Report about Aerial photography

Venkata Gautam Bharadawaj Manda

gautam.aero2astro@gmail.com

Date: 18-05-2021

Principals of aerial photograph:

Aerial photography has been defined as the science of taking photography from a point in the air for the purpose of making some type of study on earth surface.

The net result of any photographic mission is photographic negative.

Photographic negatives are the result of favourable and unfavourable factors acting simultaneously

A good aerial photograph must have a certain standard of geometrical accuracy

Aerial photography and its planning generally includes selection of types of aeroplane and camera, trend of run, film and filter combination, which is of great importance in aerial photo interpretation

Most of the conventional aerial photography is done at 1: 30000 to 1:60000 scale on a conventional black and white panchromatic film

The scale of photography further depends on objectives of the work, which governs the speed of the aircraft and its flying height, also depends on the type of camera lens being used

Optimum scale for geological photo interpretation are 1: 25000 to 1:40000

For regional surveys a small scale photograph of 1:60000 or even smaller is suitable

For extensive ground coverage satellite imagery are most useful

In aerial photography for more specific and detailed information such as geotechnical studies, mineral exploration, ground water surveys, land-use planning, and town planning, large scale photographs on photographs of scale 1:15000 to 1:10000 are most suitable.

In such type aerial photographs, low speed aeroplanes (200 to 350 kmph) are used and flying height is normally not more than 8000 to 10000m

Low flying speed and heights are one of the most important aspects in obtaining sufficiently large scale photographs with sharp images of objects.

There should be complete stereographic coverage of terrain, i.e., all features of the terrain should occur on at least 2 photographs for stereoscopic viewing.

Photographs are taken in runs in the direction of flights in such a way there will be minimum 60% overlap between adjacent photos and 30% side lap between adjacent runs.

The quality of photographs depends on

- flights and weather conditions
- camera lens
- developing and printing process

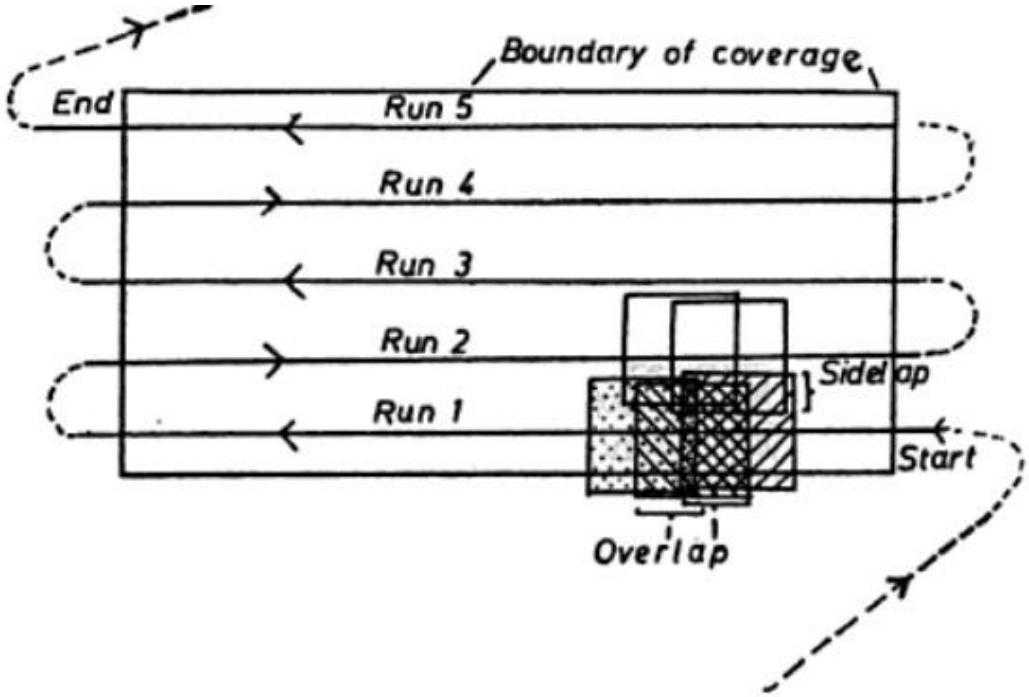

Fig. 2.1: Diagram showing the general pattern of stereoscopic ground coverage by aerial photography.

Types of Aerial Photographs

Extreme growth in the technology and techniques used for acquiring aerial photographs

Aerial photographs are classified according to attitude camera axis, lens system, types of cameras, types of films and filters or some special equipment employed in the camera or techniques to record some special effect on the film.

Classification of techniques is done here according to 3 main criteria which are discussed in the next few slides.

Based on orientation of camera axis

- Vertical photographs
- Low oblique photographs
- High oblique photographs

Based on lens system

- Single lens photography
- Three lens photography (trimetrogon photography)
- Four lens photography
- Nine lens photography
- Continuous strip photography

According to special properties of films, filters or photographic equipment

- Black and white photography (Panachromatic photography)
- Colour photography
- Colour infra-red photography
- Radar imagery
- Thermal infra-red photography
- Spectra zonal photography