

photograph has a larger scale than a 1:20,000-scale photo. Objects appear larger, thereby providing more detail, in the 1:10,000 photo than they do at the 1:20,000 scale. Figure 6 shows aerial photographs of the same area at scales of 1:40,000, 1:20,000, 1:10,000 and 1:5,000.

The scale of a photograph is determined by the flying height of the aircraft when the photo is taken and the focal length of the lens used to take the photograph. The same scale can be achieved from a number of flying heights. For example, a photograph taken with a 6-inch lens from 3,000 feet above ground will have the same approximate scale as one taken at 6,000 feet using a 12-inch lens. However, the two photos will not be the same. In the photograph taken from 3,000 feet, tall objects such as office buildings will "lean over" near the edges of the photo, whereas in the photograph taken from 6,000 feet they will appear to stand upright. An interpreter might want buildings to "lean over" since it allows their sides to be examined and permits accurate height measurements to be made of the buildings. An interpreter could also need photographs in which buildings do not "lean," so that ground areas between the buildings will be visible. Parameters such as the focal length of the lens and flying height of the aircraft must be carefully selected to meet the interpretation requirements for each individual mission.

Cameras used to take vertical aerial photographs include aerial survey cameras such as in Figure 7. This kind of camera is used to acquire photographs for map-making and other commercial applications. A camera of this type would cost about \$300,000 to buy.¹ Otherwise, a commercial aerial survey company might be contracted to acquire the required photography. The approximate cost to have photography taken on a commercial basis ranges from about \$4,000 to \$5,000 per

¹ Dieter Zeuner, Wild Heerbrugg Canada Ltd. Personal communication.