

## USE OF AIRPHOTOGRAPHS IN LAND APPRAISAL WORK IN BRITISH COLUMBIA\*

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THE first airphotographs for project use in British Columbia were taken in the early 1920's. Since that date, there has been a steady use and appreciation of the value of air photographs as a tool in the mapping of physical features and the survey of resources. Such men as G. S. Andrews, William Hall, Lyall Trorey and others too numerous to mention, have pioneered the application of photographs to the unique topographic extremes of our 366,255 square miles of unmapped and often unsurveyed vastness. The excellence of their work has sold air-photography to people in all walks of life. The result is that all Departments of Government are making ever increasing use of photogrammetry.

The Forest Service has developed a forest inventory technique based on field and office use of photographs. This program began in 1936. The Lands Department has undertaken a land survey to classify and to inventory areas suitable for settlement in the Provinces. This is necessary to provide for the orderly settlement of the ever increasing population.

As an example of the intensive application of photographs to resource examination, I should tell you of a novel photogrammetry accomplishment. The Air Surveys Division has just completed a series of low elevation verticals of salmon spawning areas on the headwaters of the Nechacko and other interior rivers. These pictures revealed the density of fish population and showed the importance of these streams as spawning areas.

In the assessment of land for taxation purposes, we are making wide use of photography. These uses may be divided into the following applications.

### NAVIGATIONAL

Detailed maps showing roads, drainage and other physical features ordinarily are not available. We therefore treat the photographs as the map. By the identification of features on the ground and the pictures, the assessor is able to locate his position and thereby save invaluable time and energy locating property boundaries and in traveling in unmapped country.

### FIELD NOTES

The photographs are used to examine timber types, areas of logging, cleared land and so on. Generally, typing is done in the field because boundaries can be determined readily by correlation of the field examination and photo detail. Much time is saved in estimating acreages. Essentially, the photograph eliminates a lot of needless strip cruising and survey location, to plot the boundaries of ground features. This procedure might be termed a practical use of photographs. Naturally we do not attempt to be too scientific, and many rules of thumb are employed in which the photograph becomes a part of the field notes. This use of photographs is applicable to the appraisal examination of farm, grazing land, hay meadow, industrial site and similar areas.

### TIMBER CRUISING

In timber assessment work we do not undertake an intensive mapping or inventory program. Under our Taxation Act we have the power to requisition

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detailed cruise maps. Normally these are readily obtainable from operators and are reliable. However, some cruises are of doubtful accuracy and we check these with the photos. If the timber types and map topography do not conform to the photographed conditions, we make further investigations. This consists of a check cruise and if necessary rejection of the doubtful estimates.

In virgin country we use the photographs to map timber properties. On the plan, timber types are plotted and sample cruise strip laid out from known ground features. The cruising party will then take the photos in the field and run the strips, making the necessary field adjustments.

In the interior, we have numerous large timber blocks covering 10,000 acres in a single property. These areas have scattered bodies of mature accessible timber, large areas of burn or second growth, and Alpine summits with no commercial timber. It would be a costly task to examine this area by a reconnaissance or strip survey. The practical solution is to identify accessible and valuable timber on the photographs, and to limit the field examination to these areas. This of course saves considerable time and expense and gives a practical answer.

#### CHECKING OF FIELD EXPORTS

An important use of photographs is for checking the returns of land logged in the assessment year. Owners submit these returns annually to claim reduction of taxation value for lands logged off. The intensity of field checks by assessors is reduced by photographic comparison of areas logged. By this means random samples of logging returns are made. Operators naturally tend to give fair returns but our field and photographic checks serve to keep them accurate.

The photographs are invaluable in this checking program because at low cost we can plot logging road development and keep track of logging locations. This is particularly important in areas being patch logged.

In our work, I have stressed what might be termed a field application of photography. You will note that our land appraisal department is not making use of Multiplex, slotted templet or other scientific aids. The Air Surveys Division specializes in this work. We deliberately stay out of the precise mapping and topographic phase of photography, to prevent duplication of work.

In connection with tax assessment, our valuations are often appealed to the Court of Revision. For some peculiar reasons, known only to the legal mind, the Court has refused to accept airphotos as evidence unless the actual individual who snapped the shutter is present to give evidence under oath as to the accuracy of the picture. Recently we have been able to overcome this by having the pictures documented by the Chief Air Survey Engineer as a true picture of the area under consideration. To date this procedure has been unchallenged by the law fraternity.

In conclusion, I can summarize by saying that in British Columbia land appraisal work, we have adopted a rough-shod practical application of air-photographs to our rough terrain and the large area of now unmapped country. We are satisfied that this yields a satisfactory result at a low cost.