

AERIAL RECONNAISSANCE MAPPING OF LAND UTILIZATION *

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Within the last year, the Department of Geology and Geography of Southern Methodist University has initiated a series of land utilization studies for Dallas County. The survey divides the county into thirty areas of approximately thirty square miles each. The first two areas assigned, located in the northwest corner of the county, embracing about sixty-five square miles, contain two small urban centers, Farmers Branch (population 400), and Carrollton (population 689).

In the course of field work on the assigned areas, the authors felt that an aerial reconnaissance might expedite the survey and an airplane trip was arranged to cover the major part of the area. Numerous photographs were taken from an altitude of approximately one thousand feet, but with only a moderate amount of light because of a partly cloudy day, and with the noonday sun casting few shadows, results were not so good as anticipated. Nevertheless, the potentialities of this type of survey seem to warrant a brief discussion.

Reasonably accurate land utilization maps may be made from the air, if well-known landmarks, railroads, rivers, and highways offer ready correlation between the map and landscape below.

Cultivated land may be distinguished easily from pasture land, and little difficulty is experienced in differentiating cleared from uncleared pasture. In blocks of uniform utilization, aerial mapping seems as accurate as land surveys.

* This paper is preliminary to a more detailed report on land utilization in the northwestern part of Dallas County, Texas, to be published in full at a later date.—Editor.

Bottom forests along the Trinity River and its tributaries appear as a uniform dark green mass, easily distinguished from the grass-green of the upland mesquite pasture forests. Extensive gravel workings, which from the ground present a complex maze of pits and dumps, appear from above as a series of giant furrows (Fig. 1). In the latter instance, mapping, which from ground observation would have been extremely tedious because of the lack of passable roads, was executed from the air with accuracy, rapidity, and ease.

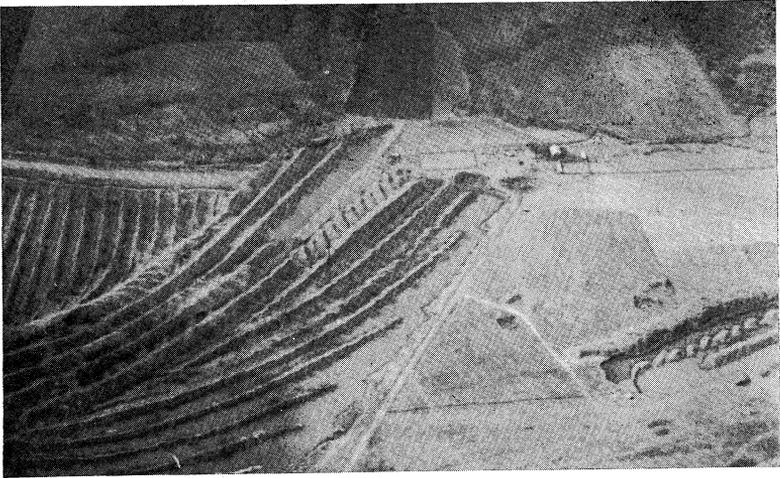


Fig. 1. Gravel pits southeast of Carrollton, Texas. Dumps have an average height of about thirty feet.

Limits of gravel pits (Fig. 1) may be correlated easily on a base map by noting their location in relation to highways, railroads, and river meanders. In like manner, the limits of small urban centers, as Carrollton (Fig. 2), are clearly indicated. This photograph shows how the city has assumed a V-shaped pattern with urban extensions radiating from the knot of railway intersections along the main highways, permitting wedges of cultivated land to divide the town into two parts.

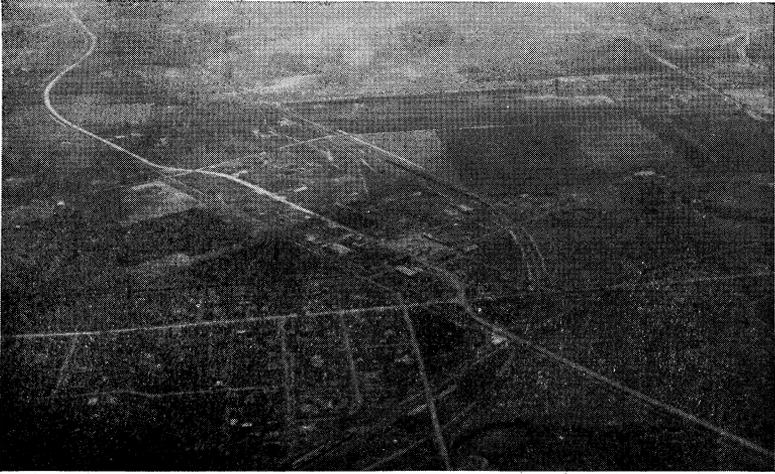


Fig. 2. Carrollton, Texas

However, a satisfactory land utilization map cannot be constructed solely from aerial observations or photographs. Many blocks of land which incorporate a variety of uses within a small area, obviously require detailed field work. Again, the differentiation of various crops becomes difficult unless the work is done in late summer or early fall, immediately preceding harvest. It appears, therefore, that aerial reconnaissance may greatly facilitate land utilization mapping, but does not supplant a more detailed and deliberate study from the ground.