

SYMPOSIUM

PHOTO INTERPRETATION KEYS*

CHAIRMAN

Dr. John H. Roscoe *Introduction*

PARTICIPANTS

Mr. Glenn Landis	<i>Concept and Validity of Association PI Keys in Regional Analysis</i>
Dr. Lloyd D. Black	<i>Regional Keys are Valid Geographic Generalizations</i>
Mr. Hank Weiner	<i>The Mechanical Aspect of Photo Interpretation Keys</i>
Dr. Harold E. Young	<i>The Need for Quantitative Evaluation of the Photo Interpretation System</i>
Mr. Paul J. Maynard	<i>Validity of PI Keys in the Interpretation of Industry</i>
Dr. Frank C. Whitmore	<i>Manpower for Military Photo Interpretation of Terrain</i>
Mr. James F. McDaniel	<i>PI Keys for the Air Intelligence Officer†</i>
Dr. Robert N. Colwell	<i>The PI Picture in 1955</i>

EDITOR'S NOTE: Acting for President Lundahl, Vice-President Colwell opened the Symposium and introduced as Chairman, Dr. Roscoe, Chief of the Photo Reconnaissance Utilization Section, Reconnaissance Branch, Directorate of Intelligence, Headquarters, U. S. Air Force.

INTRODUCTION

Dr. John H. Roscoe, Chairman

EACH of the scheduled five-minute papers will be followed immediately or later by a question and answer period of approximately the same length. Following the last speaker, Dr. Colwell has the difficult task of summarizing all the photo interpretation activities and papers, some of which he has not yet heard, and working this into the general PI picture for 1955. If time permits this presentation will be followed by general discussion.

Photo interpretation, for the purposes of this meeting is defined as the utilization of systems, techniques or processes of analyzing photographs which enable skilled scientific or professional personnel, by virtue of their individual experiences, to produce significant, reliable, and detailed information concerning the natural or cultural features of the area photo-

graphed, and to determine, or infer factors which the observable presence, condition, or use of these features may imply.

This may be contrasted with *photo reading* which is the *simple identification* of an object imaged on the photograph and is *not its interpretation*.

Photo interpretation keys have been defined by the Interservice Committee on Photo Interpretation Keys and Techniques of the Joint Staff, as reference materials designed to facilitate rapid and accurate identification and the determination of the significance of objects or conditions from an analysis of their photo images. Ideally, a key consists of two parts, an organized collection of annotated or captioned stereograms or other materials illustrative of objects or conditions to be identified, and a graphic or word description, which sets

* Presented at 21st Annual Meeting of the Society, Hotel Shoreham, Washington, D. C., March 8, 1955, p.m.

† In accordance with his request, the author's remarks are not published.—*Editor*

EDITOR'S NOTE: A major portion of biographical material presented by the Chairman has been omitted, and much of the balance changed in position. Also introductions of individual papers and some miscellaneous material has been lessened in length, rearranged or omitted.

forth in some systematic fashion the recognition features of those objects or conditions.

Most of these keys involve photo images. A *photo image* is a pictorial representation of a specific object or condition on the surface of the earth which is composed of the sum of such elements as photographic tone, texture, shadow, shape, size, pattern, position, parallax and others. Photo images vary in size from say one ten thousandth of an inch to many square inches, with the smaller sizes being more common. Photo images are not mutually exclusive; they frequently do not have common boundaries; and they even exist one within another, or partly within one another.

Another matter to keep in mind is whether photo interpretation keys are to be used for civil or military purposes. There is considerable difference in the design of the key, if it is to be used for one of these purposes and not the other. Civilian professional people are normally well-trained and have had field experience. Here technical terminology may be used. The phrase "karst-topography" means much to the geologist or geographer but if this phrase is used in a military publication, it might require several pages of explanation. In the military services, a photo interpreter may or may not be trained professionally and his assignment may or may not be in a specialty in which he is competent. So for the purpose of the discussion this afternoon, if we say a key is valid or not valid, let us state whether we mean for military or non-military use.

The first paper was to have been presented by Mr. William Steen, of the Aero Service Corporation. Mr. Steen is out of the country, and in his place, Mr. Landis will present a paper. Mr. Landis has specialized in forest photogrammetry, forest photo interpretation and map compilation. His current position for Aero Service involves the compilation of regional PI Keys.

Mr. Lloyd D. Black, whose paper will follow the discussion of Mr. Steen's paper, is a professional geographer with an in-

terest in photo interpretation. He is assigned to the Department of Agriculture and also is a Professor of Geography at American University.

Mr. Hank Weiner was born in Vienna, educated in Europe and served in the U. S. Army as a photo interpreter, photogrammetrist, and a specialist in the interrogation of prisoners of war. Later Mr. Weiner was with G-2, Lockwood, Kessler and Bartlett and the Naval Photo Interpretation Center.

Dr. Harold Young, Professor of Forestry at the University of Maine, has worked with aerial photographs since 1938 and has instructed foresters and geologists in photogrammetry and photo interpretation. He has made numerous contributions to the literature on the use of air photos for forestry and other purposes.

Mr. Paul Maynard served in the Navy as a photo interpretation officer specializing in amphibious and industrial target analyses. He has been associated with the Library of Congress as a research supervisor, and is now the General Manager of the Commercial and Industrial Research Corporation.

As Chairman of the former Photo Interpretation Working Group, Research and Development Board, Department of Defense, Dr. Frank Whitmore, Chief of the Military Geology Branch of the United States Geological Survey, has contributed substantially to the policies and practices of photo interpretation in the Armed Services. His chief interest is the application of geology to military operations and construction.

In World War II and during the Korean conflict, Mr. James F. McDaniel served with the Navy. He has been a faculty member of the Naval Intelligence School, an Air Intelligence Officer and photo interpreter. He is on the photo interpretation staff of the Broadview Research and Development Company.

Dr. Robert Colwell is a bona fide photo interpreter and has been the Second Vice-President of our Society. He is probably the man best qualified to sum up the situation today.