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AN EXPERIMENT IN CULTURAL INTERPRETATION
AND MAP REVISION FROM SKYLAB DATA

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a. Overall Status

Imagery from SL/2 and SL/3 was obtained and examined with respect to combining clear, cloud-free photographs with an outdated base map. Of the 5 experiment sites available, it was decided that the Washington, D.C., area offered the best combination.

The SL/3 mission provided excellent S190-A coverage in a strip from Detroit, Michigan, to the Chesapeake Bay. Enlargements of frames 193, 194, and 195 from Rls. 20 and 23 were made to fit the IMW Chesapeake Bay quadrangle at 1:1,000,000 scale. Both paper prints and film transparencies were made.

Revision in the USGS consists of detecting changes and new features through the monoscopic comparison of new photographs overlaid by the obsolete map base. At larger scales (1:24,000) additions and deletions of map features are accomplished by direct compilation with confidence.

Smaller scale maps such as 1:250,000 and less are the result of cartographic composites of larger scale maps photographically reduced. A cartographic formula is followed for limiting map features to allow for legibility. When a small-scale map is directly compared to a satellite photograph the scene becomes "noisy," and the task of isolating additions and deletions becomes difficult.

It was therefore decided to pursue the revision experiment utilizing direct compilation methods. The operator was instructed to compile on a clear overlay those map features which would normally be compiled at 1:1,000,000 scale--major transportation systems including highways, railroads, power lines, pipelines, railroads, and airports; the extent of urban growth; and major hydrographic features. By isolating the major cultural features on two separate overlays, a more precise comparison of the old and new could be made.

The results of the S190-A experiment on the 1:1,000,000-scale IMW encouraged us to attempt the same exercise at 1:250,000 scale. For this, the Baltimore, Md., 1:250,000-scale map was used in conjunction with exposure 194. Skylab band-2 (Rl. 20 on SL/3) IR aerographic B&W was used to compile hydrographic features, and band-5 (Rl. 23 on SL/3) Pan-X aerial B&W was used for culture interpretation and delineation. None of the color film was used due to its graininess when enlarged.

Compilation is in its final stages. Color S190-B exposures from the same mission have been enlarged by the Cibachrome process to be used as a check on accuracy of compilation. S190-B exceeds S190-A by a magnitude of 3 with respect to image detection for revision.

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b. Actions Required or Recommended

None

c. Expected Accomplishments During Next Reporting Period

Review compilation for accuracy. Consult with Johnson Space Center on S190-B revision experiment.

d. Significant Results

S190-A imagery is suitable for input to map compilation and revision at scales from 1:1,000,000 to 1:250,000.

e. Summary Outlook for Remaining Effort

Evaluate results.

f. Travel Summary and Plans

Attend P.I. conference at Johnson Space Center in July.