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Photogrammetric Brief

Interim Revision

In lieu of complete revision, this rapid, low-cost, technique enables USGS to update its topo maps at an improved rate.

THE NATION'S STANDARD topographic maps, which show elevations, roads, streams, buildings, and other detailed features, can now be updated more economically and rapidly by a new photorevision technique referred to as *interim revision*.

Interim revision is defined as adding, without field checking, certain new information and deleting certain obsolete information from the maps as indicated by recent photographs. Except for specified deletions and corrections, the original map data are not changed. Interim revision encompasses the

landscape so rapidly and so drastically that normal revision of the topographic maps, about every ten years, cannot possibly keep up with the changes. The magnitude of the revision problem becomes apparent when it is noted that the Geological Survey maintains more than 21,000 different topo maps at the scale of 1:24,000. In urban areas alone, nearly 2,000 maps now need revision.*

As a pilot project for interim revision, using stereoscopic techniques, the Central Region of the U. S. Geological Survey recently completed the Des Moines, Iowa, project. The

ABSTRACT: Interim revision is a relatively new mapping technique whose products have not yet been exposed to widespread public use. Initial comments from users indicate that this type of mapping can be a very useful and economical tool in updating maps.

photogrammetric and cartographic operations required to update and print in a distinctive color the cultural and major drainage changes which are discernible on aerial photographs as compared with the previous map. It also includes the correction of major errors noted in the correction files, and updating of selected interior nomenclature and marginal data. Interim revision does not include updating of contours, woodland, fence and field lines, land lines, city or county boundaries, depth curves and soundings, or the addition of proposed roads.

Interim revision compilation data are obtained from new aerial photographs, by monoscopic and/or stereoscopic techniques.

New construction, especially in urban areas, poses a vexing problem; some maps are virtually obsolete before they are off the presses. In some areas man is altering the

project consists of four 7½ minute quadrangles, which covered 219 square miles or the entire city of Des Moines and the surrounding area.

The photographs were taken at 12,000 feet above mean ground level, with a 6-inch-focal-length camera.

The compilation was obtained by use of a standard Balplex plotter at 1:7,200 model scale which was reduced to 1:24,000 compilation scale by means of a variable-ratio pantograph. The actual time spent on stereocompilation was 305 man hours.

The cost of all phases of revising the four quadrangles was \$6,971, or slightly less than \$32 per square mile exclusive of printing.

* Whitmore, George D., Chief Topographic Engineer, *Press Release 12/20/67*, United States Dept. of Interior, Geological Survey.

This figure represents a considerable saving over what a complete revision job would cost for this area.

Cost could have been less than this if monoscopic techniques had been employed, but the same degree of accuracy could not have been attained because of significant relief in the area. The use of stereoplotting instruments produces an interim revised map which approaches the accuracy of the original map.

Photographs for the Des Moines project were taken in June 1967, and the finished interim revised map was ready for distribution to the public in April 1968, a period of about 10 months. This compares with approximately 3 years to produce a standard map for public use.

This one small pilot project employing this new mapping technique should not be considered definitive in cost and production time. For this type of work, each project will have its own individual problems and costs, depending upon project size, changes in the

terrain, density, and the amount of economic growth.

With experience and refinement of techniques, the cost and time expended probably can be reduced in the interim revision process.

One can detect at a glance at the finished revised maps of the Des Moines project the growth that has occurred since the compilation of the original map. Such information can be very valuable to engineers, city planners, and the construction industry.

Although an interim revised map is not as complete or as elegant as a new standard map, it is a useful and accurate product that can be prepared in less time at a lower cost. Only a few interim revised maps have been published so far, but the enthusiastic response of map users has caused the U. S. Geological Survey to undertake a large-scale program of interim revision. Nearly 1,000 urban-area quadrangle maps will be revised by this new technique in the next 2 years.

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80 authors. (Sold only in sets of 2 volumes)

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Manual of Photographic Interpretation, 1960

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pairs for 3D viewing), 16 full-color photographs,
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Manual of Color Aerial Photography, 1968

550 pages, 50 full-color aerial photographs, 16 pages
of Munsell standard color chips, 40 authors

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