Chapter 1

The development of World War II aerial photography

During the 1930's German technicians pioneered the development of aerial photography cameras, high quality lenses, and viewing equipment. From 1939 to '45 they compiled millions of air photos from flights over Europe and western Russia. Photo interpreters monitored military equipment and troop movements while using stereo viewing magnifiers, which give a 3-dimensional effect by looking at two photos taken one after the other that both photographed the same area on the ground.

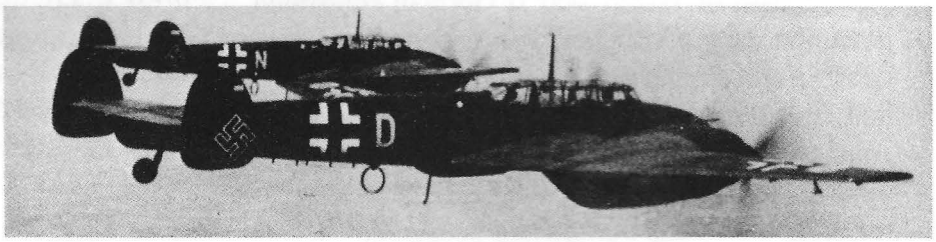


Photo 1: A Messerschmitt 110 twin engined air photo plane.

Photo 2: A Lublin, Poland train station map drawn on an air photo.

Air photos from American library which were taken by Germans are in this book

Photo 3 - **After 1945:** Americans looking through a German made stereo viewing magnifier which also allows two people to view at the same time.

At the end of the war the American military seized truckloads of German air photo prints and sent them to the U.S. where 1.2 million were released to the public during the 1980's. The German photos in this book were selected from the collection stocked at the National Archives Air Photo library at Alexandria, Virginia, U.S.A.

American and British air photo development

American and British air photo reconnaissance and interpretation developed from being almost non existent in 1939 to a well equipped and top priority program by 1943. Bombing targets such as communications centers, railway stations, power plants, factories, and city centers were photographed and the developed 23 centimeter (9 inch) prints were studied at field offices and at the large Medmenham interpretation center near London, England where the Americans and British worked together.

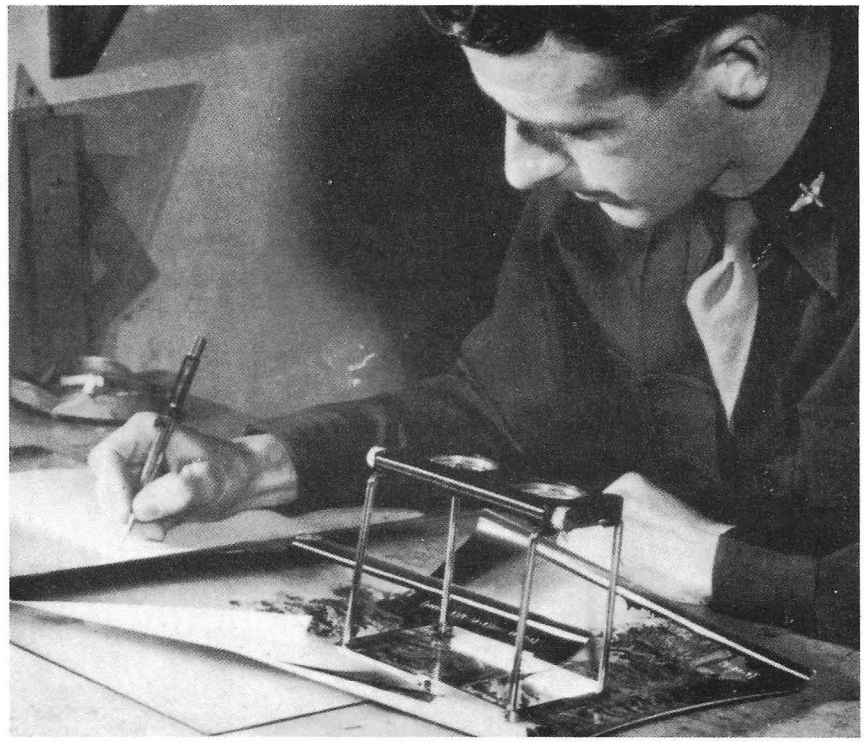


Photo 4: (right) A U.S. Army interpreter writes a report while using a stereo viewing magnifier.

Faster higher aircraft combined with larger focal length cameras by 1943

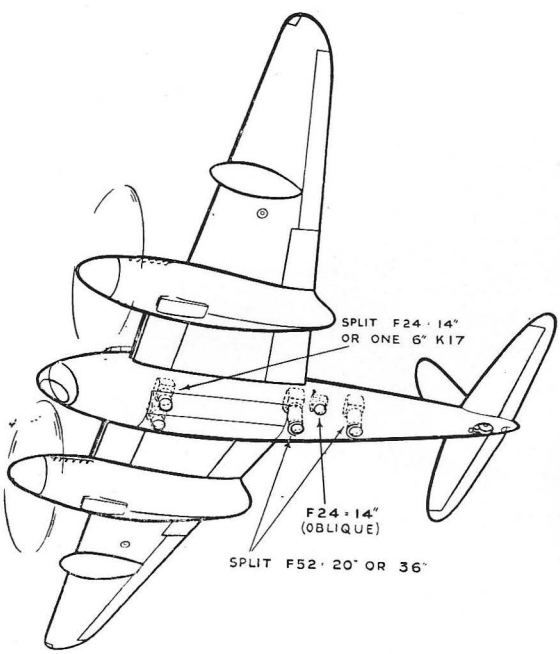
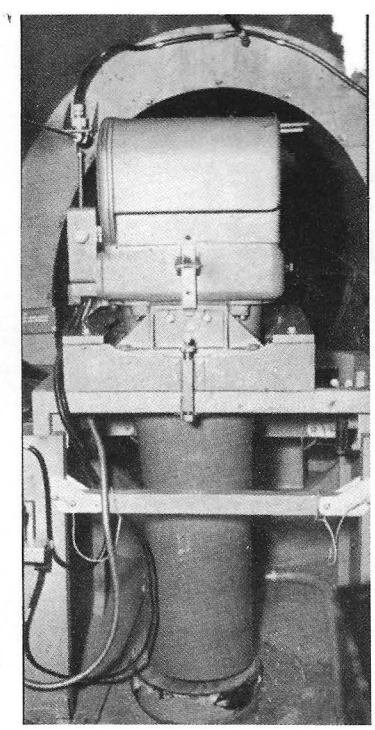


Photo 5: (above) Camera locations in the Mosquito. Photo 6: (right) A 36 inch (90 centimeter) camera in position that could obtain large scale images from high elevations.



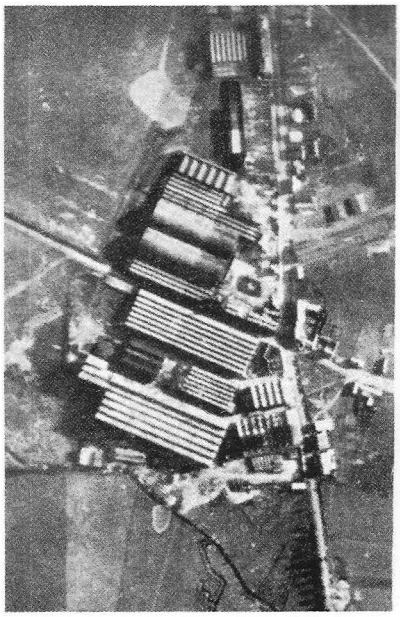
The twin engined DeHavilland Mosquito aircraft was modified after 1940 so that it could photograph most areas of Europe after 1941 because:

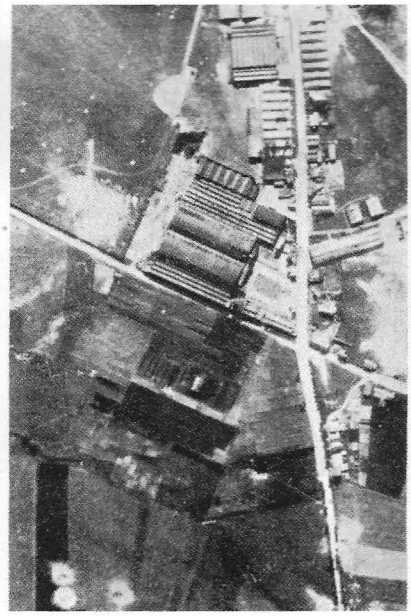
(1) radar could not detect it as it's skin was plywood,
(2) it flew 600 kilometers (380 miles) per hour at 13 kilometers (8 miles) elevation), and
(3) it could fly 1450 kilometers to a target and then return.

The Germans were also aware that after 1943 the Mosquito could fly from Italian airfields to photograph Poland.

By 1943 long focal length 90 centimeter (36 inch) cameras were developed.

Camouflage used to hide important or sensitive possible bombing targets



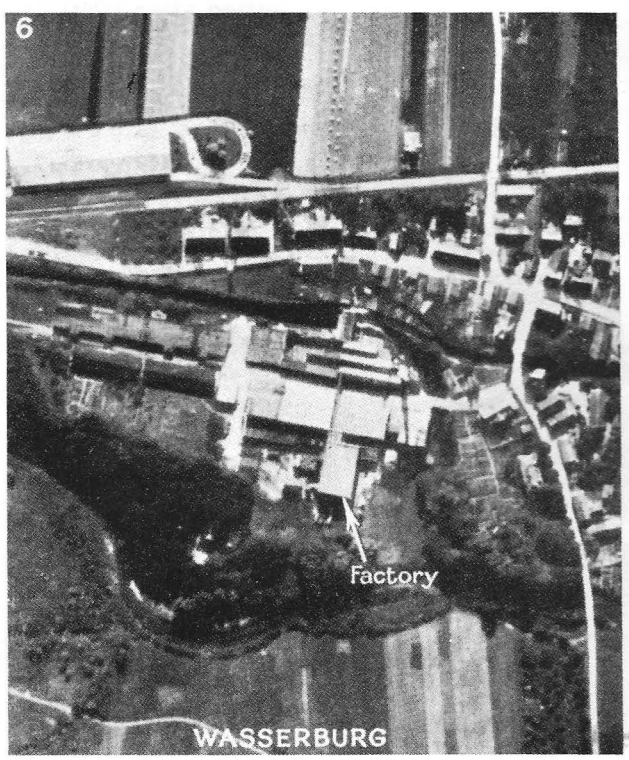


After 1941 the German military was aware that high elevation aircraft were photographing western Europe, and after 1943 they knew all of former Poland could be reached from Italian airfields. They therefore made extensive use of camouflage to conceal and guard important and sensitive installations from being photographed and bombed.

Photo 7 -**1942:** (left) Photos taken in Europe before and after a factory was camouflaged using draped coverings and paint.

Camouflage often not successful against air photos

Photo 8: (below) The results of using camouflage were mixed. A factory or weapons storage site could be made to look like a farmhouse to an observer in a plane, but if photographed the building would probably fail to deceive the camera for it's ability to record small details and at the same time give an overall view of the building in relation to it's surroundings. Two factories determined by air photo interpreters to be factories are the camouflaged shoe factory at Wasserberg (left) and the agricultural equipment factory at Baumenheim (right).



Air photo interpretation used to confirm or dismiss stories from spies

By 1942 spies in Europe were channelling rumors, indications, and 'eye-witness' accounts of selected areas to England, which were summarized and given to British or American air photo interpreters who would study the photos for evidence as to whether these spy reports could be confirmed.

Military commanders placed the highest priority on air photo interpretation reports because they gave positive evidence of a selected target as opposed to rumors and alleged 'eye-witness' stories. For example spies may have submitted evidence that a group of farmhouses were being used to produce aircraft parts, but it wouldn't be until an interpreter received and could study air photos for evidence such as ground scarring from vehicles, smoke, chimney sizes, fuel storage areas, or changes in the building layout from previous months that a decision could be produced as to whether the spy reports could be confirmed or not.

Photo 9: (left) The largest battleship in the world at that time, the *Tirpitz,* photographed off the Norwegian coast on July 12th, 1944 to confirm spy stories it was in the area. The British sunk it with six ton bombs after determining it's exact location and anti-aircraft defences from the air photos.

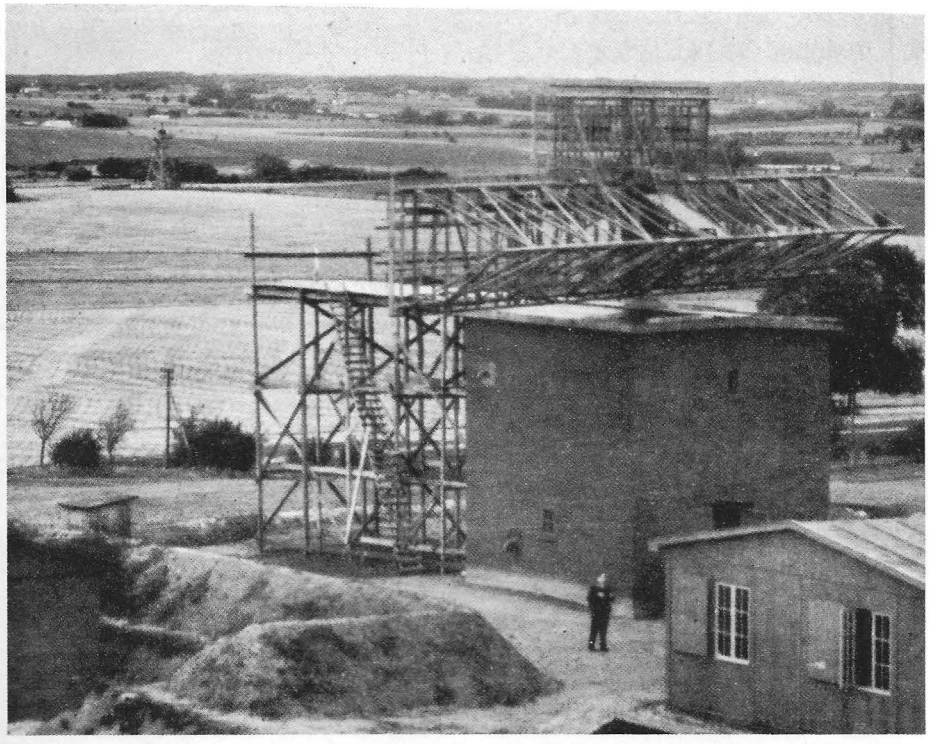


Photo 10: (above) Low level photos using a camera positioned in the nose of a plane such as the Mosquito were used to obtain information of important potential bombing targets such as this radar installation in Denmark.

Photos: 1, 4 to 10: British Air Ministry, *Evidence in Camera.* Photo 3, Stanley, Roy, *World...Intelligence*