

AERIAL PHOTOGRAPHY MAPS OUR FARMLANDS
THE PROGRAM OF THE AGRICULTURAL ADJUSTMENT ADMINISTRATION

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ON CONSULTING ASSIGNMENT TO EAST CENTRAL DIVISION, AAA

THE AGRICULTURAL ADJUSTMENT ADMINISTRATION, LIKE THE SOIL CONSERVATION SERVICE, ANOTHER AGENCY OF THE U. S. DEPARTMENT OF AGRICULTURE, HAS INAUGURATED AN EXTENSIVE MAPPING PROGRAM. APPROXIMATELY 375,000 SQUARE MILES OF NEW PHOTOGRAPHY AND THE UTILIZATION OF SOME 385,000 SQUARE MILES OF PHOTOGRAPHY COMPLETED BY OTHER AGENCIES, COMPRISING A TOTAL EQUAL TO ROUGHLY ONE-FOURTH THE AREA OF THE UNITED STATES, IS THE IMMEDIATE PROGRAM.

FOR PURPOSES OF PLANNING AND ADMINISTERING THE NATION-WIDE AGRICULTURAL CONSERVATION PROGRAM, THE 48 STATES OF THE COUNTRY ARE DIVIDED INTO FIVE REGIONS, BASED LARGELY UPON THE CHARACTER OF THE AGRICULTURE AND NATURE OF PROBLEMS INVOLVED. THE NORTHEAST REGION IS DEVOTED PRIMARILY TO DAIRYING AND THE PRODUCTION OF MISCELLANEOUS AGRICULTURAL PRODUCTS. IN THE EAST CENTRAL REGION TOBACCO IS THE MAIN CASH CROP, WHILE IN THE SOUTHERN REGION IT IS COTTON. THE NORTH CENTRAL REGION INCLUDES THE CORN-BELT PROPER. THE WESTERN REGION INCLUDES A LARGE PART OF THE WHEAT-GROWING LANDS. SEPARATE ADMINISTRATIVE DIVISIONS OF THE A.A.A. ARE IN CHARGE OF THE PROGRAM IN THE RESPECTIVE REGIONS.

THE AGRICULTURAL CONSERVATION PROGRAM PROVIDES FOR THE MAKING OF PAYMENTS TO FARMERS FOR DIVERTING ACREAGE FROM SOIL-DEPLETING CROPS TO SOIL-CONSERVING CROPS, AND FOR CARRYING OUT APPROVED SOIL-BUILDING PRACTICES. SINCE THE AMOUNT OF ANY SUCH PAYMENT IS DETERMINED BY THE EXTENT TO WHICH CROP ACREAGE HAS BEEN SHIFTED OR PRACTICES HAVE BEEN CARRIED OUT, THE REASONS FOR THE WIDE-SPREAD PROGRAM OF FARM LANDS DELINEATION AND MEASUREMENT BECOMES EVIDENT. THE MAPPING METHOD MUST BE RAPID, IT MUST BE ACCURATE AND, ABOVE ALL, IT MUST BE ECONOMICAL.

THE UTILIZATION OF THE AERIAL PHOTOGRAPHIC METHOD BY THE AGRICULTURAL ADJUSTMENT ADMINISTRATION IS NOT ENTIRELY NEW NOR UNTRIED. DURING THE YEARS 1934-1936, CONSIDERABLE RESEARCH WAS DONE AND TRIAL AREAS WORKED UP WITH VERY SATISFACTORY RESULTS. THE WORK OF MESSRS. W. N. BROWN, O. J. MARSHALL AND C. S. COBLENTZ PARTICULARLY, HAS COME TO MY ATTENTION. THERE ARE DOUBTLESS MANY OTHERS WHO HAVE HAD A HAND IN THE DEVELOPMENT WORK WHICH SHALL HAVE A BEARING ON THE EVOLUTION OF THE MOST RAPID AND ECONOMICAL METHOD. IN VIEW OF THE URGENCY OF THE 1937 PROGRAM FOR CHECKING COMPLIANCE, THE RESULTS OF FURTHER RESEARCH AND EXPERIENCE MUST NECESSARILY BE APPLIED AT A LATER TIME.

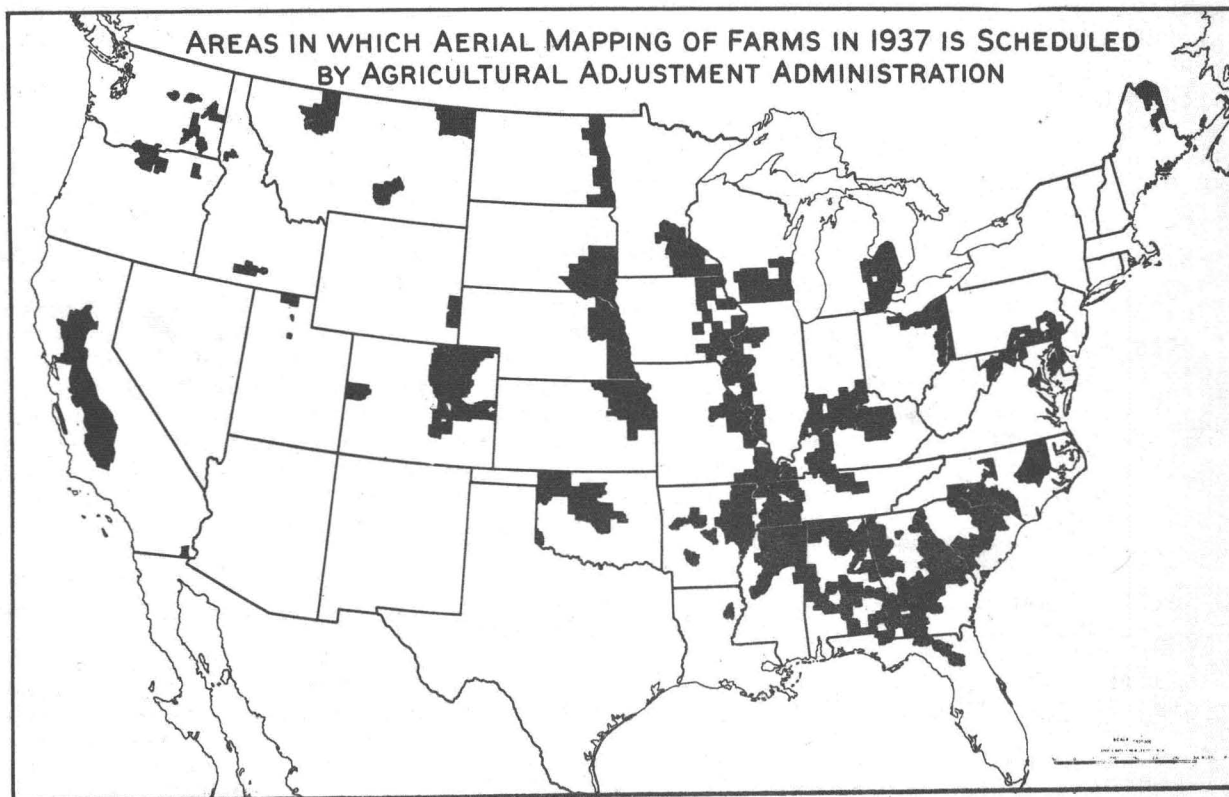
ONE OF THE CHIEF PROBLEMS CONFRONTING THE ADMINISTRATION IN THE EARLY PHASE OF PLANNING THE PROGRAM WAS THE STANDARDIZATION OF THE AERIAL PHOTOGRAPHY SPECIFICATIONS TO BE USED BY THE DIFFERENT DIVISIONS. WITH AN AERIAL PHOTOGRAPHY PROGRAM OF SUCH LARGE EXTENT, AND WITH THE RECOGNIZED NEED FOR PROVIDING PHOTOGRAPHY OF CONSISTENT HIGH QUALITY, IT WAS EVIDENT THAT A SET OF UNIFORM STANDARDS WERE NECESSARY FOR ALL NEW AERIAL PROJECTS. THESE WERE ACCORDINGLY WORKED OUT IN A SERIES OF DISCUSSIONS AMONG MEMBERS OF THE LAND POLICY COMMITTEE OF THE DEPARTMENT OF AGRICULTURE AND REPRESENTATIVES OF EACH DIVISION OF THE A.A.A. MR. MARSHALL WRIGHT OF THE SOIL CONSERVATION SERVICE AND THE WRITER SERVED AS TECHNICAL ADVISORS. THE STANDARD SPECIFICATIONS OF THE AMERICAN SOCIETY OF PHOTOGRAMMETRY PROVIDED THE GROUND WORK FOR THE FINAL PROVISIONS. THE CHIEF SPECIFICATIONS GOVERNING THE PHOTOGRAPHY ARE AS FOLLOWS:

SCALE - 1:20,000
PRINT OVERLAP - 65% AVERAGE
STRIP OVERLAP - 30% AVERAGE
FLIGHT DIRECTION - NORTH-SOUTH OR EAST-WEST
TILT - MAXIMUM 1° AVERAGE FOR ENTIRE PROJECT
CRABBING - MAXIMUM OF 10%
SCALE ACCURACY - WITHIN 5%

AFTER ADMINISTRATIVE APPROVAL AND ADOPTION OF THE FINAL FORM OF THE SPECIFICATIONS, SCHEDULES OF PROPOSED PHOTOGRAPHY WERE PREPARED BY THE RESPECTIVE DIVISIONS. SUCH LISTS INCLUDED AREAS WHERE THE PARTICULAR NATURE

AND EXTENT OF PARTICIPATION IN THE AGRICULTURAL CONSERVATION PROGRAM MADE IT DESIRABLE TO INCLUDE THEM IN THE 1937 MAPPING PROGRAM. SINCE THE PROGRAM OF THE ADMINISTRATION IS ON A COUNTY-UNIT BASIS, THE AERIAL PHOTOGRAPHY IS, IN GENERAL, SPECIFIED IN LIKE MANNER. SOME VARIATION OCCURS WHERE NEW WORK IS TO JOIN BLOCKS OF EXISTING PHOTOGRAPHY. HERE THE PROJECT BOUNDARIES ARE ADJUSTED ACCORDINGLY. SOME DEVIATION IS ALSO MADE WHERE VERY IRREGULAR COUNTY BOUNDARIES MAKE IT DESIRABLE TO DELIMIT AREAS ON SELECTED LINES OF LATITUDE AND LONGITUDE.

DEPENDING ON THE PARTICULAR NEEDS AND THE MAPPING ORGANIZATION OF THE RESPECTIVE DIVISIONS, SPECIFIED ITEMS OF PHOTOGRAPHY INCLUDE THE AERIAL NEGATIVES, ONE SET OF CONTACT PRINTS, ROUGH PRELIMINARY PAPER INDEX MAPS, A PHOTOGRAPHIC-TYPE INDEX AND ENLARGEMENTS. PHOTOGRAPHIC LABORATORIES AT WASHINGTON, D. C. AND SALT LAKE CITY, UTAH ARE PLANNED TO PROVIDE EXTRA PRINTS AND ENLARGEMENTS FOR CERTAIN OF THE DIVISIONS, WHILE A LARGE PORTION OF THE WORK WILL BE OBTAINED COMMERCIALY.



ALL EXISTING AERIAL PHOTOGRAPHY OF A QUALITY WHICH WILL MEET THE NEEDS OF THE AGRICULTURAL ADJUSTMENT ADMINISTRATION WILL BE UTILIZED. NATURALLY SOME DEVIATION FROM THE PRESCRIBED AERIAL PHOTOGRAPHY SPECIFICATIONS WILL BE NECESSARY IN ORDER TO GAIN THE LARGE ECONOMIES POSSIBLE BY USING EXISTING WORK. THE MAXIMUM AGE OF PHOTOGRAPHY WHICH WILL BE USED HAS TENTATIVELY BEEN SET AS FIVE YEARS. AGAIN, IN THE LIGHT OF EXPERIENCE TO BE GAINED IN THE 1937 PROGRAM, THIS FIGURE MAY BE REVISED CONSIDERABLY. THE LARGE MAJORITY OF EXISTING PHOTOGRAPHY WILL COME FROM THE FOLLOWING AGENCIES:

- U. S. SOIL CONSERVATION SERVICE
- U. S. WAR DEPARTMENT
- U. S. FOREST SERVICE
- U. S. GEOLOGICAL SURVEY
- TENNESSEE VALLEY AUTHORITY
- COMMERCIAL COMPANIES

GIVEN BELOW IS A TABULATION BY REGIONS OF THE APPROXIMATE QUANTITIES OF NEW PHOTOGRAPHY AND EXISTING PHOTOGRAPHY WHICH IT IS PLANNED TO EMPLOY THIS YEAR:

<u>REGION</u>	<u>NEW PHOTOGRAPHY</u>	<u>EXISTING PHOTOGRAPHY</u>
NORTHEAST	7,695 sq. mi.	14,200 sq. mi.
EAST CENTRAL	41,847	64,645
SOUTHERN	120,000	180,000
NORTH CENTRAL	112,254	80,000
WESTERN	94,045	45,000
	<u>375,841</u>	<u>383,845</u>

SINCE THE WRITER'S SPECIAL ASSIGNMENT IS WITH THE EAST CENTRAL DIVISION, THE NATURE OF THE WORK AND ORGANIZATION PROPOSED FOR THIS DIVISION WILL BE OUTLINED. BY REFERRING TO THE ABOVE MAP, IT WILL BE SEEN THAT THE GREATER PORTION OF THE TENNESSEE VALLEY AREA LIES WITHIN THE LIMITS OF THE EAST CENTRAL DIVISION. APPROXIMATELY 12,000 SQUARE MILES OF THE 17,000 SQUARE MILES OF SINGLE LENS AERIAL PHOTOGRAPHY EXECUTED BY THE TENNESSEE VALLEY AUTHORITY DURING THE PAST FOUR YEARS WILL BE UTILIZED BY THE EAST CENTRAL DIVISION. ACCURATE SCALE RATIOS FOR MOST OF THE 12,000 SQUARE MILES OF PHOTOGRAPHY ARE ALREADY AVAILABLE, AND PRINTS AND ENLARGEMENTS ARE BEING MADE BY THE AUTHORITY FOR THE A.A.A. WORK. THAT PORTION OF THE PHOTOGRAPHY NOT YET SCALE-CHECKED WILL BE PUT THROUGH THE SAME PROCEDURE DEVELOPED, AND NOW IN USE BY, THE TENNESSEE VALLEY AUTHORITY. SOME SLIGHT MODIFICATIONS WILL BE MADE IN THE METHOD HOWEVER, TO PRODUCE RESULTS CONSISTENT WITH THE REQUIREMENTS OF THE A.A.A. IN ITS FARM LANDS MAPPING PROGRAM.

IN ADDITION TO THE ASSISTANCE GIVEN BY THE TENNESSEE VALLEY AUTHORITY IN SETTING UP A WASHINGTON MAPPING ORGANIZATION, A SMALL GROUP OF ENGINEERS HAVE BEEN ASSIGNED FOR INSTRUCTION AND SUPERVISORY SERVICES IN SEVERAL OF THE STATES. THIS GROUP INCLUDES PHOTOGRAMMETRISTS EXPERIENCED IN GRAPHICAL AND ANALYTICAL SOLUTIONS OF SCALE-CHECK AND TILT PROBLEMS. THESE PHOTOGRAMMETRISTS ARE SERVING IN CENTRAL STATE OFFICES INSTRUCTING ENGINEERS OF THE EAST CENTRAL DIVISION IN THE NECESSARY OFFICE PROCEDURE FOR SCALE DETERMINATIONS. AS INSTRUCTORS IN THE FIELD OPERATIONS INCIDENT TO SCALE-CHECK SURVEYS, THE TENNESSEE VALLEY AUTHORITY HAS ASSIGNED SURVEYORS WITH LONG EXPERIENCE IN FIELD PRACTICES CONNECTED WITH SCALE-CHECK SURVEYS. THE INSTRUCTION SERVICES DURING THE PAST TWO MONTHS HAVE BEEN GIVEN IN CONNECTION WITH THE UTILIZATION OF EXISTING AERIAL PHOTOGRAPHY. IT IS EXPECTED THAT THE FIRST NEW PHOTOGRAPHY FOR THIS DIVISION WILL BE AVAILABLE ABOUT JULY 1, AT WHICH TIME A TRAINED GROUP OF MEN WILL BE ON HAND TO VIGOROUSLY PROSECUTE THE SCALE-DETERMINATION SURVEYS ON THE NEW PHOTOGRAPHS.

THE ACTIVITIES THUS FAR DESCRIBED, AND THE PRODUCTION OF THE FIELD ENLARGEMENTS ARE ADMINISTERED DIRECTLY BY EACH DIVISION. THE FIELD INSPECTION, THE DELINEATION OF CROPS, THE MEASURING OF AREAS ON THE ENLARGEMENTS AND THE MAKING OF SIMPLE TRACINGS OF THE FARMS ARE ACTIVITIES WHICH ARE CARRIED ON AND SUPERVISED BY COUNTY-ASSOCIATION PERSONNEL. IN THESE COUNTY ORGANIZATIONS, WE FIND ENGINEERS, FARMERS AND OTHER INDIVIDUALS WHO HAVE SHOWN UNUSUAL APTITUDE FOR THE TECHNICAL ASPECTS OF THE JOB. MANY OF THESE ARE ALREADY VETERANS OF TWO OR THREE YEARS' SERVICE ON COMPLIANCE CHECKING WORK. ONLY THROUGH THE MEDIUM OF THIS GREATLY DECENTRALIZED MAPPING ORGANIZATION IS IT POSSIBLE TO UNDERTAKE WITH CONFIDENCE A PROGRAM OF THE MAGNITUDE DESCRIBED HEREIN.

I RESERVE FOR THOSE WHO WILL WORK AT CLOSER RANGE WITH THE SEVERAL PHASES OF THIS UNDERTAKING, THE OPPORTUNITY TO PRESENT TO OUR MEMBERS AND READERS MORE DETAILED PICTURES OF THEIR RESPECTIVE ACTIVITIES. THE SIMULTANEOUS PHOTOGRAPHING OF 375,000 SQUARE MILES OF OUR COUNTRY, EMPLOYING 36 PHOTOGRAPHIC CREWS, IS IN ITSELF A MILE-STONE IN THE DEVELOPMENT OF AERIAL MAPPING. WE SHOULD LATER KNOW OF THE PROGRESS MADE IN PHOTOGRAPHIC OPERATIONS, OF DARK-ROOM AND INDEXING PROBLEMS, OF THE MORE TECHNICAL SCALE-DETERMINATION SURVEYS, OF THE FIELD DELINEATION WORK DURING HOT SUMMER DAYS, OF PLANIMETERING AND TRACING AREAS IN COUNTY OFFICES AND OF THE FUNCTIONING OF THE ADMINISTRATIVE AND SUPERVISORY ACTIVITIES IN THIS FAR-FLUNG UNDERTAKING.