of flight.

→ Both photos are now shifted and swung until marked objects in the 2 <sup>picture</sup> objects appear to be one and on line parallel to base. In other words photographs are shifted and swung until 3D view is obtained. This is called as 'Fusing' the photographs.

→ Scale : 1 : 10000

(\*)

$P_1$  = Principle point of left photograph  
 $P_2$  = Principle point of right photograph  
 $P_1'$  = Transferred principle point of left photograph  
 $P_2'$  = Transferred principle point of right photograph

(\*)

Observation Table :

Observed photograph	Photo Base Distance (1)	Photo Base Distance (2)	Mean	Scale	Air Base Distance
NO.	$P_1 P_2'$	$P_1' P_2$			
1	5.5	5.6	5.55	1 : 10000	5.5
2	7.8	7.8	7.65	1 : 10000	7.65
3	8.4	8.4	8.4	1 : 10000	8.4