

Aerial Remote Sensing

Aerial photography is the oldest form of remote sensing. Despite the increasing availability of more sophisticated imaging systems, aerial photographs remain one of the most reliable and widely used sources of remotely sensed data. The use of aerial photography as a geographical tool was still largely experimental before World War II, but in the post-war world its use was to become standard. Aerial photography, generally flown from an airplane, is still widely used in the creation of topographic maps worldwide; they are also a relatively inexpensive and accessible data source. Photography can provide black-and-white, color, or color-IR data in either film or digital form. All photographs are captured with some inherent geometric distortion; however, those distortions can be corrected to produce an orthophoto. Aerial photography is widely used in archaeological prospection due to its potential to recognize site locations, record and monitor changes of their landscapes through time, and even discover subsurface features by means of the topsoil characteristics or by stereoscopic examination of images.

Aerial Photography in India

Aerial photography in India goes back to 1920 when large-scale aerial photographs of Agra city were obtained. Subsequently, Air Survey Party of the Survey of India took up aerial survey of Irrawaddy Delta forests, which was completed during 1923–24. Subsequently, several similar surveys were carried out and advanced methods of mapping from aerial photographs were used. Today, aerial photography in India is carried out for the entire country under the overall supervision of the Directorate of Air Survey (Survey of India) New Delhi. Three flying agencies, i.e. Indian Air Force, Air Survey Company, Kolkata and National Remote Sensing Agency, Hyderabad have been officially authorised to take aerial photographs in India.

ADVANTAGES OF AERIAL PHOTOGRAPHY

The basic advantages that aerial photographs offer over ground based observation are :

- a. Improved vantage point:** Aerial photography provides a bird's eye view of large areas, enabling us to see features of the earth surface in their spatial context.
- b. Time freezing ability:** An aerial photograph is a record of the surface features at an instance of exposure. It can, therefore, be used as a historical record.
- c. Broadened Sensitivity:** The sensitivity of the film used in taking aerial photographs is relatively more than the sensitivity of the human eyes. Our eyes perceive only in the visible region of the electromagnetic spectrum, i.e. 0.4 to 0.7 μm whereas the sensitivity of the film ranges from 0.3 to 0.9 μm .
- d. Three Dimensional Perspective:** Aerial photographs are normally taken with uniform exposure interval that enables us in obtaining stereo pair of photographs. Such a pair of photographs helps us in getting a three-dimensional view of the surface photographed