Hello everyone,

my name is Ashwini Ashish I'm assistant

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I welcome you all for the module name,

types of aerial photography.

This is the outline of my lecture.

I will start with the introduction

to aerial photography.

Then I will discuss the various

type of aerial photography followed

by conclusion and references.

This is the learning outcome,

so after the completion of this

lecture you will be able to

understand the various type of aerial

photography as well as you'll be

able to differentiate between the

various types of aerial photography.

So the first is what is the

meaning of aerial photography,

so it is the science of

obtaining photographs from air.

By using various platforms,

mostly aircraft for the study

of the surface of the Earth.

So in aerial photography we click or

we collect photograph of the earth

surface by using various platforms.

That platform is an aerial platform.

So mostly we use aircraft for that.

Camera is also very useful to

collect all such types of photographs.

So in this picture you can see there is

an aircraft and the camera is fitted below the aircraft.

So this is the way we capture photographs of the earth

surface so it is one of the most common

and versatile an economical form of

remote sensing so you know remote sensing is also a science and arts of collecting or

gathering information about the Earth surface.

Now what are the types of aerial photography?

So based on the direction of or the

position of the axis of the camera.

So in which way the camera is

fitted below the aircraft.

Based on that we can divide aerial

photographs into four types.

The first is vertical,

second is oblique,

third is convergent and 3rd is

trimetrogon type of photograph.

Now we will see one by one.

So the first type of aerial photography,

It is a vertical photograph.

So here the axis of the camera

is adjusted in such a way that

it is almost or it is perfectly

vertical to the ground surface.

So here the photograph which we will

get from a vertical type of photograph.

It will be square in shape.

So in simple word this type of

photographs are taken with an

aerial borne camera aimed vertically

downward from the plane.

So this is an example of a verticle photograph.

So here you can see there is an

aircraft and a camera is fitted below

the aircraft and the area captured by the camera is PQ.

Then there is a broken line that is

‘MN’ and it is called an optical axis.

Then ‘N’ represent principal point

or nadir point and as I said,

PQ is the area captured.

So this is an example of a vertical photo.

Now a vertical photograph can be of three types, the first is true,

vertical second is near vertical

and 3rd is orthorectified vertical.

Now the first is true vertical,

so if a photograph is taken in

such a way that the optical axis

is making perfectly 90 degree of

angle with the ground surface,

then we called it as true

vertical photograph.

So such type of photographs are very

useful for mapping point of view as

well as we take multiple photograph

that is overlapping of images so that

one photograph will be overlapped by

the another photograph by 50 to 60%.

So in this picture this is an example

of a true vertical photograph.

Here you can see the aircraft is there.

Camera is there and the optical axis is

making a perfect 90 degree of angle.

It is shown by the alphabetical letter N & PQ is the area which is captured.

So if a photograph is taken then

it will look like the image ‘A’.

So here you can see the point

which is there in picture P that

is N that nadir point, it is located at the center of Picture A,

so in this way this photograph will be

taken to the shape of the photograph,

It is square in shape.

So to take vertical photograph,

we need a modified type of aircraft

and it should be having special

equipment as well as a very experienced

photographer is also required to

take a true vertical photograph.

The second type in vertical photograph.

It is near vertical,

so here also a photograph is

taken almost vertical,

so here it won't be 90 degree of angle.

I mean the optical axis won't make

a 90 degree angle to the ground

surface but near to 90 degree angle it will make so such type

of photograph are very useful for

general layout of a large area.

So for example,

for the planning purpose or redesigning

of an extensive industrial area or an

agriculture area or some commercial area,

such type of photograph that is near

vertical photograph is very useful.

Then the third is orthorectified,

vertical photograph.

So the photographs taken by a camera,

whether it is vertical or a true vertical or whether it is near vertical photograph,

it requires some rectification,

so these photograph have some

geographical or topographical distortion,

and these topographical and

geographical distortion we have to remove then and then

only we can use all these images,

so a distortion may occur because of

imperfect optical lenses or digital

sensor because of the tilt of the camera.

So all such type of error we

have to remove first then we can use those images.

So if it is rectified then only it

is possible that we can use such type

of map or image for mapping purposes

or for proper scale measurement.

Then the second type of aerial photograph,

after vertical it is oblique photograph.

So here the camera is tilted.

So here the optical axis won't

make 90 degree but camera will be

tilted so it will cover a large

area as well as there is.

One drawback of such type of photograph

that the distortion will be more

near the edge of the photograph.

So as you go away from the another point,

the distortion will be more,

but it will cover a large area,

so oblique photograph can be of two types.

First is Low oblique and 2nd is higher obloque.

So how much is the camera tilted ,Based on that,

we can divide into low or high oblique,

so the first is a low oblique.

So the camera will be tilted very little.

So one which does not have the

horizon showing is called low object,

so in Low oblique photograph you won't be

able to see the horizon of that area,

so this is an example of a low oblique photograph.

Here you can see the principal

point is not making an angle of 90

degree because camera is tilted,

so area captured by the by the camera,

it is P to Q, in the picture or the image.

‘A’ is an example of low oblique photography,

so this is how it will look like.

Then the second is a high oblique photograph.

So when the axis of camera is tilted

by between 30 degree to 60 degrees,

so this is a high object photograph.

So here you can see the field of

view is very large so it will cover

a very large area and the horizon

of that area will be also visible.

So this is an example of

high oblique photograph.

Here you can see that there is an image

and it covers a very large area and the

red color arrow is showing the horizon.

So horizon is also visible

in this particular picture.

So this is an example of

high object photograph.

Now the third type of photograph it

is a convergent type of photographs.

So here we take two photograph

of the same area.

So when an aircraft will reach to A point

it will capture the first image.

Which will be oblique in nature when

the same aircraft will reach to point B,

it will click another picture

of the same area and it will be

again of oblique in nature.

So simultaneously two photographs are

taken and both are oblique in nature.

So such type of photograph is very

useful because such type of photograph

will give us a 3 dimensional view

of a particular area if we use an

instrument called stereoscope.

The last type of photograph is trimetrogon

Photograph,

so here we use three photographs.

So when an aircraft will reach

to point A it will click the

first picture which is oblique.

When the same aircraft will reach to point B,

it will click the second picture.

It will be vertical type of photography

and the third when the aircraft

will reach to Point C It will again

click the picture of the same area,

but again it will be of oblique in nature.

So here we are clicking three picture

or the camera is capturing 3 images.

In this three images,

two images or two photographs

are oblique in nature,

and the one image or one

photograph is vertical in nature.

So such type of photographs are

very useful when we capture or

when we cover a very large area.

Now in the conclusion.

So as you know,

vertical photographic is a very

essential part of remote sensing.

That is,

to gather information about

the earth surface.

So once the photograph is taken,

then a geographer or an interpreter can

interpret that picture or that image,

and he can extract a lot of information.

So because of that aerial photograph

is very important nowadays

for military point of view.

Also it is very useful.

So aerial photographs,

present Birds Eye view.

of the earth surface,

there are four types of aerial photography

that we had discussed that is vertical,

oblique, convergent and trimetrogon

type of photography.

So based on our purpose,

I will select either vertical,

oblique,

convergent or trimetrogon.

So such type of images or

photographs are very informative,

useful for cartographers and for planners.

So for example, if someone is interested

to find out the change detection.

of a particular area,

then aerial photographs are very

useful as well as if someone is

interested to know the land use

land cover of in particular area,

such types of images are very important.

These are the Glossary so you

should go through all this

terminology which I have used.

These are the references

I have used two books,

so you should go through all these books.

Thank you.