

AERIAL PHOTOGRAPHY

AERIAL PHOTOGRAPHY Most aerial photos are taken with the camerer pourting vertically down wave called Identification + plocting A.P.s (1) Picking out + recogniying the various features of the land co ape . c. e. roads, houses, henches ste, vis called Identification. (ii) Matheney on a map the area show or a phot is called Plotting. ing: (1) Fund approx N & photo by direction Johaddow (ii) Jun photo so that N of photo agrees with N of map. (iii) Pick out the most promiment feature or Keynole or photo such as vielages, railrays etc, abokfor same on map. (Check by considering some other details i.e. wads shape of fields. (Place bracing paper or map with firs coincident. (Vi) Trace the to of sque. (Vii) Mark on having paper your lives showing position of 4 sides of photo. (Viii) In stating your plotting count only the sque which are 1/2 or more covered. Most Aerial photos are taken with the camera

Most Aerial photos are taken with the camera pointing vertically down & are called A.P.

Identification & plotting of A.P.s

- (i) Picking out & recognising the various features of
- (ii) the landscape i.e. roads, houses, trenches, etc & is called identification
- (ii) Marking on a map the area shown on a photo is called Plotting

Plotting:

- (i) Find approx N of photo by direction of shadows
- (ii) Turn photo so that N of photo agrees with N of map

- Pick out the most prominent feature or keynote on photo such as villages, railways etc & look for same on map
- (iv) Check by considering some other details i.e. roads & shape of fields
- (v) Place tracing paper on map with grid coincident
- (vi) Trace the no of sqrs (vii) Mark on tracing paper your lines showing position of 4 sides of photo.
- (viii) In stating your plotting count only the sqrs which are ½ or more covered.

List of cameras

List of Cameras and MARSH LB. W. A BM EB Wide angle Jape LP L with prim Bize 5"×4 5×4 8/ ×6% 8/ ×6% 5×4 of PLATE 10 with 3/ Prism FOCAL LENATH 8" NID" 20" 10" N14" 20 FUT USED VETTIONLY VETTICALY VETTICAlly Votically Derique armyand army Work Corps Corps armya FOR Bly area only. Work. WOTK Corns grues Covers gives Pretorial Juneral Feature STEA7great large effect utility detail. area detail BM. 8/2×6/2 W. 4 8 5 K6/2 L 5×4 R.B. SKL 10 20 Field of Views. and covered

Туре	I	LB or EB	W.A.	BM	LP
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	_		Wide angle	5	L with prism
Size of PLATE	5″ x 4″	5″ x 4″	8 ½" x 6 ½"	8 ½" x 6 ½"	5″ x 4″
Focal length	8" or 10"	20"	10" x 14"	20"	10" with 3 ½" prism
USED	Vertically	Vertically	Vertically	Vertically	For Oblique
FOR	Army and corps work	Army & counter Bty area	Army work only	Corps work	Corps work
Feature	General	Gives great	Covers large	Gives great	Pictorial
	utility	detail	area	detail	effect

(Illustrations of field of view)

1000 all cameras can be worked 5 ×4 4 auto y Haw as matically 6 cca 10 and withour 3/2 Prism barry dow ble dar advanta automatic 0 01 CI ern (i) the camera can be worked at a distance from the pilot thus enabling machines to be undo for pholof otherwin anpose it chiling of attac for any an iero ucto (1) the pilot is released of the pist worker carries Lein the engle oppratio Bowden whe release

(Illustrations of different type of photography)

All cameras can be worked automatically or by hand, as in L type. Occasionally the W.A. is used without magazines have double dak slides instead.

Advantage of Automatically Changing:

- The camera can be worked at a distance from the pilot thus enabling machines to be used for photography which otherwise would be unsuitable on account of the impossibility of attaching the camera within reach of Pilot giving an unobstructed
- (ii) The pilot is relieved of the responsibility of working the camera & continuous flying photographs can be taken by the single operation of the Bowden wire release.

(iii) Head resistance is obviated where camera is mounted miside fusilage Tifferent kinds of acrial photos -(1) Vertical: - are taken with camera pointing sharpt . down spice a plan view of ground. They are used where any measurment is required as in map martine, pin pointing, batteries etc. (11) blight - are perspective views taken with the I type through a prisen. They are pictored views owhen taken at a low allitude show everything in side devotion so that they are easily read. They are therefore very useful ti infanty. Hills adalleys show up well on these photos. (iii) Continuous line photos - a continuous line is a series of photos taken vertically one ofter another at such an interval that each ver laps the previous one about 1/4 of its built when joured together give a continuous photo of the ship of country over which the machine has flown. (iv) Moraic photo: Is made by taking photos all over an area, reducing or unlarging them to scale + sintably combining them together. This a

(iii) Head resistance is obviated where camera is mounted inside fusilage [sic].

Different kinds of aerial photos:

(i) <u>Vertical</u>:

Are taken with camera pointing straight down & give a plan view of ground. They are used where any measurement is required as in map making, pinpointing, batteries, etc.

(ii) Oblique:

Are perspective views taken with the L type through a prism. They are pictorial views & when taken at a low altitude show everything inside elevation so that they are easily read. They are therefore very useful to infantry. Hills & valleys show up well on these photos. (iii) Continuous line photos:

A continuous line is a series of photos taken vertically one after another at such an interval that each overlaps the previous one about ¼ of its breadth & when joined together give a continuous photo of the strip of country over which the machine has flown.

(iv) Mosaic photo:

Is made by taking photos all overan area, reducing or enlarging them to scale & suitably combining them together. Thus a . . .

very large area can be shown photograp in one piece. Oftena morais made the same seale as a maps lines drawn upon it. (v) Vertical stereos:- are made from 2 photos place taken vertically from 2 slightly deferent view points as the machine flies along. They are suitably normated side by side Wiewed throng a stereoscope. They show features I landscape in greatly exagerated releifet Very usefue in stamunice him cralors, lubank wents que pits elc. (VI) Collegue stareos - Here are made similar to above but from two obleque photos taken is papid succession as machine fliesdong Photography from the die: ght to shade in ou wap area to be photoprophed. () Atudy pround correction from recent photon. (in Nok land marks on which to sight (in) Calculate unter al required between exposures restricte to plates required.

... very large area can be shown photographing in one piece. Often a mosaic is made the same scale as a map & grid lines drawn upon it.
(v) Vertical stereos:

Are made from 2 photos of a place taken vertically from 2 slightly different viewpoints as the machine flies along. They are suitably mounted side by side & viewed through a stereoscope. They show features of landscape in greatly exaggerated relief & are very useful in examining mine craters, embankments, gun pits etc. (vi) <u>Oblique stereos</u>: These are made similar to above but from two oblique photos taken in rapid succession as machine flies along.

<u>Photography from the Air:</u> Before flight:

- (i) Shade in on map area to be photographed.
- (ii) Study ground concerned from recent photos.
- (iii) Note landmarks on which to sight. (iv) Calculate interval required between exposures & estimate No of plates required.

Suring flight is blinkt a sufficient height then fly over area tobe photo paper using a puides the land marks already decided on (ii) Just before exposing (a) Hy level (1) Hy shaight (O Hy up wind if possible (iii) & pose (iv) Hystraight on for about 5 sees tallow plates to change plates without farmbing (V.) make a note of locality taken I pround is obscured by clouds, don't photo them but wait for a gap or get below them after Hight :-(i) Pass any methore plates into exposed box by hand (ii) Close both boxes (111) Haw the box containing exposed plates t photographer who will be stationed on drome. (iv) Write out report giving (a) Ro of plates exposed (1) map a) Jim (e) wearler condition. Center of bac photo :- (a) hot flying level. If photo baken rebank, shell or dive it will not be here Vertical. At may mos

During flight:

- (i) Climb to a sufficient height & then fly over area to be photographed using as guides the landmarks already decided on.
- (ii) Just before exposing (a) Fly level (b) Fly straight(c) Fly up wind if possible.
- (iii) Expose
- (iv) Fly straight on for about 5 secs to allow plates to change plates without jambing [sic]
- (v) Make a note of locality taken
- (iv) If ground is obscured by clouds, don't photo them but wait for a gap or get below them

After flight:

- Pass any unexposed plates into exposed box by hand.
- (ii) Close both boxes.
- Hand the box containing exposed plates to photographer who will be stationed on drome.
- (iv) Write out report giving (a) No of plates exposed,
 (b) Map reference of each plate. (c) Height
 from which taken. (d) Time (e) Weather
 conditions.

Causes of bad photo:

(a) Not flying level. If photo taken on bank, stall or dive it will not be a true vertical. It may miss ...

and sphot will be distorted. Upalion (6) used by badly rearing sugue to stor n photo. (0) ice speed due to photopaphing yces und in a gale also causes how Importance 1 Thotography To the May (a) enemy's intentions can be descovered this closed by ano men die g stock at station existance of wew words hacks always norths (6) The exact position schergth of ned villages lopaphs. (c) save kept up to date by photopaphs a · account of work 1 and Cwen hune (e) Chammallor of photor of Junction budyes

... his pinpoint & photo will be distorted.

- (b) Vibration caused by badly running engine causes movement to show or photo.
- (c) Excessive ground speed due to photographing downwind in a gale also causes movement.
 Importance of Photography:

To the staff:

- (a) The enemy's intentions can be discovered & his probable movements disclosed by amount of rolling stock at stations, material at dumps, existence of new roads, tracks or light railways & works under construction.
- (b) The exact position & strength of his 1st & 2nd line defences & fortified villages in rear is shown in photographs
- (c) Maps are kept up to date by photographs.
- (d) Comparison of photos taken on different days shows amount of work done by enemy in a given time
- (e) Examination of photos of L of C reveals important railway junctions, bridges & X roads

. . .

the bombing of which would sen weinender the enerry. Hostile N.Q. + Kelephone exchanges (F) ven away by henches es ~ ~ buried cable of plotos route follower by night have part (9) up clearly in phi shelled. They can be purpo (A) aeroa 1 on phopes er shown the hanger availa the sheafth of air force can be estimated measures takes To the artiller Photos are an aid to the disco (a) I hostile batteris renable their exact position the pinpointes. The progress reflect of tourbordeneuts (6) can be seen in photos Photo four own battery porchion (c)

... the bombing of which would seriously inconvenience the enemy.

- (f) Hostile H.Q. & telephone exchanges often given away by trenches carrying phone wires & buried cable shown in photos.
- (g) The route followed by night transport & reliefs shows up clearly in photos. They can be pinpointed & shelled.
- (h) Aerodromes show up clearly on photos & by considering the number shown in a sector & the larger space available, the strength of the enemy air force can be estimated & appropriate measures taken.

To the Artillery:

- (a) Photos are an aid to the discovery of hostile batteries & enable their exact position to be pinpointed.
- (b) The progress & effects of bombardments can be seen in photos.
- (c) Photos of our own battery position . . .

Mushale effectiveness for como To the du force Pilot robservers can popully lea (a) pour mosaies vobligi new sector Before a shoot the observer studies a 6) ot of the tayet marks a properly 1. Latas the sealer clock code on photo into the air sends correction nom it. (c) after registration a photo of tayet shows exact position feach shell hale the o servers spotting. eks fore a bornb (d) photos taker show the faken durin The benstice bourbs show the damage Before contact patrot, pilot caufee (e) ludic detail shot & hout line. To the Infactory or Facts:-The exact position of Gerenan pour (a) lund its sheigh can be wenny whe the japs in it are noted (6)

... illustrate effectiveness of our camouflage. <u>To the Air Force</u>:

- (a) Pilots & observers can rapidly learn a new sector from mosaics & obliques.
- (b) Before issued the observer studies a photo of the target & marks are properly scaled clock code on it. Takes a photo into the air, & sends corrections from it.
- (c) After registration a photo of target shows the exact position of each shell hole & checks the observers spotting.
- (d) Similarly, photos taken before a bomb raid show the target, taken during the raid show the bursting bombs, after raid show the damage.
- (e) Before contact patrol, pilot carefully studies detail photo of frontline.

To the Infantry & Tanks:

- (a) The exact position of German front line & its strength can be seen
- (b) Enemy wire & the gaps in its are noted.

(c) Parts this enemops will use by paholo are shown up on photo. plotos of front lines show M. G.S. - deegoals (d) Scharle 1. how up the bit of land in a (e) Oblique how them the pietoria easily regognere their oo the Her of eclive 820 ellow, avere cher attach

- (c) Paths thro' enemy's wire by patrols are shown up on photos
- (d) Detailed photos of front lines show M.G.s, T.M.s & dugouts
- (e) Obliques show up the lie of land in a pictorial manner & from them the Infantry can easily recognise their own positions, their objective & also the point they have reached after an attack.